



Landscapes generated by fractals. "A simulation of the curvature of the earth," as at right, "is needed in coastal landscapes in order to avoid the impression that the landscape is cut off at the horizon," as at left. [From *Fractals*]

Much of the book is concerned with self-similar fractals and self-affine fractal curves and surfaces, the simplest fractals that (so far) have had the broadest range of applications. Feder describes in detail the difference between them, an appropriate topic since indiscriminate application of the simple methods that work well for characterizing self-similar fractals to self-affine fractals appears to be a common error.

Satisfactory procedures for measuring fractal dimensions with these classes of fractal geometry have now been developed. Further advances can be expected, but these parts of the book will have lasting value. For multifractals (fractal measures), practical methods for characterization are just emerging, so the discussion of applications to convection, diffusion-limited aggregation, and viscous fingering should soon be superseded.

In real applications the fractal scaling does not extend over an unlimited range of length scales but is bounded by upper and lower cut-off lengths that depend on the details of the system. In some cases, one type of fractal behavior on one length scale may cross over to a different type on another range of length scales. These issues are discussed when they appear in examples, but it might have been appropriate to discuss them in more detail since difficulties associated with this behavior are commonly encountered in research. Similarly, a more detailed discussion of how to assess both statistical and systematic uncertainties would have been valuable.

The book is concerned primarily with two of the major topics of recent research: the quantitative description of random systems and the phenomenology and kinetics of the growth of fractals. Feder gives little coverage to the third major focus of current research, the physical and chemical processes

occurring in, on, and around fractals.

This is a relatively short book, but I believe it is the right length for its purpose. It is well written and careful. The most technically complex topic it covers, multifractals, is described in a clear, direct fashion. Although fractal geometry is a mathematical subject, little mathematical background is required to benefit from this book. I highly recommend it for those who are interested in using fractal geometry but do not want it to become the major focus of their research. It would also provide a sound basis for a course in fractal geometry.

PAUL MEAKIN

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Contemporary Mechanics

Hamiltonian Systems. Chaos and Quantization. ALFREDO M. OZORIO DE ALMEIDA. Cambridge University Press, New York, 1989. x, 238 pp., illus. \$64.50. Cambridge Monographs on Mathematical Physics. Translated from the Portuguese.

Most university students of physical science and engineering must take a course that covers classical mechanics—the study of the motion of material bodies in response to forces. The basic concepts underlying classical mechanics have been known since their enunciation by Isaac Newton and the revealing reformulation by William Rowan Hamilton. It is therefore remarkable that this old field has lately become a "hot" area of research with an explosion in the number of papers, conferences, and new textbooks.

The element stimulating this activity has been the introduction of topological and

analytic ideas from the branch of mathematics known as dynamical systems theory. In particular, the concept of chaos has been key to this awakening interest. The word *chaos* is used to describe the time evolution of a deterministic system with very complicated dynamics (complicated in a way that is quantifiable by dynamical systems theory). When viewing chaotic behavior over time, one is very often led to the well-founded thought that its description might best be made statistically. The surprise is that such complicated behavior is common even in very simple Hamiltonian mechanics problems.

This book presents Hamiltonian mechanics from this modern point of view and deals with the implications of chaos for quantum mechanics. The book had its origin in a graduate university course, and it has what I would consider an excellent selection of topics for a graduate course following the standard one in classical mechanics in American universities.

The first part of the book deals with classical mechanics, covering such topics as the Poincaré surface of section technique, the Hartman-Grobman theorem, structural stability, horseshoes, normal forms, bifurcations, and the Kolmogorov-Arnold-Moser theorem. The second part (about one-third of the book) discusses the implications of chaotic dynamics for the solution of a classical problem when quantum mechanical effects are included. The author's treatment of this fascinating topic is very expert, as might be expected from the fact that he has been a major contributor to it.

Since there has been a rapid increase in books on chaotic dynamics, it is fair to ask where the current one fits in. It is not a comprehensive reference, nor does it supply mathematical proofs, extensive illustrative examples, or computer results. However, it successfully (despite some minor errors and obscurities) gives a concise treatment of well-chosen key elements of the field that are suitable for an upper-level graduate physics course.

EDWARD OTT

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Books Received

AIDS and AIDS-Related Infections. Current Strategies for Prevention and Therapy. Adrian J. Bint, John Oxford, and Philip J. Daly, Eds. Academic Press, San Diego, CA, 1989. vi, 137 pp., illus. Paper, \$24.95. From a meeting, Stratford-on-Avon, U.K., April 1988.

Atomic Spectra and Collisions in External Fields. K. T. Taylor, M. H. Nayfeh, and C. W. Clark, Eds. Plenum, New York, 1989. xiv, 457 pp., illus. \$95. Physics of Atoms and Molecules. From a meeting, Egham, U.K., July 1987.

Beyond Anthropology. Society and the Other. Bernard McGrane. Columbia University Press, New York, 1989. xiv, 150 pp. \$28.

Beyond the Limits. Flight Enters the Computer Age. Paul E. Ceruzzi. MIT Press, Cambridge, MA, 1989. xiv, 270 pp., illus. Paper, \$17.50. An extensively illustrated history written to coincide with the opening of a gallery at the National Air and Space Museum.

Biogenic Sulfur in the Environment. Eric S. Saltzman and William J. Cooper, Eds. American Chemical Society, Washington, 1989. xii, 572 pp., illus. \$99.95. ACS Symposium Series 393. From a symposium, New Orleans, Aug.-Sept., 1987.

Biohazards Management Handbook. Daniel F. Liberman and Judith G. Gordon, Eds. Dekker, New York, 1989. x, 438 pp., illus. \$125. Occupational Safety and Health, vol. 17.

Biological Role of Plant Lipids. Péter A. Biacs, Katalin Gruiz, and Tibor Kremmer, Eds. Plenum, New York, 1989. xviii, 626 pp., illus. \$115. From a symposium, Budapest, Hungary, July 1988.

Biologically Based Methods for Cancer Risk Assessment. Curtis C. Travis, Ed. Plenum, New York, 1989. x, 355 pp., illus. \$75. NATO Advanced Science Institutes Series A, vol. 159. From a workshop, Corfu, Greece, June 1988.

Biology. Helena Curtis and N. Sue Barnes. 5th ed. Worth, New York, 1989. xxx, 1192 pp., illus., + glossary and index. \$47.95.

The Biology of Parasitism. A Molecular and Immunological Approach. Paul T. Englund and Alan Sher, Eds. Liss, New York, 1988. xvi, 544 pp., illus. \$90; paper, \$45. MBL Lectures in Biology, vol. 9. From a series of courses, Woods Hole, MA, 1980-1987.

Biomechanics. K. B. Sahay and R. K. Saxena, Eds. Wiley, New York, 1989. viii, 346 pp., illus. \$34.95.

Botulinum Neurotoxin and Tetanus Toxin. Lance L. Simpson, Ed. Academic Press, San Diego, CA, 1989. xiv, 422 pp., illus. \$89.

Case-Based Planning. Viewing Planning as a Memory Task. Kristian J. Hammond. Academic Press, San Diego, CA, 1989. xxiv, 277 pp. \$34.95. Perspectives in Artificial Intelligence, vol. 1.

Cell Calcium Metabolism. Physiology, Biochemistry, Pharmacology, and Clinical Implications. Gary Fiskum, Ed. Plenum, New York, 1989. xiv, 642 pp., illus. \$115. GWUMC Department of Biochemistry Annual Spring Symposia. (Washington, DC, May 1987.)

Diverse Divers. Physiology and Behavior. Gerald Kooyman. Springer-Verlag, New York, 1989. xvi, 200 pp., \$99. Zoophysiology, vol. 23.

Does God Play Dice? The Mathematics of Chaos. Ian Stewart. Basil Blackwell, New York, 1989. vi, 317 pp., illus. \$19.95.

Drug Carrier Systems. F. H. D. Roerdink and A. M. Kroon, Eds. Wiley-Interscience, New York, 1989. xii, 330 pp., illus. \$74.95. Horizons in Biochemistry and Biophysics, vol. 9.

Dynamics of Dinosaurs and Other Extinct Giants. R. McNeill Alexander. Columbia University Press, New York, 1989. viii, 167 pp., illus. \$30.

Ecological Engineering. An Introduction to Ecotechnology. William J. Mitsch and Sven Erik Jørgensen, Eds. Wiley-Interscience, New York, 1989. xvi, 472 pp., illus. \$54.95. Environmental Science and Technology.

Ecotoxicology and Climate. With Special Reference to Hot and Cold Climates. Philippe Bourdeau *et al.*, Eds. Published for the Scientific Committee on the Problems of the Environment by Wiley, New York, 1989. xx, 392 pp., illus. \$127. SCOPE, vol. 38. Based on a workshop, Schmallenberg-Grafchaft, F.R.G., July 1985.

Effective Risk Communication. The Role and Responsibility of Government and Nongovernment Organizations. Vincent T. Covello, David B. McCallum, and Maria T. Pavlova, Eds. Plenum, New York, 1989. xiv, 370 pp., \$85. Contemporary Issues in Risk Analysis, vol. 4.

Electric Fields in Vertebrate Repair. Natural and Applied Voltages in Vertebrate Regeneration and Healing. Richard B. Borgens *et al.* Liss, New York, 1989. xxiv, 310 pp., illus. \$69.50.

Electromagnetic Interaction with Biological Systems. James C. Lin, Ed. Plenum, New York, 1989. viii, 300 pp., illus. \$62.50. From a symposium, Tel Aviv, Israel, Aug.-Sept. 1987.

Electronic Transport in Hydrogenated Amorphous Semiconductors. H. Overhof and P. Thomas. Springer-Verlag, New York, 1989. xiv, 174 pp., illus. \$59.50. Springer Tracts in Modern Physics, vol. 114.

Evolutionary History of the "Robust" Australopithecines. Frederick E. Grine, Ed. Aldine de Gruyter, Hawthorne, NY, 1989. xxii, 527 pp., illus. \$99.95. Foundations of Human Behavior. From a workshop, Stony Brook, NY, March 1987.

Functional Epithelial Cells in Culture. Karl S. Matlin and John D. Valentich, Eds. Liss, New York, 1989. xii, 463 pp., illus. \$79.50. Modern Cell Biology, vol. 8.

Gauge Fields. Classification and Equations of Motion. M. Carmeli, Kh. Huleihil, and E. Leibowitz. World Scientific, Teaneck, NJ, 1989. xii, 136 pp. \$24.

The Gene Hunters. Biotechnology and the Scramble for Seeds. Caeleous Juma. Princeton University Press, Princeton, NJ 1989. xiv, 288 pp. \$39; paper, \$14.95. African Center for Technology Studies Research Series, no. 1.

Generation, Distribution and Utilization of Electrical Energy. C. L. Wadhwa. Wiley, New York, 1989. viii, 367 pp., illus. \$39.95.

Genetic Engineering Fundamentals. An Introduction to Principles and Applications. Karl Kammermeyer and Virginia L. Clark. Dekker, New York, 1989. xii, 290 pp., illus. \$85.

Geometry and Topology. G. Stratopoulos and G. M. Rassias, Eds. World Scientific, Teaneck, NJ, 1989. x, 331 pp., illus. \$67.

Glutathione. Chemical, Biochemical, and Medical Aspects. David Dolphin, Olga Avramovic, and Rozanne Poulson, Wiley-Interscience, New York, 1989. 2 vols. Part A, xiv, 930 pp., illus. Part B, xvi, 848 pp., illus. Each vol., \$125. Coenzymes and Cofactors, vol. 3.

Healthy Nutrition. Preventing Nutrition-Related Diseases in Europe. W. P. T. James *et al.* World Health Organization, Geneva, 1988. xiv, 150 pp., illus. Paper, SwF 20. WHO Regional Publications, no. 24.

Hearing. Physiological Acoustics, Neural Coding, and Psychoacoustics. W. Lawrence Gulick, George A. Gescheider, and Robert D. Frisina. Oxford University Press, New York, 1989. xii, 409 pp., illus. \$39.95. A textbook for advanced undergraduates and graduate students.

Histophysiology of the Immune System. The Life History, Organization, and Interactions of Its Cell Populations. Sigbjørn Fossum and Bent Rolstad, Eds. Plenum, New York, 1988. xxii, 916 pp., illus. \$139.50. Advances in Experimental Medicine and Biology, vol. 237. From a conference, Oslo, Norway, Aug. 1987.

Horizons in Endocrinology. M. Maggi and C. A. Johnston, Eds. Raven, New York, 1989. xvi, 360 pp., illus. \$74. Sero Symposium Publications from Raven Press, vol. 52. Based on a meeting, Florence, Italy, May 1988.

HPLC of Macromolecules. R. W. A. Oliver, Ed. IRL Press (Oxford University Press), New York, 1989. xvi, 236 pp., illus. \$54; paper, \$36. Practical Approach Series.

Interaction of the Rocky Mountain Foreland and the Cordilleran Thrust Belt. Christopher J. Schmidt and William J. Perry, Jr., Eds. Geological Society of America, Boulder, CO, 1988. xiv, 582 pp., illus., + maps + microfiche. \$78. GSA Memoir 171.

An Introduction to Hilbert Space and Quantum Logic. David W. Cohen. Springer-Verlag, New York, 1989. xii, 149 pp., illus. \$39.80. Problem Books in Mathematics.

Knowledge-Based Systems in Astronomy. A. Heck and F. Murtagh, Eds. Springer-Verlag, New York, 1989. iv, 280 pp., illus. \$31.40. Lecturer Notes in Physics, 329.

Laboratory Manual for the Examination of Water, Waste Water, and Soil. H. H. Rump and H. Krist. VCH, New York, 1989. xii, 190 pp., illus. \$33.

Language. A Theory of Its Structure and Use. Per Saugstad. Solum, Oslo, and Humanities Press International, Atlantic Highlands, NJ, 1989. x, 156 pp. \$45.

Lanthanides, Tantalum and Niobium. Mineralogy, Geochemistry, Characteristics of Primary Ore Deposits, Prospecting, Processing and Applications. Peter Moller, Petr Cerny, and Francis Saupé, Eds. Springer-Verlag, New York, 1989. xii, 380 pp., illus. \$55.90. Society for Geology Applied to Mineral Deposits Special Publication no. 7. From a workshop, Berlin, Nov. 1986.

Laser Microanalysis. Lieslotte Moenke-Blankenburg. Wiley-Interscience, New York, 1989. xvi, 288 pp., illus. \$69.95. Chemical Analysis, vol. 105.

Laser Spectroscopy of Solids II. W. M. Yen, Ed. Springer-Verlag, New York, 1989. xii, 307 pp., illus. \$79.50. Topics in Applied Physics, vol. 65.

Lewis and Clark. Pioneering Naturalists. Paul Russell Cutright. University of Nebraska Press, Lincoln, 1989. xvi, 506 pp. + plates. Paper, \$14.95. Reprint, 1969 ed.

Light Scattering in Solids V. Superlattices and Other Microstructures. M. Cardona and G. Güntherodt, Eds. Springer-Verlag, New York, 1989. xiv, 351 pp., illus. \$79.50. Topics in Applied Physics, vol. 66.

Mathematical Evolutionary Theory. Marcus W. Feldman, Ed. Princeton University Press, Princeton, NJ, 1989. x, 341 pp. \$60; paper, \$19.95.

Nematode Identification and Expert System Technology. Renaud Fortuner, Ed. Plenum, New York, 1988. x, 386 pp., illus. \$79.50. NATO Advanced Science Institutes Series A, vol. 162. From a workshop, Raleigh, NC, June 1988.

Neural Connections, Mental Computation. Lynn Nadel *et al.*, Eds. MIT Press, Cambridge, MA, 1989. xii, 355 pp., illus. \$39.95. Computational Models of Cognition and Perception. Based on a conference, Tucson, AZ, Feb. 1986.

Neurochemical Pharmacology. A Tribute to B. B. Brodie. E. Costa, Ed. Raven, New York, 1989. xxiv, 369 pp., illus. \$80. Fidia Research Foundation Symposium Series, vol. 2. From a symposium, Washington, DC, April 1988.

Neutron Optics. An Introduction to the Theory of Neutron Optical Phenomena and Their Applications. Varley F. Sears. Oxford University Press, New York, 1989. xii, 317 pp., illus. \$60. Oxford Series on Neutron Scattering in Condensed Matter, vol. 3.

New Techniques for Future Accelerators II. RF and Microwave Systems. Matio Puglisi, Stanislaw Stipich, and Gabriele Torelli, Eds. Plenum, New York, 1989. vi, 366 pp., illus. \$75. Ettore Majorana International Science Series, vol. 36. From a workshop, Erice, Italy, May 1987.

Ninety-Nine Gnats, Nits, and Nibblers. May R. Berenbaum. University of Illinois Press, Urbana, IL, 1989. xxii, 254 pp. + index. \$29.95; paper, \$9.95.

No Woman Tenderfoot. Florence Merriam Bailey, Pioneer Naturalist. Harriet Kofalk. Texas A&M University Press, College Station, 1989. xx, 225 pp., illus. \$19.95.

Psychology and Productivity. Paul Whitney and Robert B. Ochsman, Eds. Plenum, New York, 1988. viii, 203 pp. \$49.50. From a symposium, Little Rock, AR, Aug. 1987.

Public Places and Spaces. Irwin Altman and Ervin H. Zuba, Eds. Plenum, New York, 1989. xviii, 316 pp., illus. \$42.50. Human Behavior and Environment, vol. 10.

The Roche Problem. and Its Significance for Double-Star Astronomy. Zdeněk Kopal. Kluwer, Norwell, MA, 1989. x, 263 pp. \$69. Astrophysics and Space Science Library, vol. 152.

Rubber. C. C. Webster and W. J. Baukwill. Longman Scientific, Harlow, U.K., and Wiley, New York, 1989. x, 614 pp., illus. \$139. Tropical Agriculture Series.

The Science of Computing. Exploring the Nature and Power of Algorithms. David Harel. Addison-Wesley, Reading, MA, 1989. xvi, 348 pp., illus. Paper, \$17.95. Abridgement of *Algorithms*.

Selected Papers. Vol. 1, Stellar Structure and Stellar Atmospheres. S. Chandrasekhar. University of Chicago Press, Chicago, 1989. xiv, 515 pp., illus. \$74.95 paper, \$29.95. Papers dated 1929-1945.

Sewall Wright and Evolutionary Biology. William B. Provine. University of Chicago Press, Chicago, 1989. xvi, 545 pp., illus. Paper, \$18.95. Science and Its Conceptual Foundations. Reprint, 1986 ed.

The Social and Cognitive Aspects of Normal and Atypical Language Development. Stephen von Tetzchner, Linda S. Siegel, and Lara Smith, Eds. Springer-Verlag, New York, 1989. xvi, 182 pp., illus. \$69. Springer Series in Cognitive Development.

Thermal Conductivity 20. D. P. H. Hasselman and J. R. Thomas, Jr., Eds. Plenum, New York, 1989. xiv, 439 pp., illus. \$105. From a conference, Blacksburg, VA, Oct. 1987.

Transport Phenomena in Polymeric Systems. R. A. Mashelkar, A. S. Mujumdar, and R. Kamal, Eds. Horwood, Chichester, U.K. and Halsted (Wiley), New York, 1989. viii, 447 pp., illus. \$99.95. Ellis Horwood Series in Physical Chemistry.

Ultrastructural Cytochemistry of Blood-Brain Barrier Endothelia. Andrzej W. Volbrodt. Fisher, Stuttgart, 1988 (U.S. distributor, VCH, New York). viii, 99 pp., illus. \$57. Progress in Histochemistry and Cytochemistry, vol. 18, no. 3.

Union of Opposites. A Comprehensive Theory of Natural and Human Processes. Hector C. Sabelli. Brunswick, Lawrenceville, VA, 1989. xxx, 529 pp., illus. Paper, \$24.95.

The Urbanization Revolution. Planning a New Agenda for Human Settlements. Richard May, Jr., Ed. Plenum, New York, 1989. xvi, 271 pp. \$50. Urban Innovation Abroad.

Variational Methods in Nonconservative Phenomena. B. D. Vujanovic and S. E. Jones. Academic Press, San Diego, CA, 1989. x, 371 pp. \$59.95. Mathematics in Science and Engineering, vol. 182.

X-Ray Structure Determination. A Practical Guide. George H. Stout and Lyle H. Jensen. 2nd ed. Wiley-Interscience, New York, 1989. xviii, 453 pp., illus. \$45.

Personnel Placement

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Dr. Louis J. Elsas, II, Director
Division of Medical Genetics
Emory University School of Medicine
2040 Ridgewood Drive
Atlanta, GA 30322

Deadline for receipt of application is 31 October 1989.

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ASSISTANT PROFESSOR DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY

Applications are invited for a tenure-track position at the assistant professor level. Applicants should have two or more years of postdoctoral experience and should have the potential for establishing an independent research program in biochemistry and molecular biology. Interest and excellence in teaching and research are expected. The medical center includes the schools of dentistry, medicine, nursing, and graduate studies. The department has biotechnology and tissue culture support units. Competitive start-up and equipment funds will be provided. The present department consists of 11 faculty with \$1.3 million in direct annual research grant support. Interested individuals should send curriculum vitae with bibliography, short (three-page) summary of planned research, and the names and address of three references to the following:

Robert Roskoski, Jr.
Head, Department of Biochemistry
and Molecular Biology
Louisiana State University Medical Center
1100 Florida Avenue
New Orleans, LA 70119-2799

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Applicants should send curriculum vitae, a statement of research interests and plans, and should arrange for the submission of three letters of recommendation. All materials should be received by 15 November 1989. Send applications to: **Professor Donald M. Crothers, Chairman, Faculty Search Committee, P.O. Box 6666, New Haven, CT 06511-8118.** *Yale University is an Equal Opportunity/Affirmative Action Employer.*

THE UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER AT DALLAS ASSISTANT PROFESSOR

A tenure-track appointment is available for an individual with a strong background in NMR spectroscopy and/or imaging. Experience and demonstrated achievement in biological or biomedical NMR is essential. A minimum of 2 years of relevant postdoctoral experience is recommended. This position requires a 50% commitment of time and effort as Facilities Supervisor and co-investigator for the regional Biotechnology Resources Program facility of the Biomedical MR Center (The Southwest In Vivo NMR Facility). The Center has excellent instrumentation, including a 1.8 T/m bore imaging and spectroscopy unit, a 4.7 T/40 cm bore CSI system, VAX 11/750 and Sun computers, and well-equipped and staffed electronics and machine shop facilities. A 400 wide bore unit with microscopic imaging is available and will be sited in a new (25,000 square feet) building presently under construction and dedicated to biomedical NMR research. Persons with the requisite background and research interests in neurochemistry and/or neurophysiology, perfusion measurements by NMR, or tumor biology are particularly encouraged to apply. Appointment to a biological sciences or biomedical engineering graduate program faculty will be provided. This position is strongly focused on biomedical research and has a minor teaching component. Applications and two letters of recommendation should be sent to: **Ray L. Nunnally, Ph.D., Associate Professor, Radiology Director, Biomedical Magnetic Resonance Center, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9071.** *Equal Opportunity Employer.*

ASSISTANT PROFESSOR—BOTANY

Applications are invited for an entry-level, tenure-track position in structural botany. A strong commitment to excellence in teaching and the development of an active, externally funded research program in vascular plant morphology will be expected. Proficiency in transmission electron microscopy and a research program focused on angiosperm taxa are desirable. Curriculum vitae, copies of relevant publications, official graduate and undergraduate transcripts, and at least three letters of recommendation should be received by 15 December 1989 by: **Dr. David E. Lemke, Department of Biology, Southwest Texas State University, San Marcos, TX 78666-4616.** **Telephone: 512-245-2178.** *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, PSYCHOBIOLOGY. The Department of Psychology at Yale University expects to make an appointment at the rank of assistant professor in psychobiology effective 1 July 1990. The department emphasizes research interests in the analysis of learning and memory; however, outstanding candidates in all subspecialties of psychobiology are encouraged to apply. Applicants are expected to provide high quality teaching at the undergraduate level and in a graduate psychobiology program, and to have exhibited (or shown very clear promise of) excellence in research. *Yale is an Equal Opportunity/Affirmative Action Employer, and applications from women and minority group members are especially encouraged.* Applicants should send a letter of application, a résumé, and papers or reprints, and should arrange for three letters of recommendation to be sent to: **Chair, Psychobiology Search Committee, Department of Psychology, Yale University, Box 11A Yale Station, New Haven, CT 06520-7447.** Deadline for completed applications: 15 December 1989.

POSITIONS OPEN

DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN ASSISTANT PROFESSOR PROTEIN CRYSTALLOGRAPHY

Applications are invited for a tenure-track position in protein crystallography at the assistant professor level starting August 1990. Applicants are required to have a doctoral degree. The successful candidate is expected to develop a vigorous independent research program and participate in our undergraduate and graduate teaching programs. He/she will join a strong group of molecular biophysicists including two diffractionists as part of the commitment to establish an outstanding program in structural biology. Salary for this 9-month appointment will be commensurate with experience and qualifications. An additional 2-month summer salary may be generated from teaching or research sources. In order to ensure full consideration, applications must be received by 15 November 1989. Interviews may be conducted before 15 November 1989, but all applications received by that date will receive full consideration. Applicants should submit curriculum vitae, a list of publications, a short statement of future research plans, and the names of at least three references to: **Dr. Andrew H.-J. Wang, Chairman, Search Committee, Department of Physiology and Biophysics, 524 Burrill Hall, The University of Illinois at Urbana-Champaign, 407 South Goodwin Avenue, Urbana, IL 61801. Telephone: 217-244-6637.** The University of Illinois is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR, Institute of Molecular Biology and Biochemistry, Simon Fraser University. Applications are being accepted for a **DEVELOPMENTAL GENETICIST**. Candidates should be applying genetic and/or modern molecular approaches to model developmental systems.

Postdoctoral experience and demonstrated research potential are required. Appointment and teaching duties will be in the Department of Biosciences. The Institute was recently established to stimulate expanded graduate training and research and will be occupying a new building in 1992. Set-up funding is available. Applicants should forward a complete curriculum vitae, reprints of most significant recent publications, and three letters of reference to: **Dr. Bruce Brandhorst, Director, Institute of Molecular Biology and Biochemistry (I.M.B.B.), Simon Fraser University, Burnaby, B.C. V5A 1S6, Canada.** Applications will be evaluated beginning 1 December 1989. *Simon Fraser University offers Equal Employment Opportunities to qualified applicants. While all are encouraged to apply, Canadian law requires that consideration in the first instance be given to applicants eligible for employment in Canada at the time of application.*

ASSISTANT/ASSOCIATE PROFESSOR OF BIOCHEMISTRY AND MOLECULAR BIOLOGY LOUISIANA STATE UNIVERSITY (LSU) MEDICAL CENTER

The Department of Biochemistry and Molecular Biology, Louisiana State University School of Medicine in Shreveport, invites applications for a tenure-track position at the assistant/associate professor level. As part of an ongoing expansion of our department, we are seeking candidates with strong research training in molecular biology, molecular genetics, protein biochemistry, and/or physical biochemistry. We especially encourage applicants whose research interests are focused on studies using either mammalian or yeast cell systems; however, outstanding candidates in other special areas of molecular biology and biochemistry will definitely be considered. The department currently has well-funded and interactive research programs focused on gene expression and regulation in prokaryotic and eukaryotic systems, yeast genetics, molecular virology, and protein chemistry. Letters of application, including curriculum vitae and a statement of future research interests, and three letters of reference should be sent to: **Dr. Richard J. Courtney, Chairman, Department of Biochemistry and Molecular Biology, LSU Medical Center, 1501 Kings Highway, Shreveport, LA 71130.** Consideration of applicants will begin 1 November 1989; however, applications will be accepted until 1 December 1989. *An Affirmative Action/Equal Opportunity Employer.*



Atherosclerosis Research Senior Scientist

CIBA-GEIGY Pharmaceuticals Division, world-renowned for innovative research and development of new products to treat cardiovascular and other disorders, is seeking a scientist for a significant role in studying atherosclerosis. The project will be based at our 100-acre headquarters complex in Summit, New Jersey.

The Senior Scientist sought will have experience in lipoprotein biochemistry, and will investigate the interactions between lipoproteins and cells which contribute to the exchange of cholesterol. Experience in lipoprotein and phospholipid synthesis and catabolism would be most appropriate. A PhD in Biochemistry, Cell Biology or related discipline is required—as is at least two years of postdoctoral experience.

We offer an excellent salary, comprehensive benefits, and the opportunity for professional growth. Please send curriculum vitae with salary history and requirements to: **Al Aronson, Staffing Center, CIBA-GEIGY Corporation, Pharmaceuticals Division, Dept 305, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

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Continued success in the development of highly advanced medical diagnostics technology is driving the substantial growth of the Fortune 75 Baxter Healthcare Corporation's Pandex Division. At Pandex you'll enjoy the support of Baxter along with a mid-size environment offering recognition and independent project roles. The following positions are now available at our north suburban Chicago location.

Ph.D. SCIENTIST—Assay Development

We require a Ph.D. with a minimum 2-3 years post doctoral experience in assay development with a strong background in animal/human virology, retrovirology, immunology, or biochemistry.

RESEARCH ASSISTANT—Assay Development

We require a B.S. in Chemistry or a Life Science plus 0-2 years experience in assay development.

Q.C. TECHNICIAN—Reagent Manufacturing

We require a B.S. in Chemistry or Bioscience with 1-2 years quality control background in an industrial laboratory.

In addition to our progressive scientific environment we provide an excellent compensation package including retirement and stock purchase plans, plus relocation assistance. For confidential consideration, please send resume to: **Anne McNicholl, Personnel Director, Baxter Healthcare Corporation, Pandex Division, 909 Orchard Street, Mundelein, IL 60060.** Equal Opportunity Employer.

Pandex Division

Baxter

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR. The Department of Microbiology and Immunology of the Texas College of Osteopathic Medicine (TCOM) is seeking applicants for tenure-track faculty positions at the assistant or associate professor rank in the area of molecular immunology, molecular biology, and immunogenetics. Applications will also be accepted for related areas of microbiology and immunology. *TCOM is an Equal Opportunity/Affirmative Action Employer.*

Send curriculum vitae, summary of research interests, names and addresses of three references to: **Dr. Paul F. Cook, Chairman, Department of Microbiology and Immunology, Texas College of Osteopathic Medicine, 3500 Camp Bowie Boulevard, Fort Worth, TX 76107-2690.**

ASSISTANT/ASSOCIATE PROFESSOR OF MICROBIOLOGY, tenure-track, fish and shellfish disease position. Candidate will conduct research on fish and shellfish diseases; develop an independent research program; work collaboratively within the university and with industry and public agencies; and contribute to instructional programs and graduate education. Will be appointed to Coastal Oregon Marine Experiment Station, Newport, with academic appointment in Department of Microbiology. Contact: **Dr. Robert E. Olson, Search Committee Chairman, Oregon State University, Hatfield Marine Science Center, Newport, OR 97365.** Deadline: 30 November 1989. *Oregon State University is an Affirmative Action/Equal Opportunity Employer.*

MOREHOUSE SCHOOL OF MEDICINE ASSISTANT/ASSOCIATE PROFESSORS ANATOMY, MOLECULAR GENETICS, MOLECULAR IMMUNOLOGY

Morehouse School of Medicine (MSM) seeks candidates for a position in the Department of Anatomy at the level of assistant professor and for two positions in molecular genetics and molecular immunology at the level of assistant or associate professor. The molecular genetics and molecular immunology appointments will be made in the department appropriate to the academic qualifications and interests of the appointees. Applicants should have the Ph.D. or M.D. degree.

Candidates for associate professor should have well-established, independently funded research programs and several years of medical/graduate school teaching experience.

Candidates for assistant professor should have strong research training, including postdoctoral experience, records of research productivity and independence, and some teaching experience.

Morehouse School of Medicine is an expanding, new, private medical school with a strong commitment to the academic and scientific growth of minority students.

Initial screening of candidates will begin 1 November 1989.

Applications should include curriculum vitae, a statement of research interests including funding history, and the names, addresses, and telephone numbers of at least three references. Send applications to: **Thomas E. Norris, Ph.D., Senior Associate Dean, Morehouse School of Medicine, 720 Westview Drive, S.W., Atlanta, GA 30310-1495.**

ASSISTANT OR ASSOCIATE PROFESSOR (EDUCATIONAL SPECIALIST). Requirements: Ph.D. in education, 3 to 4 years of postdoctoral experience, demonstrated record of publications. Responsibilities: (i) Plan, implement, and evaluate research in education of medical students on the surgical service as well as of residents. (ii) Serve as consultant for educational matters to the chairman of the departmental curriculum committee as well as the departmental chairman. (iii) Plan, implement, and evaluate ways to improve teaching effectiveness of the surgical faculty. (iv) Provide consultation to the third year curriculum director for improvement of the third year curriculum for medical students. Please send curriculum vitae to: **James W. Mackenzie, Professor and Chairman, Department of Surgery, University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, One Robert Wood Johnson Place, CN-19, New Brunswick, NJ 08903-0019.** *The UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer M/F/H/V.*

POSITIONS OPEN

BIOLOGISTS

Southern Methodist University invites applications for two tenure-track positions at either the assistant or associate professor level in the Department of Biological Sciences. We seek individuals whose training and research interests will complement current programs in biochemistry, molecular genetics, microbiology, and cell biology. The successful candidates will be expected to develop a research program that will merit extramural funding, and teach both undergraduate and predoctoral graduate students.

MOLECULAR GENETICIST: Preference will be given to the individual working on either *Drosophila* or yeast. Teaching duties will include assignment to the undergraduate genetics course.

MOLECULAR PHYSIOLOGIST-BIOCHEMIST: Preference will be given to the candidate whose research employs the techniques of molecular biology, and who is qualified to teach an undergraduate course in animal physiology.

Submit applications by 1 November 1989 to the **Chairman of the appropriate search committee, Department of Biological Sciences, Southern Methodist University, Dallas, TX 75275.** *SMU is an Equal Opportunity/Affirmative Action/Title IX Employer.*

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain the Doctor of Optometry (O.D.) degree in 2 calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **Dr. D. Chauncey, Program Director, Accelerated Program, The New England College of Optometry, Room S, 424 Beacon Street, Boston, MA 02115.**

MOREHOUSE SCHOOL OF MEDICINE CHAIR DEPARTMENT OF PHARMACOLOGY

Morehouse School of Medicine (MSM) invites applications for the position of Professor and Chair of the Department of Pharmacology to begin 1 July 1990. The candidate should be a well-established investigator in a current field of research who has demonstrated a strong commitment to teaching medical students. The applicant should also have demonstrated academic administration capabilities. Applicants must have the Ph.D. or M.D. degree.

Morehouse School of Medicine is an expanding, new, private medical school with a strong commitment to the academic and scientific growth of minority students. The position offers an excellent opportunity to develop an outstanding, progressive department in an institutionally supported atmosphere of cooperative growth and development. Initial screening of candidates will begin 1 November 1989. Applications or letters of interest along with curriculum vitae, including research, teaching, and administrative experience should be sent to: **Curtis L. Parker, Ph.D., Chair, Search Committee for the Chairperson of Department of Pharmacology, Morehouse School of Medicine, 720 Westview Drive, S.W., Atlanta, GA 30310-1495.**

DEPARTMENT CHAIR DEPARTMENT OF HORTICULTURE AND LANDSCAPE ARCHITECTURE WASHINGTON STATE UNIVERSITY

Major responsibilities include dynamic leadership and effective administration of research, teaching, and extension programs. A Ph.D. in horticulture or any closely related area in plant science or landscape architecture is required. Strong academic, administrative, organizational, budgetary, and communication skills are desired. The candidate should have proven ability to attract extramural funding, a record of scholarly excellence, and must be eligible for tenure at the rank of full professor. Salary is competitive and commensurate with qualifications and experience. Application deadline: 1 November 1989, or until a suitable candidate is found. The application must include curriculum vitae, list of publications, names and addresses of four references, and a statement of professional goals. Nominations or applications should be sent to: **Professor B. W. Poovaiah, Chairman, Search Committee, Department of Horticulture and Landscape Architecture, Washington State University, Pullman, WA 99164-6414.** *WSU is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

CELLULAR NEUROPHYSIOLOGIST/ANIMAL PHYSIOLOGIST (SEARCH REOPENED).

The Department of Biology at Bryn Mawr College has a tenure-track opening for a highly qualified young investigator having an active interest in both research and teaching. The successful applicant will be expected to establish a funded research program and to participate in the undergraduate and graduate teaching programs of the department and of an anticipated new interdepartmental program in neural and behavioral sciences. We seek a broadly trained cellular neurobiologist whose program will complement existing strengths in neuroscience, and who is able to teach both cellular neurophysiology and animal physiology. Applications, including curriculum vitae, statement of research and teaching interests, selected reprints, and the names of three references, should be sent to: **Dr. Paul Grobstein, Department of Biology, Bryn Mawr College, Bryn Mawr, PA 19010.** *Affirmative Action/Equal Opportunity Employer.*

STATE UNIVERSITY OF NEW YORK AT BUFFALO

The Department of Geology invites nominations and applications for the position of **CHAIRMAN OF THE DEPARTMENT AND PROFESSOR** (with tenure). Salary will be highly competitive. We seek applicants with excellent research accomplishments and the interest and administrative ability to provide academic leadership for a research-oriented department.

Applicants should send curriculum vitae, brief statement of research/teaching interests, and names of four references to:

**Dr. Lewis A. Coburn
Search Committee Chairman
c/o Department of Geology
SUNY/Bufalo
4240 Ridge Lea Campus
Buffalo, NY 14260**

The deadline for applications is 1 December 1989. Later applications will be considered until the position is filled.

SUNY/Bufalo is an Equal Opportunity/Affirmative Action Employer. We are interested in identifying prospective minority and women candidates. No person, in whatever relationship with the State University of New York at Buffalo, shall be subject to discrimination on the basis of age, creed, color, handicap, national origin, race, religion, sex, marital, or veteran status.

ECOLOGIST. The Department of Ecology and Evolution at the University of Chicago seeks to hire an ecologist working with plants, animals, and/or microorganisms and having an appreciation for both empirical and theoretical approaches. The level of appointment is open. To apply please send curriculum vitae, reprints, and a statement of research interests, and have three letters of recommendation sent by 30 November 1989 to: **Dr. Michael J. Wade, Ecology Search Committee, The University of Chicago, Department of Ecology and Evolution, 915 East 57th Street, Chicago, IL 60637.** *An Affirmative Action/Equal Opportunity Employer.*

DEAN, College of Pharmacy, University of Utah. A distinguished educator/scientist is sought to provide educational, scientific and fiscal leadership for the college. The Dean is the chief administrator of the College, reporting directly to the Vice President for Health Sciences. The College of Pharmacy is research-intensive and committed to excellence in professional and graduate education. Applications will be accepted until 1 November 1989 or until a suitable candidate has been identified. Please send curriculum vitae and names, addresses, and telephone numbers of three or more referees to: **Arthur D. Broom, Ph.D., Chairman of the Search Committee, College of Pharmacy, University of Utah, Salt Lake City, UT 84112.** *The University of Utah is an Equal Opportunity/Affirmative Action Employer; applications from qualified female/minority candidates are encouraged.*

EXECUTIVE DIRECTOR. Sea World Research Institute, a private foundation, seeks a person to direct all research and associated programs, and to develop and manage finances. Candidates need an established scientific reputation in the biological sciences, demonstrated management ability, and skill in fund-raising. For further information, write to: **Frank Awbrey, Sea World Research Institute, 1700 South Shores Road, San Diego, CA 92109.**



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The people who work for Energy, Mines and Resources in Ottawa share the possibility of a career with few boundaries. In fact, by working for one of the 70 departments and agencies that make up the Federal Public Service, they gain experience that enhances their professional development and opens national and international doors. To ensure that all candidates have every chance on an equal basis, we encourage equitable participation by women, aboriginal peoples, members of visible minority groups and persons with disabilities.

Your Choice

Research Scientist (\$32,948 - \$61,284)

Conduct original research into fundamental problems of crustal and lithospheric evolution and be involved in areas of solid-earth geophysics and impact processes as they relate to the study of evolution. Participate in the development of research programs.

Your Contribution

A doctoral degree from a recognized university in the field of earth sciences or a lesser degree with evidence of research experience and productivity equivalent to that of a doctoral degree. Research experience in the field of tectonophysics, potential field studies, remote sensing or mathematical modelling. Experience in writing and presenting research results to the scientific community and high productivity in addressing scientific problems.

Knowledge of English or French is essential.

*Personal information
is protected under
the Privacy Act.
It will be held in
Personal Information
Bank PSC/P-PU-040.*

*Vous pouvez obtenir
ces renseignements
en français.*

Send your application by November 15, , 1989, quoting reference number: S-89-31-5873-47JG-G35, to: Joan Girling (613) 996-8054, Public Service Commission of Canada, 171 Slater Street, Ottawa, Ontario, Canada K1A 0M7.



Public Service Commission
of Canada

Commission de la fonction
publique du Canada

Canada

POSITIONS OPEN

DIRECTOR INSTITUTE OF BIOLOGICAL CHEMISTRY WASHINGTON STATE UNIVERSITY

Applications or nominations are invited for the Director of the Institute of Biological Chemistry, a research department within the College of Agriculture and Home Economics. Faculty in the Institute are dedicated to fundamental research in plant biochemistry and molecular and cellular biology. Candidates must have proven leadership ability and an internationally recognized, basic research program in plant biochemistry or allied field, commensurate with a tenured, full professor position. Major responsibilities include leadership and administration of the Institute and the conduct of a highly productive and innovative research program. Ph.D. in biochemistry, chemistry, molecular biology, or related disciplines is required. Applications or nominations, including accomplishments, a summary of current research, extramural grant support record, and the names, addresses, and telephone numbers of three or more references should be submitted to: **Dr. Gynheung An, Chair of the Search Committee, Institute of Biological Chemistry, Washington State University, WA 99164-6340. Telephone: 509-335-4643.** Applications will be accepted until 1 November 1989, or until position is filled. *WSU is an Equal Opportunity/Affirmative Action Educator and Employer. Protected groups are encouraged to apply.*

ELECTROPHYSIOLOGIST

The Cardiology Branch, National Heart, Lung, and Blood Institute, National Institutes of Health, is recruiting for an electrophysiologist to perform clinical and research investigations. The need for an electrophysiologist who is senior and experienced is essential, as many high-risk patients, including those with HCM, will be routinely investigated. The environment is extremely stimulating and exciting. Annual starting salary: \$56,128. **Dr. Stephen Epstein, National Institutes of Health, NHLBI, Building 10, Room 7N218, 9000 Rockville Pike, Bethesda, MD 20892. Telephone: 301-496-5817.**

NIH is an Equal Opportunity Employer.

ENDOCRINOLOGIST: Department of Comparative Medicine tenure-track position available. Requirements include a solid publication record, evidence of independent research, interest in collaborative research, and ability to supervise a core laboratory. Research opportunities include monkey models of atherosclerosis and risk factors, reproductive function and behavior. Rank and salary commensurate with experience. Contact: **Jay Kaplan, Ph.D., Department of Comparative Medicine, Bowman Gray School of Medicine, Wake Forest University, 300 South Hawthorne Road, Winston-Salem, NC 27103. Telephone: 919-764-3600.** *An Equal Opportunity/Affirmative Action Employer.*

THE UNIVERSITY OF CALIFORNIA SAN DIEGO DEPARTMENT OF BIOLOGY FACULTY POSITION

The Department of Biology at the University of California, San Diego, invites applications for one tenure-track position at the assistant professor level. We are seeking outstanding candidates in three main fields: (i) mammalian molecular biology/animal virology or related areas; (ii) cellular biology with emphasis in one or more of the following subdisciplines: protein sorting, signal transduction, cell-cell interactions, extra-cellular matrix or cell motility; (iii) developmental genetics; Ph.D. and several years of postdoctoral experience are required.

We will consider exceptional applicants in all areas of cellular biology, developmental genetics, mammalian molecular biology, and animal virology. *We strongly encourage applications from women and minority groups.*

Salary will be commensurate with level of appointment and based on the published UC salary scale. The successful candidate is expected to develop a vigorous research program in one of the rapidly moving areas mentioned above, and participate in undergraduate and graduate teaching/training.

Please submit curriculum vitae, a statement of present and future research goals, and names of three references by 31 October 1989 to: **Search Committee, Department of Biology, B-046, University of California, San Diego, La Jolla, CA 92093.**

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

POSITIONS OPEN

ENVIRONMENTAL MICROBIOLOGIST: Tenure-track assistant professorship available in the Department of Microbiology at South Dakota State University. Ph.D. in microbiology or related area with emphasis in environmental microbiology and experience and knowledge of molecular biology methodology required; postdoctoral experience is preferred. Contact **Dr. Charles McMullen, Department of Microbiology, South Dakota State University, Brookings, SD 57007. Telephone: 605-688-6144.** Applications accepted until 17 November 1989 or position is filled. *Equal Opportunity/Affirmative Action Employer.*

The University of Chicago. **FACULTY APPOINTMENT IN CARDIOVASCULAR PATHOPHYSIOLOGY.** Department of Pathology. The Department of Pathology invites applications for a tenure-track position in the area of cardiovascular pathology. Preferred research topics include the influence of extracellular matrix upon vascular cells relevant to fundamental mechanisms of atherosclerosis or angiogenesis. M.D./Ph.D. with several years of postdoctoral research experience and board eligibility in anatomic pathology desirable. The cardiovascular section of the department includes a Specialized Center of Research (SCOR) in Atherosclerosis in which the selected candidate will be encouraged to participate. The opportunity to interact with well-established departmental research programs is an attractive feature of the position. These include: the biophysics, biochemistry and molecular biology of lipoproteins; vascular cells and molecular biology; endothelial cell physiology; hemodynamic flow studies in human and animal vessels and cultured cells; steroidogenic cell metabolism; and the growth factor regulation of lipoprotein metabolism. Research facilities are centralized in the Billings hospital building of the Pritzker School of Medicine. Please send curriculum vitae and names, telephone numbers, and addresses of three referees to: **Godfrey S. Getz, M.D., Chairman, The University of Chicago, Department of Pathology, Box 414, 5841 South Maryland Avenue, Chicago, IL 60637.** *An Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION at Diabetes Center affiliated with leading Medical School. The Section on Immunology invites applications for a faculty position as Research Investigator in Immunogenetics of the nonobese diabetic (NOD) mouse.

Qualifications include Ph.D. degree in immunology, pathology, or genetics with a minimum of 3 years of experience in diabetes research. Candidate must have had pre- or postdoctoral training in immunology, murine genetics, and experimental pathology, as well as prior experience in research on the NOD mouse. Candidates must also demonstrate by their publication record and grant history that they have the ability to establish an independent research program. Salary \$40,000 per annum.

Interested individuals should submit curriculum vitae and publication list, with three letters of reference, to: **Department of Employment and Training, Special Programs, Hurley Building, 19 Staniford Street, Boston, MA 02114** and refer to Job Order #91294.

FACULTY POSITION IN MOLECULAR AND CELLULAR NEUROBIOLOGY

The University of Cincinnati College of Medicine, Department of Anatomy and Cell Biology, invites applications for a tenure-track (or tenured) faculty position (rank dependent upon qualifications of the successful candidate). Preference will be given to individuals whose research programs include molecular and/or cellular neurobiology. Teaching responsibilities are minimal. The new position will include a generous amount of custom-renovated laboratory and office space, exceptional start-up funds, and access to a variety of state-of-the-art core facilities. The Department provides a highly collaborative environment; excellent opportunities exist for interaction with other basic and clinical departments and particularly with systems neurobiologists. Send curriculum vitae, statement of research interests, and names of three references to: **Dr. Robert R. Cardell, Professor and Chairman, Department of Anatomy and Cell Biology, Mail Location #521, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Cincinnati, OH 45267-0521.**

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

POSITIONS OPEN

FACULTY POSITION AVAILABLE

VIROLOGIST. The Department of Microbiology and Program in Medical Sciences at Washington State University invite applications for a tenure-track academic-year faculty position at the assistant/associate professor level. Preference will be given to individuals with research interests in the molecular basis of pathogenesis. Applicants must have postdoctoral training. The successful candidate will be expected to establish an active research program and participate in graduate, first-year medical student and undergraduate teaching. Send curriculum vitae, a statement of research interests and professional objectives, and three letters of reference to: **Dr. L. P. Mallavia, Search Committee Chairman, Department of Microbiology, WSU, Pullman, WA 99164-4340.** Application deadline is 1 December 1989 or until position is filled. *An Equal Opportunity/Affirmative Action Educator and Employer. Protected group members are encouraged to apply.*

FACULTY POSITION IN PLANT POPULATION BIOLOGY AT THE UNIVERSITY OF CALIFORNIA, BERKELEY

The Department of Integrative Biology, pending final budgetary approval, invites applications for a tenure-track assistant professor position, beginning with the 1990 to 1991 academic year. The research interests of the candidate should be in experimental plant population biology. Applicants should send curriculum vitae, statement of research and teaching, objectives, relevant reprints and manuscripts, and names and addresses of three references to: **Chair, Plant Population Biologist Search Committee, Department of Integrative Biology, University of California, Berkeley, CA 94720.** Closing date for receipt of applications: 15 January 1990. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITON MOLECULAR CELL BIOLOGY PHARMACOLOGY

The Department of Pharmacology at the University of Miami School of Medicine is seeking applications for a tenure-track faculty position. The position will be available in 1990; rank and salary will be commensurate with experience. Candidates for assistant of new associate professor are preferred. Generous lab space and start-up funds are available. Candidates must have a Ph.D. and/or M.D. degree (or equivalent), and should have an established record of research excellence in the broad area of molecular biological approaches to problems of pharmacological interest. The successful applicant will complement existing research efforts in the department, which include regulation of cardiac and skeletal muscle function, transmembrane signalling mechanisms, function and development of the nervous system, and the regulation of gene expression.

Applicants should send curriculum vitae, statement of past and future research interests, and the names and addresses of three references to: **Dr. John L. Bixby, Search Committee Chairman, Department of Pharmacology, University of Miami, P.O. Box 016189, Miami, FL 33101.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS. The University of Guam, Water and Energy Research Institute of the Western Pacific has immediate openings for three tenure-track faculty positions at the assistant or associate professor level in the following areas: (i) water resource engineering with Ph.D. and background in the areas of hydraulics or groundwater hydrology; (ii) environmental toxicology/chemistry with Ph.D. and background in the areas of environmental toxicology, environmental chemistry, and/or environmental biology; and (iii) geo-science with Ph.D. and background in the areas of geology, hydrology, or meteorology. The rank and salary will depend upon qualifications. The successful appointees will be expected to initiate and conduct research and to teach undergraduate/graduate courses in their fields of expertise. U.S. citizenship or permanent residency are required. Send latest résumé and names of three professional references to: **Dr. Sh. Khosrowpanah, Director, WERI, University of Guam, Mangilao, Guam 96923 USA.** *The University of Guam is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN



INSTITUTE OF CHEMICAL TOXICOLOGY WAYNE STATE UNIVERSITY

The Institute of Chemical Toxicology, Wayne State University, invites applications for tenure-track **FACULTY POSITIONS** at the **ASSISTANT, ASSOCIATE OR PROFESSOR LEVEL**; faculty research-track positions at all academic ranks are also available. Completely renovated laboratory and well-equipped support facilities are available along with substantial opportunities for collaboration. Emphasis is directed toward molecular/biochemical toxicology, respiratory toxicology, and metals toxicology. Preference within these areas will be accorded to applicants employing modern molecular and cellular approaches in the study of cell differentiation, cellular secretions, oncogene expression, gene regulation, transcriptional and posttranscriptional regulation, and chemically-mediated retrovirus activation. The successful candidates are expected to develop strong independent research programs, to collaborate in existing research projects, and to participate in biotechnology development. Highly competitive offerings of laboratory space and start-up funds accompany these positions. Applicants should have a Ph.D. and/or M.D. degree and relevant postdoctoral research experience. Send curriculum vitae by 30 October 1989 to:

Dr. Raymond F. Novak
Director, Institute of Chemical Toxicology
Wayne State University
2727 Second Avenue, Room 402
Detroit, MI 48201

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

FACULTY POSITIONS SECTION OF IMMUNOBIOLOGY YALE UNIVERSITY

The Section of Immunobiology, a multidisciplinary group working collaboratively on basic problems of T cell development, activation, and function, seeks applicants for several faculty positions at the level of assistant professor in the general area of immunobiology. Qualified applicants in all areas of immunology are invited to apply and would be expected to develop an independent research program using molecular, cell biological or biochemical approaches to immunobiological problems. We are particularly interested in people active in the areas of T cell development, regulation of gene expression, signal transduction, and protein traffic in cells of the immune system. They will also be expected to participate in departmental teaching at primarily the graduate level. Candidates should submit curriculum vitae with a summary of present and future research interests, and request that three letters of recommendation be sent, all of which must be received at the below address no later than 15 November 1989.

Dr. Richard Flavell
Chairman
Section of Immunobiology
Yale University School of Medicine
310 Cedar Street, 424 FMB
P.O. Box 3333
New Haven, CT 06510

*An Equal Opportunity/Affirmative Action Employer.
Women and minority candidates are encouraged to apply.*

INSECT MOLECULAR BIOLOGIST. Department of Biochemistry—University of Nevada, Reno, invites applications for 12-month tenure-track faculty position (assistant, associate or full professor). Position is part of the university's ongoing commitment to build quality programs in selected areas and is enhanced by an NSF-EPSCoR grant to strengthen programs in insect biochemistry and plant molecular biology. Position is about 20% teaching and 80% research. Ph.D. in biochemistry or related discipline required. The successful candidate will be expected to build a quality, extramurally funded research program. Send curriculum vitae, letter of application, brief statement of research interests, and names, addresses, and telephone numbers of three references to: **Dr. David A. Schooley, Biochemistry Department, University of Nevada, Reno, NV 89557.** Application deadline is 1 January 1990. *Equal Opportunity/Affirmative Action Employer.*

29 SEPTEMBER 1989

Schering

Research Professionals

*If joining a dynamic protein
purification development
and scale-up group
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We're a progressive \$3-billion pharmaceuticals leader recognized worldwide for our dedication to discovery. Outstanding opportunities exist at our new state-of-the-art protein purification pilot plant for scientific professionals in the following roles:

Manager, Bioisolation Pilot Plant (DD89-27)

Will plan, direct and administer activities, as well as guide personnel in the development, scale-up and production of rDNA bioactive substances to meet research, pre-clinical, toxicology, clinical and manufacturing needs.

Requires a PhD in Bio/chemical Engineering with a minimum of 5 years' industrial experience. Knowledge of protein purification procedures with supervisory experience in a pilot plant environment under GMP guidelines plus good managerial judgement and interpersonal skills are also essential.

Sr. Scientist (DD89-36)

Will develop methods to purify and characterize recombinant proteins from bacteria and mammalian cell cultures.

Requires a PhD in protein chemistry, biochemistry, or a related field, plus 2-5 years' experience in purification and characterization of proteins. Familiarity with HPLC, FPLC and conventional chromatographic techniques is also required.

Scientist, Bioisolation Pilot Plant (DD89-37)

Requires a BS in Biochemistry with 7 years' experience or MS in Biochemistry with 5 years' experience in purification process development and scale-up for protein and/or natural products. Position also requires full understanding of GLP and GMP. Experience with preparation of documentation for FDA submissions is highly desirable as well as ability to interact with other research and pilot plant groups.

We offer a competitive salary and benefits package, and a corporate culture which fosters professional growth and satisfaction. For prompt consideration please forward your resume indicating position of interest and job number to: Mr. M. Urdanick, Schering-Plough Corporation, 1011 Morris Ave., Union, NJ 07083. We are an equal opportunity employer.

What you have in mind, we put in action.



Schering-Plough

POSITIONS OPEN

FACULTY POSITIONS IN EUKARYOTIC MOLECULAR BIOLOGY

The Center of Marine Biotechnology of the Maryland Biotechnology Institute, University of Maryland System, is seeking outstanding candidates to fill full-time tenure-track positions (assistant professor to full professor) in eukaryotic molecular biology. Experience with marine organisms is desirable but not essential. The successful candidates will be expected to establish independent research programs in, or related to, the following areas: molecular basis of growth, development, and reproduction of fish, shellfish, or algae; endocrinology; molecular basis of marine symbiotic relationships; and sex determination. Many opportunities exist for collaborative research at the Center of Marine Biotechnology. Candidates must have a Ph.D. and a minimum of 2 years of postdoctoral experience. Applicants should submit a letter of application, curriculum vitae, statement of ongoing research, a brief description of research plans, and the names and addresses of three references to: **Search Committee, Center of Marine Biotechnology, 600 East Lombard Street, Baltimore, MD 21202.** For best consideration, applications should be received before 1 December 1989.

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

FIELD VERTEBRATE ZOOLOGIST ASSISTANT PROFESSOR

Tenure-track position commencing fall 1990. Teach ichthyology, general zoology, one or more courses in area of expertise. Seeking field-oriented individual with research interests in behavior, population biology, or wildlife management. Individual expected to develop an independent research program and direct master's level research. Ph.D. and demonstrated abilities required.

Inquiries to: **Dr. William Fennel, Department of Biology, Telephone: 313-487-4242.** Send letter of interest, curriculum vitae, three letters of reference, and transcripts (undergraduate and graduate) by 4 December 1989 to:

**Position FAAA89036
310 King Hall
Eastern Michigan University
Ypsilanti, MI 48197**

Equal Opportunity/Affirmative Action Employer.

GENETICIST

Tenure-track position, Biology Department. Assistant professor beginning August 1990. Ph.D. required. Teach genetics, evolutionary, or developmental biology and introductory biology. Teaching excellence and undergraduate research program required. Coeducational liberal arts college of the Evangelical Lutheran Church in America. Letter of application, résumé, statement of teaching and research goals and three recommendations by 31 October 1989 to: **Dr. Gerald L. VanAmburg, Department of Biology, Concordia College, Moorhead, MN 56560.** An Equal Opportunity Employer.

IMMUNOLOGIST, FACULTY POSITION. A full-time tenure-track position in the Pathology Department at the rank of assistant or associate professor, M.D. or Ph.D. with demonstrated leadership in teaching and research. Establish research program competitive for external funding. Position includes participation in educational programs in department and hospital service responsibility in immunopathology laboratory. Send curriculum vitae and references to: **C. Robert Baisden, Chief, Section of Clinical Pathology, Medical College of Georgia, Augusta, GA 30912.** Equal Opportunity Employer/Affirmative Action Program.

MAGNETIC RESONANCE PHYSICIST—Research and development of novel experimental methods of NMR imaging and in-vivo NMR spectroscopy. Develop image quality control procedures. Teach physician and technologist users. Ph.D. required in physics or chemistry. Must know NMR imaging and imaging system hardware, assembly language programming, and digital system interfacing. Research expertise in NMR imaging and in vivo spectroscopy (radio frequency coils and novel pulse sequences). Salary: \$40,000 per year. Send résumé to: **Pittsburgh Job Service North, 1122 Western Avenue, Pittsburgh, PA 15233.** Refer to Job Order No. 4143513.

POSITIONS OPEN

MOLECULAR BIOLOGIST. The Department of Biology at the University of Missouri—St. Louis is seeking a molecular biologist. The position, to start August 1990, is tenure-track and rank is open. Candidates at the associate and full professor levels are encouraged to apply. Applicants at the assistant professor level should have a minimum of 2 years of postdoctoral experience. The successful candidate will be expected to develop a strong research program, direct graduate student research, and contribute to the newly established Ph.D. program in biology. We seek scientists of exceptional quality irrespective of their specific research interests; however, we especially encourage applications from candidates whose interests might interface with or complement existing research programs in developmental biology, neurobiology, immunology, cell biology, microbiology, or plant biology. Teaching responsibilities include an upper division course in molecular biology and a graduate or undergraduate course in the applicant's area of expertise. This position will offer competitive salary and laboratory set-up funds; space and equipment are available in a new science building. Send curriculum vitae, statement of research interests and goals, and the names and phone numbers of three references by 20 November 1989 to: **Dr. Lon A. Wilkens, Chair of Molecular Biology Search Committee, Department of Biology, University of Missouri—St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121-4499.** The University of Missouri is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGISTS. Two tenure-track positions in molecular/developmental genetics. Preference given to candidates with experience in regulation of gene expression. Postdoctoral experience required. Applicants must have a commitment to teaching and a demonstrated ability to develop a funded research program. Applicants must provide curriculum vitae, statement of research and teaching interests, and have three letters of recommendation sent to: **Department of Biology, California State University, Long Beach, CA 90840-3702.** Deadline for receipt of applications is 15 November 1989 or until a suitable candidate is found. Women and minorities are encouraged to apply. An Equal Opportunity/Affirmative Action Employer.

MOLECULAR DEVELOPMENTAL BIOLOGY UNIVERSITY OF SOUTHERN CALIFORNIA

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

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

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

The University of Southern California is an Equal Opportunity Employer.

MOLECULAR PHARMACOLOGY: Mayo Medical School invites applications for a tenure-track **FACULTY POSITION** in Department of Pharmacology, available 1 January 1990. Ideal candidate will have primary interests in pharmacology and be actively using the methods of molecular biology. Special attention will be given to individuals working on the molecular aspects of drug receptors and ligand-gated ion channels, but those with other interests will also be considered. Generous space and start-up funds provided in addition to an attractive package of salary and benefits. Academic rank will be determined by qualifications; established investigators are also encouraged to apply. Applicants should submit curriculum vitae and names and addresses of three or more referees to: **Stephen Brimijoin, Ph.D., Department of Pharmacology, Mayo Medical School, 200 First Street Southwest, Rochester, MN 55905.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

DEPARTMENT OF AGRICULTURE (USDA) AGRICULTURAL RESEARCH SERVICE (ARS)

MICROBIOLOGIST, National Animal Disease Center, Brucellosis Laboratory, Ames, Iowa. ARS is seeking a microbiologist/cell biologist to develop an independent research program on the intracellular development of *B. abortus* and signal molecules that affect replication. Research should be directed toward identification of receptors, enzymes, cytokines, growth factors, or other signal molecules. Cooperation with units in biochemistry, molecular biology, immunology, and pathology sections is available. Candidate must have experience with common preparative techniques used in biochemistry and cellular biology, including capacity to work with cell cultures. Ph.D. is desirable. *Must be U.S. citizen.* Salary is commensurate with experience (\$34,580 to \$63,172). For information on the research program and/or position, contact: **Dr. Norman F. Cheville (515-239-8204).** For information on application procedures/forms, contact: **Janie Carr at 301-344-4569.** Applications in response to this advertisement should be marked 9N038.

Applications must be postmarked by 31 October 1989.

Mailing address:

**USDA, Agricultural Research Service
Personnel Operations Branch
Northern Section
Building 419, BARC-East
Beltsville, MD 20705**

MOLECULAR BIOLOGIST: Faculty position—research assistant professor to develop molecular aspects of ongoing research in smooth muscle hypertrophy. Ph.D. in cell or molecular biology with postdoctoral experience in muscle cell culture and recombinant DNA techniques, including subtraction hybridization. Send curriculum vitae and references to: **John McConnell, M.D., Urology, UT Southwestern, 5323 Harry Hines, Dallas, TX 75235.** Affirmative Action/Equal Opportunity Employer.

MOLECULAR BIOLOGY

The Department of Biology of Pomona College invites applications for two tenure-track, assistant professorships beginning fall 1990. Applicants should have a broad background in biology with extensive training in molecular biology, including postdoctoral experience. The appointees will participate in an interdisciplinary molecular biology program supported by the Howard Hughes Medical Institute. The department seeks faculty to teach courses in their areas of specialization. Fields of particular interest include, but are not limited to, developmental biology, endocrinology, and immunology. At least one of the appointees will teach a course in genetics (molecular and classical). Each appointee will teach one course per semester. The successful candidates will be expected to establish active research programs for which start-up funds are available. *We particularly encourage applications from women and minorities.* Send curriculum vitae, statement of research and teaching interests, citing specific courses to be taught, and three letters of recommendation by 1 November 1989 to: **Dr. Bruce Telzer, Chair, Search Committee, Department of Biology, Pomona College, Claremont, CA 91711.**

Pomona College is an Affirmative Action/Equal Opportunity Employer.

NMR SPECTROSCOPIST—Florida State University. The Department of Chemistry and the Institute of Molecular Biophysics and Structural Biology are searching for a Ph.D. level NMR spectroscopist to supervise the NMR facility. Extensive experience with high resolution methods and a desire to perform independent technique development and to participate in collaborative research is required. Presently the facility has two permanent staff and six FT spectrometers ranging from 150 to 500 MHz as well as a SUN Microsystems 4/260 workstation. Salary will be nationally competitive and commensurate with experience. Position available immediately; send résumé and three letters of reference to: **T. A. Cross, Department of Chemistry, Florida State University, Tallahassee, FL 32306** before 1 December 1989. *Florida State University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH MANAGER, CELL BIOLOGY

THE OFFICE OF NAVAL RESEARCH is seeking a highly qualified individual to plan and manage a contract research program in molecular aspects of cell biology. The sponsored research is conducted principally at universities and private laboratories, with research performed by leading scientists in the field. **This is a Civil Service position at the GM-13, 14 or 15 level (\$41,121 - \$74,303), depending on qualifications.**

The individual selected will establish goals for and conceive, organize and direct research and development programs in new areas of cell biology addressing the molecular mechanisms of cellular responses to injury and other adverse stimuli, as well as regulatory processes driving regenerative events in cells and tissues. Specifically, the individual selected will integrate research on regulatory cellular processes such as activation events mediated by calcium ions, GTP-binding proteins, membrane lipid and protein phosphorylation, other post-translational modifications of proteins, and growth factors. The molecular events regulating cell function will be examined in the context of pathological changes in trauma, promotion of tissue regeneration, etc. This position provides the challenge and opportunity to have a creative and significant impact on the direction and quality of research conducted at the national level. Additionally, the opportunity exists to establish or maintain an individual research program at an academic institution or government laboratory.

Applicants must have a Ph.D. or equivalent training in biological sciences, with emphasis on cell biology, and at least one year of professional experience or an equivalent combination of education and experience. Demonstrated research experience is preferred.

Interested persons should send a resume, list of publications and a Standard Form 171, Application for Federal Employment (Available at Federal Job Information Centers or from the address below), to:

OFFICE OF THE CHIEF OF NAVAL RESEARCH
Civilian Personnel Division, OCNR Code 01242P
Attn: Announcement #89-34(SC)
800 North Quincy Street
Arlington, VA 22217-5000

U.S. Citizenship Required

Applications will be accepted through 5 January 1990 and must be received by that date. Applicants are requested to complete the appropriate supplemental forms. For further information and supplemental forms, please call (202) 696-4705.

An Equal Opportunity Employer

American Cyanamid Leads the Way In Animal Biotechnology

Group Leader

The Animal Industry Discovery and Biotechnology Department of American Cyanamid's Agricultural Research Division has an immediate opening for a Group Leader of their Molecular and Cellular Biology Group. The successful candidate will lead a research team organized to apply the techniques of molecular biology to discover products that (1) enhance animal performance and (2) solve animal health problems important in veterinary medicine including the study of molecular mechanisms governing immune status.

In pursuing this goal, the Group Leader will be expected to propose new research programs, to develop collaborations with academic research groups and to encourage publishing of research findings in refereed journals. Topics of particular interest include problems in receptor biology, infectious disease, animal physiology and immunology.

Candidates should have a Ph.D. degree in Molecular Biology or comparable training, post-doctoral training and several years postgraduate experience in an academic

or industrial setting. To qualify, the individual must have the leadership capabilities needed - technical, communication, interpersonal, and organizational skills - to build innovative research programs. Previous supervisory experience is desirable.

American Cyanamid offers an excellent compensation and benefits package which includes 401(k) savings plan, flex-time work schedules, and a convenient location one hour from New York City and Philadelphia. If interested and qualified, please send your resume and reference contacts to: Employment Office, American Cyanamid Company, Agricultural Research Division, P.O. Box 400, Princeton, New Jersey 08540.

An Equal Opportunity Employer



THE COMMITMENT GROWS EVERY DAY.

POSITIONS OPEN

OCEAN SCIENTISTS

The Ocean Sciences Centre, a research unit within the Faculty of Science, Memorial University of Newfoundland, invites applications for two tenure-track faculty positions at the level of assistant professor (research). Research and teaching, primarily at the graduate level, are the primary responsibilities. We will consider persons with a background and achievements in any oceanographic science that complements OSC research in cold oceans, which includes zooplankton ecology, fisheries oceanography, coldwater aquaculture environments, physiological ecology, geophysics, Quaternary paleoclimatology and paleo-oceanography, and physical oceanography. OSC occupies a 4000-m² laboratory with full running seawater 6 km north of the university's main campus in St. John's, as well as smaller facilities on campus. Work at sea utilizes OSC's two small boats and major research vessels of the Northwest Atlantic Fisheries Centre and the Bedford Institute of Oceanography. Interested persons should send a résumé, letter of research interests, and the names of three potential referees to:

Richard L. Haedrich, Director
Ocean Sciences Centre
Memorial University of Newfoundland
St. John's, Newfoundland
A1B 5S7, Canada.

Telephone: 709-726-6681; Fax: 709-726-7711;
Telemail: NICOS

In accordance with Canadian Immigration requirements, this advertisement is directed, in the first instance, to Canadian citizens and permanent residents of Canada.

PARASITOLOGIST

Cornell University, New York State College of Veterinary Medicine. Assistant professor of parasitology, tenure-track. The successful applicant will be expected to develop an independent, competitively funded research program focusing on host parasite interactions. Applicants should have a Ph.D. or a D.V.M./Ph.D. or equivalent. Experience in molecular biology and training at the postdoctoral level is required. This position is part of a major commitment by the department to apply molecular approaches to infectious disease research. Participation in the teaching of parasitology to veterinary and graduate students will be required. Applications including curriculum vitae, statement of research interests, and the names and addresses of three referees should be sent to: **Dr. Roger J. Avery, Chairman, Department of Microbiology, Immunology and Parasitology, New York State College of Veterinary Medicine, 616 Veterinary Research Tower, Cornell University, Ithaca, NY 14853-6401** by 15 November 1989. Telephone inquiries will be welcomed (607-253-3400).

Cornell University is an Equal Opportunity/Affirmative Action Employer/Educator.

POSTDOCTORAL POSITION available immediately to study endocrine-immune response interactions. Studies will focus on the regulation of MHC Class II expression by mononuclear phagocytes and on innate microbial resistance mediated by macrophages. The candidate should have a background in cellular immunology, molecular biology, biochemistry, or endocrinology. Send curriculum vitae, a summary of research experience, and the names of three references to: **Dr. Bruce S. Zwilling, Department of Microbiology, The Ohio State University, 484 West 12th Avenue, Columbus, OH 43210.** *The Ohio State University is an Affirmative Action/Equal Opportunity Employer and specifically invites and encourages minority and women applicants.*

POSTDOCTORAL POSITION available immediately in laboratory actively engaged in development of new drugs and therapeutic strategies for treatment of solid tumors. Applicants should be well versed in all aspects of mammalian tissue culture and have some experience working with animals. Knowledge of flow cytometry, cell sorting, and normal tissue toxicity assays is desirable. This position requires an individual who is able to work relatively independently. Joint appointment will be held in an appropriate department of Harvard Medical School. Send curriculum vitae and names, addresses, and telephone numbers of three references to: **Dr. Beverly A. Teicher, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

PHARMACOLOGY—MOLECULAR PHARMACOLOGY

Applications are invited for tenure-track positions at the assistant or associate member level in the Program of Developmental Therapy and Clinical Investigation of the Sloan-Kettering Institute. Candidates with a Ph.D. or M.D. degree who have demonstrated outstanding research capabilities in cancer-related pharmacology will be considered. We are especially interested in candidates with a strong interest in mechanisms of drug action at the molecular level, and with interests in clinical application. Additional areas of research emphasized include mechanisms of drug resistance, protein structure and drug design, signal transduction and DNA repair. Please send a detailed curriculum vitae and a statement of research interests by 1 November 1989 to: **Dr. Joseph R. Bertino, Program Co-Chairman of Developmental Therapy and Clinical Investigation, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021.**

Sloan-Kettering Institute is committed to Equal Opportunity through Affirmative Action and, therefore, members of minority groups are encouraged to apply.

POSTDOCTORAL FELLOW MOLECULAR BIOLOGY OF GROWTH FACTOR RECEPTORS

A position is available for research in the area of growth factor receptor biology related to the mechanisms of signal transduction. (For more information, see *J. Biol. Chem.* 263, 5319; 263, 5373; 263, 7450; 263, 9462; 264, 10828, and 264, 13642.) A strong background in molecular biology or protein chemistry is desirable.

Send curriculum vitae and the names of three references to: **Dr. Roger J. Davis, Department of Biochemistry, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655.**

The University of Massachusetts is an Equal Opportunity Employer.

POSTDOCTORAL POSITION CELLULAR IMMUNOLOGY

A postdoctoral position is available immediately to study the basic immunobiology of the ear and eustachian tube. Applicants should possess a Ph.D. and have previous experience with current immunological techniques. Send curriculum vitae and three references to: **Ms. Teresa Martin, Ohio State University, 456 West 10th Avenue, Room 4331, Columbus, OH 43210-1240.**

POSTDOCTORAL RESEARCH FELLOW. Transdermal Drug Delivery Research: The successful candidate will be expected to develop an independent and comprehensive research program in the area of human skin transport and transdermal drug delivery systems. This includes in vitro mechanistic investigation of skin permeability and influencing factors, optimistic design and development of transdermal drug formulation and delivery systems, and in vivo pharmacokinetics and pharmacodynamics studies. The position requires Ph.D. in pharmaceuticals or pharmaceutical chemistry. Applicant must have a strong academic background as demonstrated by completion of the following course work: one course each in biochemistry, pharmacology, physics, and inorganic chemistry; two courses each in organic chemistry, surface/polymer chemistry, and analytical chemistry; three courses each in physical chemistry and mathematics; and four courses each in advanced physical chemistry and advanced pharmaceuticals. Experience in skin morphology, skin biochemistry, diffusion in skin, other biological membranes and synthetic membranes, skin penetration enhancements, dosage formulations and transdermal delivery systems, drug disposition and pharmacokinetics and physical/mathematical modeling is essential. Scientific publications demonstrating innovative research strategies and skills in transdermal drug delivery are required. Previous industrial experience and an undergraduate degree in pharmacy are desirable. Salary: \$41,000 first year; \$43,000 second year. Send résumé to: **Ms. Carol S. Brooks, Corporate Human Resources, CIBA-GEIGY Corporation, 444 Saw Mill River Road, Ardsley, NY 10502.**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for an individual with a background in molecular biology to study the molecular basis of cross-reactive idiotypes expressed by human B cell malignancies. Work entails amplification and sequencing of human V genes. Send curriculum vitae and two letters of reference to: **Dr. Ivor Royston, Director, Clinical Immunology Program, UCSD Cancer Center, T-011, La Jolla, CA 92093** or Fax to 619-543-2227. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to conduct research in a human autoimmune disease model specific for carbohydrate RBC antigens. The model involves chromosomally aberrant B-cell clones (EBV-transformed) secreting pathogenic red blood cell autoantibodies which are representative of clonal B-cell disorders associated with autoimmune hemolysis. Studies involve comparative nucleotide sequence, analyses of V genes of a defined autoimmune response of neoplastic and non-neoplastic B-cell origin to determine the V_H and V_L usage and mutational events in relation to autoantibody specificity idiosyncrasy and biology of B-cell neoplasia. Prior experience in molecular immunology is preferred. An appointment will be held in the Department of Pathology and Laboratory Medicine of the University of Pennsylvania School of Medicine. Salary commensurate with level of experience. Send curriculum vitae and two references to: **L. D. Silberstein, M.D., Hospital of the University, 3400 Spruce Street, 6-57 Founders Pavilion, Philadelphia, PA 19104-4283.**

POSTDOCTORAL POSITION

Research on microbial removal of organic sulfur from coals. Twelve-month appointment at \$23,500, beginning 1 January 1990. Deadline: 15 November 1989 or until filled. Send curriculum vitae and names of three references to: **Dr. Bailey Ward, Department of Biology, University of Mississippi, University, MS 38677.** *Inquiries: 601-232-7203. An Affirmative Action/Equal Employment Opportunity Employer.*

POSTDOCTORAL POSITION: Participate in a study of the representation of sound location in the cat's auditory cortex. We use computer-controlled free-field stimuli to map the location selectivity of cortical neurons. Anatomical tracing techniques are used to explore aspects of functional organization. Results from ongoing psychophysical experiments in man will be related to the cortical experiments. Individuals with experience in neurophysiology and/or auditory psychophysics should send curriculum vitae and a letter describing research interests to: **Dr. John C. Middlebrooks, Department of Neuroscience, Box J-244, University of Florida, Gainesville, FL 32610.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS IN MOLECULAR IMMUNOLOGY/University of California, Berkeley, California. Two postdoctoral positions are available to (i) characterize the T cell receptors on tumor infiltrating lymphocytes (TIL) in solid neoplasms and (ii) develop T cell mitogens as TIL reagents for immunotherapy. Salary commensurate with experience. Training in molecular or cellular immunology required. Send curriculum vitae, two to three references, and letters of interest to: **Dr. Robert S. Goodenow, Department of Molecular and Cell Biology, 451 LSA, Berkeley, CA 94720.**

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately for 2 years at Texas A&M University, Center for Advanced Invertebrate Molecular Sciences (CAIMS), and the Department of Entomology, College Station, Texas, to conduct basic research on transgenic beneficial insects capable of resistance to chemical pesticides. Study will involve molecular biology of foreign gene expression using recombinant forms of an insect virus vector with foreign genes inserted into a variety of vector constructs to evaluate their expression from different classes of insect virus gene promoters. Salary \$20,000 to \$25,000. Send curriculum vitae and names of three references preferably by 30 November 1989 to: **Dr. Max D. Summers, Director, CAIMS, Distinguished Professor, Department of Entomology, Texas A&M University, College Station, TX 77843.**

An Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study EMC virus-induced diabetes. Projects include site-directed mutagenesis and construction of recombinant DNA molecules. Preference to recent Ph.D. experienced in cloning. Starting salary \$24,000. Send curriculum vitae and names of three references to: **George W. Jordan, M.D., Division of Infectious Diseases, University of California, Davis, School of Medicine, 4301 "X" Street, Sacramento, CA 95817.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS—Temple University School of Medicine has the following two positions immediately available: **RESEARCHER, RECEPTOR REGULATION**—Will study the molecular mechanisms involved in receptor regulation. Research will focus on the role of receptor phosphorylation in desensitization utilizing the techniques of cloning, mutagenesis, expression and protein purification, and characterization. Send curriculum vitae and names of three references to: **Dr. Jeffrey Benovic, Fels Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, 3401 North Broad Street, Philadelphia, PA 19140.** **RESEARCHER, SIGNAL TRANSDUCTION**—Will investigate the mechanisms of receptor regulation and the role of receptor/G-protein interactions required for signal transduction. Individuals experienced in protein/peptide chemistry and purification, cloning, mutagenesis, or eukaryotic cell expression are encouraged to apply. Send curriculum vitae and three letters of reference to: **Dr. Thomas Frielle, Fels Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, PA 19140.** *Temple University is an Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE available immediately for molecular biology/biochemistry studies of mammalian drug and xenobiotic metabolizing enzyme. Experience with cDNA cloning, DNA sequencing, and expression vectors is desirable. Send curriculum vitae and names and telephone numbers of three references to: **John Cashman, Department of Pharmaceutical Chemistry, University of California, San Francisco, CA 94143-0446.** *UCSF is an Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE POSITION IN CONNECTIVE TISSUE BIOCHEMISTRY LABORATORY

A strong background in protein chemistry required, preferably with experience in connective tissue research, to work on the isolation, characterization, and structural analysis of collagenous and non-collagenous extracellular matrix proteins. Computer literacy (VAX/VMS) and an interest in the three-dimensional structure of proteins an advantage. Modern well-equipped laboratory offering a competitive salary (range \$24,000 to \$29,000). Send résumé with names and telephone numbers of three references to:

**Robert W. Glanville, Ph.D., Director Research Unit
Shriners Hospital for Crippled Children
3101 SW Sam Jackson Park Road
Portland, OR 97201**

POSTDOCTORAL/RESEARCH ASSOCIATE—position available immediately for ongoing work on cloning/sequencing/regulation of plant peroxidase genes. Experience in modern molecular biology essential. Send curriculum vitae, statement of interests, names, addresses, and telephone numbers of three referees to: **Dr. Hugh Tyson, Biology Department, McGill University, Stewart Biology Building, 1205 Avenue Dr. Penfield, Montreal, Quebec H3A 1B1, Canada.**

POSTDOCTORAL/RESEARCH ASSOCIATE available immediately to study various aspects of control of breathing: airway receptors, neuroregulation of respiratory muscles, development, etc. Strong background in respiratory physiology or neurosciences desirable. Send curriculum vitae and names of references to: **Dr. O. P. Mathew, Department of Pediatrics, The University of Texas Medical Branch, Galveston, TX 77550.**

UTMB is an Equal Opportunity M/F/V/H Affirmative Action Employer. UTMB hires only individuals authorized to work in the United States.

Director, California Institute For Energy Efficiency

A Director is sought for the California Institute for Energy Efficiency (CIEE). CIEE is a recently established unit of the University of California (UC), administered by LBL, which coordinates a mid-term research program on energy end-use efficiency as a joint effort among UC, the California energy utilities, the California Public Utilities Commission (CUC), the California Energy Commission (CEC), and other State institutions. The Director interacts regularly at staff and management levels within these institutions, convenes a high-level Research Board to establish overall policy and research direction, convenes a Planning Committee to provide technical input to the Board, and works with officials at LBL and UC on administrative matters. Undertakes technology transfer activities. Represents CIEE at technical meetings and reviews, and before government agencies as appropriate. Directs small staff in support of above duties. May have opportunity to establish or participate in an LBL research program.

Scientific or engineering education at the Ph.D. level or equivalent experience is required. Leadership and management experience is required in one or more of the following institutions: universities, government-supported research laboratories, government agencies, energy utilities. Capable of dealing effectively with management and staff of such institutions in a liaison mode. Experience relevant to energy end-use efficiency, and success in technology transfer activities, strongly preferred.

Potential candidates are encouraged to obtain a package of information concerning CIEE by contacting Marina Gonzalez, Employment Manager, Job C/5380, Lawrence Berkeley Laboratory, #1 Cyclotron Road, Mailstop 90/1042, Berkeley, CA 94720. An Equal Opportunity Employer, M/F/H.



**LAWRENCE
BERKELEY
LABORATORY**

The Merck Sharp & Dohme Research Laboratories, recognized as a world leader in pharmaceutical research and development has immediate openings in the Department of Microbial Chemotherapeutics and Molecular Genetics Research.

Biochemists/Molecular Biologists

We seek highly motivated individuals with ability to conduct independent research, supervise the development of a research program in regulation of mammalian mRNA transcription, and to participate in a multi-disciplinary team to discover novel therapeutic compounds. The successful candidate must have a Ph.D. degree in Biochemistry or Molecular Biology with two or more years of postdoctoral experience in a relevant field. Prior experience in isolation and characterization of transcription regulatory molecules desirable.

Postdoctoral Fellow - Atherosclerosis Research

We are seeking an individual with a Ph.D. degree in Molecular Biology or Pathology interested in molecular pathogenesis of the atherosclerotic plaque, and the role of growth factors in the development of the plaque. Previous experience with Polymerase Chain reaction and immunocytochemistry desirable.

Postdoctoral Fellow - Transcription Regulation

We are also seeking an individual with a Ph.D. degree in Molecular Biology or Biochemistry to participate in research on regulation of gene transcription, with particular emphasis on the regulation of LPS responsive genes in macrophages. A strong background in immunology and protein purification is desirable.

Merck Sharp & Dohme Research Laboratories are located in Rahway, NJ, approximately 25 miles from New York City. Our salaries, benefits and growth potential are excellent. Interested candidates should submit their curriculum vitae, three letters of reference, and salary requirements to: **Ms. Dolores Barefield, Merck Sharp & Dohme Research Laboratories, P.O. Box 2000, WBD-362, Rahway, NJ 07065.** An Equal Opportunity Employer.



Merck & Co., Inc.

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA LOS ANGELES

POSTDOCTORAL RESEARCH ASSOCIATES. Positions now available to study molecular mechanisms of the genetic and environmental regulation of gene expression in the mammalian retina. Projects involve the light-dependent movement of proteins in visual cells and the non-coordinate expression of visual genes during the light/dark cycle. Experience in molecular biology, biochemistry or immunocytochemistry preferred. Send résumé, and names of three references to: **Dr. James F. McGinnis, University of California, Los Angeles, 760 Westwood Plaza, Los Angeles, CA 90024. Telephone: 213-825-0579.**

RESEARCH SCHOLAR DRUG RECEPTORS AND METABOLISM

RESEARCH BIOCHEMIST/PHARMACOLOGIST: Children's National Medical Center, an academic affiliate of the George Washington University School of Medicine, plans to fund a research scientist with at least 3 years of experience, in the Departments of Laboratory Medicine and Gastroenterology, to conduct and supervise research and be part of a team working on drug metabolism in relationship to hepatic function.

Suitable candidates should have a Ph.D., or M.D. degree. Preference will be given to candidates with a strong research background in modern biochemical pharmacology, receptor separation techniques, and affinity chromatography.

The candidate will hold an academic position at the medical school and will be expected to generate research grants.

Please send a complete curriculum vitae and three recent references to: **Dr. Steven J. Soldin, Department of Laboratory Medicine.**

Children's National
Medical Center
111 Michigan Avenue, N.W.
Washington, DC 20010

POSITIONS OPEN

RESEARCH AGRICULTURAL CHEMIST

Applications invited for the position of Research Agricultural Chemist with the California Department of Food and Agriculture, Sacramento, California. Successful applicants will be expected to direct and conduct a vigorous, original, and independent research program. Applicants sought who have achieved international recognition in their field with emphasis on analytical chemistry; leadership skills in a research and development program with emphasis on analytical chemistry of pesticides; and an ability to manage all functions associated with directing such a program including budgeting, personnel management, interaction with public and private entities, and knowledge of state and federal regulatory processes. Starting annual salary commensurate with responsibilities, plus substantial benefits. Submit applications, including curriculum vitae, by 17 November 1989 to: **Carroll Anderson, California Department of Food and Agriculture, Personnel Management Services, Room 126, 1220 North Street, Sacramento, CA 94271-0001. The State of California is an Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE. Conduct epidemiological research into the etiology, natural history, prevention, and treatment of radiation-induced thyroid tumors. Laboratory research involves the chemical structure of thyroglobulin and the study of the structure-function relationship with specific regard to the glycosylated part of this molecule. Prepare results of research for publication; prepare and submit articles for publication; present research findings at scientific conferences. M.D. required together with a 1-year residency in internal medicine. Must have one publication in a peer-reviewed journal and one scientific conference presentation on thyroid tumors. Forty hours, Monday to Friday, 8:30 a.m. to 5:00 p.m., \$27,937 per year. Send résumé and Social Security Number to: **Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, IL 60605. Attention: Mr. Robert S. Felton, Reference V-IL 9504-F. An employer-paid ad.**

POSITIONS OPEN

RESEARCH ASSOCIATE

The Wistar Institute is seeking a molecular biologist to develop a program designed toward understanding the molecular basis of the control of DNA rearrangements and DNA replication in human blood cancer cells. Qualified candidates should have a Ph.D. in biochemistry, with 2 to 3 years experience in using molecular biological techniques and working in the field of DNA recombination and replication.

Submit curriculum vitae to: **Dr. Warren B. Cheston, Associate Director, The Wistar Institute, 36th and Spruce Streets, Philadelphia, PA 19104. Equal Opportunity Employer M/F.**

RESEARCH ASSOCIATE position available for studies in developmental neuroendocrinology. Ph.D. in physiology, pharmacology, molecular biology or related discipline required. Experience in cell culture and radioimmunoassay preferred; additional techniques welcome. Competitive salary. Please send résumé and names of references to: **Research Associate Position, c/o Dr. W. Dahms, Rainbow Babies and Childrens Hospital, Room 790, Case Western Reserve University, 2101 Adelbert Road, Cleveland, OH 44106.**

RESEARCH POSITION LABORATORY OF PEDIATRIC CRITICAL CARE

The Department of Pediatrics, Cornell University Medical College, seeks a research scientist (Ph.D.) with postdoctoral experience in fundamental aspects of adrenergic receptor pharmacology, including receptor-related events at the cellular and molecular level, for appointment as assistant professor. The candidate will develop a research program in the Division of Pediatric Critical Care Medicine and eventually supervise the research activities of post-residency fellows. Initial full salary and research support are provided. Please submit a covering letter with curriculum vitae, representative publications, and the names of three references to: **Daniel A. Notterman, M.D., N-309, Cornell Medical Center, 525 East 68th Street, New York, NY 10021.**

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Pharmaceutical Products Division

The selected metabolism investigator will work within our drug delivery program and participate in strategic planning in identification of lead drug candidates. An interest in drug discovery is emphasized. The qualified candidate will have skills in hepatic clearance methodologies including isolated tissue and whole animal techniques. Proficiency in HPLC and familiarity with mass spectroscopy are essential. A Ph.D. in Pharmacology, Biochemistry, or Metabolism/Toxicology with 2-5 years postdoctoral experience are required.

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This position will manage several Product Development Managers assigned to coordinate the R & D and Marketing Department efforts for new and existing animal products. Requirements include strong managerial skills, documented experience in research and several years experience in product development after a Ph.D. or DVM degree.

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Currently, we have several openings for animal Product Development Managers. These jobs involve the coordination of several projects involving dairy and beef cattle, swine, and poultry products. Duties include designing efficacy and safety studies, coordinating efforts with

Discovery, Product Development and Marketing Departments, providing technical advice on assigned projects and monitoring various studies required in an animal drug submission.

Requirements include a DVM or Ph.D. degree in a basic or applied science. Post doctoral experience is a plus with knowledge of US registration procedures highly desirable.

American Cyanamid offers an excellent compensation and benefits package which includes 401(k) savings plan, flex-time work schedules, and a convenient location one hour from New York City and Philadelphia. If interested and qualified, please send your resume and reference contacts to: Employment Office, American Cyanamid Company, Agricultural Research Division, P.O. Box 400, Princeton, New Jersey 08450.

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Environmental Scientists

Lawrence Livermore National Laboratory, located in the San Francisco Bay area, is one of the Nation's premier research and development organizations. Our Nuclear Chemistry Division currently has challenging opportunities available for creative, dynamic scientists who have achieved national recognition for their scientific contributions to multidisciplinary environmental research.

The successful applicants will support a major new environmental initiative at the Department of Energy's Nevada Test Site that will be coordinated with a general expansion of research in environmental, waste, and geoscience areas. They will also provide complementary scientific skills and technical coordination for a multidisciplinary team assembled to address a broad range of environmental questions. Major responsibilities include: the design, conduct and publishing of field oriented research, identification of basic and applied research needs, short and long range technical planning, and communication/coordination with managers and scientists.

Requirements include a minimum of 5 years of professional experience, a demonstrated ability to design/direct multidisciplinary environmental research projects with both basic and applied objectives, excellent management abilities, and good communication/interpersonal skills. Research experience in regions of interior drainage typical of the Southwestern United States desirable, but not necessary. Some field work and travel required.

We offer a competitive salary and excellent benefits. For consideration, please forward your resume to: **Art Wong, Professional Staffing, Lawrence Livermore National Laboratory, P.O. Box 5510, L-725, Dept. KSC9U904B, Livermore, CA 94550.** U.S. citizenship required. An equal opportunity employer.

University of California



RESEARCH SCIENTISTS

Ph.D. - BS/MS

PULMONARY PHARMACOLOGY

WYETH-AYERST Laboratories has openings in its Immunopharmacology Division for both Ph.D. and BS/MS level pharmacologists to work at its modern research facility located in the Princeton, New Jersey area.

These positions will investigate the involvement of pulmonary inflammation in late phase asthmatic responses and airway hyperreactivity, and will be responsible for establishing appropriate *in vivo* models for evaluating the pharmacologic activity of drug candidates. Experience in the *in vivo* assessment of pulmonary function and/or pulmonary inflammation an asset.

The senior level position requires a Ph.D. in pharmacology, physiology or a related life science with 0-3 years post doctoral training. Highly developed oral and written communication skills and a strong publication record in major scientific journals required.

Junior positions require a BS/MS in a related life science and/or a minimum of three years experience working in pulmonary pharmacology/physiology.

We offer an excellent salary and benefits package plus opportunities for career advancement. Interested candidates should submit their curriculum vitae and salary requirements to:

Personnel Manager, Dept. 2776-DG



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DIRECTOR, CARDIOVASCULAR RESEARCH INSTITUTE

Northwestern University Medical School seeks a Director for the newly established Feinberg Cardiovascular Research Institute. The Institute's mission is the development, coordination and support of cardiovascular research ranging from cellular and molecular studies to clinical investigation. The Director, who will report to the Dean, is responsible for developing and administering the Institute which has a substantial budget, core laboratories and facilities, and several well-established research programs. Candidates should have nationally recognized research accomplishments, proven leadership ability and be qualified for a senior, tenured faculty appointment in the Medical School. The deadline for nominations or applications, which should include a curriculum vitae and a letter describing candidate qualifications in detail, is November 1, 1989. Please address correspondence to:

Dr. John Phair
Northwestern University Medical School
680 N. Lake Shore Drive, Suite 1106
Chicago, IL 60611

Northwestern University is an Equal Opportunity/Affirmative Action Educator and Employer. Employment eligibility verification required upon hire.

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Marion Laboratories, Inc., one of the fastest growing pharmaceutical companies in the United States, headquartered in Kansas City, Missouri, has an opening for an experienced Pharmacologist within our Pharmacology department in Kansas City.

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We offer an excellent total compensation and benefits package, including bonus, stock options, profit sharing, comprehensive group health, dental and life insurance. Please send a detailed resume, including salary history, in confidence to: **Marion Laboratories, Inc., Recruiting & Placement, Dept. CNA, P.O. Box 9627, Kansas City, MO 64134.** Equal Opportunity Employer.



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Send your resume to: Professional Staffing, Dept. BB-SW, Becton Dickinson Immunocytometry Systems, 2350 Qume Drive, San Jose, CA 95131-1807. An equal opportunity employer.

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Research Scientists

Due to continued growth in our Cardiovascular Biology Department, Rorer Central Research is currently seeking two Research Scientists interested in innovative research and drug discovery in the areas of hypertension, atherosclerosis or thrombosis.

The successful candidate for one of the positions must have experience in animal models of thrombosis. Knowledge of platelet adhesion and aggregation or ischemia is desirable. A Ph.D in cardiovascular pharmacology and two years post-doctoral experience is required.

The other successful candidate must possess a Ph.D in Biochemical Pharmacology with two years of post-doctoral experience. The incumbent will supply expertise in enzymology and receptor biochemistry for our programs in hypertension and atherosclerosis.

Demonstration of scientific achievement and good communication skills are required. Collaboration with a multi-disciplinary group and presentation of experiments is encouraged.

Rorer Central Research offers a competitive salary, comprehensive benefits package and continued opportunities for professional development. Please submit your resume and salary history in confidence to: Ms. Linda Stewart, Personnel Manager, Rorer Central Research, 640 Allendale Road, King of Prussia, PA 19406. An Equal Opportunity Employer, M/F/H/V.



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Responsibilities are to establish effective relationships within key medical institutions, providing scientific liaison and indepth information essential to appropriate use of SK&F's products. There is also responsibility for training Representatives and medical professionals. Travel 50%.

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Associate Director for Education

Applications and nominations are sought for the position of Associate Director of Education to be responsible for the quality and vitality of all Institution education programs and to provide leadership in identifying new educational directions. WHOI is a private research and educational institution that conducts research in ocean related areas of biology, chemistry, engineering, geology, geophysics, physical oceanography and marine policy. Education programs include a joint graduate program with the Massachusetts Institute of Technology, post-doctoral and undergraduate fellowships and traineeships.

In addition to coordinating academic recruiting, enhancing fundraising activities, and allocating existing resources, the Associate Director will be expected to interact at the national and international level on issues of oceanographic/scientific educational policy.

Strong commitment to scholarship and education is essential, demonstrated by a distinguished record in research, teaching, academic leadership and management. PhD in a discipline related to ocean sciences required, with credentials appropriate to a senior scientist appointment.

Nominations and/or applications with curriculum vitae to **Dr. Joseph Pedlosky, Chairman, Search Committee, Box 54P, Woods Hole, MA 02543.**

**Personnel Manager
Box 54P**



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POSITIONS OPEN

RESEARCH ASSOCIATE/ POSTDOCTORAL FELLOW CYCLIC AMP-RESPONSIVE TRANSCRIPTIONAL TRANSACTIVATOR PROTEINS, CREBs

A position is open for a dedicated investigator with experience in molecular/cellular biology to work on the regulation of a family of DNA-binding proteins responsive to activation by cAMP- and/or DAG-dependent signal transduction pathways in animal endocrine cells. Interest is in the mechanisms by which phosphorylations modulate the DNA-binding and transactivating functions of these multiple CREB- and Jun-related proteins and the developmental expressions of subsets of the proteins in the placenta, pituitary and endocrine pancreas. Progressive salary and rank commensurate with experience. Comprehensive benefits. Please send résumé and two letters of recommendation to: **Joel F. Habener, M.D., Director, Laboratory of Molecular Endocrinology, Howard Hughes Medical Institute, Massachusetts General Hospital, Boston, MA 02114. Fax: 617-726-8142.**

RESEARCH TECHNICIAN

Master's degree in either electrical engineering or a subdiscipline of the visual sciences to model multi-input nonlinear neurons in primate visual cortex. Requires competence in linear and nonlinear stochastic systems theory, as demonstrated by course work taken, research, or publications, including knowledge of the Wiener and Volterra nonlinear system theories and mathematical techniques for structural modeling and parameter estimation. Familiarity with computers required, plus demonstrated proficiency with at least one major computer language, preferably 'C,' and familiarity with the UNIX operating system. No work experience required.

Reports all unusual problems to the principal investigator for clarification and direction. Otherwise works independently.

Full time 40 hours per week, 9:00 a.m. to 5:00 p.m., Monday through Friday. Salary is \$25,410 per year. Send résumé to: **Case #91001, Division of Employment Security Building, Government Center, Boston, MA 02114. Equal Opportunity Employer.**

SENIOR ENGINEER—Develop superconducting Josephson Junction Integration Circuit fabrication technology for high speed-low power electronics. Fabrication of high-temperature superconducting thin films by using physical vapor deposition and analysis of physical properties. Utilize cryogenic equipments, ultra-high vacuum systems, x-ray diffractometer, and electron microscopy.

Ph.D. required in physics and expertise with ultra-high vacuum systems; fabrication of thin films of various compound superconductors including high-temperature superconductors; analysis of physical properties of superconducting thin films using x-ray diffraction and electron microscopy; and analysis of electromagnetic properties of superconducting thin films using low-temperature cryogenics.

Salary: \$48,000 per year. Résumé to: **Pittsburgh Job Service South, 918 Park Avenue, Pittsburgh, PA 15234. Refer to Job Order No. 4143506.**

SUMMER FACULTY POSITIONS IN SLSTP A NASA PROJECT

Four Project Counselor positions are open in the 1990 Space Life Sciences Training Program (SLSTP) to be held at the Kennedy Space Center, Florida. Project counselors will be involved in the implementation of the 7-week long program (starting mid-June 1990) activities for undergraduate college students. An applicant must have a minimum of M.S. degree, preferably Ph.D. degree and some experience of teaching and research in life sciences and related fields. If interested, please send a letter of application, complete curriculum vitae, and three letters of recommendation before 31 December 1989 to:

**Program Director
SLSTP
Florida A&M University
College of Pharmacy
and Pharmaceutical Sciences
106 Honor House
Tallahassee, FL 32307
Telephone: 904-599-3636**

POSITIONS OPEN

SENIOR RESEARCH SCIENTIST to supervise neuroscience lab; supervise and teach electrophysiological and biochemical techniques to investigators; use pharmacological and biophysical methods to investigate and compare the molecular basis of local anesthetic and antiarrhythmic drug action in nerve and heart including sucrose-gap and voltage-clamp of myelinated nerve and patch clamp of isolated cardiac muscle cells; immunocytochemical studies including purifications, and biochemical modification of scorpion venom toxins for use as molecular probes of sodium channels, and production of antibodies against the above toxins for use in target localization studies in myelinated nerve. Must have Ph.D. in pharmacology, 1 year of experience in voltage clamping of myelinated nerve and patch clamping of cardiac muscle cells, and knowledge of immunocytochemistry and radioligand-binding techniques. Salary \$25,000 per year. Send résumé to **Massachusetts Department of Employment and Training, Special Programs Department, 19 Staniford Street, Boston, MA 02114. Refer to case no. 91335.**



TECHNICAL SALES REPRESENTATIVE

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

TENURED FACULTY POSITION— ASSOCIATE PROFESSOR OF UROLOGY

The University of Minnesota Department of Urologic Surgery is recruiting an academic urologist at the associate professor level with tenure. Job duties will include teaching residents in endourology, ureteroscopy, and pulsed laser techniques while performing these clinical functions in a patient care facility. Appointment at the associate professor level requires professional distinction in research and writing and demonstrated effectiveness in teaching and advising.

The successful candidate should be board certified in urology and have post-residency experience in academic practice. This experience should have included a designated year of fellowship devoted to endourology, and with demonstrated effectiveness in ureteroscopy and pulsed laser techniques. The candidate should have demonstrated extensive teaching of medical students and residents. Also, the candidate should have evidence of publications in peer-reviewed journals.

Send three letters of reference and curriculum vitae before 20 October 1989 to: **E. Fraley, M.D., Professor and Chair, Department of Urologic Surgery, Box 394 UMHC, 420 Delaware Street, S.E., Minneapolis, MN 55455.**

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

TENURE-TRACK POSITION IN PLANT TAXONOMY available beginning August 1990. Faculty rank negotiable. Ph.D. degree in botany, experience as a herbarium curator, and competence to teach taxonomy, anatomy, land plants, and environmental biology required. Individuals with interest in both teaching and research preferred. *Minorities and women are especially encouraged to apply.* Duties include developing an independent research program. Competitive salary. Send letter of application, long-term goals, curriculum vitae, transcripts, and three references to: **Dr. Thomas W. Gaither, Biology Department, Slippery Rock University, Slippery Rock, PA 16057.** To ensure consideration, application materials must be received by 15 November 1989. *Slippery Rock University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

SCIENTIFIC EDITOR

The Neurosciences Institute seeks a person with experience in all phases of publishing. Responsibilities will include working with scientist authors and marketing as well as editing. Aptitude for scientific writing and redaction and ability to grasp new subjects quickly are preferred. Ph.D. or equivalent in neuroscience or related field is highly desirable. Send résumé to: **Dr. W. Einar Gall, Research Director, The Neurosciences Institute, 1230 York Avenue, New York, NY 10021.**

SENIOR RESEARCH SCIENTIST CELL BIOLOGY

BIOQUAL, located in Rockville, Maryland, near the NIH, is a leader in research services in mammalian biology. We are seeking a senior research scientist to conduct basic research and services in cell biology, including techniques of microinjection of cells and embryos toward the production of model systems both in vivo and in vitro. The candidate should have a Ph.D. with a minimum of 2 years of postdoctoral experience in transgenics or embryo manipulation. Submit résumé to: **Dr. John C. Landon, BIOQUAL, Inc., 11 Taft Court, Rockville, MD 20850. Telephone: 301-251-0633.**

TENURE-TRACK FACULTY POSITION UCR/UCLA PROGRAM IN BIOMEDICAL SCIENCES HUMAN GROSS ANATOMY

The UCR/UCLA Program in Biomedical Sciences, which offers an accelerated M.D. curriculum jointly between the University of California, Riverside (UCR) and the University of California, Los Angeles (UCLA) School of Medicine, has a tenure-track faculty position open in the Division of Biomedical Sciences at UCR available 1 February 1990. Primary teaching responsibilities will be in a 10-week lecture and laboratory course in human gross anatomy for 24 first-year medical students. Prior gross anatomy teaching experience is considered essential. The successful candidate is also expected to actively participate in graduate student training.

The committee welcomes applications from those working in any modern area of biological research, but applicants with interests in cell, molecular, or developmental biology or neurosciences are encouraged to apply. The prospective level of appointment for candidates, who must possess the Ph.D. and/or M.D. degree, may be at the assistant, associate, or full professor level. Junior applicants must have postdoctoral research experience and the potential to develop a strong, extramurally funded research program. Senior applicants should have a clearly demonstrable record of research productivity, success in obtaining extramural funding, and demonstrated teaching effectiveness. *The University of California is an Affirmative Action/Equal Opportunity Employer.* The deadline for application is 31 October 1989. Applicants should send curriculum vitae, representative reprints, a statement of present and future research goals, summary of teaching experience, and arrange to have three letters of recommendation sent to:

**Dr. Kenneth Dorshkind
Anatomy Search Committee
Division of Biomedical Sciences
University of California
Riverside, CA 92521-0121**

GRANTS

RESEARCH INQUIRIES INVITED

The Smokeless Tobacco Research Council, Inc., invites inquiries regarding grant applications.

The council sponsors independent research into questions of smokeless tobacco and health. Research support is through a program of grants-in-aid.

Grant applications are evaluated by the Scientific Advisory Board to the council and will be judged solely on the basis of scientific merit and relevance.

Deadlines for submission of grant applications are December 31st for July 1st funding and June 30th for January 1st funding. Address inquiries or requests for applications to: **The Smokeless Tobacco Research Council, Inc., 420 Lexington Avenue, New York, NY 10170. Telephone: 212-697-3485.**

BIOTECHNOLOGY

CULTURE CURATOR

Cetus Corporation, a leader in the development of biotechnology-based therapeutics for cancer and infectious diseases, is currently seeking a Culture Curator.

You will be responsible for daily operations of the Cetus microbial culture collection which includes deposition of cultures, characterization and documentation. Other duties include interacting with other departments and managers regarding company's patent strains; serving as an information source on host strains for various research projects; supervising staff; and performing a combination of lab and administrative work. Requirements include a minimum MS in Microbiology plus 4-8 years' related experience. Familiarity with microbial physiology, taxonomy and molecular biology, some computer skills, and excellent organizational and communication skills, are also required.

Cetus offers an excellent compensation and benefits package. For consideration, please send your resume to: Cetus Corporation, Box JHC, 1400 Fifty-Third Street, Emeryville, CA 94608. We are an Equal Opportunity Employer.



DRUG METABOLISM

Fisons Pharmaceuticals, an international pharmaceutical research and development organization announces two openings in the area of drug metabolism at its U.S. research and development facility in Rochester, NY. Both positions offer challenging opportunities for qualified and highly motivated individuals wishing to join experienced multidisciplinary research teams dedicated to the discovery of innovative drugs.

Head of Drug Metabolism

We are looking for an experienced person to lead a group dealing with the disposition of candidate compounds in animals and man. The ideal candidate will have a Ph.D. in drug metabolism or a related discipline and several years' experience in team leadership in this general area, preferably but not essentially in the pharmaceutical industry, with a sound knowledge of the role of drug metabolism studies in drug development.

Candidate experience should preferably include the use of radiolabelled isotopes in animals and in vitro systems and analytical and separation methodology. Experience in metabolite isolation and identification, and in pharmacokinetics would also be a distinct asset.

Team Leader - Drug Metabolism

A scientist with Post-Doctoral experience in drug metabolism is required to lead a small experimental team in the above group. Candidates should be able to lead and direct a scientific team. Industrial experience would be helpful but is not essential.

Strong organizational, interpersonal and communication skills together with an innovative scientific approach are required of candidates for both positions.

For consideration, send resume and salary requirements to Bill VanBuskirk at Fisons Pharmaceuticals, P.O. Box 1710, Rochester, NY 14603.

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FEATURED ARTICLES

Overview

Dr. Lee Hartwell,
Department of Genetics,
University of Washington,
Seattle.

Events in G₂/M and Triggering of Mitosis

Dr. Mark Kirschner,
Department of Biochemistry,
University of California
Medical School,
San Francisco.

S Phase

Dr. Ron Laskey,
Department of Zoology,
CRC Molecular Embryology
Research Group,
Cambridge University, U.K.

G₁ and Early Regulatory Events in the Cell Cycle

Dr. Arthur Pardee,
Dana Farber Cancer Institute,
Boston.

Mitosis

Dr. J. Richard McIntosh,
Department of Molecular, Cellular
and Developmental Biology,
University of Colorado, Boulder.

Development and the Cell Cycle

Dr. Patrick O'Farrell,
Department of Biochemistry
and Biophysics,
University of California Medical
Center, San Francisco.

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AWARD

THE MICHELSON-MORLEY AWARD

The prestigious Michelson-Morley Award is presented by Case Institute of Technology to recognize the distinctive achievements of a particular scientist or engineer. The award is named in honor of Albert A. Michelson, first professor of physics at Case Institute and 1907 Nobel laureate, and Edward W. Morley, distinguished professor of chemistry at Western Reserve College. Joint research by Professors Michelson and Morley is highlighted by their experiments related to the velocity of light. These scientific probes prepared the way for the discoveries of Albert Einstein and decisively advanced modern theoretical physics.

The stated purpose of the award is to honor the individual chosen for eminent contributions to knowledge and to the well-being of mankind, to perpetuate the tradition of scholarly inquiry exemplified by the independent and collaborative research of Professors Michelson and Morley, and to call to the attention of the general public the continuing contributions of the scientist and engineer to human welfare. Deadline for nominations: 15 November 1989. Nominations should be sent to: **Glenn R. Brown, Dean of the Colleges, Case Western Reserve University, Crawford Hall #7100, 10900 Euclid Avenue, Cleveland, OH 44106.**

Announcement: The Joseph P. Kennedy, Jr. Foundation will make **RESEARCH AWARDS** for projects related to the biomedical or biosocial bases of mental retardation with priority given to proposals related to infant and children's issues. Applications from investigators new to mental retardation research and/or "high-risk" proposals are encouraged. Send two-page letters of intent including objectives, methodology, summary budget, and curriculum vitae of principal investigator by 15 November 1989. Complete proposals will be solicited after preliminary review. Send to:

Eunice Kennedy Shriver, Executive Director
The Joseph P. Kennedy, Jr. Foundation
1350 New York Avenue, N.W. Suite 500
Washington, DC 20005-4709

TRAINING GRANT

POSTDOCTORAL TRAINING IN CELLULAR/MOLECULAR NEUROBIOLOGY is offered by the Department of Physiology and Biophysics of the University of Miami (NIH training grant): **E. Barrett**, electrophysiology of myelinated axons and motor terminals; **J. Barrett**, neurotrophic regulation of dopaminergic and cholinergic neurons; **E. Chambers**, biophysics of gamete cell interaction; **G. Dahl**, biogenesis of cell-cell channels, membrane fusion; **R. Keane**, developmental neurobiology, neuroimmunology; **P. Hoar, W. G. L. Kerrick**, biophysics of muscle contraction; **D. Landowne**, molecular basis of neuronal excitability; **W. R. Loewenstein**, genetic and molecular regulation of gap junctions; **K. Magleby**, biophysics of ion channels in muscle; **K. Muller**, neuron signalling and integration, synapse regeneration and development; **W. Nonner**, biophysics of neuronal ion channels; **B. Rose**, regulation of junctional communication; **D. Wilson**, axonal transport and nerve regeneration. *U.S. citizens and permanent residents send curriculum vitae and names of three references to: S. Villamil, Department of Physiology and Biophysics, University of Miami, P.O. Box 016430, Miami, FL 33101.*

Equal Opportunity/Affirmative Action Employer.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP

The Division of Medical Genetics, Emory University School of Medicine, is seeking applications for a postdoctoral fellowship to study the molecular biology of Galactosemia. To apply, send curriculum vitae and a synopsis of current and future research interest to:

Dr. Louis J. Elsas, II, Director
Division of Medical Genetics
Emory University School of Medicine
2040 Ridgewood Drive
Atlanta, GA 30322

Deadline for receipt of application is 31 October 1989.

Emory University School of Medicine is an Equal Opportunity/Affirmative Action Employer.

ANNOUNCEMENT

ANALYTICAL ULTRACENTRIFUGATION FACILITY AT THE UNIVERSITY OF CONNECTICUT BIOTECHNOLOGY CENTER

This newly formed national facility, funded in part by the National Science Foundation, provides opportunities for the characterization of macromolecules in solution. Studies of molecular weights, shapes, and interactions can be performed with facility analytical ultracentrifuges and related specialized instrumentation.

A variety of collaborative arrangements are available for industrial and academic investigators, including short- or long-term projects and personnel training. Inquiries should be made to:

Dr. Emory Braswell, Head
National Analytical Ultracentrifugation Facility
Biotechnology Center
The University of Connecticut
Storrs, CT 06269-3125
Bitnet CENTRIF@UCONNVM

FELLOWSHIPS

University of California, Los Angeles—**FELLOWSHIP IN CARDIOVASCULAR PATHOLOGY.** The Department of Pathology of UCLA School of Medicine is offering a Fellowship in Cardiovascular pathology for 1 to 2 years. Training is available in aspects of basic science cardiac research. Areas of research emphasis include heart muscle disease, cardiac toxicity of drugs, heart transplantation, cryobiology, AIDS, and atherosclerosis. Diagnostic responsibilities include involvement with autopsy service and interpretation of endomyocardial biopsies. Teaching of students and residents is encouraged. Applicants should be board-eligible or certified in AP or AP/CP and eligible for medical licensure in California. Send letter of inquiry with curriculum vitae and names of three referees to: **William Lewis, M.D., Chief—Autopsy Section, Department of Pathology, UCLA Center for the Health Sciences, Los Angeles, CA 90024-1732.** *UCLA is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP: A position is available immediately to study the regulation of phospholipid metabolism and its relationship to signal transduction and the cell cycle. Candidates with a Ph.D. degree should submit their curriculum vitae, reprints and names of three references to: **Dr. Charles O. Rock, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101.** *An Equal Opportunity/Affirmative Action Employer.*

SMITHSONIAN INSTITUTION FELLOWSHIP PROGRAM

GRADUATE STUDENT, PRE-, POST-, AND SENIOR POSTDOCTORAL FELLOWSHIPS in American history and material culture, anthropology, biological sciences, earth sciences, history of art, history of science and technology. Tenable in residence at the Smithsonian and its research facilities. Stipends and tenures vary. Deadline: 15 January annually. Contact: **Smithsonian Institution, Office of Fellowships and Grants, 955 L'Enfant Plaza, Suite 7300, Desk S, Washington, D.C. 20560. Telephone: 202-287-3271.** *Awards are based upon merit, without regard to race, color, religion, sex, national origin, age, or condition of handicap of applicant.*

VIROLOGY POSTDOCTORAL FELLOWSHIP UNIVERSITY OF NEBRASKA-LINCOLN

Position available, January 1990, to work on the molecular biology of Bovine Viral Diarrhea virus (BVDV, Flaviviridae). The research aim is to characterize the molecular basis for the differential mode of interaction of cytopathic and non-cytopathic BVDV strains with the host cell. Requires Ph.D. in microbiology, molecular biology, or biochemistry. Experience in molecular biology and protein biochemistry is desired. Send curriculum vitae and three letters of reference before 1 November 1989 to: **Dr. Ruben Donis, Department of Veterinary Science, University of Nebraska-Lincoln, Lincoln, NE 68583-0905.** *Affirmative Action/Equal Opportunity Employer.*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP (Plant molecular biology): To study leghemoglobin genes and nodulation mutants clustered on chromosome 1 in garden pea. Experience in cosmid cloning or YAC vectors preferred. Research will involve genome walking and characterization of subclones. Funding available for 2 to 3 years starting immediately. Send application letter, curriculum vitae, and names of references to: **Norman F. Weeden, Department of Horticultural Sciences, Cornell University, New York State Agricultural Experiment Station, Geneva, NY 14456.** *Cornell University is an Equal Opportunity/Affirmative Action Employer. Minorities, women, and the handicapped are encouraged to apply.*

POSTDOCTORAL FELLOWSHIPS IN NEUROPATHOLOGY/NEUROIMMUNOLOGY

Positions exist on an NRSA Training Grant on Experimental Neuropathology for Postdoctoral Fellows to work on neuroimmunology of Alzheimer's disease, AIDS, multiple sclerosis, and related models in a leading medical school in the New York City area. Emphasis will be placed on candidates trained in molecular immunology, cytokines, nervous system tissue culture techniques, PCR, adhesion molecules, and immunocytochemistry. Candidates must hold an M.D. or Ph.D. and have some postdoctoral laboratory experience. Send curriculum vitae to: **BHA Box 2878, 555 Madison Avenue, Suite 1600, New York, NY 10022.** *An Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS: Opportunities are available through an NIH-sponsored program in the areas of cancer cell/molecular biology, carcinogenesis, biochemistry, endocrinology, virology, pathophysiology of cancer, environmental cancer, and nutrition. Postdoctoral fellows should forward curriculum vitae, three letters of recommendation, and an expression of research interest. *Funding is restricted to U.S. citizens or permanent residents.* For complete information write to: **Donald Nagel, Ph.D., Eppley Institute for Research in Cancer, University of Nebraska Medical Center, Omaha, NE 68105.** *Affirmative Action/Equal Opportunity Employer. Reference positions #9-6146 and 9-6198.*

POSTDOCTORAL FELLOWSHIPS IN ENDOCRINOLOGY

Interdisciplinary program supported by NIH Training Grant offers research training to U.S. citizens, permanent residents, and non-citizen nationals in the following areas: Renal Function in Pregnancy (**C. Baylis, Ph.D., Physiology**); Hepatic Carbohydrate Metabolism (**J. B. Blair, Ph.D., Biochemistry**); Pituitary-Ovarian Function (**R. L. Butcher, Ph.D., Obstetrics and Gynecology**); Gonadotropins and Follicular Development (**R. A. Dailley, Ph.D., Animal Science**); Reproductive Neuroendocrinology (**R. L. Goodman, Ph.D., Physiology**); Thyroid Secretion/Blood Flow (**G. A. Hedge, Ph.D., Physiology**); Utero/Ovarian Relationships (**E. K. Inskeep, Ph.D., Animal Science**); Salt-Sensitive Hypertension (**T. Kotchen, M.D., Medicine**); and Gene Expression/Recombinant DNA (**J. Strobl, Ph.D., Pharmacology and Toxicology**). Positions filled as available depending on candidate qualifications and needs of laboratories involved. *Women and minorities are particularly encouraged to apply.* Application information and more detailed descriptions of these research programs are available on request from the program director:

Dr. George A. Hedge
E. J. Van Lierc Professor
and Chairman
Department of Physiology
West Virginia University Health Sciences Center
Morgantown, WV 26506

Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIPS AT MIAMI UNIVERSITY

Two fully funded postdoctoral fellowships are available in the Zoology Department; starting date is negotiable. One is for a **behavioral toxicologist or a behavioral ecologist** to work with **Dr. Douglas Taylor**; the other is for a **fish ecologist or aquatic toxicologist** to work with **Dr. Thomas Wissing**. Send résumé, three letters of recommendation, and transcripts of all academic work to: **Department of Zoology, Miami University, Oxford, OH 45056.**

PHARMACEUTICAL RESEARCH OPPORTUNITIES

Berlex Laboratories is part of a global family of companies engaged in the research, development, manufacturing and marketing of chemical-pharmaceutical products in 120 plants and subsidiaries in 140 countries, employing over 25,000 people. Combined sales are in excess of \$2.7 billion.

At Berlex Laboratories, you will be supported, recognized and encouraged to pursue your scientific interests and ideas.

SENIOR SCIENTIST

As a protein biochemist/enzymologist, you will plan, execute and interpret laboratory research in protein isolation, purification and characterization.

To qualify, you must be a Ph.D. with at least 6 years of experience. Specific requirements include a knowledge of enzyme kinetics, protein sequencing, amino acid composition analysis, chemical modification studies, SDS-PAGE, FPLC, HPLC and immunoassays. You must also have a strong record of publications and excellent oral communication skills. Experience in molecular biology is preferred.

SENIOR RESEARCH PHARMACOLOGIST

You'll be heading up a small team investigating whole animal models for assessing coronary flow, regional function, and blood flow distribution.

To qualify, you must have a Ph.D. and 1 or more years of postdoctoral experience in the specialty above. Experience with models of angina and prevention of myocardial ischemia is desirable. You must have a high level of creativity and communications skills, and be able to work in a supervisory role.

BIOLOGIST/PHYSIOLOGY, BIOCHEMISTRY

As part of a cardiovascular research team involved in drug discovery and development, you will conduct experiments on segments of isolated blood vessels designed to determine effects of various agents on contractile activity. You'll also design and interpret experiments.

To qualify, you must have a B.S. or M.S. and a background in in-vitro physiology or biochemistry. Good surgical skills and the ability to handle laboratory animals are essential as are excellent written and oral presentation skills. A basic knowledge of computer data analysis and contractile biochemistry is highly desirable.

BIOLOGIST/BIOCHEMISTRY, IMMUNOLOGY

You'll work on drug discovery and development in a cardiovascular research team.

To qualify, you must have a B.S. or M.S. and a background in biochemistry or immunology. Your specific experience should include work in protein biochemistry with an emphasis on membrane receptor studies and familiarity with preparation of membrane receptors and handling radio-labelled legends. Additional knowledge of HDLC, FPLC, SDS-PAGE, RIA and ELISA techniques as well as computer analysis of data and experience in molecular biology is helpful. You'll also need excellent written and oral communications skills in order to present your findings.

In addition to a stimulating research environment complete with excellent resources BERLEX offers a generous salary and benefits package including tuition reimbursement and comprehensive medical and dental coverage. For consideration, send your resume to: **JOAN BIANCHINI**, Human Resources Representative, **BERLEX LABORATORIES, INC.**, 110 East Hanover Avenue, Cedar Knolls, New Jersey 07927. Equal Opportunity Employer M/W/H/V.

BERLEX
Laboratories, Inc.

HUMAN FRONTIER SCIENCE PROGRAM (HFSP)

The new international program starts now.

The Human Frontier Science Program (HFSP) is an international program, which was proposed by the Japanese Government at the Venice Economic Summit Meeting in 1987, and which has been discussed at the Toronto Economic Summit Meeting and at the meetings of eminent scientists and experts from the Economic Summit member countries and the Commission of the European Communities. The HFSP aims at promoting, through international cooperation, basic research focused on the elucidation of the sophisticated and complex mechanisms of living organisms. To the fullest possible extent the research results will be used for the benefit of all mankind. The HFSP is also intended to encourage international interdisciplinary research by researchers early in their careers who are expected to play an important role in originating and pursuing creative research.

Invitation for Applications

Research Grants/Fellowships/Workshops

Research Areas of the HFSP:

(A) Basic research for the elucidation of brain functions

1. Perception and Cognition
2. Movement and Behaviour
3. Memory and Learning
4. Language and Thinking

(B) Basic research for the elucidation of biological functions through molecular level approaches

1. Expression of Genetic Information
2. Morphogenesis
3. Molecular Recognition and Responses
4. Energy Conversion

Research grants: Grants for basic research carried out by international joint research teams represented by principal researchers from one of the eligible countries*.

Fellowships: Fellowships for researchers from the eligible countries who wish to do research in foreign countries, or for researchers outside the eligible countries who wish to do research in one of the eligible countries.

Workshops: Subsidies for international workshops organized by researchers from the eligible countries.

※ The eligible countries for fiscal year 1989 are Canada, France, F.R.G., Italy, Japan, U.K., and U.S.A.. Researchers in non-summit EC member countries may apply through the Commission of the EC on equal terms with the researchers in the eligible countries. (Details in the guidebook)

Prospective number of awards and duration of each activity for fiscal year 1989:

Research Grants	~ 20	3 years
Long-term Fellowships	~ 100	3 months - 2 years
Short-term Fellowships	~ 50	2 weeks - 3 months
Workshops	~ 10	----

Application Deadline: November 15, 1989

In fiscal year 1989, awardees will be determined by March 31, 1990, after the review procedures are completed by the organization to implement the HFSP.

Further information:

Until the organization is established in Strasbourg (France) this fall, the Task Force on the HFSP of the Japanese Government will undertake preparatory activities on behalf of the organization.

Guidebooks and Application Forms may be obtained upon request from the address given below. (Please indicate which program activity [Research Grant/Fellowship/Workshop] you are interested in.)

The Task Force on the HFSP

c/o Science and Technology Agency, The Japanese Government

2-2-1, Kasumigaseki, Chiyoda-ku, Tokyo, 100, Japan.

FAX: (Japan 81)-3-581-3079, 3-581-5698, TEL: (Japan 81)-3-501-3490

