

times, cumbersome and limiting. These limitations notwithstanding, it is likely that this book will be widely read and enjoyed by chemists and nonchemists alike.

WILLIAM F. DEGRADO

Experimental Station,

E. I. du Pont de Nemours and Company,

Wilmington, DE 19898

Evolutionary Trends

The Evolution of Complexity by Means of Natural Selection. JOHN TYLER BONNER. Princeton University Press, Princeton, NJ, 1988. xii, 260 pp., illus. \$40; paper, \$13.95.

Among the shadowy concepts intoxicating many an evolutionary thinker, perhaps the headiest is that of progress. From at least the Greeks on, there has been a tendency to array life's diversity, both past and present, in some directional pattern, as most famously canonized in the Great Chain of Being. Yet, though much eloquence and passion have been unleashed upon the subject, and simple-minded linear models have been rightly dispensed with, the existence of progress in biological evolution remains a matter of much debate.

In his latest book J. T. Bonner provides some fresh observations by approaching the problem from the perspective of developmental biology. After starting with a basic overview of Darwinian evolution, this ambitious little book ranges through such diverse topics as size increase in the fossil record, size and ecology, and even animal behavior. Though such breadth is thought-provoking, the combination of so many ideas with a sometimes freewheeling discourse left me longing for more coherence. This may not be so much a matter of Bonner's style, which is genteel and pleasantly chatty, as of the demands of trying to write a book geared to both peers and general readership on such a difficult and far-reaching topic. Gems of intellectual insight are there, in number, but they are often embedded in a matrix of description and basic information.

Most of the insight comes from Bonner's approaching "progress" by couching it in terms of complexity, avoiding much of the semantic confusion over definitions. Of course complexity itself can be a fuzzy concept, but Bonner is clear about what he means: increasing complexity is associated not only with increasing number of components but also with increasing number of kinds of components. This agrees with the current thinking on hierarchical systems in general, in which complexity is seen as measured in terms not only of number but of kinds of interactions. A massive interstellar

cloud has many interactions but is not very complex compared to an amoeba.

What emerges from this as the general theme of the book is that since the origin of life natural selection has increased the upper limit of complexity of individual organisms, as measured by kinds of cells (internal complexity), and of complexity of ecosystems, as measured by number and kinds of individuals (external complexity). The common nexus of both kinds of complexity is body size: with increasing body size, the number of cells and cell types per individual increases while the number of individuals and types of individuals decreases.

The main conclusions drawn from this are: (i) The increase in body size often seen in evolutionary time does not necessarily lead to greater net complexity at the resulting size. This is because, though internal complexity increases with size, there is a concurrent decrease in external complexity. (ii) The units of internal and external complexity are subject to counteracting selection for both isolation and integration.

These conclusions, and the themes behind them, struck me as hollow. Increasing body size demands increase in cell types owing to functional or constructional needs. Larger organisms are rarer and less diverse owing to ecological energetics. So what? The most intriguing connections, those between the hierarchical levels, are left untouched. Perhaps Bonner's approach is too reductionist (that is, cellular). A more holistic view is needed to capture emergent connections. Nevertheless, though Bonner's approach may falter in explaining the whys of complexity in evolution, this book is very good at explaining the hows of building complex organisms through both ontogenetic and evolutionary time. That, plus other snatches of insight, make it a worthwhile read for serious evolutionists. It would also be a good springboard for a lively upper-level course in evolution.

MICHAEL L. MCKINNEY

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Books Received

Acoustics of Solids. A. I. Seltzer. Springer-Verlag, New York, 1988. xii, 235 pp., illus. \$59.

Advances in Polyolefins. The World's Most Widely Used Polymers. Raymond B. Seymour and Tai Cheng, Eds. Plenum, New York, 1987. xii, 568 pp., illus. \$95. From a symposium, Chicago, IL, Sept. 1985.

Agricultural Research Systems and Management in the 21st Century. K. V. Raman, M. M. Anwer, and R. B. Gaddagimath, Eds. NAARM Alumni Association, National Academy of Agricultural Research Management, Hyderabad, 1988. xii, 211 pp., illus. \$20. From a seminar, Hyderabad, India, Dec. 1987.

Amino Acid Availability and Brain Function in Health and Disease. Gerald Heuther, Ed. Springer-Verlag, New York, 1988. xviii, 487 pp., illus. \$141.50. NATO Advanced Science Institutes Series H, vol. 20. From a workshop, Göttingen, F.R.G., Sept. 1987.

Antisense RNA and DNA. Douglas A. Melton, Ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1988. xii, 149 pp., illus. Paper, \$20. Current Communications in Molecular Biology. From a conference, Cold Spring Harbor, NY, Dec. 1987.

Applied Quantum Mechanics. Richard K. Osborn. World Scientific, Teaneck, NJ, 1988. x, 184 pp., illus. \$42; paper, \$28.

Applied Time Series Analysis for Business and Economic Forecasting. Sufi M. Nazem. Dekker, New York, 1988. x, 431 pp., illus. \$89.75.

The Autopsy. Medical Practice and Public Policy. Rolla B. Hill and Robert E. Anderson. Butterworths, Stoneham, MA, 1988. xxvi, 294 pp., illus. \$39.95.

Bacterial Energy Transduction. Christopher Anthony, Ed. Academic Press, San Diego, CA, 1988. xvi, 517 pp., illus. \$98.

Biotechnologically Derived Medical Agents. The Scientific Basis of Their Regulation. John L. Gueriguian, Vittorio Fattorusso, and Duilio Poggolini, Eds. Raven, New York, 1988. xii, 195 pp., illus. \$45. From a conference, Paris, Sept. 1987.

Bombay Lectures on Highest Weight Representations of Infinite Dimensional Lie Algebras. V. G. Kac and A. K. Raina. World Scientific, Teaneck, NJ, 1987. xii, 145 pp. \$55; paper, \$28. Advanced Series in Mathematical Physics, vol. 2. Based on a lecture series, Bombay, India, Dec. 1985-Jan. 1986.

Boundary Value Problems in Linear Viscoelasticity. J. M. Golden and G. A. C. Graham. Springer-Verlag, New York, 1988. xiv, 266 pp., illus. \$72.50.

Carbonate Rock Depositional Models. A Microfacies Approach. Albert V. Carozzi, Prentice-Hall, Englewood, NJ, 1989. xx, 604 pp., illus. \$68.

Causation, Chance, and Credence. Vol. 1. Brian Skyrms and William L. Harper, Eds. Kluwer, Norwell, MA, 1988. xii, 284 pp., illus. \$69. University of Western Ontario Series in Philosophy of Science, vol. 41. From a conference, Irvine, CA, July 1985.

Central D₁ Dopamine Receptors. Menek Goldstein, Kjell Fuxe, and Irving Tabachnick, Eds. Plenum, New York, 1988. viii, 183 pp., illus. \$49.50. Advances in Experimental Medicine and Biology, vol. 235. From a symposium, New York, Dec. 1986.

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Chloride Channels and Their Modulation by Neurotransmitters and Drugs. Giovanni Biggio and E. Costa, Eds. Raven, New York, 1988. xvi, 384 pp., illus. \$85. Advances in Biochemical Psychopharmacology, vol. 45. From a conference, Villasimius, Italy, May 1987.

Computer Simulation in Cell Radiobiology. Andrej Yu. Yakovlev and Aleksandr V. Zorin. Springer-Verlag, New York, 1988. vi, 133 pp., illus. Paper, \$16.30. Lecture Notes in Biomathematics, vol. 74. Translated from the Russian.

Contemporary Reviews in Neuropsychology. Harry A. Whitaker, Ed. Springer-Verlag, New York, 1988. xiv, 172 pp. \$36. Springer Series in Neuropsychology.

Contingencies of Value. Alternative Perspectives for Critical Theory. Barbara Herrnstein Smith. Harvard University Press, Cambridge, MA, 1988. xii, 229 pp. \$22.50.

Control of Breathing During Sleep and Anesthesia. W. A. Karczewski et al., Eds. Plenum, New York, 1988. x, 246 pp., illus. \$59.50. From a symposium, Warsaw, Poland, Sept. 1987.

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Control of Plant Diseases. Costs and Benefits. B. C. Clifford and E. Lester. Blackwell Scientific, Palo Alto, CA, 1988. xiv, 263 pp., illus. \$111.25. From a meeting, Manchester, U.K., Dec. 1984.

Craniofacial Development. Peter Thorogood and Cheryl Tickle. The Company of Biologists, Cambridge, U.K., 1988 (distributor, Biochemical Society Book Depot, Colchester, U.K.). iv, 257 pp., illus., + plates. \$75. Development, vol. 103 supplement. From a meeting, Bath, U.K., Sept. 1987.

Creation. The Story of the Origin and Evolution of the Universe. Barry Parker. Plenum, New York, 1988. xiv, 297 pp., illus. \$22.95.

Dictionary of Concepts in the Philosophy of Science. Paul T. Durbin. Greenwood, Westport, CT, 1988. xvi, 362 pp. \$59.96. Reference Sources for the Social Sciences and Humanities, no. 6.

Dietary Phenylalanine and Brain Function. Richard J. Wurtman and Eva Ritter-Walker. Birkhäuser Boston, Cambridge, MA, 1988. xiv, 391 pp., illus. \$39.50. From a conference, Washington, DC, May 1987.

The Different Faces of Motherhood. Beverly Birns and Dale F. Hay, Eds. Plenum, New York, 1988. xx, 291 pp. \$35. Perspectives in Developmental Psychology.

Directions in Chaos. Vol. 2. Hao Bai-lin, Ed. World Scientific, Teaneck, NJ, 1988. xiv, 382 pp., illus. \$68; paper, \$28. World Scientific Series on Directions in Condensed Matter Physics, vol. 4. Based on a school, Beijing, China, Aug. 1987.

DNA Replication and Mutagenesis. Robb E. Moses and William C. Summers, Eds. American Society for Microbiology, Washington, DC, 1988. xxii, 493 pp., illus. \$59; to ASM members, \$39. From a meeting, fall 1987.

Dreamers and Defenders. American Conservationists. Douglas H. Strong. 2nd ed. University of Nebraska Press, Lincoln, 1988. x, 282 pp., illus. \$26.95; paper, \$9.95.

Earthquakes, Animals and Man. B. G. Deshpande. Maharashtra Association for the Cultivation of Science, Pune, India, 1987. xvi, 120 pp., illus. Paper, \$20.

The Ecology of Stress. Stevan E. Hobfoll. Hemisphere, New York, 1988. xviii, 360 pp. \$49.50; paper, \$29.95. The Series in Health Psychology and Behavioral Medicine.

Electrophotography and Development Physics. L. B. Schein. Springer-Verlag, New York, 1988. xviii, 271 pp., illus. \$54. Springer Series in Electrophysics, vol. 14.

Emerging Technologies for in Situ Processing. Daniel J. Ehrlich and Van Tran Nguyen. Nijhoff, Dordrecht, 1988 (U.S. distributor, Kluwer, Norwell, MA). x, 290 pp., illus. \$79. NATO Advanced Science Insti-

tutes Series E, vol. 139. From a workshop, Cargèse, France, May 1987.

Fiber Optics. Ye. M. Dianov, Ed. Nova Science, Commack, NY, 1988. viii, 221 pp., illus. \$58. Proceedings of the Institute of General Physics, Academy of Sciences of the USSR, vol. 5. Translated from the Russian edition (Moscow, 1987) by Kevin S. Hendzel.

Fourier Analysis. James S. Walker. Oxford University Press, New York, 1988. xx, 440 pp., illus. \$49.95.

Fractals, Quasicrystals, Chaos, Knots and Algebraic Quantum Mechanics. A. A. Amann, L. Cederbaum, and W. Gans, Eds. Kluwer, Norwell, MA, 1988. xiv, 331 pp., illus. \$89. NATO Advanced Science Institutes Series C, vol. 235. From a workshop, Acquafredda di Maratea, Italy, Oct. 1987.

Freud Without Hindsight. Reviews of His Work (1893-1939). Norman Kiell. International Universities Press, Madison, CT, 1988. xviii, 758 pp. \$65.

The Handbook of Environmental Chemistry. Vol. 2, Reactions and Processes. Otto Hutzinger, Ed. xii, 210 pp., illus. \$99.50.

Neurophysiology of Dopaminergic Systems. Current Status and Clinical Perspectives. Louis A. Chiodo and Arthur S. Freeman, Eds. Lakeshore, Grosse Pointe, MI, 1987. xviii, 369 pp., illus. \$76. Based on a conference, Detroit, MI, Oct. 1986.

Neuropsychological Studies of Nonfocal Brain Damage. Dementia and Trauma. Harry A. Whitaker, Ed. Springer-Verlag, New York, 1988. xviii, 308 pp., illus. \$79. Springer Series in Neuropsychology.

Neutrino Physics. H. V. Klapdor and B. Povh, Eds. Springer-Verlag, New York, 1988. x, 333 pp., illus. \$55.90. From a workshop, Heidelberg, F.R.G., Oct. 1987.

Neutron Cross Sections. Vol. 2, Neutron Cross Section Curves. Victoria McLane, Charles L. Dunford, and Philip F. Rose. Academic Press, San Diego, CA, 1988. xii, 806 pp., illus., + appendixes. \$59.50.

Neutron Scattering at a Pulsed Source. R. J. Newport, B. D. Rainford, and R. Cywinski, Eds. Hilger,

Bristol, 1988 (U.S. distributor, Taylor and Francis, Philadelphia). xiv, 413 pp., illus. \$44. From lectures, Oxford, U.K., Sept. 1986.

The New Dinosaurs. An Alternative Evolution. Dougal Dixon. Salem House, Topsfield, MA, 1988. 120 pp., illus. \$19.95.

Waging War. A Philosophical Introduction. Ian Clark. Clarendon (Oxford University Press), New York, 1988. vi, 154 pp. \$35.

Waterfowl in Winter. Milton W. Weller, Ed. University of Minnesota Press, Minneapolis, 1988. xx, 624 pp., illus. \$49.50; paper, \$19.95. Based on a symposium, Galveston, TX, Jan. 1985.

Wave Interactions and Fluid Flows. Alex D. D. Craik. Cambridge University Press, New York, 1988. vii, 322 pp., illus. Paper, \$24.95. Cambridge Monographs on Mechanics and Applied Mathematics.

What Is a Person? Michael F. Goodman, Ed. Humana, Clifton, NJ, 1988. x, 325 pp. \$29.50. Contemporary Issues in Biomedicine, Ethics, and Society.

The World Drug Situation. World Health Organization, Geneva, 1988. vi, 123 pp. Paper, \$16.

The World Within the World. John D. Barrow. Clarendon (Oxford University Press), New York, 1988. xiv, 398 pp., illus. \$24.95.

Writing Technical Articles, Speeches, and Manuals. Mark Forbes. Wiley, New York, 1988. xii, 207 pp., illus. Paper, \$24.95.

Zero-Phonon Lines and Spectral Hole Burning in Spectroscopy and Photochemistry. O. Sild and K. Haller, Eds. Springer-Verlag, New York, 1988. x, 183 pp., illus. \$41.10. Translated from the Russian edition (Tartu, 1986).

Zero-Range Potentials and Their Applications in Atomic Physics. Yu. N. Demkov and V. N. Ostrovskii. Plenum, New York, 1988. viii, 288 pp., illus. \$75. Physics of Atoms and Molecules. Translated from the Russian by A. M. Ermolav.

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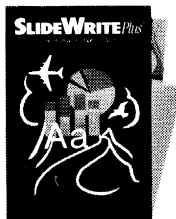
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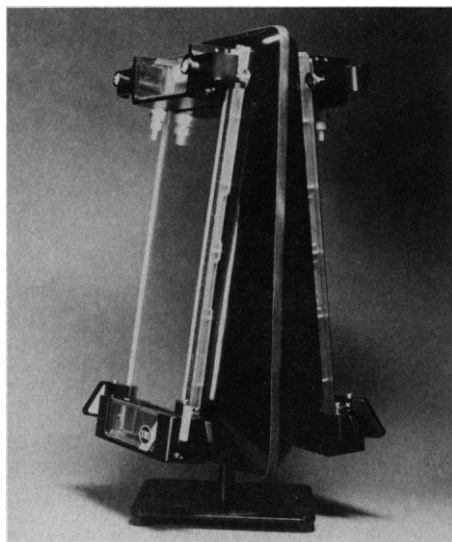
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Cloned DNA Polymerase

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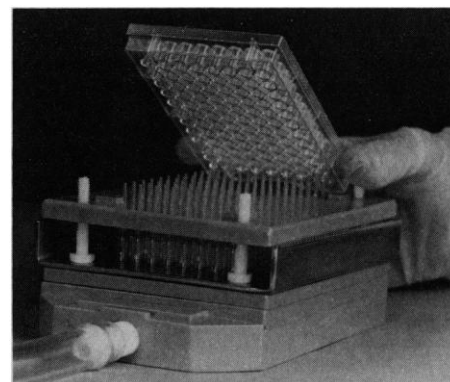
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Literature

Flanged Closure Stirred Reactors is a product bulletin that describes a series of reactors that withstand pressures to 6000 psi and temperatures to 343°C. Pressure Products Industries. Circle 565.

The brochure *Hydropore* introduces hydrophilic chemistries for protein chromatography. Rainin Instrument. Circle 574.

WaterPro PS is a brochure that describes a line of water polishing stations optimized for specific scientific applications. Labconco. Circle 575.

Estapor Microspheres is a booklet that describes preparation and properties of uniform latex particles. Bangs Laboratories. Circle 433.

The Catalog of Personal Computing Tools for Scientists and Engineers lists hardware and software for IBM PC-compatible computers. Personal Computing Tools. Circle 434.

Model U-3110 Double Beam UV/Visible Scanning Spectrophotometer is an 8-page brochure about a spectrophotometer with both a printer and a programming language built in. Hitachi Instruments. Circle 440.

Personnel Placement

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Chair of the Search Committee
Department of Animal Sciences
Cook Campus

Rutgers, The State University of New Jersey
New Brunswick, NJ 08903

Applications should preferably be submitted by 15 February 1989, but will be considered until the positions are filled.

Rutgers is an Affirmative Action/Equal Opportunity Employer.

AQUATIC ECOLOGIST—Develop field research in the area of freshwater ecology and prepare grants. M.S. with 3 years of experience in experimental and quantitative aspects of field oriented and applied community ecology. Doctoral work desirable. Low \$20's. Send letter and résumé to: **Director of Personnel, Massachusetts Audubon Society, Lincoln, MA 01773** by 31 January 1989. An Equal Opportunity Employer.

ASSISTANT CURATOR VERTEBRATE PALEONTOLOGY AMERICAN MUSEUM OF NATURAL HISTORY

The Department of Vertebrate Paleontology invites applications from Ph.D.'s in vertebrate paleontology with specialization in nonmammalian tetrapods for an entry-level, tenure-track curatorial position. Applicant must have experience in collection-based research in systematics and comparative morphology as well as proficiency in related earth and biological sciences.

The successful candidate will be expected to develop a strong research program and participate in curation, maintenance, and growth of collections of fossil reptiles, amphibians, and birds. Active involvement in the Department's exhibition, public education, and graduate teaching programs is also expected. Other responsibilities will include participation in departmental and museum administrative activities.

Salary will be commensurate with qualifications and experience. Full Museum benefits apply. Interested applicants must submit by 15 February 1989: a letter of application, curriculum vitae, a brief statement of research objectives, and names and addresses of at least three references. Submit to:

Dr. Michael J. Novacek
Chairman, Search Committee
Department of Vertebrate Paleontology
American Museum of Natural History
Central Park West at 79th Street
New York, NY 10024-5192

An Equal Opportunity Employer.

ASSISTANT PROFESSOR at Presbyterian-related liberal arts women's college with strong programs in biology and chemistry to develop physics program, also teaching physical science or physical chemistry. Submit résumé, official transcript, and three letters of recommendation by 15 February 1989 to: **Physics Search Committee, Dean of the College, Mary Baldwin College, Staunton, VA 24401.** Equal Employment Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ACADEMIC TRANSPLANT SURGEON—Faculty position starting at the rank and salary of an assistant professor in a prestigious midwestern university with a large multi-organ transplant center to develop a major pediatric transplant program. Applicants should be Board-certified or Board-eligible in general surgery and must be fully trained in kidney, liver, and pancreas transplant surgery and experienced in vascular access surgery. He/she should have evidence of a serious interest in laboratory and/or clinical research. In addition, the applicant must have special competence in pediatric kidney transplantation with the ability to carry out clinical and basic investigations in this field. Responsibilities include teaching general surgery students and house staff/fellows the principles and techniques of transplantation and vascular access surgery, patient care, and transplant research. Interested individuals should forward their curriculum vitae to: **Box 2, SCIENCE.**

ASSISTANT PROFESSOR—We invite applications for a tenure-track position available 1 July 1989 in the area of marine organic geochemistry/biogeochemistry. Qualifications: A Ph.D. with a minimum of 2 years of postdoctoral experience in lipid geochemistry, including the transformation of natural organic materials by biota in water column and sedimentary environments. We are particularly interested in individuals who will be able to successfully interact with present faculty in the areas of fisheries, toxicology, environmental chemistry, and microbiology. Interest in teaching within the University's marine science program is also desired. Applications including curriculum vitae, three letters of recommendation, and a statement of research interests should be sent to: **Dr. Rodger Dawson, Chair, Geochemistry Search Committee, University of Maryland System, Chesapeake Biological Laboratory, Box 38, Solomons, MD 20688.** Applications received by 1 March 1989 will be given full consideration.

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

A position is available at the rank of **ASSISTANT PROFESSOR** in the Department of Orthopaedics at The University of Texas Health Science Center at San Antonio. Individuals applying for this position should hold a Ph.D. in engineering. Specialization in biomechanics, particularly as it relates to orthopaedics and bone and cartilage repair, is required. The applicant is expected to establish an independent research program within the division of research and must interface closely with a large research group involved in basic and applied studies of bone and cartilage metabolism. Postdoctoral experience is desirable. Interested applicants should send their curriculum vitae and three references to: **Barbara D. Boyan, Ph.D., Director, Division of Research, Department of Orthopaedics, 7703 Floyd Curl Drive, San Antonio, TX 78284-7774.** An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR IMMUNOLOGIST UNIVERSITY OF MINNESOTA SEARCH REOPENED

The School of Dentistry of the University of Minnesota invites applications for a tenure-track position. The successful candidate will be expected to develop a vigorous independent research program and interact with scientists in the Clinical Research Center for Periodontal Diseases, the Dental Research Institute, and other excellent programs in cellular and molecular immunology. Applicants with outstanding programs or promise in any area of modern immunology are encouraged to apply. Minimal qualifications include a Ph.D. and postdoctoral experience or a D.D.S. degree with 5 years of research experience. Candidates must be qualified to teach in graduate and professional school courses. Excellent laboratories and start-up funds are available. Applicants should submit curriculum vitae, statement of professional goals, and the names of three references to: **Dr. Mark C. Herzberg, Chairperson, Immunologist Search Committee, School of Dentistry, 17-164 Moos Tower, University of Minnesota, Minneapolis, MN 55455.** Applications will be accepted until 3 February 1989. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

POSITIONS OPEN

The Chemistry Department of Wesleyan University invites applications for a tenure-track position in inorganic chemistry, effective September 1989. It is expected that the appointment will be made at the **ASSISTANT PROFESSOR** level, but exceptional candidates of higher rank are encouraged to apply. The successful candidate will exhibit the potential for excellence in both teaching (undergraduate and graduate level) and research in a well-equipped department with an active Ph.D. program, and will be expected to attract outside funding. Salary, fringe benefits and start-up funds will be highly competitive. Interested applications should submit curriculum vitae, a brief description of research plans, and the names and addresses of three references to: **Chair of the Inorganic Search Committee, Department of Chemistry, Wesleyan University, Middletown, CT 06457** by 20 February 1989. Late applications may not be considered. *Wesleyan University is an Equal Opportunity/Affirmative Action Employer and actively seeks applications from women and minority candidates.*

ASSISTANT PROFESSOR, ANATOMY—Conducts university courses at the graduate level in the area of human gross anatomy. Prepares and delivers lectures; coordinates and supervises guest lecture participation. Serves on faculty committees. Must have Ph.D. in gross anatomy, M.D., or equivalent. Also must have strong background in human gross anatomical dissection, good teaching references, and at least 1 year of academic experience in teaching human gross anatomy at the college or university level, as well as clinical experience examining or observing the examination and treatment of patients. A complete curriculum vitae and the names of three references should be sent by 15 February 1989 to: **Dr. Barbara Kriz, Chair, Department of Basic Sciences, California College of Podiatric Medicine, 1210 Scott Street, San Francisco, CA 94115.** An Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR MOLECULAR BIOLOGY OF RETROVIRUSES

The Division of Biology at Kansas State University has a tenure-track position available at the assistant professor level effective August 1989. Applications are invited from investigators with postdoctoral experience in the molecular biology of retroviruses and/or related oncogene expression. The division has a strong program in biological research, excellent facilities, an NCI Graduate Training Grant in Virology and Tumor Biology, and a distinguished faculty with several millions of dollars in extramural grants. The successful candidate will be expected to establish a vigorous and creative program in retrovirus and/or oncogene research, and to participate in graduate and undergraduate instruction. Candidates should apply by 15 February 1989 by submitting curriculum vitae, a brief description of future research plans, and having three letters of reference sent to:

**Terry C. Johnson
Division of Biology, Ackert Hall
Kansas State University
Manhattan, KS 66505**

KSU is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF BIOLOGY. A tenure-track faculty position is available in the Department of Biology at Providence College for an invertebrate biologist with background in field biology/ecology, beginning 1 September 1989. Applicants should have a Ph.D., the ability to establish a research program involving undergraduate majors, and a commitment to undergraduate education. Responsibilities include teaching an elective course for advanced majors in invertebrate biology, some portion of the team-taught general biology course for majors, and nonmajors courses. Course development in areas of expertise, establishment and maintenance of a productive research program that may involve undergraduate participation are also expected. Salary and fringe benefits are competitive and commensurate with experience. Please send curriculum vitae including names, addresses, and telephone numbers of three references along with a cover letter to: **Dr. Carol B. Crafts, Chair, Biology Department, Providence College, Providence, RI 02918.** Providence College is an Equal Opportunity Employer and Educator.

POSITIONS OPEN

Western Maryland College—an independent college of the liberal arts and sciences, located in central Maryland near Baltimore and Washington, D.C.—announces a tenure-track opening at the **ASSISTANT PROFESSOR** level beginning in September 1989. The four-member, ACS-certified chemistry department seeks applications from chemists who will possess by September 1989 a Ph.D. in biochemistry. The department is committed to attaining ACS approval for the chemistry/biochemistry option. The successful applicant will be expected to teach and develop courses in biochemistry and to participate in introductory courses for science and non-science majors. Although Western Maryland's emphasis is high quality teaching, research with students will be strongly encouraged. Prior teaching experience and/or postdoctoral work is desired but not required. Candidates should submit a résumé, all graduate and undergraduate transcripts, and three or more letters of recommendation to: **Dr. David W. Herlocker, Head, Search Committee, Department of Chemistry, Western Maryland College, Westminster, MD 21157** by 13 February 1989. *Western Maryland College is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR PLANT SYSTEMATICS AND CYTOLOGY

The Department of Botany-Microbiology, Ohio Wesleyan University, invites applications for a tenure-track position beginning August 1989. Teaching responsibilities include general botany, plant systematics, and cytology. Prefer person interested in developing an alternate-year course in horticulture. Candidates must have a strong commitment to teaching. Applications should include curriculum vitae, statement of research interests, and three letters of recommendation sent to: **Dr. J. E. Sanger, Department of Botany-Microbiology, Ohio Wesleyan University, Delaware, OH 43015.** Ohio Wesleyan is an Affirmative Action/Equal Opportunity Institution, encouraging applications from women and minorities.

TWO ASSISTANT PROFESSORSHIPS—The Department of Veterinary Microbiology, College of Veterinary Medicine, University of Missouri-Columbia, Mo. is seeking applicants for two full-time, tenure-track assistant professorships. The Department's plans include implementation of the latest technology in solving current disease problems of veterinary, zoonotic and comparative medical importance. Existing faculty expertise will be complemented by that of successful applicants in addressing host/agent/environment interaction in an interdisciplinary approach. Successful candidates will be encouraged to collaborate with faculty engaged in molecular/cell biology in medicine, agriculture and biological sciences.

Position 1—Available immediately. We are seeking a Ph.D. veterinary immunologist responsible for teaching immunology in the professional curriculum. D.V.M. and certification by the American College of Veterinary Microbiologists are desirable. The position will involve contributions to graduate courses, development of a competitive research program and supervision of graduate students. Veterinary research experience in an area compatible with the departmental thrust and competitive for external funding is highly desirable. Applications will be accepted until 15 February 1989 or until a suitable candidate is identified. Salary dependent on qualifications.

Position 2—We are seeking a Ph.D. or D.V.M., Ph.D. microbiologist or parasitologist with special interest and experience in an area of molecular or cellular immunology. This person shall participate in teaching in the professional curriculum and cooperate in the interdisciplinary approach to disease control via immunologic study. The individual will be expected to establish a competitive research program and supervise graduate students. Position will be activated on 1 July 1989. Applications will be accepted until 15 March 1989, or until a suitable candidate is identified. Salary will be based on qualifications.

Send curriculum vitae, names, and addresses of three references and letter stating professional goals to:

**C. A. Carson, Chairman
Department of Veterinary Microbiology
104 Conaway Hall
University of Missouri-Columbia
Columbia, MO 65211**

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

POSITIONS OPEN

ASSISTANT PROFESSOR, MICROBIAL GENETICS. Academic year, tenure-track position available fall 1989. Teach microbial genetics, molecular biology, participate in an introductory course, direct undergraduate and masters-level research. Ph.D., strong commitment to teaching required. Competitive salary. Send curriculum vitae, graduate and undergraduate transcripts, three recommendation letters, all postmarked by 15 February 1989, to: **James Parry, Chair, Department of Biology and Microbiology, University of Wisconsin-La Crosse, La Crosse, WI 54601.** An Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR— MOLECULAR IMMUNOLOGIST

Faculty position in the Department of Microbiology/Immunology for an investigator with experience in the molecular mechanisms of B and T cell activation; in particular, the role of interleukins in leukocyte activation and differentiation. Opportunities to collaborate closely with other groups involved in the cellular and molecular aspects of lymphocyte biology. Send curriculum vitae, a summary of research interests and two letters of recommendation to: **Dr. Daniel H. Conrad, Chairman Search Committee, Department of Microbiology/Immunology, Box 678, MCV Station, Richmond, VA 23298.** The deadline for receipt of application is 1 March 1989. MCV is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

ASSISTANT/ASSOCIATE PROFESSOR IN PLANT CELLULAR/MOLECULAR BIOLOGY AND BREEDING.

This is a tenure-track position with responsibility for a research/teaching program in genetics and breeding of turfgrasses. The turfgrass industry in Virginia is rapidly expanding. There is great potential for enhancing turfgrass germplasm, particularly in resistance to non-specific herbicides and to disease, and in cold and heat tolerance. Appropriate research activities would include gene identification and characterization, genetic transformation, regeneration or other relevant molecular/cellular techniques.

The appointee will have the opportunity to participate in an interdisciplinary team with good opportunities for working closely with colleagues in genetics, breeding, biotechnology, pathology, and entomology.

Applicants should have a Ph.D. and preferably post-doctoral experience in aspects of cellular/molecular biology, genetics or breeding. Experience in working with monocotyledonous species would be advantageous, and knowledge of turfgrasses is desirable. Salary will be commensurate with training and experience.

The position will be available 1 July 1989, with the possibility of filling it earlier in exceptional circumstances. Applications will be accepted until 8 February 1989 or until a qualified candidate is selected. Applicants should send a letter of application, a résumé, transcripts, and the names and addresses of three references to: **Dr. R. Q. Cannell, Professor and Head, Department of Agronomy, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061.** Telephone: 703-961-6305.

VPI&SU is an Equal Opportunity/Affirmative Action Employer.

ASSOCIATE AND ASSISTANT PROFESSORS OF CELL BIOLOGY

The Department of Cell Biology, Stanford University School of Medicine, invites applications for the positions of associate and assistant professor. Candidates should have significant accomplishments in one or more of the following areas: X-ray crystallography, electron microscopy, and image processing, and the structure of cells and viruses.

Applicants should send curriculum vitae, description of research interests, and names and addresses of three referees to:

Dr. Roger D. Kornberg
Department of Cell Biology
Stanford University School of Medicine
Fairchild Science Building
Stanford, CA 94305

Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.

POSITIONS OPEN

ASSISTANT PROFESSOR MOLECULAR NEUROBIOLOGY UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE

A tenure-track assistant professor position is available in the Department of Neuroscience starting on or before 1 July 1989. The University has a large and growing state-funded Interdisciplinary Center for Biotechnology Research and, together with the Department of Neuroscience, has a strong commitment to expand molecular biology research. The successful candidate will be expected to establish an independent research program and participate in graduate/medical teaching. Send a summary of research interests, curriculum vitae and three letters of recommendation to: **Dr. Gerry Shaw, Department of Neuroscience, University of Florida College of Medicine, Gainesville, FL 32610-0244,** before 1 March 1989.

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

ASSISTANT PROFESSOR (RESEARCH SCHOLAR) FACULTY OF MEDICINE, DEPARTMENT OF PHYSIOLOGY UNIVERSITY OF ALBERTA \$32,564 to \$46,700

Applications are invited for the position of assistant professor (research scholar) in the area of renal physiology. Qualifications include a Ph.D. or M.D. degree and a demonstrated outstanding ability for independent research. The successful candidate will participate in the department's teaching program (both graduate and undergraduate) and other academic activities. The position will depend upon funding through an external agency such as The Alberta Heritage Foundation for Medical Research, and the effective date of employment is dependent upon the success of the application.

In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

Interested applicants should submit their curriculum vitae, an outline of proposed research, and the names of three referees by 31 January 1989, to:

Dr. P. K. T. Pang
Professor and Chairman
Department of Physiology
University of Alberta
Edmonton, Alberta
T6G 2H7

The University of Alberta is committed to the principle of equity in employment.

ASSISTANT/ASSOCIATE PROFESSOR: The Department of Biochemistry and Molecular Biology at the University of South Florida, College of Medicine, invites applications for a tenure-track position in the general area of molecular biology. The position carries a competitive salary and start-up funds. Review of applications will begin 15 March 1989 and will continue until the position is filled. Please send curriculum vitae, a statement of research interests, and names of three references to: **Duane C. Eichler, Ph.D., Chairman, Search Committee, Department of Biochemistry and Molecular Biology, College of Medicine, University of South Florida, Tampa, FL 33612.** The University of South Florida is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSICAL SCIENCES EDUCATION. Teach courses in one of the departments of the Physical Sciences area, engage in scholarly activities, and assist with development and implementation of a program in Physical Sciences Education. Appointment at rank appropriate to qualifications (\$27,588 to \$48,204). Applicant must have Ph.D. degree in one of classical physical sciences areas, broad background in the physical sciences and demonstrated emphasis in science education as a primary interest. Applicants are to submit letter of application and curriculum vitae to: **Dr. James D. Crum, Dean, School of Natural Sciences, California State University, San Bernardino, CA 92407.** Applications will be accepted until position filled: will not close prior to 1 February 1989. An Equal Opportunity, Affirmative Action Section 504, Title IX Employer.

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR—MOLECULAR BIOLOGISTS: Two tenure-track faculty positions are available in the Department of Microbiology and Immunology for **MOLECULAR BIOLOGISTS** and **MOLECULAR IMMUNOLOGISTS** with two or more years of postdoctoral experience in recombinant DNA technology. Candidates should have interests in gene structure/function and expression in mammalian cells, and have demonstrated skills in constructing cDNA and genomic DNA libraries, molecular cloning, DNA sequencing, preparing prokaryotic and eukaryotic expression vectors, restriction enzyme mapping and oncogenes. Preference will be given to individuals interested in the molecular biology of cancer and microbial pathogenesis, but all qualified candidates will be considered. Major responsibilities will be to develop an independent research program and to collaborate on research projects with other faculty members. The department is undergoing a major growth phase, with a focus on cancer research, offering the successful candidates excellent incentives, including competitive salaries, research space and state-of-the-art equipment. Please send curriculum vitae, three letters of reference, and a description of your research interests to: **George L. Wright, Jr., Ph.D., Professor and Chairman, Department of Microbiology and Immunology, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.** An Affirmative Action/Equal Opportunity Employer.

POSITION: ASSISTANT/ASSOCIATE PROFESSOR OF BIOLOGY—TENURE-TRACK (For fall 1989): Doctoral level applicant with strong background in human/animal anatomy and physiology and disease processes to teach courses in human anatomy, histology, and pathobiology. Strong commitment to teaching required; experience preferred. We seek a broadly-trained investigator who is capable of establishing an independent research program in an emerging field of Biology and directing masters and undergraduate students. Mankato State University (enrollment: 15,500; 80 miles south of Minneapolis/St. Paul) with its modern facilities provides an excellent opportunity for professional growth. All applicants must be able to legally accept employment in the United States and have demonstrated ability to communicate effectively with students and colleagues. Submit application including statement of teaching and research interests, curriculum vitae, official undergraduate/graduate transcripts, and three references to: **Dr. William McEnery, Chair, Department of Biological Sciences, Box 34, Mankato State University, Mankato, MN 56002.** Application deadline of 15 February 1989 or until filled. Mankato State University is an Equal Opportunity/Affirmative Action Educator and Employer.

Harvard Medical School and Children's Hospital, Boston, Massachusetts—**ASSISTANT OR ASSOCIATE PROFESSOR,** orthopaedic surgery (biochemistry): Biochemist with experience in purification and characterization of proteins and some acquaintance with or willingness to learn in collaboration with members of the laboratory, cell and molecular biology. Major emphasis is on connective and skeletal tissue noncollagenous proteins. Write or send résumé to:

Dr. Melvin J. Glimcher, M.D.
Children's Hospital
Enders Building 11th Floor
320 Longwood Avenue
Boston, MA 02115

ASSOCIATE OR FULL PROFESSOR MOLECULAR BIOLOGY

A tenured position is available in the Rosenstiel Basic Medical Sciences Research Center as a joint appointment with the Graduate Department of Biochemistry. We seek candidates who are investigating basic mechanisms in molecular biology, in fields ranging from replication to gene expression. Curriculum vitae should be sent to:

Dr. David DeRosier
Rosenstiel Basic Medical Sciences Research Center
Brandeis University
P.O. Box 9110
Waltham, MA 02254-9110

The deadline for applications is 1 March 1989.

Brandeis University is an Equal Opportunity/Affirmative Action Employer.



The newly created Department of Ecology invites applications for a

POSITION IN ECOLOGY,

behavioral ecology, physiological ecology, population genetics or evolutionary biology. Our research projects aim at combining theoretical and empirical as well as ultimate and proximate approaches to the study of adaptation. The animals under study are mainly amphibians and birds, but other vertebrate taxa are not excluded.

Applicants must possess a Ph.D., some postdoctoral experience is also desirable. The successful candidate is expected to participate in ongoing research and teaching programmes and to develop his/her own programme. The position is available from January 20th 1989 for a period of three years. If you are interested, please, send me your application with curriculum vitae, list of publications, summary of research goals and letter(s) of reference.

Prof. Dr. Heinz-Ulrich Reyher
Zoologisches Institut
der Universität Zürich
Winterthurerstrasse 190
CH-8057 Zürich
Schweiz

POSTDOCTORAL RESEARCH ASSOCIATE HST OBSERVATIONS AND DATA ANALYSIS

The Laboratory for Atmospheric and Space Physics of the University of Colorado invites applications for the position of Research Associate. We anticipate an opening beginning in the fall of 1989 for participation in observations and data analysis for the Hubble Space Telescope (HST). The undersigned is the Principal Investigator for the Goddard High Resolution Spectrograph (GHRS) and the activities deal with the ultraviolet spectroscopy of comets and GHRS Team Projects covering a wide range of astrophysics.

LASP facilities include the data analysis and operations control center for the Solar Mesosphere Explorer mission; a development node of the Planetary Data System; a complete space instrument design, fabrication, test and calibration facility; and modern computer facilities. In addition, there is an ongoing sounding rocket program, and payloads for shuttle-launched missions are being developed. The Laboratory is an Institute of the University's Graduate School and has close ties with the Departments of Astrophysical, Planetary and Atmospheric Sciences and of Aerospace Engineering Sciences.

A doctorate in an appropriate discipline is required; salary will be in accord with experience. Send letters of application with an up-to-date resume and the names of two references to:

Dr. John C. Brandt, PI-GHRS
LASP/University of Colorado
Campus Box 392
Boulder, CO 80309-0392

Applications will be accepted until February 1, 1989. The University of Colorado has a strong institutional commitment to the principle of diversity in all areas. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities and disabled individuals.

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Pulmonary Research Technician

Pfizer Central Research has an immediate opening for a laboratory assistant in the Pulmonary Group within the Department of Immunology and Infectious Diseases. You will participate in a project designed to evaluate the efficacy of novel compounds in the treatment of pulmonary diseases.

You must have at least a BS in Physiology or Biology and experience with pulmonary pharmacology. Ideally, this experience should include the development of aerosol drug delivery systems and the measurement of the mechanics of respiration.

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



POSITIONS OPEN

The Department of Kinesiology, UCLA, is seeking a full-time **ASSOCIATE (tenured) OR ASSISTANT PROFESSOR (tenure-track)** in the area of Motor Behavior or Motor Control, starting July, 1989 or 1990. The candidate's teaching and research focus must include the behavioral level of analysis. The applicant may specialize in aspects of motor functioning such as: coordination and control of movement, visual determinants of action, movement learning and practice, attention and performance, response preparation, sensory contributions to movement, or other aspects that are related to the understanding of complex movement behavior. Candidates should hold a Ph.D. in kinesiology or in one of a number of related fields such as experimental psychology, cognitive science, neuroscience, or biomedical engineering. Postdoctoral research is highly desirable. Send curriculum vitae, publications, and the names and addresses of three individuals who could provide recommendations to: **Dr. V. R. Edgerton, Chair, Department of Kinesiology, UCLA, Los Angeles, CA 90024-1568.** The closing date for receipt of applications is 28 February 1989. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

The University of Minnesota, Duluth, invites applications for **ASSOCIATE VICE CHANCELLOR FOR ACADEMIC ADMINISTRATION** position commencing 1 July 1989. Qualifications: terminal degree in academic discipline, 3 years of academic administration experience at department head level, and qualify for indefinite tenure and the minimum rank of associate professor. Write: **T. Anderson, Chairperson, Search Committee, 420 Darland Administration Building, University of Minnesota, Duluth, MN 55812-2496.** *Equal Opportunity Educator and Employer. Applications from women and minorities encouraged.*

Metropolitan State College is located in downtown Denver, Colorado, and announces the following full-time probationary faculty position beginning August 1989. Deadline: 1 March 1989.

BIOLOGY, ASSISTANT OR ASSOCIATE PROFESSOR RANK

Qualifications: Earned doctorate with an emphasis in human anatomy and strong supporting coursework in human physiology, or vice versa. Interest in a teaching career required, teaching experience at the college level highly desirable. Applicants must submit in advance: letter of application; curriculum vitae; copies of transcripts from all colleges attended (official transcripts will be required of finalists); three letters of reference from individuals able to state the applicant's expertise as a college science teacher; brief statement on how applicant sees his/her role in undergraduate science education. Please contact: **Dr. George C. Becker, Chair, Department of Biology, Box 53, Metropolitan State College, 1006 11th Street, Denver, CO 80204.**

Metropolitan State College is an Equal Opportunity Employer. Applications from minorities and women are particularly invited. Metropolitan State College does not discriminate on the basis of race, color, creed, national origin, sex, age, or handicap in admissions or access to, or treatment or employment in, its educational programs or activities. Inquiries concerning Title VI and Title IX may be referred to: Dr. Percy Morehouse, Jr., Director of Equal Opportunity/Assistant to the President, 1006 11th Street, Box 63, Denver, CO 80204; telephone: 303-556-2999. Inquiries concerning Section 504 may be referred to: AHEC, P.O. Box 4615-P, Denver, CO 80204. Or, inquiries may be referred to the Office for Civil Rights, U.S. Department of Education, 1961 Stout Street, Denver, CO 80294.

BIOLOGY FACULTY POSITIONS. The Department of Biology, Middle Tennessee State University invites applications for two tenure-track teaching positions (Assistant Professor, Ph.D.) available August 1989. The successful applicants must have strong backgrounds in the subject areas. (i) **Anatomy**—Teach lecture and laboratory courses in comparative anatomy, embryology, histology, and general biology. (ii) **Plant Physiology**—Develop a program in plant physiology and participate in general biology sequence. Some research and public service is expected of the successful applicants. Deadline for application is 15 February 1989. Send application, complete transcripts and three letters of recommendation to: **Faculty Search Committee, Box 60, Middle Tennessee State University, Murfreesboro, TN 37132.** *Middle Tennessee State University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

THE HUMANE SOCIETY OF THE UNITED STATES

ASSOCIATE DIRECTOR position available immediately in the Laboratory Animals Department, which advocates increased protection for animals used in research, testing, and education, and improved efforts at reducing such uses through scientific innovation. Ph.D., D.V.M., or other advanced degree in biomedical sciences required. Send résumé and names and addresses of three references as soon as possible, but no later than 10 February 1989, to: **Dr. Martin Stephens, The Humane Society of the United States, 2100 L Street, NW, Washington, DC 20037.**

OBERLIN COLLEGE BEHAVIORAL NEUROSCIENTIST

The Neuroscience Program at Oberlin College invites applications for a full-time, tenure-track position in behavioral neuroscience. The position will carry the rank of assistant professor or higher. Candidates with research interests in fields such as learning, behavioral development, behavioral endocrinology, cognitive neuroscience, ethology, and behavioral pharmacology are especially encouraged to apply. The incumbent will teach (i) an introductory course in behavioral neuroscience with laboratory; (ii) a course in animal behavior with laboratory; (iii) and an upper level neuroscience course consistent with the candidate's training and interests. He or she will also be expected to assume a full range of faculty responsibilities. Among the qualifications required are a Ph.D. in neuroscience, or a closely related field, an interest in undergraduate teaching, and potential excellence as a scholar. Prior teaching and postdoctoral experience are desirable.

To be assured of consideration, letters of application, including curriculum vitae, academic transcripts, reprints, and at least three letters of recommendation should be sent to: **Dennison Smith, Director, Neuroscience Program, Oberlin College, Oberlin, OH 44074** by 15 February 1989. *Affirmative Action/Equal Opportunity Employer.*

BIOCHEMISTRY FACULTY POSITION Tenure-track position at assistant professor level to teach a two-term biochemistry sequence and other related courses. Development of a research program involving undergraduates will be expected and encouraged. The program is ACS certified. Send résumé, transcripts of academic work, three letters of reference and a description of research interests by 1 February 1989 to: **Dr. James Phifer, V.P. for Academic Affairs, Coe College, Cedar Rapids, IA 52402.** *Affirmative Action/Equal Opportunity Institution.*

The Biology Department of City College of New York plans to hire one or two **BIOLOGISTS** on tenure-track lines for 1 September 1989. Candidates are expected to utilize molecular approaches in their research. Areas of preference are gene structure and function and evolutionary biology. Candidates will join a NIH-supported Research Center housed in the Science Division of the College and will also participate in teaching undergraduate and graduate courses in biology. At least 2 years of postdoctoral experience are required and candidates are expected to develop a vigorous research program. Rank and salary are open to negotiation. Please send curriculum vitae and a list of three references by 15 February 1989 to: **Dr. Linda H. Mantel, Chairman, Department of Biology, City College of CUNY, Convent Avenue at 138th Street, New York, NY 10031.** *An Affirmative Action/Equal Opportunity Employer M/F.*

BIOLOGY—West Chester University's Department of Biology invites applications for a **TENURE-TRACK POSITION** in environmental/applied microbiology. Teaching responsibilities include general microbiology, microbial ecology and introductory biology. Applicants should demonstrate the potential to develop a strong research program involving undergraduate and graduate (M.A.) students. Individuals using molecular approaches in addressing problems in microbial ecology are particularly encouraged to apply. A Ph.D. is required with some college teaching experience preferred. Send curriculum vitae, undergraduate and graduate transcripts, and three letters of recommendation postmarked by 15 March 1989 to: **Dr. G. Winfield Fairchild, Biology Department, West Chester University, West Chester, PA 19383.** *Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

BIOCHEMIST/CLINICAL CHEMIST

The Regional Bone Center at Helen Hayes Hospital, a New York State Department of Health facility, has an immediate opening for a senior research scientist with a strong background in the measurement of circulating hormones and factors by radioimmunoassay, competitive protein binding techniques, and high-pressure liquid chromatography. The successful candidate will join a team of investigators engaged in both clinical and basic studies on the pathogenesis and treatment of osteoporosis, funded by an NIH Specialized Center of Research grant (P.I.: **Dr. Robert Lindsay**), administered by Health Research, Inc. Experience in the measurement of parathyroid hormone, vitamin D and its metabolites, and bone Gla protein would be considered advantageous, but not essential. Independent research funding desirable. Salary range: \$44,480 to \$54,350, depending upon experience, with excellent fringe benefits. The position is available for 3 years in the first instance with the possibility of transferring to a permanent position during this period if performance is satisfactory. Helen Hayes Hospital is situated in a rural setting 25 miles north of New York City.

Informal enquiries to: **Dr. David Dempster, Director, Regional Bone Center, Helen Hayes Hospital, Route 9W, West Haverstraw, NY 10993.** Telephone: 914-947-3000, Extension 3494. Formal applications, including curriculum vitae and the names of three referees, to: **The Human Resources Director** at the same address.

Health Research, Inc. is an Equal Opportunity/Affirmative Action Employer.

BIOLOGICAL CHEMISTRY. A tenure-track position at the level of **ASSISTANT PROFESSOR** is available in the Department of Biological Sciences at Florida International University. The State University of Florida at Miami. The successful candidate will: (i) have postdoctoral experience demonstrating a strong commitment to research; (ii) be expected to direct M.S./Ph.D. students; and (iii) to teach biochemistry at the graduate/undergraduate levels. Applicants whose research enhances one or more areas of departmental strength (marine, molecular or tropical biology; ecology; microbiology) are particularly encouraged to apply, although promising individuals in all areas of biochemistry will be considered. Applicants should submit curriculum vitae, statement of research interests and three letters of reference postmarked by 2 February 1989 to: **Search Committee Chairman, Department of Biological Sciences, Florida International University, University Park, Miami, FL 33199.** *The State University System of Florida is an Affirmative Action/Equal Opportunity Employer.*

BIOMEDICAL RESEARCH ASSISTANT positions immediately available in Rockville, Maryland, firm specializing in retrovirology and herpes virology. Our expanding research, research-service, product development and production activities enable us to offer these challenging, dynamic opportunities in molecular biology, protein chemistry, immunology, serology and antiviral drug testing. PDSA also offers excellent salary and benefits. Call: 301-294-2297, or write to: **Pan-Data Systems, Inc., 13 Taft Court, Rockville, MD 20850.**

TWO POSITIONS: BIOMETRICIAN AND ENVIRONMENTAL SYSTEMS MODELER. The SUNY College of Environmental Science and Forestry (CESF) seeks two academic-year, tenure-track, assistant professors to begin 1 September 1989. **Biometrician:** Ph.D. in statistics or biometrics; expertise in experimental design and data analysis in the biological sciences. Duties: teaching AOV, experimental design, and multivariate analysis; conducting research in quantification of natural and managed ecosystems. **Environmental systems modeler:** Ph.D. in statistics, science, or engineering. Duties: teaching systems simulation, modeling, and risk assessment; conducting research in environmental risk assessment and environmental systems modeling and management. **Both:** provide quantitative assistance to graduate students and faculty; share teaching responsibilities in introductory statistics and quantitative analysis. Send letter of application, curriculum vitae, statement of research interests, transcripts, and three letters of reference by 31 January 1989 to: **Drs. C. A. Maynard: 315-470-6560 (Biometrician), or R. C. Smardon: 315-470-6576 (Environmental System Modeler), Search Committee, SUNY CESF, Syracuse, NY 13210.** *Equal Opportunity Employer/Affirmative Action.*

OUR PAST. OUR PRESENT. YOUR FUTURE.

In the world of biotechnology, we have a history. A history with a proven track record of growth and stability. Today, we are a world leader in the production of chemicals, instruments, and systems for industrial research, the life sciences and clinical diagnostics.

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Bio-Rad has a special need for scientists at all levels whose education and industrial experience include biology, biochemistry, chemistry, molecular biology, microbiology or virology. If you have experience in commercial immunoassay development, or the development of diagnostic systems for infectious diseases, consider our opportunities.

The pace here is stimulating, often going from concept to market application in a very short time. Which helps explain why we have been able to maintain a 25% annual sales growth.

If being a part of our team sounds interesting to you, apply today by sending your resume to: Bio-Rad Laboratories, Inc., Human Resources, Dept. SM0106, 1000 Alfred Nobel Drive, Hercules, CA 94547. An equal opportunity employer.

BIO-RAD Bio-Rad Laboratories

Dean, School of Ocean and Earth Science and Technology University of Hawaii at Manoa

The University of Hawaii at Manoa, a land- and sea-grant institution with an enrollment of 18,000 students, is seeking a distinguished scholar-administrator to lead its newly-formed SCHOOL OF OCEAN AND EARTH SCIENCE AND TECHNOLOGY. The University is committed to establishing the new School as the international leader in ocean and earth sciences. The School includes the personnel of the Departments of Geology and Geophysics, Meteorology, Oceanography, and Ocean Engineering; of the Hawaii Institute of Geophysics, the Hawaii Institute of Marine Biology, and the Hawaii Natural Energy Institute; and the Sea Grant College Program, the Hawaii Undersea Research Laboratory, and the Joint Institute for Marine and Atmospheric Research. These units are staffed by a total of 247 faculty members and research personnel.

The University presently operates two research vessels, two submersibles, and various complementary facilities and laboratories. The University is beginning construction of a new building to house the School and will provide substantial support for additional positions, equipment, and other facilities necessary to achieve its goal.

Applicants must have: a Ph.D. or equivalent degree in a relevant field; a distinguished, internationally established reputation in research so as to qualify for appointment at full professorial rank within one of the departments of the School; a commitment to the importance of teaching in the School; experience in obtaining programmatic support; and experience in the international science arena. The Dean will serve as the spokesperson for the School within the University and to the public at both the state and federal levels.

Specifically, applicants should have from 3-5 years of experience in academic administration in higher education, including responsibility for a major budgetary program of research and/or instruction in ocean or earth science, or some equivalent combination; knowledge of academic administration, budgetary principles and practices, philosophy of higher education and scientific research, student services policies and programs, and management principles and practices. Further, they should be able to exercise academic leadership at the university, national, and international levels; establish and maintain effective and harmonious relationships with students, faculty, administrators, support staff, and representatives of public groups and officials of national and international organizations; organize, direct, and coordinate an extensive, complex organization; and develop and implement policies and procedures.

Salary will be highly competitive and commensurate with experience. The position should be filled by August 15, 1989, or as soon thereafter as possible. Applicants should submit a letter of application, a resume, and the names of at least four references (with addresses and telephone numbers) no later than February 24, 1989. Nominations must be received by January 20, 1989.

Applications, nominations, and requests for additional information should be sent to:

Dr. David W. Greenfield
Dean, Graduate Division
University of Hawaii at Manoa
2540 Maile Way, Spalding 360
Honolulu, Hawaii 96822

The University of Hawaii at Manoa is an Affirmative Action, Equal Employment Opportunity employer. Women and minority candidates are encouraged to apply.

Immunology Opportunities

BOEHRINGER INGELHEIM PHARMACEUTICALS, Inc., a major researcher, developer, manufacturer and marketer of prescription and over-the-counter drugs, currently has openings in the Immunology group at our Research and Development Facility in DANBURY, CONNECTICUT.

Currently we have the following positions available:

Senior Immunologist: Qualifications include a Ph.D. with 1 to 3+ years research laboratory experience in Cellular Immunology. Experience in bone marrow transplantation and tumor immunology (including metastases). Knowledge of cell homing patterns and lymphocyte trafficking along with a working knowledge of cytotoxic lymphocytes and their interaction with target cells. Successful candidate will develop experimental models in transplantation, (transplantable and spontaneous tumors and metastases) as well as develop systems to study the interaction of the host immune response to foreign tissue and neoplasia. RESPOND TO DEPT. PTG-1S-866.

Immunologist: Qualifications include a BS Degree with 3 to 7+ years of laboratory research experience or an MS Degree with 1 to 3+ years research laboratory research experience in Immunology or related disciplines. Experience in cellular immunology, tissue culture and experimental models in immunology; knowledge of lymphocyte cell-cell interaction, as well as working knowledge of transplant models and tumor immunology. Successful candidate will assist in design, execution and interpretation of experiments for studies of organ, tissue and bone marrow transplantation. RESPOND TO DEPT. PTG-1S-901.

Our state-of-the-art environment is combined with a highly competitive compensation and benefits package, relocation assistance, and excellent work environment and the opportunity to have your contributions recognized.

Please send your resume and salary requirements indicating stated dept code to: BOEHRINGER INGELHEIM PHARMACEUTICALS, Inc., 90 East Ridge, P.O. Box 368, Ridgefield, CT 06877. We are an equal opportunity employer m/f/h/v.



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Ingelheim**

POSITIONS OPEN

TWO BIOLOGY TENURE-TRACK POSITIONS

1) **DEPARTMENT CHAIR: PROFESSOR.** September 1989. Ph.D. in a biological science. Research record and exemplary undergraduate teaching. Half-time administrative duties for directing ten-member department; lead in development/implementation of a masters program. Application letter, curriculum vitae, three reference letters, and narrative to include administrative philosophy and role of biology B.S. and M.S. programs in a liberal arts university.

2) **MICROBIOLOGY: ASSISTANT PROFESSOR.** September 1989. Ph.D. Potential to conduct reviewable research. Teaching experience desirable. Some expertise in genetics/invertebrate zoology desirable. Half of teaching assignment in microbiology for nursing and medical technology majors. Application letter, curriculum vitae, transcripts, three reference letters, and narrative on approach to develop student skills in problem solving, data analysis, and writing.

Deadline: 31 January 1989. Inquiries to: **Dr. Edwin H. Sasaki, Acting Chair, Department of Biology, California State University, Bakersfield, 9001 Stockdale Highway, Bakersfield, CA 93311-1099.** An Equal Opportunity/Affirmative Action Employer.

BOTANICAL SYSTEMATIST L. H. BAILEY HORTORIUM CORNELL UNIVERSITY

The Liberty Hyde Bailey Hortorium is seeking a vascular plant systematist to serve as Chair of the unit. Rank and tenure are dependent on qualifications. Duties will include a vigorous research program and participation in the Hortorium teaching program. Qualifications are a Ph.D. with expertise in modern systematic theory and methods. Salary commensurate with experience. Position available January 1990.

Applicants should submit curriculum vitae, statement of research interests, and the names, addresses and telephone numbers of three references to: **Kevin C. Nixon, Chair of Search Committee, L. H. Bailey Hortorium, 462 Mann Library Building, Cornell University, Ithaca, NY 14853.**

Application deadline is 1 March 1989. The Bailey Hortorium is a unit within the Division of Biological Sciences and New York State College of Agriculture and Life Sciences. *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

CELL BIOLOGIST, ASSISTANT PROFESSOR. Tenure-track position. To start September 1989. Ph.D. and expertise in plant tissue culture and genetic engineering required. Salary negotiable (probable range: \$23,000 to \$32,000). Duties include teaching undergraduate courses in cell biology and general biology and a graduate course in area of expertise and advising undergraduate and graduate students. Research is encouraged. Send curriculum vitae, official undergraduate and graduate transcripts, three letters of recommendation, and a brief statement of professional goals to: **W. Mechling, Hiring Committee, Biology Department, Towson State University, Baltimore, MD 21204.** Deadline for completed application, 1 February 1989. An Equal Opportunity/Affirmative Action Employer.

CELLULAR AND MOLECULAR BIOLOGY

The Department of Physiology and Cellular Biophysics invites applications for two new tenure-track **FACULTY POSITIONS.** Appointments will be made at a rank commensurate with experience. Candidates must have M.D. and/or Ph.D. degree and proven abilities as laboratory investigators. The Department is especially interested in candidates who wish to address contemporary questions of membrane structure and function, especially as they pertain to the biology of leucocytes, endothelial cells and epithelial cells, and to the roles of cytokines in modulating these functions. Applicants should send a letter describing their research interests, curriculum vitae, and the names, addresses and telephone of at least three references to: **Samuel C. Silverstein, M.D., Chairman, Department of Physiology and Cellular Biophysics, Columbia University, College of Physicians and Surgeons, 630 West 168th Street, New York, NY 10032.** *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

CELL BIOLOGIST, BIOPHYSICIST, STRUCTURAL BIOLOGIST, MOLECULAR BIOLOGIST: The Pennsylvania Muscle Institute and the University of Pennsylvania School of Medicine seek outstanding candidates for two tenure-track positions in the area of fundamental cardiovascular or motility research. One position will be in the field of molecular genetics of contractile proteins. The other position is in the broad area of cell biology, biophysics and/or structural biology of muscle. These positions are primarily aimed at, but not restricted to, the assistant professor level. Appointment will be made in the department appropriate to academic interest. Applicants should send curriculum vitae and research statements and the names of three references to: **Yale E. Goldman, M.D., Ph.D., Director of Pennsylvania Muscle Institute, School of Medicine, University of Pennsylvania, Philadelphia, PA 19104-6085.** *Equal Opportunity/Affirmative Action Employer.*

CELL/MOLECULAR BIOLOGIST: Tenure-track, Bennington College, September 1989. Scientist with broad interests, commitment to liberal arts, creative approach to curriculum, to develop teaching program with cell and molecular biology, genetics, other advanced and intro courses. Ph.D. required, computer experience desirable. Two to three courses/term (about thirty students total), academic counseling, supervision of student research. Send letter, résumé, three letters of reference to: **Dr. Kerry Woods, Division Natural Science and Mathematics, Bennington College, Bennington, VT 05201** by 15 February 1989. *Equal Opportunity Employer.*

BODEGA MARINE LABORATORY UNIVERSITY OF CALIFORNIA, DAVIS CELLULAR/ORGANISMIC BIOLOGIST

The Bodega Marine Laboratory, a research unit of the University of California, Davis, invites applications for a tenure-track position as an assistant, associate, or full professor. Applicants must have a Ph.D. (or equivalent), significant postdoctoral research experience and have demonstrated excellence in research. Preference will be given to applicants trained in the modern techniques of cellular and molecular biology who have demonstrated an interest in applying that expertise to research problems in organismic biology. We particularly encourage applications from those whose research will take advantage of the varied and abundant species found along the Northern California coast where the Laboratory and its surrounding natural reserve are located. In addition to research and teaching, the appointee will serve as the Laboratory's coordinator for research and instruction in cellular and organismic biology, alongside counterparts from population biology and aquaculture and fisheries. The appointee will be expected to be in full-time residence at the Laboratory and will have an academic appointment in an appropriate department on the Davis campus. Applicants should provide a letter of research and teaching interests, curriculum vitae, two or three selected reprints, and the names and addresses of three references to: **Dr. James S. Clegg, Bodega Marine Laboratory, P.O. Box 247, Bodega Bay, CA 94923.** The Selection Committee will begin review of applications on 1 February 1989; the position will remain open until filled. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON—DEPARTMENT OF BIOCHEMISTRY—Temple University School of Medicine is seeking an individual with demonstrated administrative skills and an outstanding record of achievement in research and teaching to succeed the present chairman. The candidate should demonstrate a commitment to excellence in research, medical education, and graduate training. The department currently has excellent research and graduate programs, and effective collaborative arrangements with the Fels Institute for Cancer Research and Molecular Biology and the Thrombosis Center at Temple University. As one of the five medical schools in the Philadelphia area, there are excellent opportunities for collaborative programs with other institutions, the Fox Chase Cancer Center, and several major pharmaceutical companies in the Delaware Valley and surrounding area. Applications and nominations together with curriculum vitae may be sent to: **John J. O'Neill, Ph.D., Chair, Search Committee, Department of Pharmacology, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, PA 19140.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

The Department of Health Sciences at East Tennessee State University invites applications for tenure-track position of **CHAIR**, beginning 15 August 1989. The Chair will provide administrative leadership for a multifaceted service department which offers a B.S. and M.S. in microbiology, B.S. in medical technology and a minor in health sciences. Other responsibilities include teaching, grant writing, research, student advisement and service. Minimum qualifications include a Ph.D., Dr.P.H., or equivalent degree with educational background and experience in immunology/microbiology. Evidence of prior leadership and administration in health sciences and a significant record in research grant writing, and other scholarly activities are preferred. Review of applicants will begin 15 February 1989. Send letter of application, résumé, and names, addresses, and telephone numbers of three professional references to:

**Dr. Algeania W. Freeman, Dean
School of Public and Allied Health
Box 21, 190A
East Tennessee State University
Johnson City, TN 37614**

East Tennessee State University is an Equal Opportunity/Affirmative Action Employer and employs only U.S. citizens and aliens authorized to work in the United States.

CHAIRPERSON/PHYSIOLOGIST. Beaver College in Glenside, Pennsylvania (suburban Philadelphia), invites applications for a full-time, tenure-track position as chairperson of the biology department and physiologist. Responsibilities include chairing biology department of five full-time faculty, and teaching introductory biology and human and comparative physiology. Qualifications include experience as department chair or significant committee responsibilities. Ph.D. required. Active research program expected, preferably involving students. Rank and salary commensurate with experience and qualifications. Send curriculum vitae, names, addresses and telephone numbers of three references to: **Dr. Myra K. Jacobsen, Chair, Search Committee, Beaver College, Glenside, PA 19038** Closing date 10 February 1989. *Affirmative Action/Equal Opportunity Employer.*

The Latin America Science Program of The Nature Conservancy is seeking candidates for two positions: **CHIEF BOTANIST** and **CHIEF ZOOLOGIST.** These positions are responsible for maintaining and developing the Conservancy's botanical and zoological inventory programs for Latin America and the Caribbean. This includes technical and scientific support to a network of Conservation Data Centers throughout the region, and the continued development of computerized biodiversity databases. Applicants should have Master's or Ph.D. (preferred), relevant research or conservation experience in Latin America, and Spanish or Portuguese language skills. Please submit curriculum vitae and names of three references to: **Dr. Bruce A. Stein, Director, Latin America Science Program, The Nature Conservancy, 1815 North Lynn Street, Arlington, VA 22209**, by 31 January 1989. *The Nature Conservancy is an Equal Opportunity Employer.*

BIOPHYSICAL SOCIETY CONGRESSIONAL SCIENCE FELLOW

The Biophysical Society is sponsoring a Congressional Science Fellow for the 1989-1990 academic year. This program provides accomplished scientists the opportunity to integrate into the legislative staff of a Member of Congress, Senator or Congressional Committee. The Fellow will be able to experience firsthand how public policy is made, to contribute to public policy-making within Congress and to enhance interactions between government and the scientific community. Individual should actively participate in the Biophysical Society. The fellowship is open to individuals holding a doctorate degree in the biophysical sciences or related area, who can demonstrate exceptional scientific competence and who have strong leadership and communication skills. The Fellow will receive a stipend of \$30,000 for 1 year beginning 1 September 1989. This stipend may be complemented by additional sabbatical support from the home institution. The Biophysical Society Fellow will participate in the orientation and year-long seminar series organized by AAAS. To apply, please send a complete curriculum vitae, a letter specifying interest in the program and three letters of support to: **Biophysical Society, Congressional Science Fellowship Program, 9650 Rockville Pike, Bethesda, MD 20814.** Deadline for submission is 1 March 1989.

POSITION ANNOUNCEMENT
DIRECTOR
INSTITUTE ON GLOBAL CONFLICT
AND COOPERATION
UNIVERSITY OF CALIFORNIA

The University of California invites applications and nominations for the position of Director of the Institute on Global Conflict and Cooperation (IGCC), a University of California multicampus research unit funded by the Regents of the University of California, the State of California, and private foundations. The mission of the Institute is to enhance the capability of the University of California to contribute to international security and cooperation through research, education, and special projects. Through a variety of programs—research grants, graduate fellowships, summer seminars, lectureships, conferences, and publications—the Institute seeks to discover ways to prevent or reduce conflicts that may lead to escalation into large scale conventional or nuclear war and to promote forms of international cooperation which promise to solve problems threatening world peace.

Candidates must be qualified for appointment as a senior faculty member of the University of California and be prepared to assume the directorship at the San Diego campus of the University, the current location of the Institute. The director of the Institute reports to the President of the University of California. He or she provides leadership and visibility to the Institute, in addition to being responsible for its array of regular activities as a multicampus research unit of the University of California. These activities include soliciting research proposals, creating task forces, colloquia and study groups, conducting conferences and seminars, securing extramural research support, promoting educational and public service programs, and coordinating intercampus projects. The director will be assisted in these activities by a steering committee and staff. Teaching responsibilities and departmental affiliation are subject to negotiation.

Qualified women and minority candidates are urged to apply.

Please send nominations or applications, including cv's and the names of four references, to:

IGCC Search Committee
Professor Randolph Siverson, Chair
359 University Hall
Office of the President
University of California
Berkeley, CA 94720

Candidates who send their complete applications by February 17, 1989 will receive full consideration. The position will remain open until final decisions are made by the Search Committee.

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

An Uncommon Opportunity

PHARMACOLOGIST

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.

Primary responsibilities will be to conduct preclinical pharmacological research and to assist in the pre-clinical evaluation of various agents which includes specific enzyme inhibitors.

The successful candidate will have a Ph.D. in Pharmacology or Biochemistry and at least three years of experience in basic biochemistry and pharmacology. Experience with setting up animal models and drug testing *in vivo* and *in vitro* is required. Strong interpersonal and communication skills are essential.

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.

Marion Laboratories, Inc.

The Uncommon Company

SENIOR RESEARCH SCIENTIST

or

PRINCIPAL RESEARCH SCIENTIST

\$A38,203-\$A51,552

DRYLAND CROPS AND SOILS RESEARCH UNIT

Laboratory For Rural Research
Floreat Park
PERTH WA, AUSTRALIA

THE DIVISION: The Dryland Crops and Soils Research Unit was established by the Division of Plant Industry and the Division of Soils to undertake research necessary to improve agricultural production through the development of new and improved crop and pasture plants and the improved management of Australian soils. The Unit of seven plant and soil scientists plus support staff is based in the Laboratory For Rural Research, Perth, Western Australia.

THE PROGRAM: The aim of the program is to develop improved management systems for sustainable dryland crop production in the coarse textured and texture contrast (duplex) soils in the mediterranean climatic zones of Australia. The two major interests of the Unit are the optimization of water and nitrogen use efficiency in lupins and wheat. The Unit has new laboratories, glasshouse, and rainout shelter facilities at Floreat Park and established field research sites at three locations across the cereal growing regions of Western Australia.

THE JOB: To develop both soil and plant management strategies to improve the currently low and variable yields of cereals and grain legumes on duplex soil by focussing attention on the physical and chemical constraints which occur, particularly at the sand/clay interface. Specifically, to improve root penetration and water uptake in clay subsoils, by investigating the physico-chemical properties of the interface, and root reactions to these.

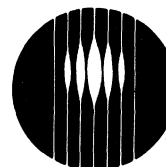
THE PERSON: Applicants should have a PhD in soil science, agricultural science, or have equivalent qualifications, with a record of considerable research achievement in these areas. Previous experience in clay surface density, plant nutrition and soil properties would be an advantage. Applicants should have a desire to work in the field as well as controlled laboratory environments and be prepared to work in a team with other scientists from the Unit, the University of Western Australia and the Western Australia Department of Agriculture.

CONDITIONS: Appointment will be for an indefinite period or a term of three years depending upon qualifications and circumstances. Australian Government superannuation benefits available.

MORE INFORMATION: Prospective applicants are invited to telephone Dr N.C. Turner 61 9 387 0622 for further information. A copy of the detailed duty statement and selection criteria are available from Mrs Pru Yendle at the address below or by phoning 61 9 387 0200.

APPLICATIONS: Applications should be submitted by 4 weeks after publication and quote reference number A0848, stating relevant personal particulars including details of qualifications and experience. Applicants should nominate at least two professional referees, and address their applications to:

**Officer-In-Charge
CSIRO
Dryland Crops and
Soils Research Unit
Laboratory For Rural Research
Private Bag, PO
WEMBLEY WA 6014
AUSTRALIA**



CSIRO
AUSTRALIA

CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

AB1-PL 88/083

POSITIONS OPEN

CNS NEUROGLIAL LINEAGES: CELL AND MOLECULAR BIOLOGY. RESEARCH ASSISTANT PROFESSOR position is available for research on the lineages of CNS macroglia. We are seeking an individual with experience in neural tissue culture in immunohistological and molecular biological techniques. Areas of present interest include growth factor effects on these lineages and the development of new immunological and molecular probes for analysis of lineage relationships. Send curriculum vitae, names of three references, and a statement of interests to: **Dr. David Pleasure, Department of Neurology, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104.** *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.*

CYTOGENETICIST, MASSACHUSETTS GENERAL HOSPITAL

We invite applications for a staff position in cytogenetics. Applicants should have a Ph.D. or M.D. degree, experience in cytogenetics (preferably with certification in clinical cytogenetics), a strong background in molecular biology, and research accomplishments. The person appointed will be Associate Director of the Cytogenetics Laboratory at the MGH and Assistant or Associate Professor of Pathology at Harvard Medical School. Send curriculum vitae and the names of three persons from whom recommendations can be solicited to: **Dr. Robert T. McCluskey, Department of Pathology, Massachusetts General Hospital, Boston, MA 02114.**

The Massachusetts General Hospital and Harvard School are Affirmative Action/Equal Opportunity Employers.

DEAN OF THE COLLEGE OF SCIENCES AND HUMANITIES IOWA STATE UNIVERSITY

The college is the largest of Iowa State's colleges, comprised of 24 academic departments which encompass the natural and mathematical sciences, the social sciences, the humanities, and the performing arts. Candidates for the position must be qualified to hold a tenured professorship in one of the college's disciplines; must have an understanding of a broad spectrum of academic research and a distinguished record of scholarly activity; must have a strong commitment to and vision of high-quality liberal arts and professional education; must have a demonstrated commitment to the principles of affirmative action; and must have experience in academic administration. The position is available 1 July 1989, or later. Persons interested in the position should submit a letter of application, curriculum vitae, and the names of five references to: **Dr. John R. Clem, Chair, S&H Dean Search Committee, c/o. Provost's Office, 110 Beardshear Hall, Iowa State University, Ames, IA 50011.** Applications and nominations will be accepted until 31 January 1989, or until the position is filled. *Women and minorities are especially encouraged to apply. Iowa State University is an Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT CHAIRPERSON

School of Health Related Professions, University of Pittsburgh. Applications and/or nominations are invited for the position of Department Chairperson to replace retiring Chairperson. A Ph.D. nutritionist or an M.D. with nutrition training and experience is required. Candidate should have academic and research experience, demonstrated ability to attract external funding and a commitment to the education of dietitians/nutritionists. A baccalaureate degree through both Coordinated and Plan IV programs and a Master of Science degree are offered. Planning for broadening the department's teaching mission and research activity is underway. Position responsibilities include department administration, development of research activity, and maintaining and expanding collaborative activities with the five other university schools of the health sciences and the university health center acute and ambulatory care facilities. Position is available 1 September 1989. Application deadline is 15 March 1989. Please send curriculum vitae and the names and addresses of those who will provide letters of reference to: **Toni Zucco, Search Secretary, 104 Pennsylvania Hall, School of Health Related Professions, University of Pittsburgh, Pittsburgh, PA 15261.** *Equal Opportunity Employer.*

POSITIONS OPEN

DEAN OF SCIENCE THE AMERICAN MUSEUM OF NATURAL HISTORY

The American Museum of Natural History invites applications and nominations for the position of Dean of Science. This is a vice presidential level position reporting to the President. The Dean will provide guidance and leadership to the curatorial staff; and will advise the President on all matters dealing with the direction of science at the Museum, including such areas as staffing, budget allocation, equipment needs, collection management, and the role of scientific departments in research, exhibition and education. The Dean will be the chief spokesperson for the importance of the Museum's scientific efforts both internally and externally.

The American Museum has been a leader in inquiry in natural history and this position, new to the institution, expresses the commitment to continue and strengthen that tradition. The position will be arranged so that the Dean may continue his or her research activities, including field work if appropriate.

The American Museum intends to appoint a distinguished scientist to this position, ideally to begin 1 July 1989, and preferably from the collections-based fields now found at the Museum or from a closely associated field. The person should be eligible for tenure in one of the Museum's scientific departments. Salary and benefits will be commensurate with the responsibilities for this position and competitive with leading colleges and universities.

Inquiries, applications with résumés, and nominations should be submitted by 15 February 1989 to:

**Search Committee for Dean of Science
c/o William J. Moynihan
Executive Assistant to the President
American Museum of Natural History
Central Park West at 79th Street
New York, NY 10024-5192**

The American Museum is an Equal Opportunity Employer.

DEVELOPMENTAL BIOLOGIST MCGILL UNIVERSITY

The Department of Biology invites applications for a tenure-track position at the assistant professor level, effective 1 September 1989. We seek a developmental biologist using cellular, molecular and/or genetic approaches. The successful candidate is expected to establish a strong research program and to participate in teaching developmental biology.

Send curriculum vitae, statement of research interests and goals, representative reprints, and three letters of reference to: **Dr. Barid Mukherjee, Chairman, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1.** Deadline: 15 February 1989.

DEVELOPMENTAL BIOLOGIST. ASSISTANT PROFESSOR. Nontenure track. Position renewable up to six years. To start September 1989. Contingent upon state funding. Ph.D. required. Salary negotiable (probable range: \$23,000 to \$32,000). Duties include teaching embryology, human anatomy and physiology, human biology, general biology and a graduate course in developmental biology, and advising undergraduate and graduate students. Research is encouraged. Send curriculum vitae, official undergraduate and graduate transcripts, three letters of recommendation, and a brief statement of professional goals to: **R. Smoes, Hiring Committee, Biology Department, Towson State University, Baltimore, MD 21204.** *An Equal Opportunity/Affirmative Action Employer.* Deadline for completed application 1 February 1989.

DIATOM TAXONOMIST—to identify and enumerate diatoms of the Great Lakes, regular, full-time position. Requires M.S. in biology (or higher), plus work experience in diatom taxonomy. Familiarity with *Cyclotella* and *Stephanodiscus* species very helpful. Will also participate in shipboard surveys on the Great Lakes with U.S. E.P.A. Great Lakes National Program Office. Send curriculum vitae plus three references to: **Dr. James Krantzfeld, The Bionetic Corporation, c/o U.S. E.P.A., 10th Floor, 536 South Clark Street, Chicago, IL 60605.** *Equal Opportunity Employer M/F/V.*

POSITIONS OPEN

The Division of Neurosurgery of the University of Pennsylvania Medical Center is seeking qualified candidates for the following positions:

Professor to be the **DIRECTOR OF NEUROSURGICAL RESEARCH.** Applicants should have a Ph.D. in biochemistry/biology, 2 to 4 years of postdoctoral training, plus a minimum of 10 years in faculty positions.

Applicants should have expertise in the areas of biochemical mechanisms of brain injury, chemistry of brain lipids, biochemistry of free radical reactions in brain, brain edema, brain ischemia, and cell culture.

ASSISTANT PROFESSOR—research-track: applicants should have a Ph.D. and expertise in data management and statistics, social and psychosocial outcome assessment, and qualitative and quantitative analysis of brain images. Significant experience in organizing, writing, and management of research grants and contracts required.

The successful applicant is expected to assist in the continued development and implementation of our extensive program of research in traumatic brain injury. He or she will plan and implement fiscal management, administer program budgets, and supervise support staff. Send curriculum vitae and references to:

**Eugene S. Flamm, M.D.
Chairman, Division of Neurosurgery
University of Pennsylvania, School of Medicine
3400 Spruce Street
Philadelphia, PA 19104**

Applications from women and minority candidates are encouraged.

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

DIRECTOR PLANT CELL CULTURE AND TRANSFORMATION FACILITY CORNELL PLANT SCIENCE CENTER

Facility Director (Senior Research Associate, Ph.D.) to administer a central resource facility which has the following missions: (i) training of scientists in techniques of plant tissue culture and gene introduction and (ii) provision of state-of-the-art equipment to produce transgenic plants. In addition to facility management, the director will carry out independent research in the area of experimental analysis and transfer of plant genes, and will play a key role in organizing and teaching periodic workshops and training courses in plant and microorganism transformation.

To apply, send curriculum vitae and three letters of reference to: **Plant Science Center, Biotechnology Program, 130 Biotechnology Building, Cornell University, Ithaca, NY 14853-2703.** *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

DOCTORAL RESEARCH ASSOCIATE

Position available immediately to study the immune responses of aged individuals. Candidates should be well versed with the techniques of cellular immunology and immunochemistry, and have experience in bacterial microbiology. Ph.D. and 2 years of relevant postdoctoral experience required. Salary: \$21,000. Send curriculum vitae and three references (names and addresses) to: **Ms. Tillie Moore, Cabinet for Human Resources, KY # 785595, Department for Employment Services, 300 South Upper Street, Lexington, KY 40508.**

ECOSYSTEM MODELER AND QUANTITATIVE LANDSCAPE ECOLOGIST.

San Diego State University Foundation has positions available in the Systems Ecology Research Group for investigating Arctic ecosystem dynamics and landscape patterns. Openings at the postdoctoral, assistant or associate research scientist levels depending on experience. Successful applicants to be part of a multi-university research team that is conducting field and laboratory experiments, synthesizing available data and developing models of ecosystem response to disturbance. Opportunities for travel to Alaska and collaborating universities. Previous experience with modeling, geographical information systems (GIS), remote sensing and/or landscape analysis is highly desirable. For additional information, contact: **Dr. James F. Reynolds at 619-594-2887.** Send letter of application, curriculum vitae, and three letters of reference by 1 February 1989 to: **San Diego State University, Third Floor—Administration Building, San Diego, CA 92182.**

Equal Employment Opportunity/Affirmative Action/Title IX Employer.



UNIVERSITY OF NEVADA, LAS VEGAS
4505 Maryland Parkway, Las Vegas 89154
A Young, Proud, and Growing University
VACANCY ANNOUNCEMENT

Position Title: Dean of the College of Science and Mathematics

Applications and nominations are invited for the position of Dean of the College of Science & Math at UNLV. The appointment will commence July 1, 1989. UNLV has an enrollment of approximately 15,000 students.

The College: The College of Science and Mathematics consists of five departments: Biological Sciences, Chemistry, Geoscience, Mathematical Sciences, and Physics. There are 60 full-time and 43 part-time faculty, 1342 undergraduate and 69 graduate students in programs housed in the College. All departments offer programs leading to the M.S. Degree. In addition, the Dept. of Biological Sciences offers a Ph.D. in Environmental Biology.

The Position: The Dean is the chief academic officer of the College and reports directly to the Senior Vice President and Provost. The Dean has responsibilities in matters of curriculum, budget, personnel selection, evaluation of current programs and development of new ones, and management of academic, fiscal, physical and human resources. The Dean shall further the goals of the College and campus and be committed to:

- Excellence in undergraduate education
- Continued growth and development of graduate programs
- Support for and expansion of faculty scholarship
- The promotion of academic policies consistent with long range planning capitalizing on present and emerging departmental strengths
- The expansion of research activities in concert with the mission of the College and the Departments
- The provision of facilities adequate to support expanding College programs
- The expansion of cooperative interactions with both local and other governmental and private organizations.

Qualifications: The candidate must be a creative, resourceful and experienced administrator able to provide academic leadership. He or she must be committed to excellence in both teaching and research. The candidate must have a record of scholarly achievement and experience in teaching consistent with appointment as a full professor with tenure in one of the College's departments.

Salary: The salary is highly competitive.

The Application: Interested persons are encouraged to write or call for more information about this position. Applications must be submitted by February 15, 1989 and nominations by January 20, 1989. The application should consist of:

1. A letter including a discussion of educational and administrative philosophy,
2. a curriculum vitae,
3. the names, addresses of five references.

Send applications and nominations to:

Dr. John C. Unrue, Sr. VP & Provost
University of Nevada, Las Vegas
Las Vegas, NV 89154
Telephone: (702) 739-3301

The University of Nevada, Las Vegas is an equal opportunity/affirmative action employer. UNLV employs only U.S. citizens and aliens authorized to work in the U.S.

RESEARCH ASSOCIATE PROTEIN BIOCHEMISTRY

Amgen, an innovative leader in applied biotechnology, has an immediate opportunity for a Research Associate to join an innovative group researching structural characteristics of peptides.

Responsibilities for this position include the characterization of physical and chemical properties of proteins as well as the evaluation of protein stability, solubility and the mechanisms of protein degradation.

Qualified applicants for this position must have a BS or MS in Biochemistry, Chemistry or a related field and research experience in protein purification and analysis including electrophoresis, column chromatography, HPLC, protein sequencing and amino acid analysis.

Amgen is a dynamic and growing organization providing an exciting and innovative research environment as well as an attractive location northwest of Los Angeles. Amgen also offers an excellent compensation and benefits package.

Qualified candidates should send a resume, including references, in confidence to:

Recruitment, Dept. #371
AMGEN
1900 Oak Terrace Lane
Thousand Oaks
CA 91320

Equal
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Employer

AMGEN

HEALTH SCIENTISTS

ENVIRON® Corporation, a leading national scientific and regulatory affairs consulting firm, is seeking highly motivated health scientists looking for challenging career opportunities in the fields of chemical risk assessment and environmental risk management. Our multidisciplinary staff assists our clients in addressing the complex issues and problems of human exposure to potentially hazardous substances in the environment.

Exciting career opportunities exist in our Emeryville, Calif. (San Francisco Bay area), Washington, D.C., and Princeton, N.J. offices for experienced and entry-level health scientists. Qualified applicants must be familiar with the concepts and methodologies for evaluating risks from human exposure to toxic chemicals in various environments. M.S./Ph.D.s in biochemistry, epidemiology, pharmacology, public health, toxicology, or related disciplines are required. Must possess strong analytical ability and excellent writing skills.

ENVIRON offers competitive salaries, excellent benefits and a challenging working environment. For an evaluation of your potential at ENVIRON, send your resume, writing sample, and salary history to ENVIRON Corporation, Personnel, Dept. SCIE-189, 1000 Potomac Street, N.W., Washington, D.C. 20007. We are an equal opportunity employer.

ENVIRON
Counsel in Health and Environmental Science

Unigene Laboratories, a multidisciplinary biotechnology corporation emphasizing peptide hormone research, is seeking distinguished scientists for the following positions:

RESEARCH DIRECTOR

- Ph.D.- or M.D.-level scientist, minimum 10-15 years post-degree research experience.
- Extensive research program management experience, particularly in the coordination and direction of protein chemistry, molecular biology and immunology research teams.
- Broad knowledge of protein analysis/purification, molecular biology, protein expression, antibody production, immunoassay development.
- Will oversee all internal (25-30 scientists) and extramural research programs and participate in the identification of new programs.

GROUP LEADER OF PROTEIN CHEMISTRY

- Ph.D.-level scientist, minimum 7-10 years post-degree research experience.
- Broad protein chemistry expertise, particularly in areas of purification and analysis of native and recombinant proteins, enzymology, protein processing, protein refolding.
- Will be responsible for staffing (10-12 scientists), budgeting and supervision of all departmental research programs.

SENIOR SCIENTISTS IN PROTEIN CHEMISTRY

- Ph.D.-level scientists (0-7 years experience) with expertise in one or more of the above protein chemistry disciplines.

Unigene offers an excellent and comprehensive compensation package and the opportunity to work in an environment which fosters continuing professional development. Resumes containing a description of relevant experience should be sent in confidence to:

Ms. H. Deegan
Unigene Laboratories, Inc.
110 Little Falls Road
Fairfield, NJ 07006

unigene™

An equal opportunity employer

POSITIONS OPEN

ECOTOXICOLOGIST—Assistant/Associate Professor (9-month tenure track) beginning 1989 or 1990. Ph.D. and refereed publications required. Emphasis on developing a research program on effects of chemicals on fish and wildlife and teaching a graduate ecotoxicology course. Undergraduate teaching and advising also required. Submit application letter, résumé, official transcripts, and three letters of recommendation by 1 March 1989 to: **Dr. C. A. Carlson, Department of Fishery and Wildlife Biology, Colorado State University, Fort Collins, CO 80523.**

CSU is an Equal Employment Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building.

ELECTROPHYSIOLOGIST, Ph.D., with 2 years of postdoctoral experience with CNS slice or culture preparations for opening in Department of Neurology, Oregon Health Sciences University, at faculty level. Work to consist of extra- and intracellular recording from CNS explant cultures in an established laboratory at the affiliated Portland VA Medical Center. Salary range from \$27,000 to \$33,500, depending upon experience and qualifications. Send curriculum vitae and names of three references to: **Fredrick J. Seil, M.D., Professor of Neurology, Neurology Research (151N), VA Medical Center, Portland, OR 97201.** An Affirmative Action/Equal Opportunity Employer.

MICHIGAN STATE UNIVERSITY ENDOWED CHAIR IN PLANT SCIENCE

Michigan State University is seeking an established scientist working in an area of experimental plant-biology of relevance to agriculture. The appointment will be made at a tenured level and with a salary commensurate with experience. Substantial funds will be available on a continuing basis to provide a base level of research support.

A distinguished record of academic accomplishments is required. We are particularly interested in an individual with the expertise and interests to explore the applications of molecular biology to problems in agriculture. The Hannah Professor will also be expected to take a leadership role in creating the conditions which will facilitate the application of molecular biological techniques to problems in agriculture.

In order to assure consideration, applications should preferably be received by 1 March 1989. Interested parties should direct inquiries to: **J. M. Tiedje or C. R. Somerville** and send curriculum vitae to: **Hannah Search Committee, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824.**

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

ENVIRONMENTAL BIOLOGIST

The Biology Department, Central Michigan University, invites applications from qualified candidates for a newly established, tenure-track, research-teaching position at the assistant or associate professor level to begin August 1989.

Position responsibilities: the position will be a 50:50 research:teaching appointment. Initial research support, including laboratory start-up funds and a graduate research assistantship, are guaranteed for 2 years. After that time the individual will be expected to have generated funds for the research portion of his/her appointment. We seek an individual with a strong background in an area of environmental biology, such as microbiology, microbial ecology, or others, who utilizes recombinant DNA technology to examine environmental problems or applications. The individual will also be required to teach molecular biology and/or a course in his/her area of specialization and to direct research at both the undergraduate and graduate (M.S.) level. Qualifications include a Ph.D. in life sciences with both teaching and postdoctoral experience desired. Deadline for applications is 15 February 1989. Send curriculum vitae, transcripts, description of research goals, selected reprints, and the names, addresses, and telephone numbers of three references to: **Dr. Lawrence Koehler, Chairperson, Biology Department, Central Michigan University, Mt. Pleasant, MI 48859, Telephone: 517-774-3227.**

CMU is an Affirmative Action and Equal Opportunity Institution.

POSITIONS OPEN

ENVIRONMENTAL HEALTH FACULTY—The George Washington University School of Medicine and Health Sciences' Master of Public Health Program seeks an assistant/associate level full-time faculty to help develop and teach in a new Occupational and Environmental Health specialty track.

Desirable background includes doctoral degree and teaching experience in environmental health policy, toxicology sanitation and/or epidemiology. Opportunity to develop research and contribute to ongoing health policy, epidemiology and clinical research activities. Send letter and curriculum vitae to: **Stacey Carlisle, George Washington University, Department of Health Care Sciences, 2150 Pennsylvania Avenue, N.W. Floor 2B, Room 415, Washington, D.C. 20037.**

EVOLUTIONARY BIOLOGIST

Emory University, Department of Anthropology and Department of Biology, seek two joint positions in evolutionary biology. Candidate's research may be in any aspect of evolutionary biology. Ability to interact effectively with faculty in both anthropology and biology programs essential. Both positions are tenure-track at the assistant professor level; for exceptional candidates, appointment as associate or full professor possible. Successful candidates must have a strong research record and a commitment to quality teaching. Review of applications will begin 16 January 1989. Send curriculum vitae and names of references to: **Peter J. Brown and Gray Crouse, Search Committee Chairs, Department of Anthropology, Emory University, Atlanta, GA 30322.** Emory University is an Affirmative Action/Equal Opportunity Employer.

EVOLUTIONARY BIOLOGIST. The Department of Biology, University of North Carolina at Chapel Hill, seeks an outstanding scientist investigating evolutionary mechanisms at the population level. The appointment to enhance our program in ecology, behavior, evolution, and organismic biology will probably be made at the rank of assistant or associate professor, although all levels will be considered. Appointment will begin in July 1989 or later at the convenience of the appointee. Applicants should send curriculum vitae, a description of research interests, selected publications and four letters of recommendation by 1 March 1989 to: **Evolutionary Biology Search, Department of Biology, University of North Carolina, Chapel Hill, NC 27599-3280.** The University of North Carolina is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

FACULTY, MOLECULAR VIROLOGY

The Department of Ophthalmology of Washington University School of Medicine invites applicants for a position at the assistant or associate professor level to join a dynamic core research faculty with interests in infectious and inflammatory diseases that may affect the eye. The successful Ph.D. or M.D. candidate will have an active research program in molecular virology, experience with one or more ocular pathogens (herpesviruses, adenovirus, HIV), and an interest in combining basic scientific methodology to the study of ocular disease processes. Previous specific experience in ophthalmic research is not required. Start-up funds, laboratory and a competitive salary are available. Submit curriculum vitae and three letters of reference to:

Henry J. Kaplan, M.D.
Chairman, Department of Ophthalmology
Washington University School of Medicine
Box 8096
660 South Euclid Avenue
St. Louis, MO 63110

FACULTY POSITION

The Division of Gerontology and Geriatric Medicine at University of Alabama, Birmingham (UAB), invites applications for a Professor and Division Director to work with its teaching, research, and community service programs. Must be well-qualified and experienced in planning and conducting multidisciplinary research projects, working with community-support groups, and developing and teaching relevant courses for medical and other health science professions students and trainees.

Apply to: **Department of Medicine/Chairman's Office, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294, Attention: J. Claude Bennett, M.D.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

TWO FACULTY OPENINGS

Bates College, a selective, science-active, liberal arts college with 1500 undergraduates is seeking applicants for two positions for fall 1989.

CELL BIOLOGIST: Tenure-track, assistant professor level. Responsibilities include teaching a required course in cellular and molecular biology and advanced undergraduate courses at the cellular level which could include microbiology, immunology, virology, and/or membrane biology. Establishment of a vigorous research program involving undergraduates is expected. A Ph.D. is required and postdoctoral experience is preferred.

BOTANIST: A 1-year sabbatical replacement. Responsibilities include team teaching in two required courses, botany and ecology, as well as teaching advanced undergraduate courses in areas which could include development, physiology, taxonomy, lower plants, and/or plant uses.

Closing date for both positions is 1 February 1989. Send curriculum vitae, a statement of teaching and research interests, graduate transcripts, and the names of three references to: **Dr. Joseph Pelliccia, Botany or Cell Biology Search, Department of Biology, Bates College, Lewiston, ME 04240.** Bates College is an Equal Opportunity Employer and encourages applications from women and minority candidates.

UNIVERSITY OF WASHINGTON CENTER FOR BIOENGINEERING

The Center for Bioengineering at the University of Washington has several **FACULTY OPENINGS** on either the tenure- or research-track. These openings might be filled at the assistant, associate, or professor level. We are particularly interested in candidates with strengths in microsensors and/or biomolecular engineering. The appointees will have the opportunity to interact with faculty members in the Microsensor Research Laboratory and the Washington Technology Center. We are seeking individuals who can develop outstanding research programs and also participate strongly in graduate student research and education. Deadline for application: 27 January 1989. Send nominations or letter of application (with curriculum vitae) to: **Professor B. D. Ratner, Chair, Bioengineering Faculty Search Committee, WD-12, University of Washington, Seattle, WA 98195.**

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

FACULTY POSITION

The Chemistry Department (ACS-accredited) of Calvin College has an opening in a tenure-track position beginning September 1989. Area: analytical, analytical/physical, or biochemistry preferred. The appointment will be made preferably at the assistant professor level, although more senior levels will be considered. Calvin College is a Christian liberal arts college in the Reformed tradition. Successful applicants must affirm the goals and philosophy of education of the college. Send curriculum vitae, transcripts, a proposed research program involving undergraduate students, and three letters of recommendation to: **Dr. Arie Leegwater, Department of Chemistry, Calvin College, Grand Rapids, MI 49506.** The selection process will begin on 15 February 1989 and continue until the position is filled. An Affirmative Action/Equal Opportunity Employer.

FACULTY POSITION IN INFECTIOUS DISEASE RESEARCH. Twelve-month tenure-track position. Should be interested in studying infectious disease pathogenesis, microbial virulence factors or host defense mechanisms. Training in bacteriology, immunology, molecular biology, pathology or virology is appropriate. Will be expected to develop a competitive research program and participate in training graduate students. Start-up funds, technical support, and excellent laboratory and animal isolation facilities (BL2 and BL3) are available. Requires Ph.D. in an appropriate discipline, or a D.V.M. with M.S. or Ph.D. Rank and salary will be commensurate with record of accomplishments. Send curriculum vitae, research interests/career goals, and three letters of reference by 15 February 1989 to: **Dr. John A. Schmitz, Head, Department of Veterinary Science, University of Nebraska-Lincoln, Lincoln, NE 68588-0905. Telephone: 402-472-2952.** Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

Emory University, Department of Radiology, seeks a Ph.D. or M.D. with either NMR spectroscopy or imaging experience for a full-time **FACULTY POSITION**. The candidate must be able to originate fundable research projects using NMR and collaborate with other faculty members (in or out of radiology) on NMR research. Knowledge of spin behavior is essential, and medicine, biology, or biochemistry, analog electronics, and computer science are useful skills.

Two 1-meter clinical imagers operating at 0.5 and 1.5 T and a 30-cm 200-MHz instrument, all fully programmable, will be available. The department is part of an 800-bed tertiary care complex giving ample opportunity for collaborations requiring clinical material. Seven Ph.D. scientists in the radiology department are currently involved full-time in NMR. Qualified candidates please contact:

Dr. Thomas Dixon, Director
Frits Philips Magnetic Resonance
Research Center
419 Woodruff Memorial Building
Emory University
Atlanta, GA 30322

Emory University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION FOR IMMUNOLOGIST INTERESTED IN VACCINE DEVELOPMENT

ASSISTANT OR ASSOCIATE PROFESSOR. Tenure-track position available for an investigator desiring to collaborate in a research program focusing on active immunization against defined tumor antigens and other autologous antigens. The candidate's interest and background must allow for active participation in an ongoing multidisciplinary research program of antigenic modulation, protein engineering, and human vaccine development. Applicants should have expertise in tumor antigen identification and antigen presentation for enhanced cellular and humoral responsiveness.

A Ph.D. or M.D. with at least 3 years of postdoctoral experience necessary. The candidate should have demonstrated strong research accomplishments and ability to obtain grant support. Salaries are competitive with excellent benefits. New laboratory facilities and start-up funds available. Preceptorship and teaching responsibilities are available for graduate and postdoctoral training.

Qualified candidates should send their curriculum vitae to: **Vernon C. Stevens, Ph.D., Ohio State University Hospital, 1654 Upham Drive, Columbus, OH 43210.** *The Ohio State University is an Equal Opportunity Employer. Applications from women and minority candidates are encouraged.* Deadline for applications 1 March 1989.

FACULTY POSITIONS SLOAN-KETTERING INSTITUTE CELL BIOLOGY AND GENETICS PROGRAM

The Sloan-Kettering Institute invites applications for several tenure-track junior and senior faculty positions in the cell biology and genetics program. This research program is one of four in the Institute, and is undergoing a major expansion in research at the molecular level on the areas of positive and negative growth control, differentiation, cell structure, intercellular recognition, and morphogenic pattern formation. The Cell Biology Program and the Molecular Biology Program at the Sloan-Kettering Institute are jointly relocating to a new research building which also houses advanced facilities for protein and nucleic acid microchemistry, transgenic mice, and automated mammalian cell micromanipulation. The faculty members of the Cell Biology and Genetics Program are also affiliated as faculty with the Cell Biology Graduate Program at Cornell University Medical School. The positions offered are highly competitive with regard to start-up funds, laboratory space, salary, and housing.

Eligible candidates should have a doctoral degree, postdoctoral experience, and demonstrate potential and ability to develop an independent, imaginative research program. Formal applications are invited from junior as well as established investigators. Applications should include curriculum vitae, a list of publications, a summary of research activities and research plan, and the names of three or more references. Applications should be addressed to: **Dr. Joan Massagué, Cell Biology and Genetics Program, Sloan-Kettering Institute, 1275 York Avenue, New York, NY 10021.**

POSTDOCTORAL FELLOWSHIPS IN MOLECULAR AND CELL BIOLOGY

Postdoctoral Fellowships are available in the Genetics and Biochemistry Branch, National Institute of Diabetes, and Digestive and Kidney Diseases, National Institutes of Health. Applications are invited from individuals of the highest caliber with Ph.D., M.D., or M.D., Ph.D. degrees. Current research interests of the staff include:

- **Biosynthesis** and targeting of lysosomal enzymes, the reconstitution of the cellular protein folding machinery, and the molecular genetics of Tay-Sachs disease (**Rick Proia**)
- **Eukaryotic DNA repair**, molecular mechanisms of toxin action, and mechanisms of nuclear and cytoplasmic localization of proteins and nucleic acids in *Xenopus* (**Eric Ackerman**)
- **Molecular mechanisms of homologous recombination** in higher eukaryotes, the biochemistry of nucleic acid-protein interactions and the formation and recognition of DNA mismatches (**Peggy Hsieh**)
- **Biochemistry of homologous recombination** in eukaryotes and prokaryotes, immunoglobulin gene rearrangements in cell-free systems, gene targeting and gene disruption in mammalian cells and structure/function studies of the CD4 protein, the HIV receptor (**Dan Camerini-Otero**)

Interested candidates should send a letter stating their interests, their curriculum vitae and list of publications, and the names and addresses of three references to:

Dr. R. Daniel Camerini-Otero
Chief, Genetics and Biochemistry Branch
Building 10, Room 9D-15
9000 ROCKVILLE PIKE
National Institutes of Health
Bethesda, Maryland 20892
Telephone: (301) 496-2710



NIH is an Equal Opportunity Employer

Molecular Biologist Research Associate

The Upjohn Company, a recognized leader in the research and development of pharmaceuticals, has a position available immediately to study mammalian skin and hair growth in the recently created Hairgrowth Research Unit. The successful candidate will have either a M.S. in a biological science or B.S. with a minimum of 2 years' research experience and will have experience in molecular biology and biochemistry techniques and cell/tissue culture with demonstrated potential for independent research. Experience with mammalian animal models, microscopy and skin developmental biology is highly desirable.

Upjohn is located in Kalamazoo, a mid-sized community in southwestern Michigan, midway between Chicago and Detroit. Our area offers varied cultural events, lakes and woodlands minutes away and abundant year-round sports and recreation. Upjohn offers personal and career advancement opportunities, a highly competitive salary, comprehensive benefits and relocation assistance. For confidential consideration, send your CV/resume, names of references and a research summary to: **M. William Rex, Corporate Employment, The Upjohn Company, 7000 Portage Road, Kalamazoo, MI 49001.** Please refer to advertisement number 23833-HA in your correspondence. An Equal Opportunity Employer M/F.

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

Upjohn

POSITIONS OPEN

FACULTY POSITION: The Chemistry Department of the University of San Diego invites applications for a tenure-track position at the assistant professor level for a recent Ph.D. in any area of chemistry (including biochemistry) with competence in analytical chemistry. The starting date is fall 1989. A commitment to quality teaching and development of an active undergraduate research program is expected. Candidates should include a letter describing their background in analytical chemistry, why they are interested in this position, and the nature of the undergraduate research they intend to pursue. Send this information together with a résumé and three letters of reference to: **D. B. Peterson, Chair, Chemistry Department, University of San Diego, San Diego, CA 92110.** USD is an Equal Employment/Affirmative Action Employer.

FACULTY POSITION TOXICOLOGY FLORIDA A&M UNIVERSITY COLLEGE OF PHARMACY

The Florida A&M University College of Pharmacy and Pharmaceutical Sciences invites applications for a tenure-track assistant/associate professor position in the Division of Basic Pharmaceutical Sciences. Rank and salary are negotiable and commensurate with the applicant's qualification and experience. Candidates for the position should hold an earned D.Sc. or Ph.D. degree in toxicology or related areas. The applicant should be an established scientist with demonstrated experience in the application of biochemical, molecular and/or immunological knowledge in the study of basic toxicological problems. Responsibilities include the development and maintenance of professional and graduate programs. The successful candidate is expected to compete for extramural funding beginning in the first year of the appointment. Excellence in teaching is expected. Applicants should send their curriculum vitae, summaries of research interests and objectives, and three letters of recommendation to: **Dr. Karam F. A. Soliman, Florida A&M University College of Pharmacy, Box 367, Tallahassee, FL 32307.** Applications must be received by this office on or before 16 February 1989.

FAMU is an Equal Opportunity/Equal Access University.

FACULTY POSITION IN ECOSYSTEM SCIENCE SAVANNAH RIVER ECOLOGY LABORATORY

A research faculty position in ecosystem ecology is available at the Savannah River Ecology Laboratory of the University of Georgia. Applicants must have Ph.D. degrees and U.S. citizenship; postdoctoral experience is preferred. The faculty member will be expected to work on interdisciplinary projects relating to ecosystem or landscape processes in southeastern freshwater wetlands. Experience and skills in cycling processes and simulation modeling are desirable. Strong communication skills, publication record, and ability to work collaboratively will be weighed heavily in evaluating candidates. Faculty rank and salary are negotiable. The deadline for application is 20 February 1989. Applicants should submit letters of application stating research goals, curriculum vitae, selected reprints, and names, addresses, and telephone numbers of four references to: **Dr. Rebecca R. Sharitz, Search Committee, Savannah River Ecology Laboratory, P.O. Drawer E, Aiken, SC 29802.** Telephone: 803-725-2472. The University of Georgia is an Equal Opportunity/Affirmative Action Institution.

FLOW CYTOMETRY OPERATOR/MANAGER

We are recruiting a talented individual to operate and manage a state-of-the-art flow cytometry facility at the Johns Hopkins School of Medicine. This facility will be dedicated to the current and future needs of a diverse group of scientists engaged in basic research in immunology, neurobiology, molecular biology, and cell biology. Prior experience in flow cytometry, data management or systems management is desirable. Salary is competitive and commensurate with experience. Please forward curriculum vitae to:

Mark J. Soloski, Ph.D.
Wood Basic Science Building, Room 702
Johns Hopkins University School of Medicine
725 North Wolfe Street
Baltimore, MD 21205

POSITIONS OPEN

CLINCH VALLEY COLLEGE OF THE UNIVERSITY OF VIRGINIA WISE, VIRGINIA 24293

Founded in 1954, Clinch Valley is a residential undergraduate college of the University of Virginia. It is located in the Appalachian Mountains of Southwest Virginia and has a current enrollment of 1,450 students. The College offers the baccalaureate degree in the following areas: biology, business administration, chemistry, computer information systems, elementary education, English, environmental science, history, mathematics, medical technology, performing arts and social science. A college major is available to students who wish to pursue an interdisciplinary program of study.

Clinch Valley College invites applications for the following positions. We encourage applications from women and minorities.

- **Faculty Position in Management/Marketing** (tenure-track) in the Department of Business Studies. Doctorate preferred, ABD will be considered.

- **Faculty Position in Molecular Biology** (tenure-track) in the Department of Natural Sciences. Ph.D. required. This position is pending funding approval.

Applications should be sent, including résumé, all transcripts, and three letters of recommendation to:

Jerry D. Cardwell
Vice Chancellor and Dean
Clinch Valley College
of the University of Virginia
Wise, VA 24293

Applications will be accepted until the position is filled. The review process will begin in February 1989.

An Equal Employment Opportunity/Affirmative Action Employer. Clinch Valley College employs only United States citizens and aliens lawfully authorized to work in the United States.

FACULTY POSITIONS. Union College Department of Biology invites applications for the following tenure-track positions: **MOLECULAR or DEVELOPMENT GENETICIST** to teach in a general genetics course and one or more upper-level courses. **PHYSIOLOGIST or NEUROBIOLOGIST** to teach animal physiology and at least one other advanced course. Union College is a small selective undergraduate institution with particular strength in science and engineering. The diverse Biology Department has 13 full-time faculty. Candidates must have a strong commitment to both teaching and research. A Ph.D. is required and postdoctoral and teaching experience is desirable. Funding for research is provided in part by the College and several outside grants, including a major grant from the Hughes Foundation which will provide the successful applicants with funds for major equipment and, in their first year, a summer research salary and a reduced teaching load. Send your application and the names of three references by 20 January 1989 to: **Dr. John Boyer (for geneticist) or Dr. Robert Olberg (for physiologist), Department of Biological Sciences, Union College, Schenectady, NY 12308.** Union College is an Affirmative Action/Equal Opportunity Employer.

FACULTY POSITIONS SECTION OF IMMUNOBIOLOGY YALE UNIVERSITY

The Section of Immunobiology seeks applicants for several ladder 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. They will also be expected to participate in departmental teaching at both the graduate and undergraduate levels. Candidates should submit curriculum vitae with a summary of present and future research interests, and request that three letters of recommendation be sent no later than 15 February 1989 to:

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

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

POSITIONS OPEN

FACULTY POSITIONS DREXEL UNIVERSITY COLLEGE OF INFORMATION STUDIES

Applications and nominations are invited for two anticipated tenure-track positions, September 1989, in the College of Information Studies, Drexel University. The College is dedicated to teaching and research in the information field, especially integration of its human, social and technological aspects. Drexel University supports the College with a wide range of information and computer studies, including communications, business administration, computer science and computer engineering, and with an appropriate range of facilities and equipment. The New York-Philadelphia-Washington region provides a rich context for research, teaching, and consulting in the information industry.

Tenure-track positions are available for candidates prepared to develop courses and research in the following area: systems development methodologies, computer-aided software engineering (CASE), knowledge-based systems, distributed information systems, data administration and information management. Candidates with information resources management and system experience in business or industrial settings are especially encouraged to apply.

For all positions, a doctorate in a relevant area is required. Appointments will be at the assistant or associate professor level from a minimum of \$35,000 per academic year. Candidates should have strong interests in interdisciplinary research and in teaching at both the undergraduate and graduate levels.

Résumé should accompany application to: **Dr. Belver Griffith, Search Committee, College of Information Studies, Drexel University, Philadelphia, PA 19104.** Telephone: 215-895-2474. Closing date 1 February 1989. Drexel University is an Equal Opportunity/Affirmative Action Institution and invites applications from minorities and women.

FULL PROFESSOR IN NUTRITION AND COMMUNITY STUDIES. Nationally and internationally recognized nutrition scientist with training and experience in one of the following or related areas: nutritional epidemiology, nutritional anthropology, physical growth and performance, nutrition education, community/public health nutrition. Experience in university teaching with publication and funding record sufficient to merit the rank of full professor. Will establish, fund, and direct graduate research in area of expertise; teach graduate and undergraduate courses. Application deadline: until position is filled. Send letter of application, curriculum vitae, transcripts, and names and addresses of three references to: **Dr. Eleanor Williams, Department of Human Nutrition and Food Systems, University of Maryland, College Park, MD 20742.**

HYDROGEOLOGIST/MODELER WATER SCIENCES PROGRAM HOLCOMB RESEARCH INSTITUTE BUTLER UNIVERSITY

Postdoctoral research position lasting 2+ years available in Water Sciences Program. Will be involved with research programs and technology transfer activities of the International Ground Water Modeling Center (IGWMC), in the areas of transport, fate, and effects of contaminants in surface and subsurface systems and on conjunctive use of water resources and the application of research findings in water resources management.

Qualifications: Ph.D. in hydrology, hydrogeology, water resources. Graduate work should be related to surface-substrate system interaction with emphasis on chemical and/or biochemical activities.

HRI pursues a strong internationally recognized interdisciplinary environmental research program integrating life and water sciences. IGWMC forms the organizational framework for the research and technology transfer activities in groundwater modeling for the Institute's Water Sciences Program.

Send letter, transcript, résumé, and names of three professional references by 20 January 1989 to: **Paul K. M. van der Heijde, Holcomb Research Institute, Butler University, Indianapolis, IN 46208.**

An Affirmative Action and Equal Opportunity Employer.

NATIONAL SCIENCE FOUNDATION (NSF)

NSF's Division of Biotic Systems and Resources (BSR) is seeking qualified applicants for the position of Program Manager for Special Projects. The incumbent to this position will assume responsibility for management and administration of the Division's Postdoctoral Fellowship Opportunities in Environmental Biology, Mid-Career Fellowship Opportunities in Environmental Biology, the Presidential Young Investigator applications assigned to this Division as well as its Small Business Innovation Research applications.

The position will be filled on a 1- or 2-year temporary basis and is excepted from the competitive civil service. Salary ranges from \$15,118 to \$36,032 per annum. Applicants should have a Ph.D. or equivalent experience and up to three years postdoctoral experience in some field of environmental biology (in systematic biology, population biology and physiological ecology, ecology, or ecosystem studies).

Applicants should submit a Standard Form 171, Application for Federal Employment, or resume to the National Science Foundation, Room 208, 1800 G St. NW., Washington, DC 20550. Attn: Catherine Handle. For further information call 202/357-7840. Hearing impaired individuals should call 202/357-7492. NSF is an Equal Opportunity Employer.

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EDUCATION

ASSISTANT PROFESSOR MOLECULAR BIOLOGY OF MARINE ORGANISMS

The College of Marine studies at the University of Delaware seeks to fill a 12-month, tenure track position in molecular biology with the Marine Biology-Biochemistry faculty at the Lewes Marine Studies Complex. We seek an individual with research interests in the environmental factors affecting marine organisms, which may include plants, animals, or microorganisms. The person filling the position will teach a graduate lecture/laboratory course in molecular biology, will develop an active research program and will guide graduate students. Respondents should submit a letter of application describing their research interests and background, a current curriculum vitae, and three letters of recommendation to: Dr. J.S. Boyer, Search Committee Chairman, College of Marine Studies, University of Delaware, 700 Pilottown Road, Lewes, DE 19958. For full consideration, applications should be completed by April 1, 1989.

The UNIVERSITY OF DELAWARE is an Equal Opportunity Employer which encourages applications from qualified minority groups and women.

POSITIONS OPEN

FRESHWATER BIOLOGY

The Department of Biology at The University of Mississippi invites applications and nominations for two tenure-track faculty positions in its expanding Freshwater Biology Program. The incumbents will conduct extramurally funded research using the University of Mississippi Biological Field Station, a 500-acre facility including over 140 mesocosm ponds, teach in the undergraduate and graduate curricula, direct graduate students at the M.S. and Ph.D. level, and participate in professional service. Earned doctorate, research experience, and publications in appropriate field required.

AQUATIC BOTANIST will conduct basic and applied research using macrophytes in pond systems, and will participate in teaching courses in aquatic botany and plant ecology. Experience in ecology, physiology, and/or toxicology is appropriate. Collaboration in toxicological studies is desirable.

POPULATION GENETICIST will conduct basic and applied research using freshwater fishes in pond systems, and teach introductory genetics and population biology. Experience in quantitative genetics, biochemical genetics, population biology, and/or evolutionary biology is appropriate. A research interest in forage fishes or game fishes is desirable.

It is anticipated that the positions will be filled at the assistant professor level, beginning in fall 1989. More senior appointments may be considered for experienced candidates, with a current record of funded research, who can utilize the pond facilities available at the Biological Station.

Please submit applications (including letter of application, complete curriculum vitae, description of current and future research interests, names and telephone numbers of at least three individuals willing to provide letters of evaluation) by 6 February, 1989 to: **Search Chairs, c/o James A. Kushlan, Chairman, Department of Biology, The University of Mississippi, University, MS 38677.**

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

INSTRUCTOR OR ASSISTANT PROFESSOR—NEUROPHARMACOLOGIST. A tenure-track position for a neuropharmacologist with broad experience in neurosciences is available in the Department of Basic Sciences, University of Illinois College of Medicine at Peoria. Responsibilities: participate in curricular development and in teaching pharmacology to medical students and residents; conduct original investigations in neuropharmacology and related areas. Requirements: Ph.D. in neuropharmacology, neurochemistry, neurophysiology, biochemistry, or cell biology or an M.D. degree with appropriate biomedical training and/or experience; publication record in neurosciences; strong potential for extramural funding of research. A documented capacity for excellence in teaching medical students is preferred. A minimum of 2 years of postdoctoral experience is preferable. Position available 1 March 1989 or after. Salary and rank commensurate with qualifications. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae and names of three references to: **Phillip C. Jobe, Ph.D., Professor and Chair, Department of Basic Sciences, University of Illinois College of Medicine at Peoria, P.O. Box 1649, Peoria, IL 61656.** Applications will be received until the position is filled.

MARINE SCIENCE FACULTY POSITION AT THE UNIVERSITY OF SOUTH FLORIDA

As the result of a vacancy of the St. Petersburg Progress endowed chair in Marine Science, a 9-month, academic tenure-track faculty position is available in the Department of Marine Science at the University of South Florida. The endowed chair has an associated rank of Distinguished Professor at the University. This position is open to any oceanographic discipline, and experienced scientists are urged to apply. This position will remain open until an appropriate applicant is selected. *The University of South Florida is an Equal Opportunity/Affirmative Action Institution.* Correspondence should be directed to:

Dr. John J. Walsh
Chairman, Faculty Search Committee
Department of Marine Science
University of South Florida
140 Seventh Avenue South
St. Petersburg, FL 33701

POSITIONS OPEN

ILLINOIS LEGISLATIVE SCIENCE INTERN

Sangamon State University invites applications from graduates of science or engineering programs (baccalaureate, masters, doctorate) for two 10½ month science internships beginning 1 October 1989 as part of the Illinois Legislative Staff Internship Program. The science interns will be assigned to Springfield or Chicago offices of the Illinois Legislative Research Unit which provide legislators with information and research about policy issues. The science interns will participate in an academic seminar with other legislative interns. Curriculum vitae and application materials should be filed by 1 March 1989. For applications contact: **Dr. Kent Redfield, Coordinator, Illinois Legislative Staff Internship Program, Sangamon State University, Springfield, IL 62794-9243.**

INSTRUCTOR OF PHYSIOLOGY

Applications are solicited for a temporary, full-time, non-tenure stream position for a supplemental instruction program in physiology. Instructor will be responsible for attending first-year medical physiology classes and conducting supplemental instruction sessions on the lecture material for medical students with diverse educational backgrounds. Instructor may also teach summer term physiology courses to human and osteopathic medical students who experience academic difficulty. Instructor will be responsible for conducting research in the area of neuronal pathfinding/cell surface recognition molecules. Applicants must have teaching experience in medical/health education; must be qualified to teach physiology; must have or be working on an advanced degree in physiology; must have experience in immunocytochemistry and cell culture techniques; clinical experience preferred. Position to be filled by 15 March 1989. Applicants should send curriculum vitae and at least three references by 20 January 1989 to: **Dr. Lawrence Ross, Director, Track 1, Educational Programs, College of Human Medicine, A254 Life Sciences, Michigan State University, East Lansing, MI 48824.**

The U.S. Department of Agriculture, Agricultural Research Service, is seeking applications for a postdoctoral position, **MICROBIOLOGIST/MOLECULAR BIOLOGIST**, for the National Animal Disease Center, Brucellosis Research Unit, in Ames, Iowa. The position is temporary, full-time. Responsibilities include the application of recombinant DNA technology, and isolation and characterization of *Brucella* proteins and lipopolysaccharides for use in the development of improved subunit vaccines and diagnostic tests for bovine brucellosis.

Salary is commensurate with experience (\$28,852 to \$37,510). For program and position information, contact: **Dr. George Lambert on 515-239-8204.** For information on application procedures/forms, contact: **Janie Carr on 301-344-2756.** Applications in response to this ad should be marked 9N001. Applications must be mailed no later than 1 February 1989.

Mail applications to:

Janie Carr, USDA-ARS-PD
Personnel Operations Branch
Northern Section
Building 419, BARC-East
Beltsville, MD 20705

An Equal Opportunity Employer.

MOLECULAR CARCINOGENESIS

A **POSTDOCTORAL POSITION** in molecular carcinogenesis is available immediately to study molecular responses to DNA damage in mammalian cells. Training in molecular, cellular and immunological approaches is desired. Submit curriculum vitae and three letter of reference.

A **RESEARCH ASSISTANT** position is available immediately within the molecular carcinogenesis program. The candidate should have a B.S. in biological sciences; experience in protein purification and molecular biology techniques preferable. Submit curriculum vitae to:

Dr. Zeev Ronai
American Health Foundation
Molecular Carcinogenesis Program
Department of Pathology and Toxicology
1 Dana Road
Valhalla, NY 10595

An Equal Opportunity Employer M/F/H/V.

POSITIONS OPEN

INVERTEBRATE ZOOLOGIST/FIELD ECOLOGIST: Marietta College, a private, 4-year, liberal arts college, is seeking to fill a tenure-track position at the assistant professor level, beginning August 1989. Ph.D. required with primary interest in teaching but also willing to carry on research with students. Principal teaching duties include invertebrate zoology, field ecology, vertebrate zoology, general biology, and one other course depending on qualifications. Review of applications will begin on 1 February 1989. Send résumé, graduate and undergraduate transcripts, and three letters of recommendation to: **Dr. Peter E. Hogan, Chair, Biology Department, Marietta College, Marietta, OH 45750.** *Marietta College is an Affirmative Action/Equal Opportunity Employer. Women and minorities are particularly encouraged to apply.*

MARINE SCIENCE FACULTY POSITIONS AT THE UNIVERSITY OF SOUTH FLORIDA

As the result of recent state initiative, five 9-month, academic tenure-track faculty tenure-track faculty positions are available in the Department of Marine Science at the University of South Florida. These five positions are open ranks, ranging from assistant to full professor, depending upon the experience and qualifications of the applicant. Marine scientists in the fields of the geosciences, physical oceanography, and satellite remote sensing, with observational and/or numerical skills, are urged to apply for the positions. All five positions will remain open until appropriate applications are selected. *The University of South Florida is an Equal Opportunity/Affirmative Action Institution.* Correspondence should be directed to:

Dr. John J. Walsh
Chairman, Faculty Search Committee
Department of Marine Science
University of South Florida
140 Seventh Avenue South
St. Petersburg, FL 33701

MEDICAL ONCOLOGIST—University-affiliated Medical Center in New York City seeks senior level individual accredited in medical oncology to lead its Division of Medical Oncology and Cancer Center. Applicants should have a record of research productivity plus administrative and teaching experience commensurate with professional rank at a major university. Good salary plus benefits package. Please send résumé to: **Lorraine A. Hansen, Administrator, Medicine, St. Luke's-Roosevelt Hospital Center, 114th Street at Amsterdam Avenue, New York, NY 10025.**

MOLECULAR BIOLOGIST

A position is available 1 December 1988 for a person, preferably with a Ph.D. degree, with molecular biology background. Research project includes the demonstration of the role of cytokines (IL-1, IL-6, TNF, IFN- γ) in human endometrial physiology and function, as well as the relation to the effect of sex-steroid hormone. Send curriculum vitae to: **Dr. Tabibzadeh, Department of Pathology, Elmhurst Hospital, 79-01 Broadway, Elmhurst, NY 11373 or call: 718-830-1685.** *An Equal Opportunity Employer.*

MOLECULAR BIOLOGIST: A Catholic liberal arts college seeks molecular or biochemically-oriented biologist to chair science department granting degrees in biology and chemistry, beginning fall 1989. Required: Ph.D., administrative experience, and teaching experience with competence in biochemistry, genetics, and cell biology; immunology desirable. Expected to carry out modest research involving undergraduates. Salary and rank competitive. Send letter of application, curriculum vitae, transcripts, and three letters of reference to: **Dr. Joseph Colosi, Allentown College, Center Valley, PA 18034,** by 24 January 1989. *Affirmative Action/Equal Opportunity Employer.*

MOLECULAR BIOLOGIST, RESEARCH ASSISTANT PROFESSOR, TENURE-TRACK POSITION available to study molecular biology of Alzheimer's disease, heat-shock proteins, and ubiquitin in nervous tissue. Teaching responsibilities optional. A strong background in molecular biology is required. Send curriculum vitae, reprints of recent publications and names of three references to: **Pierluigi Gambetti, M.D., Division of Neuropathology, Institute of Pathology, Case Western Reserve University, 2085 Adelbert Road, Cleveland, OH 44106.**

Sandoz Institute for Medical Research

Laboratory Head in Molecular Biology

The Sandoz Institute is seeking an experienced molecular biologist with a good knowledge of cloning methods, preferably in the areas of expression cloning, gene transfer methods and site-directed mutagenesis. The person appointed, who will have at least 3 years' post-doctoral experience, will be in charge of a small group, and will also be expected to play an active role in the overall activities of the Institute, contributing to its long-term drug development goals. He or she should have broad interests in molecular neurobiology, so as to be able to make good use of the collaborative opportunities that the Institute offers. Initially, the emphasis will be on the cloning and characterisation of the bradykinin receptor.

The Sandoz Institute, which opened in 1985, is a multidisciplinary research organization comprising about 60 staff (45 scientific and technical staff) working on a range of neurobiological projects which have as their long-term objective the discovery of new types

of analgesic drugs. The Institute is housed in its own premises within University College London, and has strong academic links with the College, though it is administratively and financially independent. The laboratories are modern and well-appointed, and the Institute is well funded by Sandoz Ltd.

The starting salary will be in the range £25,000-£30,000 p.a., and is subject to annual review. A company car, pension scheme, medical insurance, generous holiday allowance and other benefits are included.

Applications, including a full *curriculum vitae* and the names of three referees, should be sent to the Director, Dr. H. P. Rang FRS, Sandoz Institute for Medical Research, 5 Gower Place,

London WC1E 6BN, UK, Tel: 01-387 4445, by 31 January 1989. Candidates will be welcome to visit the Institute for a preliminary discussion if they wish.



Cell Biologist

The Upjohn Company, a recognized leader in the research and development of pharmaceuticals, is seeking a highly motivated individual to conduct independent research on tumor angiogenesis as a potential target for drug therapy of cancer. The successful applicant will have a background in the biology of cancer and will apply state-of-the-art cellular and molecular approaches to the discovery of new antineoplastic drugs acting through inhibition of tumor neovascularization. This scientist will also investigate other aspects of tumor biology of their own interest which could lead to novel pharmacologic approaches to cancer treatment. Opportunities for collaboration with other Upjohn scientists interested in endothelial cell and tumor cell biology are available. The representation of research results at meetings and the timely publication of work will be expected. Individuals with a Ph.D. or equivalent degree in tumor and cell biology, molecular biology, biochemistry or related field, and at least 1-2 years of postdoctoral research or other relevant experience will be considered for this position.

Upjohn is located in Kalamazoo, in southwestern Michigan, midway between Chicago and Detroit and offers varied cultural events, lakes and woodlands minutes away, abundant year-round sports and recreation. Upjohn offers personal and career advancement opportunities, a highly competitive salary commensurate with experience, comprehensive benefits and relocation assistance. For confidential consideration, please send your CV/resume and a copy of transcripts to M. William Rex, The Upjohn Company, Corporate Employment, Kalamazoo, MI 49001. Please refer to advertisement number 23832-HA in your correspondence. We are an Equal Opportunity Employer M/F.

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POSITIONS OPEN

MICROBIOLOGY: The Department of Microbiology, University of New Mexico School of Medicine seeks applicants with an established record of research funding for a tenure-track **ASSISTANT/ASSOCIATE PROFESSOR** position to begin 1 July 1989. Applicants with ongoing research programs in molecular bacteriology/genetics will be given highest priority. The position involves teaching activities in medical bacteriology in the School of Medicine and participation in graduate student training. Salary commensurate with experience. Submit curriculum vitae and names of three references by 1 March 1989 to: **Dr. Ellen H. Goldberg, Chairperson, Department of Microbiology, University of New Mexico, Albuquerque, NM 87131. Affirmative Action/Equal Opportunity Employer.**

NORTHEAST MISSOURI STATE UNIVERSITY

Northeast Missouri State University invites applications for two tenure-track positions, beginning August 1989 for **MOLECULAR/CELLULAR BIOLOGISTS**. Teaching may include courses in general biology for majors and non-majors as well as advanced courses for seniors and graduate students. These individuals will also be expected to involve undergraduate and graduate students in research. Laboratory space, basic instruments, and initial support will be provided. The mission of Northeast Missouri State University is to provide the outstanding educational environment of a small liberal arts and sciences university while remaining highly economically accessible. *Women and minorities are encouraged to apply.* Please send letter of application indicating teaching and research goals, curriculum vitae, undergraduate and graduate transcripts, and three letters of recommendation to: **Dr. L. Scott Ellis, Division of Science, Northeast Missouri State University, Kirksville, MO 63501.**

We invite application for the position of **MOLECULAR GENETICIST** at the assistant or associate professor level. Our division has opened a molecular genetics section and a person is needed to establish a clinical and research laboratory. The successful candidate should be Board eligible in molecular genetics and demonstrate strong clinical and research interests. Faculty appointment level and tenure-tracking will depend on credentials.

Submit curriculum vitae and statement of research interests along with three letters of recommendation to: **Lawrence G. Leichtman, M.D., Chief, Genetics Division, Department of Pediatrics, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.**

Deadline for applications: 15 April 1989. *An Equal Opportunity Employer.*

SEARCH EXTENDED MOLECULAR STRUCTURAL BIOLOGY

The Department of Cell Biology and Neuroanatomy, in cooperation with the newly established Center for Structural Biology at the University of Minnesota, is extending its search for a structural biologist with expertise in electron microscopy of macromolecules (including proteins, glycoproteins, membranes and chromatin) and in computer image analysis. Areas of research interest of the successful applicant must complement ongoing programs in the department in the areas of cytoskeleton, membrane proteins or extracellular proteins that interact with cells. The appointment may range from **ASSISTANT PROFESSOR (TENURE-TRACK) TO PROFESSOR (TENURED)** depending upon qualifications (guidelines for appointment at each level will be sent on request). Applicants must have a relevant graduate degree [either Ph.D. or M.D. (or both), or equivalent foreign degree] with at least 2 years of productive postdoctoral experience. Teaching will be in courses taught to medical and dental students by the department. In addition, training of graduate students and teaching in appropriate graduate programs will be required.

Applications (which should include a letter of intent, curriculum vitae, three letters of recommendation, and a brief statement of research goals) or nominations must be received no later than 1 February 1989, and should be sent to **Search Committee, Department of Cell Biology and Neuroanatomy, 4-135 Jackson Hall, 321 Church 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.

POSITIONS OPEN

MOLECULAR GENETICS POPULATION BIOLOGY/ EVOLUTIONARY ECOLOGY REED COLLEGE

The Reed College Biology Department invites applications for two full-time **VISITING ASSISTANT PROFESSOR** positions for sabbatical and leave replacements. We are seeking a **MOLECULAR GENETICIST** and an individual in the area of **POPULATION BIOLOGY/EVOLUTIONARY ECOLOGY**. A Ph.D. is required for these 1-year positions which commence in late August 1989. Each successful applicant will teach upper-division lecture/laboratory courses, participate in the introductory biology course, and guide senior thesis research projects. Reed College is a highly selective undergraduate institution with strong, traditional commitments to scholarship and excellence in teaching.

Applications including curriculum vitae and three recent letters of reference should be sent by 15 February 1989 to: **Dr. Peter J. Russell, Chairman, Biology Search Committee, Reed College, Portland, OR 97202-8199. Reed College is an Equal Opportunity/Affirmative Action Employer.**

MOLECULAR GENETICS THREE POSITIONS

We are looking for three individuals to staff a new molecular genetics and in situ hybridization unit at the Whitney Laboratory. One position will be at the senior postdoctoral level and will be filled by someone with broad experience in various aspects of molecular genetics. This individual will be responsible for overseeing the unit and providing technical advice to other investigators in the Laboratory. The two other positions are at the junior postdoctoral level. One will have experience in the techniques of molecular genetics and a desire to learn electrophysiology; the other will have experience in electrophysiology (preferably intracellular recording and whole-cell and single-channel voltage clamp) and a desire to learn molecular genetics.

The Whitney Laboratory is the Institute for Marine Biomedical Research and Biotechnology of the University of Florida, and an Equal Opportunity Employer. Contact: **Dr. Peter A. V. Anderson, The Whitney Laboratory, 9505 Ocean Shore Boulevard, St. Augustine, FL 32086.**

NEUROSCIENCES FACULTY POSITION UCR/UCLA PROGRAM IN BIOMEDICAL SCIENCES

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 opening in the Division of Biomedical Sciences at UCR available 1 July 1989. The prospective level of appointment for candidates who must possess the Ph.D. or M.D. degree may be at the assistant, associate or full professor level. Primary teaching responsibilities will be in a 10-week course in neurosciences taught to 24 first-year medical students. Prior medical school teaching experience is strongly preferred. Also, the successful candidate should actively participate in graduate student training. Junior applicants should have postdoctoral research experience, should be able to develop a strong independent research program, and must possess a strong commitment to teaching. Senior applicants should have a clearly demonstrable record of research productivity, success in obtaining extramural funding, and demonstrated teaching effectiveness. We would particularly welcome applications from individuals with research expertise in cellular or molecular neurobiology. *The University of California is an Affirmative Action/Equal Opportunity Employer.* The deadline for applications and nominations is 28 February 1989. Applicants should send curriculum vitae, bibliography, two to three representative reprints, a statement of present and future research goals, and the names of three references to:

**Mary Ann Baker, Chair
Neurosciences Search Committee
Division of Biomedical Sciences
University of California, Riverside
Riverside, CA 92521-0121**

POSITIONS OPEN

MOLECULAR IMMUNOLOGIST BRANDEIS UNIVERSITY

The Rosenstiel Research Center and the Department of Biology seek a tenure-track assistant professor in the area of the molecular biology of the immune system. Candidates should have a strong record of research accomplishments. Exceptional individuals at a more senior level will also be considered. Please submit curriculum vitae, including a description of research goals, and the names of three individuals who can supply letters of recommendation to: **Molecular Immunology Search Committee, Rosenstiel Center, Brandeis University, Waltham, MA 02254-9110, by 28 February 1989.**

Brandeis University is an Equal Opportunity/Affirmative Action Employer.

MYCOLOGIST: The Systematic Botany, Mycology and Nematology Laboratory, U.S. Department of Agriculture (USDA), Agricultural Research Service, Beltsville, Maryland, is seeking a research mycologist specializing in the systematics of fungi useful in biological control of fungi, weeds and nematodes. Research will emphasize monographic accounts of *Fungi imperfecti* and their related sexual states. Additional duties will involve general identification of fungi, curation of the U.S. National Fungus Collections and updating the database of fungi on plants and plant products in the U.S. A Ph.D. in systematic mycology and demonstrated accomplishments concerning the systematics of microfungi are desirable. *Must be a U.S. citizen.* Salary at GS 11-13 (\$28,852 to \$41,121). Send OPM Standard Form 171 to: **Mr. J. Lynch, USDA, Agricultural Research Service, Personnel Operations Branch, Room 123, B003, BARC-West, Beltsville, MD 20705; telephone: 301-344-3954.** Applications in response to this advertisement should be marked 8E020. Deadline for application is 10 February 1989. *An Equal Opportunity Employer.*

OCCUPATIONAL MEDICINE/ENVIRONMENTAL HEALTH (OM/EH). Tenure-track faculty position for senior scientist to direct a newly established Southeastern Clinical OM/EH Evaluation Center at Emory University and an OM/EH educational track in Emory's MPH Program. Nominations and applications are invited from established clinicians Board Certified in OM and eligible for licensure in Georgia. Responsibilities include the direction, management, planning and development of an OM/EH Center and educational track committed to excellence in patient care, teaching and research. Also required are demonstrated leadership capabilities, previous academic, teaching, and administrative responsibilities, and a strong record in research. Salary is negotiable. Applications should include a current curriculum vitae, the names of three references, and be submitted by 1 February 1989 to: **Chair, Search Committee, Emory Department of Community Health, 69 Butler Street, SE, Atlanta, GA 30303-3219. An Affirmative Action/Equal Opportunity Employer.**

PEDIATRIC ONCOLOGIST—MEDICAL COLLEGE OF WISCONSIN Applications are invited for a tenure-track faculty position. The level of appointment will be commensurate with training and experience. The appointee is to develop an innovated research program in pediatric oncology, immunology or molecular biology. A record of publications in refereed journals and the ability to obtain extramural research support are essential. Ph.D. or M.D. required. Laboratory space and start-up funds are available. Please send curriculum vitae and the names and addresses of three references to: **Starkey D. Davis M.D., Professor and Chairman, Pediatrics, Medical College of Wisconsin, P.O. Box 1997 Milwaukee, WI 53201. Equal Opportunity/Affirmative Action Employer M/F/H.**

Ph.D. IN IMMUNOLOGY/VIROLOGY/MOLECULAR BIOLOGY needed by young company in Boston area to work on development of novel products for HIV testing, antibody-based research/diagnostic tests, and nucleic acid hybridization. Focus will be on new laboratory instruments. Candidate should have experience with protein/DNA electrophoresis, western and southern blotting, and other molecular biology techniques. Please send curriculum vitae to: **Carol Watkins, Immunetics, Inc., 380 Green Street, Cambridge, MA 02139.**

RESEARCH ASSOCIATE BONE MARROW CELL CULTURE

Amgen, an industry leader in applied biotechnology, has an immediate opportunity for a BS or MS scientist to contribute to an innovative group involved in the characterization, cloning and expression of hematopoietic growth factors.

Candidates for this position must have a BS or MS and a minimum of 1 year's experience in bone marrow cell culture and tissue culture. Familiarity with a variety of colony forming assays is essential. Some experience in molecular biology is desirable.

Amgen offers an excellent compensation and benefits package as well as a stimulating and challenging research environment.

Qualified applicants should send a CV or resume, including references, in confidence to:

**Recruitment, Dept. #334A
AMGEN
1900 Oak Terrace Lane
Thousand Oaks
CA 91320**

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AMGEN

CENTER DIRECTOR/CEO

The H. Lee, Moffitt Cancer Center and Research Institute, at the University of South Florida, seeks a Physician Scientist for the newly established position of Center Director and Chief Executive Officer of the institution. Applicants should have demonstrated evidence of leadership qualities and proven clinical skills as well as outstanding abilities in research and teaching. The Center Director will have sole responsibility for overall management of the cancer center and will report directly to the Board of Directors.

The Moffitt Cancer Center is a recently opened 162-bed freestanding cancer center and research facility located on the campus of the University of South Florida. Letters of interest and curriculum vitae may be submitted in confidence by February 1, 1989 to Nicolas C. Porter, Executive Director, H. LEE MOFFITT CANCER CENTER & RESEARCH INSTITUTE, P.O. Box 280179, Tampa, FL 33682-0179. An equal opportunity/affirmative action employer.



**H. LEE MOFFITT
CANCER CENTER
& RESEARCH INSTITUTE**
At the University of South Florida

POSTDOCTORAL RESEARCH ASSOCIATESHIPS

Physical Science Laboratory of New Mexico State University invites competitive applications for six Research Associate appointments for a two-year period beginning June 1989, starting dates negotiable. Appointments may be renewed for a third year.

The Laboratory is committed to developing a strong science base and solicits applications from recent PhD recipients having research specialties in any of the following:

ELECTRO-OPTICS--to include experimental or theoretical optics and computational models as related to optical remote sensing; linear or non-linear optical properties of the atmosphere and aerosols; and laser, plasma, and multiphoton nonlinear spectroscopy.

SIGNAL PROCESSING--to include data compression techniques, encryption and decryption methods, error detection and correction, image interpretation, and parallel processing techniques for real-time and near-real-time applications.

COMMUNICATION THEORY--to include signal-propagation fading and jamming effects; non-Gaussian channels; spread-spectrum systems; trellis-coded modulation methods; convolutional encoding and decoding; multiple-access techniques; frequency-hopping systems; microstrip and stripline antennae; and high-range resolution and synthetic-aperture radars.

Research Associates will have wide latitude in formulating and conducting their programs. Associates will report to the Director and have considerable visibility within PSL and ample opportunity for technical interaction with NMSU faculty. Send resume, names and addresses of three references, and statement of research interest to

**Dr. Robert E. Weigle, Director
Physical Science Laboratory, Dept. 70
New Mexico State University
Box 30002
Las Cruces, NM 88003-0002**

U.S. citizenship is required. Salaries Begin at \$26,000 and are negotiable, depending upon qualifications. Final deadline is February 28, 1989. Applications received by 27 January will have first consideration.

NMSU is an Equal Employment Opportunity/Affirmative Action Employer. Minorities and women are especially invited to apply.



**PHYSICAL SCIENCE LABORATORY
NEW MEXICO STATE UNIVERSITY**

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That's what you'll find with our dynamic, fast-growing company. We market a revolutionary process that is having a tremendous impact in all areas of biotechnology that involve electron microscopy analysis. We offer contract research services and are marketing our patented instrumentation for this wide-ranging process. Currently, we are seeking to place key professionals throughout major U.S. markets.

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Working out of either the Midwest or West Coast region, you will demonstrate our product, conduct technical seminars, in-service new instrumentation, and support distributor sales for our instrument line and contract services. Some travel is required.

Qualified candidates are aggressive, energetic individuals with outstanding interpersonal skills. Degree (B.S., M.S., or Ph.D.) in biological science required with 2 or more years' electron microscopy experience or comparable sales experience.

We offer an excellent salary with a commission schedule and complete benefits package. If you are ready for our challenging, highly rewarding environment, please send your resume, including salary requirements, in confidence to: **Personnel Director, LifeCell Corporation, 3606-A Research Forest Drive, The Woodlands, TX 77381.**

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POSITIONS OPEN

PATHOGENETIC VARIATION OF IMMUNODEFICIENCY RETROVIRUSES

POSTDOCTORAL AND RESEARCH ASSOCIATE POSITIONS are available immediately to lead and participate in the analysis of genetic variation and the consequences of that variation on the pathogenicity of immunodeficiency-inducing lenti-retroviruses of human, simian and feline species (HIV-1, HIV-2, SIV and FIV). Using PCR and automated, fluorescence-based DNA sequencing we intend to assess the array of viral genotypes in various target tissues in vivo and following propagation in various cell types in vitro. The immunological and pathogenic consequences of that variation will be assessed by virus reconstruction and in vitro, and in the case of SIV and FIV, in vivo analysis. Candidates must have experience in gene manipulation and DNA sequencing, tissue culture and virological assay experience is also desirable. Please send curriculum vitae with names of three references and a brief statement of interests to: **Dr. James I. Mullins, Department of Cancer Biology, Harvard University, School of Public Health, 665 Huntington Avenue, Boston, MA 02115.**

Research and development **PHYSICIST** in applied x-ray physics. Forty hours per week; 8:00 a.m. to 5 p.m.; \$49,100 per year. Responsible for research and development of both solid state and Xenon gas detector assemblies for low energy x-ray collection in medical applications. Researches and develops x-ray collimation assemblies for medical imaging devices. Uses complex Computer Aided Design (CAD) equipment, as well as Computer Aided Manufacturing (CAM) equipment. Develops and establishes quality control and test procedures in hard and software for medical imaging systems using x-rays. Must have 8 years of college and a Ph.D. in physics. Must have 2 years of experience as a research and development physicist in applied x-ray physics or 2 years of experience in research and development in nuclear and x-ray physics. Must also have 2 years of experience with application and design of computer hard and software for computerized tomography (Fortran, PL1, and Assembler). Interested applicants contact: **Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, IL 60605, Attention: Marie Ninneman, Ref. #8810, An Employer Paid Ad.**

PLANT MOLECULAR BIOLOGY/HORTICULTURE—Washington State University (WSU).

Tenure-track, full-time (12-month), faculty position as **ASSISTANT PROFESSOR**, research and teaching (70/30), in plant molecular biology and horticulture. Expectations include a strong externally funded research program in plant molecular biology linked to solving problems in and improvement of horticultural crops, teaching and advising at the undergraduate and graduate level.

Demonstrated expertise in plant molecular biology, a Ph.D. in plant science, and at least a year's post-doctoral experience in plant molecular biology are required. Evidence of research productivity is preferred. To complement current programs, experience with higher plant systems in the areas of photosynthesis/partitioning, respiration/senescence, stress, or growth regulation is desirable.

Résumé, transcripts (unofficial), names and addresses of four references and a statement of professional goals and research interests should be sent to: **Professor Wayne Loescher, Chair, Plant Molecular Biology Search Committee, Department of Horticulture/Land Arch., WSU, Pullman, WA 99164-6414 by 25 January 1989.**

WSU is an Equal Opportunity/Affirmative Action educator and employer. Protected group members are encouraged to apply.

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE

Major Harvard Medical School teaching institution is looking for Ph.D., M.D. or M.D.-Ph.D. to work on the control of gene expression by catecholamines and thyroid hormone. Candidate must have experience in molecular and cell biology. Send curriculum vitae, letter summarizing career goals and interests, and references to: **J. Enrique Silva, M.D., Beth Israel Hospital, Division of Endocrinology, 330 Brookline Avenue, Boston, MA 02215; telephone: 617-735-2028.**

POSITIONS OPEN

PHYSICAL CHEMIST with strong interest in biochemistry preferred; other interests considered. Assistant Professor, tenurable, starting August 1989. Ph.D. required. Denison University is a high quality liberal arts college located in central Ohio. ACS certified chemistry department; excellent facilities including modern instrumentation. Primary responsibilities include physical and biochemistry, also introductory level chemistry. Strong commitment to teaching and research involving undergraduates required. To assure consideration, send application, resume, transcript and three letters of recommendation by 31 January 1989 to: **Dr. Richard Doyle, Chairman, Department of Chemistry, Denison University, Granville, OH 43023. An Equal Opportunity Employer. Women and minorities are encouraged to apply.**

PLANT GENETICS. ASSISTANT PROFESSOR, tenure-track. Ph.D. required. Candidate should have expertise and postdoctoral experience in the application of molecular techniques to plant genetics, preferably development. Successful candidate will be expected to develop a research program with extramural funding, supervise graduate students, and teach in genetics/cell biology courses. Applicants should send a description of future research plans, curriculum vitae, and names of three referees to: **Dee Topp, Secretary, Search Committee, Department of Biology, Montana State University, Bozeman, MT 59717. Review of applications will begin 17 February 1989. MSU is an Affirmative Action/Equal Opportunity Employer.**

POPULATION BIOLOGY. Three-year term position (subject to annual renewal) at the **ASSISTANT PROFESSOR** level. Ph.D. required. Applicants should be qualified to teach genetics, introductory organismic/population biology, and advanced course in specialty. A commitment to research, including work with undergraduates, is expected. Send curriculum vitae, graduate and undergraduate transcripts, and statement of research interests, by 1 February 1989, and arrange for letters from three referees to be sent to: **Dr. J. L. Richardson, Department of Biology, Franklin and Marshall College, Lancaster, PA 17604-3003. Franklin and Marshall is a coeducational liberal arts college with a strong program in the sciences. Women and members of minority groups are encouraged to apply. An Equal Opportunity Employer.**

POSITIONS AVAILABLE 1988-89

The School for Field Studies (SFS) seeks senior and associate **FACULTY** for semester and summer programs in the following specialties: tropical species diversity/Australia; ethnobotany/Ecuador; landscape ecology/Colorado; tropical ecology/Costa Rica; acid rain/Adirondacks; wildlife management/Kenya; cultural ecology/Himalayas; bald eagles/Alaska; coral reef ecology and marine parks management/Virgin Islands; monkseals/Greece; endangered monkeys/Mexico; spinner dolphins/Hawaii; humpback whale ecology/North Atlantic; bottlenose dolphins/Alabama. SFS also seeks applicants for **ADMINISTRATOR/TEACHERS** to direct permanent Centers for Rainforest Studies/Australia; marine ecosystem studies/Virgin Islands (coral reefs); wildlife management studies/Kenya (big game ecology); and marine mammal studies/Baja, Mexico (whale ecology). Qualifications: excellence in teaching; advanced training in environmental sciences/conservation (Ph.D. for senior faculty, master's degree for associate faculty); leadership and facility with group dynamics; commitment to experiential education; experience in field research situations; teamwork; and administrative ability (for field directors). Please submit curriculum vitae and letter of interest and qualifications to: **The Dean, School for Field Studies, 16 Broadway, Beverly, MA 01915. Telephone: 508-927-7777; FAX: 508-927-5127.**

POSTDOCTORAL FELLOWSHIP POSITION available immediately, to study mechanisms underlying tolerance to sedative hypnotic drugs. Current project involves physiological assessment of ethanol-induced thermoregulatory disturbances, including hypothalamic temperature manipulation and measurement of oxygen consumption. Seeking a recent Ph.D. in pharmacology, physiology, or physiological psychology for support by NIAAA training grant. Send curriculum vitae and three letters of reference to: **Dr. Edward Gallaher, Department of Medical Psychology, L470 Oregon Health Sciences University, Portland, OR 97201.**

POSITIONS OPEN

POSITION AVAILABLE—IVF LABORATORY

Ph.D. to direct human IVF laboratory in a newly established program in Chicago. Experience in cell or tissue culture techniques and in gamete and embryo biology required. Research funds, support staff and academic appointment available. Competitive salary, dependent on experience, and generous benefits.

Replies, including curriculum vitae should be sent to:

**W. Paul Dmowski, M.D., Ph.D.
Director, Chicago IVF and Fertility Institute
Grant Hospital of Chicago
550 West Webster Avenue
Chicago, IL 60614**

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE

We study a multigene family located in Balbiani rings on polytene chromosomes in salivary glands of *Chironomus*. These genes encode secretory polypeptides which assemble in vivo into an insoluble silk fiber. Current efforts are directed at (i) characterizing additional genes/proteins in this family and (ii) learning how secretory polypeptides assemble in vitro into silk. Applicants should have experience in one or more of the following areas: production of monoclonal/polyclonal antibodies; immunomicroscopy (fluorescence and EM); physical studies on synthetic peptides/proteins; DNA cloning/sequencing. Send curriculum vitae, summary of research experience and three recommendation letters to: **Dr. Steven T. Case, Department of Biochemistry, The University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216-4505. Equal Opportunity Employer, M/F/H/V.**

POSTDOCTORAL FELLOWSHIP in intestinal packaging and transport of lipoproteins is available immediately. Research training is available in an exciting environment that includes recognized and strongly interdigitated research programs in gastrointestinal biology and pathobiology. Applicants with training in subcellular fractionation or lipid and lipoprotein metabolism are preferred. Forward curriculum vitae and statement of career goals to:

**Patrick Tso, Ph.D.
Department of Physiology and Biophysics
Louisiana State University Medical Center
1501 Kings Highway
P.O. Box 33932
Shreveport, LA 71130-3932
LSU Medical Center is an
Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIP to study biotransformations of environmental chemicals toxic to the thyroid. Ph.D. in biochemistry, organic chemistry or equivalent required. Experience in trace analysis using stable and radioisotopes, HPLC, NMR is desirable. Send curriculum vitae with names and telephone numbers of three references to: **Dr. Daniel R. Doerge, Department of Agricultural Biochemistry, 1800 East-West Road, University of Hawaii, Honolulu, HI 96822. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately in Arteriosclerosis SCOR program to investigate cellular cholesterol metabolism using biochemical and molecular biological approaches. *Minority applicants desired.* Send curriculum vitae to:

**Dr. Ira Tabas
Department of Medicine
Columbia University
New York, NY 10032**

POSTDOCTORAL POSITION available in Australia from mid-1989 to study the biology of Human Immunodeficiency Virus infection of macrophages. Areas of research include virus/receptor interactions, mechanisms involved in latency, effects of cytokines on HIV replication. Applicants should have training in virology, molecular or cellular biology. Interviews will be conducted in San Francisco, 17 February to 3 March 1989. Please send curriculum vitae and names of three referees by 10 February 1989 to: **Dr. Suzanne Crowe, MacFarlane Burnet Centre for Medical Research, Fairfield Hospital, Yarra Bend Road, Melbourne, 3078 Australia. FAX 011-613-481-3816.**

MARINE BIOLOGICAL LABORATORY



1989 Summer Courses

BIOLOGY OF PARASITISM (June 11-August 11) Emphasizing the on-going convergence of molecular biology and immunology with tropical medicine, this course covers recent developments in research on parasites and parasitic disease. Laboratory work focuses on the general biology of parasites as well as applicable methods of molecular biology and immunology. Intended for advanced graduate and postdoctoral students as well as established investigators. Co-Directors: John E. Donelson, University of Iowa School of Medicine and Carole Long, Hahnemann Medical College.

EMBRYOLOGY: CELL DIFFERENTIATION AND GENE EXPRESSION IN EARLY DEVELOPMENT (June 18-July 29) An advanced level lecture and laboratory course intended for graduate students, postdoctoral fellows, and other research scientists who wish a current treatment of major issues in the experimental analysis of developmental biology of invertebrate and vertebrate embryonic systems, and the diverse intellectual approaches now useful in this field. Director: Eric H. Davidson, California Institute of Technology.

MARINE ECOLOGY: APPLICATIONS OF MOLECULAR BIOLOGY TECHNIQUES AND MOLECULAR PROBES (June 18-July 29) Two three-week modules will provide an intensive experience for graduate, postdoctoral and highly qualified undergraduate students. Director: J. Woodland Hastings, Harvard University.

MICROBIOLOGY: MOLECULAR ASPECTS OF CELLULAR DIVERSITY (June 11-July 27) A six-week laboratory course intended for advanced students and established investigators who seek training in microbiological techniques and experience with a broad range of microbes, emphasizing anaerobes and their cultivation. Co-Directors: Ralph Wolfe, University of Illinois and Peter Greenberg, University of Iowa.

NEURAL SYSTEMS AND BEHAVIOR (June 11-July 29) A lecture/laboratory course intended for graduate students, postdoctoral fellows, and established investigators combining state-of-the-art methods of neurobiology with the analysis of animal behavior, representing the interface between these two fields. Director: Thomas Carrew, Yale University.

NEUROBIOLOGY (June 11-August 19) A ten-week advanced course for pre- and postdoctoral students providing lectures and laboratory experience in the issues and techniques of contemporary cellular and molecular neurobiology. Director: Arthur Karlin, Columbia University.

PHYSIOLOGY: CELL AND MOLECULAR BIOLOGY (June 11-July 22) A course for graduate students, postdoctoral fellows and established investigators who wish hands on experience with both standard methods to purify and characterize proteins, nucleic acids and other cellular components as well as several advanced techniques used to relate molecular structure to physiological function. The course will feature the importance of marine organisms available at Woods Hole as experimental systems in modern biology, and postcourse research with the staff. Director: Thomas D. Pollard, Johns Hopkins University.

Application Deadline: March 1, 1989

Partial financial aid is available to qualified applicants.

Contact: Admissions Coordinator
Office of Sponsored Programs
Marine Biological Laboratory
Woods Hole, MA 02543
(508) 548-3705, ext. 216

CELLULAR BIOLOGIST & CELLULAR IMMUNOLOGIST

Collagen Corporation is a dynamic and growing biomedical company. Our Research & Development subsidiary, Celtrix Laboratories, is a leader in the identification and therapeutic uses of newly discovered cytokines and growth factors. If you're a qualified research scientist with strong supervisory abilities, we invite you to join us in our attractive San Francisco bay area location.

CELLULAR BIOLOGIST

The selected candidate will be responsible for developing *in vitro* and *in vivo* models which can be used to evaluate the role of novel cytokines in the growth and differentiation of epidermal and connective tissue cells. You will also determine the potential use of these factors in the treatment of skin diseases. Qualified individual will have a Ph.D. in Cell Biology or a related field with 2-3 years of research experience in skin biology and/or dermatology.

CELLULAR IMMUNOLOGIST

The successful candidate will supervise the development of immune-mediated inflammation models used to evaluate the role of different cytokines in the immune response. This position requires a Ph.D. and 2-3 years of experience, or an M.S. and 4 years' experience, with inflammatory animal models and cellular immunology.

Our R&D focus will provide you with a challenging, stimulating career environment in an ideal location, as well as excellent salaries, full benefits, an employee stock purchase plan and relocation assistance. For prompt, confidential consideration, send your resume to: S. Hansen, Human Resources, Collagen Corporation, 2500 Faber Place, Palo Alto, CA 94303. We are an equal opportunity employer.



COLLAGEN
CORPORATION

POSITIONS OPEN

A limited number of **POSTDOCTORAL FELLOWSHIP POSITIONS** will be available in the fall of 1989 for research in marine sciences, applied biology, marine natural products chemistry, and biomedical marine research. Research areas include physical oceanography, marine botany, marine habitat restoration, invertebrate larval biology, invertebrate fisheries ecology, aquaculture, fisheries genetics, zooplankton biology, invertebrate reproduction and development, fish ecology and behavior, marine natural products chemistry, tumor biology, virology, microbiology and blue-green algal culture, immunology, molecular biology, and sponge physiology and taxonomy. Deadline for application is 1 April 1989. Specify area of interest with request for information brochure and application packet from: **Dr. Marsh J. Youngbluth, Postdoctoral Program, Harbor Branch Oceanographic Institution, Inc., 5600 Old Dixie Highway, Fort Pierce, FL 34946. An Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIPS

Postdoctoral positions are available for studying gene expression in prokaryotes using genetic, biochemical, and physical methods. Salaries commensurate with training and education. Send curriculum vitae, bibliography, and three letters of reference to: **Dr. Sankar Adhya, Laboratory of Molecular Biology, National Cancer Institute, NIH, 9000 Rockville Pike, Building 37, Room 4B06, Bethesda, MD 20892. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available for research on mapping the domains of herpes simplex virus and human cytomegalovirus proteins. Work includes gene cloning, transient expression in eukaryotic cells, construction of mutant viruses and cell lines, and the use of monoclonal antibodies. Preference will be given to applicants with a background in molecular biology. Interested candidates should submit curriculum vitae and three letters of reference to: **Dr. Lenore Pereira, School of Dentistry, University of California San Francisco, HSW-604, San Francisco, CA 94143. Equal Opportunity/Affirmative Action.**

POSTDOCTORAL POSITION available for candidate with background in one or more of the following areas: pharmacology, biochemistry, cell biology, immunology or virology. Candidate will participate in research on the evaluation of anti-viral drugs in HIV in vitro and in vivo systems (nonhuman primates). Studies will be supervised by **Dr. Jorg Eichberg**. Appointments are for 1 year periods up to 3 years. Annual salaries range from \$21,070 to \$29,265, dependent upon previous postdoctoral experience. Send curriculum vitae with names and telephone numbers of three references to: **Personnel Director (906), Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, TX 78284. Equal Opportunity Employer M/F.**

POSTDOCTORAL POSITION available immediately to study molecular mechanisms of DNA double strand break production by ionizing radiation. To define such structures in intracellular DNA will involve unique uses of molecular biological techniques. Background in DNA enzymology preferred. Send curriculum vitae and addresses of three references to: **Dr. John F. Ward UCSD, Radiation Biology Division M-010, La Jolla, CA 92093. The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately to study surface antigens and proteinases of *Entamoeba histolytica*. Experience in molecular biology desirable but background in protein chemistry acceptable. Send curriculum vitae and three letters of reference to: **Dr. Sharon L. Reed, Division of Infectious Diseases H-811F, UCSD Medical Center, San Diego, CA 92103.**

POSTDOCTORAL POSITION available immediately to characterize the biochemical and functional properties of extracellular/matrix proteins involved in the expression of the transformed phenotype. Background in biochemistry, cell biology, molecular biology or immunology desirable. Send curriculum vitae and three letters of reference to: **Dr. Susan P. Hawkes, Department of Pharmacy, S-926, University of California, San Francisco, CA 94143-0446.**

POSITIONS OPEN

POSTDOCTORAL POSITION available to study the electron transfer reactions of cytochrome P-450, including an investigation of why some substrates, such as the anesthetics, require cytochrome b₅ for their metabolism by cytochrome P-450. Biochemical, chemical and genetic engineering techniques will be applied to this problem. Send résumé and names of three references to: **Dr. L. Waskell, University of California, San Francisco, VA Medical Center (129), 4150 Clement Street, San Francisco, CA 94121.**

POSTDOCTORAL POSITION available spring 1989 to study in brain slices, serotonergic responses mediated by receptors postsynaptic to raphe neurons with special reference to hallucinogenic drugs. Experience with electrophysiological techniques required. Send curriculum vitae and names and addresses of three references to: **Dr. Joseph Goldfarb, Department of Pharmacology, Box 1215, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, NY 10029-6574. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately to an individual with training and expertise in molecular biology to study the mechanism of cold tolerance in plants. Knowledge of plant biology is not necessary. Experience in recombinant DNA and immunological techniques is desirable. To apply, send curriculum vitae and the names and telephone numbers of three references to: **Charles Guy, Institute of Food and Agricultural Sciences, 1507 Fifield Hall, University of Florida, Gainesville, FL 32611 or call 904-392-7934.**

POSTDOCTORAL POSITION at Oak Ridge National Laboratory available to devise methods to label DNA with elements that have multiple stable isotopes and apply these to a new method for DNA sequencing. Background in organometallic or nucleic acid chemistry preferred. For information contact: **K. Bruce Jacobson at 615-574-1204. For application materials contact: Postgraduate Research, University Programs Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3456.**

POSTDOCTORAL POSITION available to develop new methods for the detection of polymorphisms in human DNA with special emphasis on PCR-based techniques. Applicant should have a Ph.D. in genetics or molecular biology, preferably with some experience in this area. Please send curriculum vitae to either: **Dr. Alan F. Scott or Dr. Haig H. Kazazian, Jr., CMSC 1004, Johns Hopkins University School of Medicine, 600 North Wolfe Street, Baltimore, MD 21205. Telephone: 301-955-6327 or 955-2553. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION

Available fall 1988, to study the effects of drugs on the behavior of nonhuman primates performing sensory psychophysical tests. Work involves examination of effects of common drugs of abuse, including interactions of multiple drug combinations. Experience in one or more of the following areas is desirable: behavioral pharmacology, psychophysics of hearing and/or vision; pharmacology; animal learning; experimental psychology. Applicants should submit detailed curriculum vitae, statement of research interests, and names of three references to: **Robert D. Hienz, Ph.D., Division of Behavioral Biology, Department of Psychiatry and Behavioral Sciences, The Johns Hopkins University School of Medicine, 720 Rutland Avenue, Baltimore, MD 21205. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION in biology at M.I.T. available immediately for studies on translational control in eukaryotes with emphasis on regulation of protein chain initiation by phosphorylation-dephosphorylation mechanisms. Specific aspects focus on the roles of dsRNA-activated and heme-regulated eIF-2a kinases, and on the function of "reversing factor" in the recycling of eIF-2. Contact: **Dr. Daniel Levin, Building E25-519, Massachusetts Institute of Technology, Cambridge, MA 02139. Telephone: 617-253-4307.**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study B cell responses to polysaccharide antigens in mice and humans. Ph.D. required with training/experience in cellular immunology desired. Send curriculum vitae and three letters of recommendation to: **Dr. Donna Ambrosino, Dana-Farber Cancer Institute, Harvard Medical School, 44 Binney Street, Boston, MA 02115.**

POSTDOCTORAL POSITION available to study DNA modification and repair as related to cancer chemotherapy and environmental exposure. Should have background in enzymology and/or nucleoside chemistry. Stipend in NIH range. Please send résumé to: **Dr. David B. Ludlum, Department of Pharmacology, University of Massachusetts Medical School, Worcester MA 01655. UMMC is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION. NIH-funded research explores cell/molecular determinants of compatibility/incompatibility in molluscan schistosomiasis. If you have experience in cell/molecular biology, immunology and are eager for some immunoparasitology, apply by 23 January 1989 to: **Dr. Chris Bayne, Zoology Department, Oregon State University, Corvallis, OR 97331-2914. OSU, an Affirmative Action/Equal Opportunity Employer, has a policy of being responsive to needs of dual-career couples.**

POSTDOCTORAL POSITION (Ph.D.) available immediately for candidates with a background in virology, immunology, or molecular biology to study aspects of Human Immunodeficiency Virus infection. Areas of potential research include but are not limited to: monocyte/myeloid cell infection with HIV, identification of infected cells by flow cytometry or DNA amplification, complement activation by HIV, and interferon effects on HIV. Salary is competitive and commensurate with qualifications. Send curriculum vitae to: **Dr. Alan Landay, Department of Immunology/Microbiology, Rush-Presbyterian-St. Luke's Medical Center, 1753 West Congress Parkway, Chicago, IL 60612. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION UNIVERSITY OF PENNSYLVANIA MEDICAL SCHOOL

A position is available as of 1 July 1989, for studies of intrinsic membrane proteins of the Golgi apparatus of neurons. Research involves preparation of monoclonal and polyclonal antibodies to neuronal Golgi fractions, isolation of polypeptides by immunoaffinity chromatography and their characterization with biochemical and morphologic approaches. Send curriculum vitae and the names and addresses of three references to: **Dr. Nicholas K. Gonatas, Department of Pathology, University of Pennsylvania School of Medicine, 447A Johnson Pavilion, Philadelphia, PA 19104-6079.**

POSTDOCTORAL POSITION available for 2 years for an applicant with experience in virology and molecular biology. The goal is to design, construct, and install in animal cells and transgenic animals novel mechanisms for protection against vesicular stomatitis virus infection. Send curriculum vitae and three letters of reference to: **Dr. Geoffrey Letchworth, Department of Veterinary Science, University of Wisconsin, 1655 Linden Drive, Madison, WI 53706. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION MOLECULAR AND CELLULAR BIOLOGY

Position available for Ph.D. to study the gene expression of tissue inhibitor of metalloproteinases (TIMP) in fibroblasts and during cellular differentiation of mononuclear phagocytes. Research will also involve mechanisms of coordinate regulation of TIMP with various metalloproteinases using state-of-the-art molecular and cell biologic approaches. The position allows for collaborative research with other faculty members studying the biology of extracellular matrix. Send curriculum vitae to: **Howard Welgus, M.D., Department of Medicine, Jewish Hospital at Washington University Medical Center, St. Louis, MO 63110.**

Neurobiologist

Pfizer, a U.S. based multinational pharmaceutical company, is seeking a qualified scientist to join our Central Research facility in Groton, Connecticut. You will participate in multidisciplinary approaches to therapy for CNS disorders and neurodegenerative diseases in our Molecular Neurobiology group. You should possess an MS or BS degree in the Biological Sciences. You also should have laboratory experience in one or more of the following areas: enzymatic assays; ELISA; tissue culture.

Pfizer offers a stimulating scientific research environment with the opportunity to interact with scientists from several disciplines. In addition, Pfizer has a competitive compensation/benefit package along with relocation assistance to this southeastern Connecticut shore community. Please send a resume, description of research accomplishments and names of three references to: Mrs. Lorraine C. Corr, Personnel Associate, Pfizer Central Research, Eastern Point Road, Groton, CT 06340. An equal opportunity employer.



Postdoctoral Fellow/Research Assistant Professor

We are seeking a Ph.D. to participate in ongoing research on regulatory mechanisms in hemostasis. Familiarity with platelet physiology, radioimmunoassays, HPLC, coagulation assays required. Experience with cell culture techniques highly desirable. References required. Position open immediately.

Contact: **Daniel Deykin, M.D., Boston VAMC, 150 S. Huntington Ave., Boston, MA 02130, U.S.**

Citizenship/work permit required.
Equal opportunity employer.

BIOCHEMISTS

Lever Research & Development, the central research facility for Unilever in the United States, a leading consumer products company, is seeking Biochemists at all degree levels for research in our Enzymology and Dental research groups.

Recent experience in protein purification and characterization, enzyme kinetics, membrane biochemistry, bioinorganic chemistry and/or microbiology is helpful but not necessary. Experienced individuals and recent graduates are encouraged to respond.

We offer an excellent benefits package and competitive salary commensurate with experience. If interested, please submit resume, in confidence, to: Jim Conti, Manager, Employee Relations.



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**Lever Research &
Development Ctr.
45 River Road
Edgewater, NJ
07020**

Manager ANTIVIRAL PROGRAM

Our client is a highly respected biopharmaceutical research company. This Toronto based company has developed strong research capability in selected areas of biotechnology.

We are seeking an achievement oriented scientist to build and lead a team devoted to antiviral research. A successful track record in the development of new products is highly desirable. The selected individual will report to the President.

The ideal candidate will:

- * possess a PhD degree in Molecular Biology or Virology followed by a minimum of three to five years of relevant experience.
- * be familiar with vector construction, mammalian cell transformation, transcription factors and protein fractionation.
- * have excellent interpersonal and other managerial skills.
- * be self-motivated and yet be able to interact effectively with external scientific groups.
- * be oriented to goals, budgets and deadlines.

A competitive compensation and benefits package will be offered to the right candidate.

Qualified candidates interested in this position are invited to submit their resumes, quoting Reference #88026 to:



**Dr. Marc C. Raheja
CanMed Consultants Inc.
659 Mississauga Crescent
Mississauga, Ontario
Canada L5H 1Z9
Tel (416) 274-0707
Fax (416) 274-5211**

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PROFESSIONALS IN THE HEALTH CARE SECTOR.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for work on molecular aspects of cytokine regulation of fibroblast proliferation, collagen synthesis, and chemotaxis. Candidates with cell or molecular biology background preferred. Send curriculum vitae, three letters of recommendation, and statement of research interests to: **Sem H. Phan Ph.D., M.D., Department of Pathology, M4204, University of Michigan Medical School, Ann Arbor, MI 48109-0602.** The University of Michigan is a non-discriminatory Affirmative Action Employer.

POSTDOCTORAL POSITION is available starting June 1989 to study transcriptional activation in the mouse embryo. The candidate should be trained in molecular biology and willing to collaborate with other investigators in a Program Project Grant that focuses on studying molecular aspects of mouse embryogenesis. Send curriculum vitae, re/preprints, and addresses of three references to: **Dr. Richard Schultz, Department of Biology, University of Pennsylvania, Philadelphia, PA 19104-6018.** The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION to study structure-function relationships in *E. coli* RNA polymerase. Candidates should have a strong publication record, expertise in classical and molecular bacterial genetics, physiology, protein purification and enzymology, and a demonstrated ability to integrate these disciplines. Salary: \$27,000. Submit curriculum vitae and three letters of recommendation by 20 January 1989 to: **Dr. Carol Gross, Department of Bacteriology, University of Wisconsin, Madison, WI 53706.** Affirmative Action/Equal Opportunity Employer.

FULL-TIME POSTDOCTORAL POSITION OR ASSISTANT RESEARCH PHYSIOLOGIST position, available immediately for two years (with possibility for renewal), for a biophysicist trained in cellular electrophysiology to study calcium action in neurons. Annual salary \$23,196 to \$28,920 for postdoctoral, \$36,600 to \$45,700 for assistant research, depending on experience. Photosensitive calcium chelators will be used to probe the role of calcium in transmitter release and plasticity at central and peripheral synapses, and in causing inactivation of calcium currents. Experimental preparations include neuromuscular junction, ganglionic and isolated neurons, and the squid giant synapse using a local squid holding facility. A new calcium imaging system on an upright microscope is available to trace changes in presynaptic calcium during electrical activity, and explore ionic mechanisms of facilitation and potentiation. Before 10 February 1989, send résumé, reprints, and two names of references to: **Dr. Robert Zucker in the Neurobiology Division of the newly designated Molecular and Cellular Biology Department, University of California, Berkeley, CA 94720.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION IN PROTEOGLYCAN BIOCHEMISTRY

An exciting postdoctoral position is available immediately for an individual with a Ph.D. in proteoglycan biochemistry. The successful applicant will be engaged in research exploring the role proteoglycans play in the development of amyloidosis generally and Alzheimer's Disease in particular. The successful individuals will be part of an existing team currently consisting of a carbohydrate chemist, a molecular biologist, a protein biochemist, a postdoctoral fellow, two students, and four technicians. Collaboration and research agreements are also in place with a protein structure group, two neurobiologists and a pharmaceutical company. The initial appointment will be for 2 years, and may be extended for an additional 2 to 3 years. Please submit curriculum vitae and three letters of reference to: **Dr. Robert Kisilevsky, Professor and Head, Department of Pathology, Queen's University, Kingston, Ontario, Canada, K7L 3N6.**

POSTDOCTORAL POSITIONS are available for studies of the interaction with and unwinding of DNA by helicases and helix destabilizing proteins. Persons with experience in biochemical, biophysical, enzymological, or genetic approaches to the study of protein-DNA interactions are preferred. Send curriculum vitae and the names of three references to: **Dr. T. M. Lohman, Department of Biochemistry and Biophysics, Texas A&M University, College Station, TX 77843.**

POSITIONS OPEN

POSTDOCTORAL POSITION: Available immediately to study the biochemistry and molecular biology of macromolecules involved in the adherence of bacteria to corneal epithelial cell membranes. Send curriculum vitae and the names of two references to:

**Dr. N. Panjwani
Tufts University School of Medicine
Department of Ophthalmology
136 Harrison Avenue, Box 450
Boston, MA 02111**

POSTDOCTORAL POSITION IN NEUROBIOLOGY. A postdoctoral position is available beginning 1 August 1989, to study molecular mechanisms of olfaction. Applicants with interest in signal transduction and with expertise in recombinant DNA technology are invited to send curriculum vitae and the names of three references to: **Dr. Robert R. H. Anholt, Department of Neurobiology, Box 3209, Duke University Medical Center, Durham, NC 27710.** Salary \$20,000 plus travel allowance. Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION IN MOLECULAR AND BEHAVIORAL NEUROBIOLOGY is available on a collaborative project studying steroid hormone modulation of neurotransmitter gene transcription in the zebra finch brain in relation to behavior. Excellent research facilities are available through Hunter's new Center for the Study of Gene Structure and Function. Candidates should have a strong background in molecular biology. Send curriculum vitae and names, addresses, and telephone numbers of three references to: **Dr. C. F. Harding, Neuroscience Program, Hunter College, CUNY, 695 Park Avenue, New York, NY 10021.**

Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION IN VIROLOGY

Ph.D. or M.D. with a molecular virology training to study the molecular and pharmacologic aspects of herpes simplex virus reactivation. Strong molecular virology background required. Curriculum vitae and names of three references to: **Jay S. Pepose, M.D., Ph.D., Department of Ophthalmology, Box 8096, Washington University School of Medicine, 660 South Euclid Avenue, St. Louis, MO 63110.**

POSTDOCTORAL POSITIONS. (i) To study the multiple roles of EGF receptors during mouse development. Techniques include embryo dissection, cell culture, recombinant DNA construction and transfection, immunohistology and receptor measurements. (ii) To work on the development of epithelial layers using embryonal carcinoma cells and cell-cell and cell-matrix interactions. Send curriculum vitae and names of three referees to: **Dr. Eileen Adamson, La Jolla Cancer Research Foundation, 10901 Torrey Pines Road, La Jolla, CA 92037.** Telephone: 619-455-6480. *Equal Opportunity Employer/Affirmative Action.*

POSTDOCTORAL POSITIONS available to study transcriptional and post-transcriptional regulation of protein synthesis in liver and skeletal muscle. Positions require experience in protein chemistry, tissue culture, and gene expression in mammalian cells. Send curriculum vitae and three letters of reference to: **Dr. Leonard S. Jefferson, Chairman, Department of Physiology, College of Medicine, The Pennsylvania State University, Hershey, PA 17033.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITIONS (three) in multidisciplinary neurotoxicology studying electrophysiology of neurons in situ and in vitro, cell adhesion molecules and cytoskeleton in abnormal brain development, neural histochemistry. Experience in electrophysiology, cell culture, morphology, or molecular neurobiology essential. Curriculum vitae and letters to: **Dr. H. E. Lowndes, Neurotoxicology Laboratories, Department of Pharmacology and Toxicology, Rutgers College of Pharmacy, Piscataway, NJ 08854.** *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS are available in the following areas: (i) Molecular biology of simian immunodeficiency virus (SIV); (ii) Genetic diversity of SIV; (iii) Molecular basis for the oncogenicity of herpesvirus saimiri (HVS). For SIV, see *Ann. Rev. Micro* **42**, 607 (1988) and *J. Virol.* **57**, 701 (1986); *Science* **239**, 1145 (1988); *Cell* **54**, 599 (1988). The location is 25 miles west of Boston in a wooded, rural setting. Send curriculum vitae, and names of three references to:

**Dr. Ronald C. Desrosiers
Harvard Medical School
New England Regional Primate Research Center
1 Pine Hill Drive
Southboro, MA 01772**

POSTDOCTORAL POSITIONS available immediately to study vasodilator response and tolerance in experimental heart failure. A multidisciplinary approach involving examination of biochemistry, hemodynamics, vasodilation, pharmacokinetics, receptor and neurohormonal regulation will be carried out. Submit curriculum vitae and three letters of reference to: **Dr. H.-L. Fung, Cooke Hall, State University of New York, Buffalo, NY 14260.** *SUNY/Buffalo is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS available in the new Section of Immunobiology at Yale University School of Medicine. Headed by **Richard Flavell** (molecular immunology, regulation and function of MHC gene expression in transgenic mice, transgenic mouse models of autoimmune disease), members include **Philip W. Askenase** (cloning and function of factors regulating delayed hypersensitivity), **Alfred Bothwell** (molecular genetics of hematopoietic stem cell and T cell differentiation antigens, B cell memory and somatic mutation), **Kim Bottomly** (activation requirements and effector functions of CD4⁺ T cells), **Adrian Hayday** (role and regulation of T cell receptor gamma delta repertoire, Myc gene 'de-regulation' in lymphoma), **Charles A. Janeway, Jr.** (antigen processing and antigen recognition of T cells, experimental autoimmunity, T cell development), **Paula Kavathas** (CD8 role/regulation, molecular basis of MHC and disease association), **Nancy Ruddie** (LT/TNF regulation and mechanism of action). Brochure describing research areas is available upon request. Please send curriculum vitae, including the names, addresses, and telephone numbers of three references, and indicate laboratories or research areas of interest by 15 April 1989 to: **Dr. Richard Flavell, Section of Immunobiology, 424 FMB, 310 Cedar Street, P.O. Box 3333, New Haven, CT 06510.**

Yale University is An Equal Opportunity Employer.

POSTDOCTORAL POSITIONS

Two postdoctoral positions available at a cardiovascular research laboratory in San Francisco to study the control of the tissue-specific expression of the human apolipoprotein B gene and the assembly and secretion of apo-B containing lipoproteins after transfection with apo B cDNA constructs. If interested, please send curriculum vitae and the names of three references to: **Drs. Levy-Wilson and McCarthy, c/o Personnel, Gladstone Foundation Laboratories, P.O. Box 40608, San Francisco, CA 94140-0608.**

POSTDOCTORAL POSITIONS DEVELOPMENTAL GENE EXPRESSION

Positions are available to study the molecular mechanisms of developmental gene expression in mammals. Two NIH-funded projects involve the study of alphafetoprotein (AFP) gene expression in the rat liver during normal development and in chemical carcinogenesis, and tissue-specific gene expression in man, using the differentially expressed human alkaline phosphatase gene family as a model system. Methods used in these studies include recombinant DNA, cell culture and protein isolation. Some experience with genetics, biochemistry or recombinant DNA is desirable. Excellent salaries and fringe benefits are awarded for 2 years. Please send curriculum vitae and the names of three references (with addresses and telephone numbers) to: **Dr. Brian J. Knoll, Ph.D., Department of Pathology and Laboratory Medicine, University of Texas Medical School, Texas Medical Center, Houston, TX 77025.**

Science Program Coordinator

Babson College, located in Wellesley, MA, invites applications for a position as Science Program Coordinator starting September 1989. This is a senior position with responsibility for the development, implementation and coordination of our science curriculum. We are leaders in science education for business students. Through curriculum development and outstanding teaching, the Coordinator will help us enhance the technological literacy of our students and their understanding of the connections among science, technology and business.

Send curriculum vitae and names of three references to: Dr. Paul E. Ritt, Director, Academic Affairs, Babson College, Babson Park (Wellesley), MA 02157.

Babson College is an Equal Opportunity/Affirmative Action Employer

BABSON COLLEGE
EXECUTIVE THINKING

Applied Statistician

The Joint Commission on Accreditation of Healthcare Organizations' **Agenda for Change** initiative requires an Applied Statistician to manage the analysis and feedback of quantitative clinical performance data to health care organizations.

The individual we seek will conduct statistical analyses of patient outcome data using appropriate risk adjustment techniques; assist in the analysis of data from a variety of sources, including existing large-scale databases; provide design and statistical consultation on all phases of quality assessment processes.

We are looking for a statistician with a background in epidemiological techniques; at least five years experience preferably in an applied setting; experience with large-scale databases; and demonstrated ability to perform independently all phases of complex data analysis, from conceptualization through computerized analyses to communication of the results.

We offer an excellent starting salary and an outstanding flexible benefits package, including a child care spending account and a 401(k) plan. Interested applicants should submit their resume and salary requirements to: Jean Galovich, Director of Personnel, Joint Commission on Accreditation of Healthcare Organizations, 875 N. Michigan Avenue, Chicago, IL 60611. Equal Opportunity Employer M/F



Joint Commission
on Accreditation of
Healthcare Organizations

MOLECULAR BIOLOGISTS

A molecular biology group of Zoecon Research Institute, a division of Sandoz Crop Protection, located in the San Francisco Bay Area has several openings for experienced molecular biologists to study biological insect control.

We are seeking scientists with MS and Ph.D. degrees having experience in the following areas:

- 1) Gene cloning and DNA sequencing;
- 2) Site directed mutagenesis;
- 3) Prokaryote gene regulation.

To apply for these positions, send your CV and names of three professional references to:

**Sandoz Crop
Protection Corporation
Zoecon Research Institute
Human Resources Department
975 California Avenue
Palo Alto, CA 94304-1104**



AA/EOE

Ph.D. Biochemistry

RESEARCH INVESTIGATOR

The Squibb Institute for Medical Research is an internationally recognized leader in the research and development of innovative pharmaceuticals and related health care products. Currently, we have a position available for a Research Investigator to join us at our New Brunswick, NJ facility.

Our successful candidate will possess a Ph.D. in Biochemistry and 2-3 years experience in cell and tissue culture. Experience in transport kinetics would be a plus. Specific responsibilities of this position include:

- The preparation and characterization of myocardial and endo-thelial cell cultures.
- The study of metabolic and transport characteristics of potential myocardial and cerebral perfusion imaging agents.

We offer a very competitive compensation package and participation in our comprehensive benefits program. Interested candidates should submit their resume, including salary history, to: E.R. Squibb & Sons, Dept. LH/E18788, P.O. Box 191, New Brunswick, NJ 08903. An equal opportunity employer.



SQUIBB

POSITIONS OPEN

POSTDOCTORAL POSITIONS—BIOLOGICAL THEORY. Protein structure and function; DNA structure and function; neural net theory. Research potential more important than specific training. For information, contact: **Charles DeLisi, Chair, Department of Biomathematical Sciences, The Mount Sinai School of Medicine, Box 1023, One Gustave L. Levy Place, New York, NY 10029-6574.** An Equal Opportunity Employer.

POSTDOCTORAL POSITIONS—SCRAPIE PRION PROTEIN GENE EXPRESSION AND STRUCTURE. Interdisciplinary training in the expression of cloned prion protein (PrP) genes in eukaryotic cells and post-translational modifications of the scrapie and cellular PrP's. Construction of recombinant PrP genes and their expression in cultured cells and transgenic rodents provide an unusual opportunity to merge molecular biology and neurodegenerative disease research. Structural studies on PrP CHO and glycolipids using HPLC, GC/MS, LSIMS and tandem mass spectrometry. Crystallization and x-ray structure of PrP's are planned. Candidates with molecular biology, protein purification, genetics, physical biochemistry, organic chemistry, enzymology, mass spectrometry, CHO or protein structure are encouraged to apply. Must be U.S. citizen or hold a permanent residence visa for NIH training stipends (\$17,000-\$30,000). Send curriculum vitae, copies of papers, and three letters of recommendation to: **Stanley Prusiner, University of California, San Francisco, San Francisco, CA 94143-0518.** An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE: To study effects of dietary fatty acids on arachidonic acid metabolism. Doctoral degree in biological science is required. This position is funded by NIH and will be in the Pennington Biomedical Research Center, a major new facility in the Louisiana State University System with the mission of improving human health through basic research in the nutrition field. Please send curriculum vitae and three letters of reference directly to: **Dr. Daniel Hwang, Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808.** LSU is an Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE LABORATORY OF BIOCHEMICAL ENGINEERING DEPARTMENT OF CHEMICAL ENGINEERING MASSACHUSETTS INSTITUTE OF TECHNOLOGY

A postdoctoral position is available for the purification and characterization of heparin degrading enzymes from *Flavobacterium heparinum*. The project will focus on the characterization of the post-translational modifications of these proteins and their effects in heterologous expression systems. Applicants should have a Ph.D. in chemistry, biochemistry or a related field. Experience in protein purification, characterization of glycoproteins, and recombinant DNA technology is preferred. This position offers the opportunity to participate in an interdisciplinary group involved with several aspects of biotechnology including: fermentation technology, recombinant DNA technology, protein biochemistry and downstream processing. Send curriculum vitae to: **Professor Charles L. Cooney, Room 66-472, Department of Chemical Engineering, Massachusetts Institute of Technology, Cambridge, MA 02139.**

POSTDOCTORAL RESEARCH ASSOCIATE

Research Associate: Postdoctoral position to study the effects of acidification and clearingcutting disturbance on soil and drainage water quality at the Hubbard Brook Experimental Forest, NH. Strong background in soil and water chemistry, statistics and computer modeling required, as well as a demonstrated ability to conduct independent research. Opportunity to conduct both field and laboratory research in a multidisciplinary investigation. Submit curriculum vitae and three letters of reference to: **Dr. Charles T. Driscoll, Department of Civil Engineering, 220 Hinds Hall, Syracuse University, Syracuse, NY 13244-1190** by 27 January 1989. Syracuse University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

UNITED KINGDOM CENTRE FOR PULSED ELECTRON PARAMAGNETIC RESONANCE POSTDOCTORAL RESEARCH ASSOCIATE

SERC and the University of London have provided funds to establish a Centre for Pulsed Electron Paramagnetic Resonance at University College London. The Centre will be based on a Bruker ESP 380 pulsed EPR spectrometer. Initially the centre will concentrate on research on metallo-proteins and photosynthetic reaction centres. A service will also be established for outside users.

A postdoctoral research associate with a strong background in physics/physical chemistry, and preferably experience in magnetic resonance spectroscopy is required to help establish the centre and to take an active roll in technical and research development. The post is funded by an SERC rolling grant with initial salary in the range \$18,104 to \$24,512 depending on experience. The centre will be directed by **Dr. R. Cammack (KCL)** and **Professor M. C. W. Evans (UCL)**, from whom further particulars may be obtained. **Department of Biology, Darwin Building, University College London, Gower Street, London WC1E6BT UK.** Telephone: 01-380-7312.

POSTDOCTORAL RESEARCH ASSOCIATE/ physical biochemistry. Three openings 1 February 1989 to investigate sarcoplasmic reticulum CaATPase or actomyosin in the laboratories of **Carol Coan, Stefan Highsmith or Alex J. Murphy**, using techniques such as absorption, fluorescence and EPR spectroscopy, transient electrical birefringence and chemical modification. Send curriculum vitae and names of three references to: **Postdoctoral Search Committee—Room 400, University of the Pacific, 2155 Webster Street, San Francisco, CA 94115.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH POSITIONS. Cellular and biochemical interactions between viruses, marijuana, and cells of the immune system. Two postdoctoral positions are available 1 January 1989 to study the interactions among marijuana components, viruses and cells of the immune system at cellular, biochemical, and molecular levels. Research will include: (i) studies of effects of drug/virus combinations on immune functions, (ii) molecular mechanisms of alterations of viral and cell functions, (iii) molecular alterations of virus structure. *USF is an Affirmative Action/Equal Employment Opportunity Employer.* Send curriculum vitae and five references to: **Drs. Steven Specter and Gerald Lanza, Department of Medical Microbiology and Immunology, University of South Florida College of Medicine, 12901 North Bruce B. Downs Boulevard, Tampa, FL 33612.**

POSTDOCTORAL RESEARCH POSITIONS. Individuals interested in studies of the virulence and immunological characteristics of members of the genus *Bacteroides*, *Wolinella*, and *Eikenella* and the role of the cell envelope as a virulence factor in inflammatory diseases are invited to apply for postdoctoral positions in the Department of Periodontics at The University of Texas Health Science Center at San Antonio. The department is closely allied with the Department of Microbiology, and with the bone metabolism group in the Division of Endocrinology. This is a unique opportunity for individuals to branch out into new scientific areas of basic science and clinical interest and to apply expertise to molecular genetics, immunology, and physiology to the solving of scientific problems in these essentially unstudied yet important pathogens. Areas of study include: biochemistry and molecular genetics of the outer membrane; studies of the LPS and their role as virulence factors in fibroblast and epithelial systems; and the physiological basis of virulence in these genera. Also included as a major emphasis are immunological studies of virulence components of these microorganisms. These studies include both in vitro and in vivo assessment of virulence and immunological interference with the pathogenicity of the bacteria. Ph.D. or equivalent degree required. Submit curriculum vitae, names, addresses, and telephone numbers of at least five references to: **Dr. Stanley C. Holt, Department of Periodontics, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-7894.** The University of Texas Health Science Center at San Antonio is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION available to study response of female germ cells of mice to chemical mutagens. Cytogenetics background is necessary to relate chromosome damage in oocytes to inherited aberrations. Send résumé to: **Dr. Walderico M. Generoso, Biology Division, Oak Ridge National Laboratory, P.O. Box 2009, M.S. 8077, Oak Ridge, TN 37831-8077.**

POSTDOCTORAL RESEARCH POSITIONS

Positions are available for postdoctoral research associates to study the cell and molecular biology of microtubule associated proteins as they relate to tumor cell structure and function and the mechanism of action of antimicrotubule drugs. Salary is commensurate with background and experience. Interested candidates, please send curriculum vitae and letters of reference to: **Dr. Kenneth Tew, Chairman, Pharmacology, c/o Personnel Department, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111.** We are an Equal Opportunity Employer.

POSTDOCTORAL RESEARCH SCIENTIST MOLECULAR AND DEVELOPMENTAL NEUROBIOLOGY

Postdoctoral scientist position available as of the spring of 1989 to study gene regulation during the development of neurons. Ongoing efforts include the identification of genes related to neuronal differentiation and plasticity, the study of their transcriptional control, and the analysis of their function by perturbation in vitro and in transgenic mice.

Interested persons should send curriculum vitae to:

**Dr. Mark C. Fishman
Howard Hughes Medical Institute
Wellman 4
Massachusetts General Hospital
Boston, MA 02114**

MASSEY UNIVERSITY PALMERSTON NORTH, NEW ZEALAND PROFESSOR OF STATISTICS DEPARTMENT OF MATHEMATICS AND STATISTICS

Applications are invited for the Chair in Statistics in the Department of Mathematics and Statistics which falls vacant due to the retirement of Professor **Brian I. Hayman**. The Chair in Mathematics is held by Professor **Graeme C. Wake**, who is also currently Head of Department.

The Department of Mathematics and Statistics offers a full undergraduate program in statistics including service teaching. Most undergraduate courses are taught both to internal students and by correspondence to extramural students throughout New Zealand. The graduate study programs include masterate and Ph.D. supervision together with a recently introduced extramural Diploma in Applied Statistics. A statistical consulting service is provided to the campus and neighbouring research organizations.

The appointee will be expected to provide leadership and direction in statistics both within the Department and in the wider university environment. He/she should be distinguished in one or more fields of statistical research, have ability in teaching and be experienced in consulting. A background in the main areas in which service teaching takes place, namely Business Studies and the Sciences, may be an advantage, as would familiarity with statistical computing or statistical packages. The appointee will be expected to take a full part in teaching, research, consulting and administration and may be expected to serve a term as Head of Department. It is envisaged that the appointee would take up the Chair in January 1990.

The appointment will be made within the Professorial salary range up to NZ\$96,000.

Further details of the position together with the conditions of appointment may be obtained from: **Appointments (35840), Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, UK, or Mrs. V. B. Bretherton, Personnel Section, Massey University, Palmerston North, New Zealand,** with whom applications close on 31 March 1989.

POSITIONS OPEN

PROFESSOR AND CHAIRPERSON DEPARTMENT OF ANATOMY

UMDNJ—New Jersey Medical School invites nominations and applications for the position of Chairperson and Professor of the Department of Anatomy. Candidates must have a strong record of achievement in research and teaching of Anatomy and/or Cell Biology. The successful candidate will have the opportunity to build a strong, contemporary department with approximately 20 faculty members who will be responsible for teaching medical, dental, and graduate students, as well as conducting research programs in cell biology. The institution is prepared to commit appropriate resources for new programmatic development. Send curriculum vitae or nominations to: **George W. Machiedo, M.D., Chairman, Anatomy Search Committee, c/o Linda C. Reich, NJMS—Office of the Dean, University of Medicine and Dentistry of New Jersey, New Jersey Medical School, MSB—Level B Room 502(S), 185 South Orange Avenue, Newark, NJ 07103-2757. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.**

Minneapolis—University of Minnesota—Department of Psychiatry seeks a **PSYCHIATRIST** to fill a faculty position as assistant professor with a probationary appointment towards tenure. The position entails commitment to research and teaching. The successful applicant will share with other faculty members responsibility for one of several teams which treat hospitalized and non-hospitalized general psychiatric patients. Each team, in addition to treating patients, has the responsibility of training residents, medical students, and psychology interns. The teams may develop specialized treatment and research programs for particular psychiatric disorders. Applicants should be board-eligible, with demonstrated interest and ability to do psychiatric research. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages women and minority applicants.* Send résumé to: **Elke Eckert, M.D., UMHC Box 393, University of Minnesota Hospitals, Minneapolis, MN 55455** by 28 February 1989.

POSITIONS OPEN

PRE- AND POSTDOCTORAL TRAINING POSITIONS IN PULMONARY PHYSIOLOGY.

Training is offered at the University of Wisconsin-Madison under the terms of a NIH training grant. Training faculty includes **G. E. Bisgard, J. A. Dempsey, G. S. Mitchell, J. B. Skatrud, and E. H. Vidruk.** Research includes chemoreceptor physiology, neural regulation of tracheal smooth muscle, exercise and sleep effects on neural-mechanical regulation of breathing and respiratory muscle regulation. Write to: **J. A. Dempsey, Ph.D., Department of Preventive Medicine, 504 North Walnut Street, Madison, WI 53705. The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE. Responsible for performing research involving the effect of fish oil on blood cholesterol, platelet and leucocyte function and aspects of thrombosis. Interview volunteers and patients, obtain suitable blood samples and perform laboratory tests. M.D. degree or Ph.D. degree in medicine or physiology. One year of experience, performing the above or 1 year of experience performing research in homeopathic remedies. Thirty-five hours per week: 9 a.m. to 5 p.m.; \$2014.95 per month. Send résumés to: **Illinois Department of Employment Security, 401 South State Street—3 South, Chicago, IL 60605. Attention: Marie Ninneman. Ref. # 8360. An Employer-Paid Ad.**

RESEARCH ASSOCIATE—conduct research in the area of cancer biology. Duties include research in cloning of specific cell surface receptors function involving tumor metastasis using transgenic mouse models. Requirements include Ph.D. in molecular and cellular biology, plus a strong background in molecular cancer cell biology; protein chemistry; molecular cloning techniques; immunochemical techniques; microsurgical techniques; image analysis; handling of laboratory animals, including microinjection and immunomicroscopic techniques. No experience required. Salary \$23,000 per year. Forty hours per week. Respond with résumé only to: **Job Order #9288, Division of Employment Security, Government Center, Boston, MA 02114.**

POSITIONS OPEN

PSYCHIATRISTS—BRAIN SCIENCES

A Brain Sciences Research Center is being developed at the new Minneapolis VA Medical Center in conjunction with the University of Minnesota. This \$260-million facility is equipped for state-of-the-art brain imaging including SPECT, PET Scan, MRI, etc.

We are recruiting for the VA Psychiatry Service and the Brain Sciences Center with full University faculty appointments. Psychiatrists with an academic orientation and track-record who can contribute to the clinical and research momentum of this center will find this an extraordinary opportunity.

We have a variety of positions in the acute inpatient units (60 beds), in consultation liaison, in geriatric psychiatry, etc.

Send curriculum vitae or contact: **Richard Magraw, M.D., Chief of Psychiatry, Minneapolis VAMC, Minneapolis, MN 55417; telephone: 612-725-2037; or Paula Clayton, M.D., Head, Department of Psychiatry, Box 393 Mayo Building, University of Minnesota, Minneapolis, MN 55455; telephone: 612-626-3532.**

RESEARCH ASSISTANT PROFESSOR DEPARTMENT OF OPHTHALMOLOGY WASHINGTON UNIVERSITY IN ST. LOUIS

The Department of Ophthalmology, Washington University in St. Louis seeks candidates for research assistant professor. Must be M.D. or Ph.D. with 2 to 4 years of postdoctoral experience. No previous experience in eye research necessary, but should have experience in lymphokines, T-cell development, monoclonal antibodies, molecular biology, and/or protein chemistry. Strong ties are maintained with the large group of immunologists at Washington University. Candidate will participate in current ocular immunology research programs as well as develop his/her own research areas. Salary depends on experience. Send curriculum vitae and names of three references to: **Dr. Henry J. Kaplan, Department of Ophthalmology, 660 South Euclid Avenue—Box 8096, St. Louis, MO 63110. WU is an Equal Opportunity/Affirmative Action Employer.**

Scientists/Senior Scientists/ Principal Scientists

Your Knowledge Of Pharmaceutical Analysis Can Help Shape The Future Of Health Care.

At Ethicon, a Johnson & Johnson company, we have long recognized that research and development represent both the foundation and the future of our company. The research efforts of our scientists have helped make Ethicon the world leader in the manufacture of surgical products for wound closure, producing over 3,700 regular products and specialty items. A major commitment to new product development in surgical pharmacology presents significant new technical challenges. Accordingly, opportunities have been created for senior scientists who possess the technical prowess and management ability that will enable the company to meet its ambitious growth objectives.

Drug Characterization

This highly challenging position requires a PhD in Analytical Chemistry, Biochemistry or Pharmaceutical Chemistry and 3+ years' experience in pharmaceutical analysis. The successful candidate will be responsible for the development of analytical methods for pure drug substances, dosage forms and validating methods to determine their purity, potency and stability. Hands-on experience using chromatographic and spectroscopic techniques is required, and peptide/protein analysis experience would be helpful. Ref. Code AM1-S.

Analytical Methods Development (New Biomedical Drug Products)

Primary responsibilities for this opportunity will include the development of analytical methods for analysis of raw materials and finished products, conducting physical/chemical characterizations of new drug substances and isolating/identifying/developing analytical methods for new formulations. Qualified applicants should possess a PhD in Analytical Chemistry or Biochemistry, 1+ years' industrial or postdoctoral experience in the characterization and analysis of biomolecular entities, such as proteins, peptides or polysaccharides, and knowledge of modern laboratory instrumentation. Experience with regulatory submissions of biomolecules is highly desirable. Ref. Code AM2-S.

Our Somerville, NJ headquarters is conveniently located within an hour's drive of both New York and Philadelphia. Working in a campus-like setting, you'll enjoy ample room for career advancement, an excellent salary and the full complement of Johnson & Johnson benefits including our Live For Life Program with on-site health facility, and dental insurance. Relocation assistance will be provided. Please send your resume, indicating salary requirements and appropriate reference code, in confidence to: Employment Manager, Ethicon, Inc., Route 22, Somerville, NJ 08876. An equal opportunity employer.

ETHICON
a Johnson & Johnson company

POSITIONS OPEN

RECOMBINANT DNA OPPORTUNITIES at Vivigen. B.S. or M.S. degree, 1 year or more of experience and proficiency in recombinant DNA methodologies: isolation of nucleic acids, Southern blotting, etc. Salary commensurate with experience. Send résumé along with a list of all specific skills and references in confidence to: **Dr. Larry Chavez, Vivigen, 435 St. Michael's Drive, Santa Fe, NM 87501.**

RESEARCH ASSOCIATE for a university in the Chicago area to perform research in theoretical high energy astrophysics with specialization to spectra formation and jet formation in compact objects; radiative transfer calculation in the environment of accreting magnetized neutron star atmospheres; compare calculations with observations of binary x-ray pulsars; interpret observations concerning cyclotron line features; construct consistent nonthermal models for spectra of gamma ray bursts, especially regarding the role of synchrotron and synchrotron self-Compton processes; investigate nature of particle distributions in strongly magnetized media with widely varying optical depths; study self-collimated electromagnetic jets from magnetized accretion disks around black holes as a model for the observed extragalactic radio jets. Requires Ph.D. in physics. Special requirement: Program of study must include Ph.D.-level research using Monte Carlo Simulation techniques, Monte Carlo Resonant Line Transfer computations, and compact object astrophysics. Forty hours per week. 8 a.m. to 5 p.m. Salary: \$28,000 per year. Qualified applicants send résumés to: **Illinois Department of Employment Security, 401 South State Street, 3 South, Chicago, IL 60605. Attention: Marie Ninne-man. Reference #8735.** An employer-paid ad.

RESEARCH ASSOCIATE—to join a multidisciplinary team of cell physiologists studying the membrane properties of cultured heart cells. Experience in using patch clamp techniques is essential. Send curriculum vitae and names of three references to: **Dr. Mel Lieberman, Department of Cell Biology, Duke University Medical Center, Box 3709, Durham, NC 27710.** Equal Opportunity/Affirmative Action Employer.

RESEARCH ENTOMOLOGIST: Dow Chemical U.S.A. has an immediate opening in our Insecticide Discovery Group for a research entomologist interested in the discovery and development of innovative approaches to insect pest control. The candidate will conduct discovery and product support research and will be responsible for guiding potential products through early stage research and development. We require an adaptable, innovative, energetic person who can function productively as a member of our multidisciplinary research group. A Ph.D. in entomology is required, and experience in urban entomology or ornamental pest control is preferred. Dow offers a salary commensurate with experience, plus ample opportunity for professional growth and advancement. Qualified candidates should send a résumé to: **M. B. Hertlein, Agricultural Products Department, Dow Chemical U.S.A., P.O. Box 9002, Walnut Creek, CA 94598. Telephone: 415-944-2031 or 415-944-2008.** Application deadline is 31 January 1989. Affirmative Action/Equal Opportunity Employer. U.S. citizenship or permanent residency is required.

RESEARCH PHYSICIAN. Conduct research in the pathogenesis of autoimmune thyroid disease through the establishment and development of long-term cultures of specific immunocytes; provide technical advice to members of the laboratory regarding research techniques and findings; prepare results of research for publication in professional journals and for presentation at national or international conferences. M.D. required and 2 years of experience in the job offered or 4 years as Resident or Fellow in Endocrinology. Related occupation must have been in the field of Medicine and Endocrinology (clinical and research). Must possess knowledge of tissue culture, human lymphocyte cloning and development of Elisa assays as evidenced through publication in one professional journal and presentation at one national or international conference. Forty hours, Monday through Friday, 9:00 a.m.—5:00 p.m., \$22,000 per year. This is a University position. Send résumé and Social Security Number to: **Illinois Department of Employment Security, 401 South State Street, 3 South, Chicago, IL 60605, Attention: Robert S. Felton, Reference # V-IL-8822-F.** An employer paid ad.

POSITIONS OPEN

RESEARCH ASSOCIATE to study growth factors and peptide signals related to the reproductive system and kidney. Program will involve molecular biologic techniques, including in situ hybridization, and immunohistochemistry. Masters or Ph.D. required. Opportunity available immediately for qualified person. Salary commensurate with experience and training. Send résumé to: **Research and Education Institute, Harbor-UCLA Medical Center, 1124 West Carson Street, Personnel Department, Torrance, CA 90502.**

RESEARCH ASSOCIATE on molecular and biochemical basis of drug action with emphasis on AIDS Therapeutics. Ph.D. with experience in enzymology or molecular biological approaches highly desirable. Salaries are commensurate with experience and begin at \$22,000. Start date is flexible. Send curriculum vitae and names of three references to: **Arnold Fridland, Ph.D., Department of Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101.**

McMASTER UNIVERSITY RESEARCH ASSOCIATE

A position is available as a research associate in the Division of Physiology/Pharmacology, Department of Biomedical Sciences at McMaster University. Applicants should possess a Ph.D. in a field related to the study of the isolation, characterization and biochemistry of membranes from gastrointestinal muscles and nerves. Experience in ligand binding to receptors for neuropeptides and other neurotransmitters will be required. A basic knowledge of the molecular biological techniques related to receptor isolation and characterization will be a valuable asset. Salary will be commensurate with training and experience. *In accordance with Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada only.* Apply with curriculum vitae and references to:

**Dr. E. E. Daniel, HSC-4N51
Faculty of Health Sciences
Department of Biomedical Sciences
1200 Main Street West
Hamilton, Ontario
L8N 3Z5**

RESEARCH SCIENTIST: Conduct research on the disposition and metabolism (in vitro and in vivo) of polynuclear aromatics and chloro-dibenzofurans in fish and rats. Ph.D. in biochemical pharmacology, toxicology or related field required; experience in metabolite isolation by HPLC preferable. Position provides opportunity for developing program of candidate's interest. Submit résumé and names of three references to: **Dr. H. Sikka, Director, Great Lakes Laboratory, State University of New York College at Buffalo, 1300 Elmwood Avenue, Buffalo, NY 14222. Telephone: 716-878-5422.**

RESEARCH SCIENTIST— ELECTRON MICROSCOPY

The University of Arizona has an opening for a research scientist with experience in electron microscopy to supervise a core electron microscope facility. Applicants should have a Ph.D. or equivalent degree in biology and several years of electron microscopy experience. Duties will involve supervising core electron microscope facilities on the main campus and the College of Medicine, training users, and conducting independent research. The facility has technical support staff and operations funded by the University. The successful applicant will be expected to apply for grants to support his/her research program as well as to coordinate joint applications for the facility. The position is continuing or continuing eligible and the salary will be commensurate with qualifications. Applicants should submit curriculum vitae, a description of research interests, a summary of EM experience and arrange to have three letters of recommendation sent to: **Dr. John H. Law, Biotechnology Program, Biosciences West Building, University of Arizona, Tucson, AZ 85721, by 31 January 1989.** Applications from women and minorities are encouraged.

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

POSITIONS OPEN

RESEARCH ASSOCIATE OR MEDICAL RESEARCH ASSISTANT PROFESSOR OF PATHOLOGY POSITION, immediately available, for studies on mutant epidermal growth factor receptor (c-erb-B proto-oncogene) proteins in malignant human tumors. Opportunity to work in a large, multidisciplinary tumor biology group on the role of these deletion mutant molecules in altered tumor growth control. Experience in protein biochemistry including purification and characterization of membrane proteins desirable. Salary above NIH standard and dependent upon relevant experience. Send curriculum vitae and three letters of reference to: **Drs. Darell D. Bigner and Peter A. Humphrey, Box 3156, Department of Pathology, Duke University Medical Center, Durham, NC 27710.**

RESEARCH OPPORTUNITIES at the National Center for Toxicological Research (NCTR)—Opportunities for faculty and postgraduates to conduct collaborative research at NCTR, a Food and Drug Administration laboratory in central Arkansas. Research efforts focus on testing the assumption used in assessing risks posed by toxic chemicals emphasizing studies in biomarkers, modulators of toxicity, and extrapolation/risk assessment. U.S. citizenship or PRA status required. For more information contact: **Research Participation Program at NCTR, University Programs Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117, telephone: 615-576-3190.** Please indicate if interested in faculty and/or postgraduate program.

RESEARCH SCIENTISTS. The Immune Response Corporation (IRC) of San Diego, California is seeking Ph.D.-level scientists to participate in the development of therapeutic products for viral and autoimmune diseases. Currently an opening exists for a cellular immunologist to work on T cell immunoregulation in autoimmune disease. IRC offers excellent salary and benefits, and an opportunity to make a significant contribution in the stimulating environment of a young research-based organization.

Interested candidates should submit curriculum vitae to:

**Chief Scientific Officer
The Immune Response Corporation
6455 Nancy Ridge Drive
San Diego, CA 92121
Ref: Cellular Immunologist**

RESEARCH TECHNICIAN to work in the area of retroviral molecular biology. Applicants should have a Bachelors or Masters level degree in biochemistry, microbiology or a related field and experience working in a research environment. Applications are encouraged from individuals with a good working knowledge of recombinant DNA and tissue culture techniques. Attractive salary and benefits package. Send full curriculum vitae and references to: **Bryan R. Cullen, Howard Hughes Medical Institute, Box 3025, Duke University Medical Center, Durham, NC 27710.**

RHEUMATOLOGIST—University-affiliated Medical Center in New York City seeks senior-level individual accredited in rheumatology to lead its Division of Rheumatology. Applicants should have a record of research productivity plus administrative and teaching experience commensurate with associate professor rank (tenure track) at a major university. Good salary plus benefits package. Please send résumés to: **Lorraine A. Hansen, Administrator, Medicine, St. Luke's-Roosevelt Hospital, 114th Street at Amsterdam Avenue, New York, NY 10025.**

Louisiana State University (LSU) Eye Center is looking for a **SENIOR PHARMACOLOGIST.** Applicant should be interested in drug delivery systems, although other areas of research will be considered.

Previous experience in ophthalmology not necessary. Interested applicants send curriculum vitae to: **Herbert E. Kaufman, M.D., LSU Eye Center, 2020 Gravier Street, Suite B, New Orleans, LA 70112.** LSUMC is an Equal Employment Opportunity/Affirmative Action Employer.

NIOSH ANNOUNCES RESIDENT & POSTDOCTORAL ASSOCIATESHIP AWARDS



FOR Ph.D & M.D. SCIENTISTS

The National Institute for Occupational Safety and Health announces outstanding opportunities for research in:

- APPLIED PSYCHOLOGY
- BIOACOUSTICS
- BIOLOGICAL MONITORING
- ERGONOMICS
- HEALTH PHYSICS
- TOXICOLOGY

The National Research Council in cooperation with the National Institute for Occupational, Safety and Health, Division of Behavioral and Biomedical Research in Cincinnati, Ohio will offer competitive research awards in 1989 for independent scientific research. Recipients will be free to work on problems of their own choice as guest investigators at NIOSH. Duration of awards is one year renewable to a maximum of two. This program is open to experienced senior scientists as well as to recent PhD and MD graduates. Stipends begin at \$28,000 for recent graduates and are appropriately higher for seniors. Relocation reimbursement and funds for professional travel on tenure are available, and a health insurance program is offered.

For further information and application materials please write to:

Associateship Programs (GR 430A/NC)
NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue, N.W.
Washington, D.C. 20418

Deadlines for application are
April 15 and August 15.

Scientist

Experimental Physicist

Lawrence Livermore National Laboratory, one of the nation's premier research and development organizations, currently has a challenging opportunity available for an Experimental Physicist.

The selected candidate will conduct a vigorous program investigating atomic processes involving highly excited multiply ionized atomic systems. This research employs the latest developments in high resolution X-ray and Auger electron spectroscopy, as well as the most recent advances in ion source technology. The position is also responsible for building up a group of physicists to carry out quality research and support for the Laboratory's major applied physics programs.

The ideal applicant will have an expertise in atomic structure of highly charged ions, and a broad background in the physics of electron and ion collisions in dense plasmas and atomic processes in strong fields; a PhD or equivalent in Experimental Physics; and demonstrated scientific leadership abilities. Must also be able to plan and execute complex experiments and interpret results in the framework of current theoretical models. Excellent interpersonal and communication skills are essential.

LLNL offers a competitive salary and benefits package, and the opportunity to work in one of the best equipped national laboratories. For immediate consideration, please forward your resume to: **Nancy Kolo, Professional Staffing, Lawrence Livermore National Laboratory, P.O. Box 5510, L-725, Dept. KSC16903A, Livermore, CA 94550.** Equal Opportunity Employer.

University of California



Electrophoresis Product Manager

Molecular Dynamics is a newly formed, well-financed company providing instrumentation for molecular biology research. Innovations in the use of lasers and optics have resulted in an exciting family of products with unique capabilities.

Position involves responsibility for product planning, forecasting, as well as development of advertising and collateral materials. Candidates should have a B.S. in chemistry or biology, knowledge of the electrophoresis market and at least 5 years experience in marketing or sales of capital equipment.

Molecular Dynamics offers competitive salaries, an excellent benefit program and opportunity to participate in the growth of the company through early equity participation. Send resume to **Molecular Dynamics, 240 Santa Ana Court, Sunnyvale, CA 94086, Attn: E. Heron**



**Molecular
Dynamics**

Innovative Optical Systems for Molecular Biology

Senior Investigator, Immunology

A health care company that markets prescription and proprietary products for human and animal health care has an opening for a Senior Investigator, Immunology in its Department of Immunology at its research and development facility in King of Prussia, Pennsylvania.

The principal duties of the position include planning, directing and controlling research to study the biochemistry of cell activation, particularly the biochemical events that regulate cell function following ligand-receptor interaction, for the purpose of discovering and developing novel pharmacological approaches to immunoregulation and to the control and treatment of immunodeficiency diseases such as AIDS and autoimmune diseases such as rheumatoid arthritis and related immune abnormalities.

The minimum requirements for the position are a Ph.D. degree in Biochemistry or Microbiology and five (5) years experience in ligand-receptor interaction and cell activation and differentiation including the molecular mechanisms and biochemical pathways involved in T cell and macrophage activation and suppression and the signal transduction mechanisms involved in turning on and off responses of specific subsets of immune cells.

Salary of \$53,500 with liberal employee benefits. For prompt and confidential consideration, send resume to: The Philadelphia Job Bank, 444 N. 3rd Street, 3rd Floor, Philadelphia, PA 19123, and refer to Order Number 4208584.

POSITIONS OPEN

SCIENTIST—conduct research and development in the field of optoelectronic devices for application in electronic imaging systems. Duties include computer modeling and design of experiments for device characterization and measurement of system performance. Requirements include Ph.D. in physics, optics, or related field, with at least 1 year of postdoctoral research experience in the field of semiconductor optical amplification techniques for systems applications; strong background in physical optical sciences, including solid state and semiconductor laser theory and device technology; high speed optoelectronic modulation techniques (including mode locking and gain-switching of lasers); design of optical wave-guides and non-reciprocal devices; computer simulation of coherent laser dynamics and instabilities; as well as thorough knowledge of VAM/VMS operating system and C/PASCAL/Fortran languages. Salary: \$51,500 per year. Forty hours per week. Respond with résumé only to: **Job Order #9309, Division of Employment Security, Government Center, Boston, MA 02114.**

SENIOR RESEARCH TECHNICIAN. Opening for a senior research technician with extensive experience in cell culture techniques to work within a newly established Center of Molecular Medicine. Good organizational and technical skills required. Send résumé along with two letters of recommendation to: **Dr. Angelo M. Scanu, The University of Chicago, Lipoprotein Study Unit, 5841 South Maryland Avenue, Box 231, Chicago, IL 60637.** For information call: 312-702-1775. *The University of Chicago is an Affirmative Action/Equal Opportunity Employer.*

SENIOR SCIENTIST

The Tobacco and Health Research Institute at the University of Kentucky seeks a senior scientist with expertise in biochemical mechanisms associated with the cardiovascular system. The individual would have a non-tenure-track appointment in an academic department consistent with experience. Requirements are an M.D. and/or Ph.D. with a continuous record of research publications and extramural research grant support. Initial appointment is for a period of 3 years, with opportunity for renewal. Deadline for applications is 15 February 1989. Send curriculum vitae and three letters of reference to: **Dr. John N. Diana, Director, University of Kentucky, Tobacco and Health Research Institute, Cooper and Alumni Drives, Lexington, KY 40546-0236.**

*University of Kentucky
An Equal Opportunity/Affirmative Action Employer.*

TENURE-TRACK ASSISTANT, ASSOCIATE, OR PROFESSOR POSITIONS (note position applied for) are available in the Department of Pharmacology, University of Iowa, College of Medicine. Applicants are invited from individuals who possess the Ph.D. and/or M.D. degree, have completed postdoctoral training, and have identified an area suitable for development of a vigorous research program related to molecular and cellular pharmacology or more traditional pharmacological disciplines. *The University of Iowa is an Equal Opportunity/Affirmative Action Employer. Members of minority groups and women are encouraged to apply.* Submit curriculum vitae and names of three references to:

**Search Committee
Department of Pharmacology
Bowen Science Building
The University of Iowa
Iowa City, IA 52242**

The Department of Chemistry of The University of Tulsa invites applications for a **TENURE-TRACK POSITION IN CHEMISTRY.** The area of specialization is open, but research in environmental chemistry, polymers, catalysis, or biochemistry would complement existing strengths. Applicants at all levels are welcome. Salary and start-up funding are competitive. Send curriculum vitae, a brief summary of research interests, and three letters of recommendation to: **Dr. Robert Howard, Chairman, Department of Chemistry, University of Tulsa, 600 South College, Tulsa, OK 74104** by 1 March 1989. *The University of Tulsa is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

STRUCTURAL PHYSIOLOGY. Position at rank appropriate to experience. Ph.D./equivalent, significant publications, excellence in research, emphasizing morphological techniques. Responsibilities include supervision of Morphology Core Research Lab using variety of EM and fluorescent techniques. Collaborations available with active biophysics/cell biology groups involved in program project. Send curriculum vitae, reprints, statement of research interests, list of three references by 6 February 1989 to: **Kenton Sanders, Ph.D., Department of Physiology, University of Nevada School of Medicine, Reno, NV 89557.** Position open until filled. *Affirmative Action/Equal Opportunity Employer.*

U.S. EPA seeks a **SUPERFUND TOXICOLOGIST**, GS-12/13, (\$34,500 to \$53,460 per annum) in Denver, Colorado. Serves as Regional Expert providing technical assistance and interpretation of data relative to the impacts of hazardous wastes, toxic substances, and pesticides on human health and the environment near Superfund sites. Federal application packages can be received by calling **303-293-1487.** Application must be postmarked by 27 January 1989.

NEUROANATOMIST BIOCHEMIST HISTOLOGIST ANATOMIST PHYSIOLOGIST

The American University of the Caribbean, School of Medicine (AUC), located in Montserrat, British West Indies, seeks to fill **TEACHING POSITIONS** in the above areas. Excellent salary, benefits, and many recreational opportunities. Join AUC now for an adventure of a lifetime. Send résumé, earliest date available, and salary requirement to: **Medical Education Office (S), 2801 Ponce de Leon Boulevard, #800, Miami, FL 33134.**

VIROLOGIST

The Department of Microbiology, North Carolina State University, has available a research and teaching position as assistant professor in virology. A Ph.D. degree with emphasis in plant, bacterial, or animal virology and relevant postdoctoral experience are required. The position is a 12-month tenure-track appointment and includes continuing institutional research support. The successful candidate is expected to teach, direct graduate students and develop a vigorous research program in a basic aspect of virology. Excellent opportunities exist for collaboration with other virologists on campus and in the Research Triangle Area.

Applications are invited from qualified individuals with expertise in virology. Included in the application should be a statement of research interest, curriculum vitae and list of publications. In addition, provide the names, addresses, and telephone numbers of three individuals who may be contacted for a reference by the search committee. Indicate your professional association with each referee. Application materials should be sent to:

**Dr. Thoyd Melton
Virology Search Committee
Department of Microbiology
Box 7615
North Carolina State University
Raleigh, NC 27695-7615**

The closing date for applications is 28 February 1989 or until a suitable candidate is selected. Proper documentation of identity and employability will be required before the hiring process can be finalized. *North Carolina State University is an Equal Opportunity Employer.*

VISITING RESEARCH ASSOCIATE—Postdoctoral Research Associate to coordinate studies of wetland use for leachate treatment. Expertise in instrumental analysis and computer-based data management essential. Two-year appointment begins 1 March 1989, with a later date negotiable. Starting salary is \$25,000 plus fringe benefits. Send curriculum vitae and names of three references to: **Dr. G. A. Moshiri, Department of Biology, The University of West Florida, Pensacola, FL 32514**, by 4 February 1989. Telephone: **904-474-2079; 474-2754.** *Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

The Medical College of Wisconsin, Department of Ophthalmology, invites applications for two full-time, **TENURE-TRACK RESEARCH POSITIONS** at both senior and junior faculty levels. Requires Ph.D. or M.D. and at least 2 years of postdoctoral experience. Successful candidates must establish competitive, funded programs in eye research. The Medical College is expanding in areas of cell biology, molecular biology, immunology, neurosciences, and transplantation. Applicants with interests that may complement these areas are encouraged to apply. Send résumé, summary of research interests, and names of three references to: **Search Committee, Department of Ophthalmology, Medical College of Wisconsin, 8700 West Wisconsin Avenue, Milwaukee, WI 53226.** *Affirmative Action/Equal Opportunity Employer M/F/H.*

TOXICOLOGIST

Forest Laboratories, a medium-sized, rapidly expanding company, is seeking a Ph.D. level toxicologist with up to 5 years of experience for the position of Director of Toxicology and Pharmacology at Corporate Headquarters in midtown Manhattan. Responsibilities will include evaluating the toxicology and pharmacology data base for acquisition candidates as well as designing and implementing animal studies to document the safety and mechanism of action of new chemical entities and new formulations of already marketed compounds.

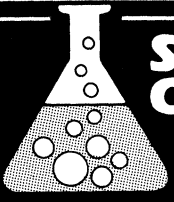
Excellent communication and interpersonal skills in an interdisciplinary team environment are also important requirements for this ground floor opportunity.

Applicants must be U.S. citizens or permanent residents and should send curriculum vitae to: **Dr. Kenneth S. Albert, Corporate Director for Research and Development, Forest Laboratories, 150 East 58th Street, New York, NY 10155.**

VIROLOGIST WITH AN INTEREST IN ANTIVIRAL AGENTS

A virologist with postdoctoral experience and an interest in antiviral research is being sought to play a major role in two recently fully funded grants. The candidate will explore the active components of natural products found to be effective in vivo for their effect on the replication cycle and pathogenesis of hepatitis B and retroviruses. The successful candidate should have a sound knowledge of molecular biology, tissue culture techniques, and animal models. In addition, this individual will supervise the implementation of assays detecting hepatitis B markers as well as markers of hepatocellular carcinoma. Although this project is funded, the candidate in time will be encouraged to seek independent funding to pursue related research. Salary and rank will be commensurate with the candidate's qualifications. Please send curriculum vitae and letters of reference to: **Search Committee for Virologist, Personnel Department, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111.** *The Center is an Equal Opportunity Employer.*

A position exists for a Universities Space Research Association (USRA) **VISITING RESEARCH SCIENTIST OR ASSISTANT** to work in the Microgravity Sciences Division of the Space Science Laboratory at the NASA Marshall Space Flight Center in the fields of acoustic levitation and containerless processing of glasses and ceramics for advanced optical devices and/or warm superconductors. The candidate would help set up laboratory breadboard multi-axis acoustic levitation devices and integrate with focused hearing sources such as carbon dioxide lasers. The purpose of the containerless processing is for example to perform nucleation/crystallization and glass formation experiments in novel oxide glass forming systems. The candidate should be a self-starter and an experimentalist. Knowledge of nucleation and crystallization, thermal analysis, viscosity measurements, and noncontact pyrometry are highly desirable. Scientists must have a Ph.D. and assistants must have a M.S. in a related field. The appointment will be for 1 year, renewable. Salary commensurate with experience (minimum \$33,000 per year for scientists) with full medical and retirement benefits. Send résumé to: **USRA, Dr. James M. Van Alstine, 4950 Corporate Drive, Suite 100, Huntsville, AL 35806.** *USRA is an Equal Opportunity/Affirmative Action Employer.*



SCIENTIFIC OPPORTUNITIES

Bio-dynamics is one of the world's foremost consulting toxicology research laboratories. We are located in central New Jersey and are currently expanding our research and development efforts. We require scientific professionals in the following areas:

TOXICOLOGY STUDY DIRECTORS

Responsibilities include all aspects of study management including client consultation, program development, data review and interpretation, report preparation and regulatory interface. Requirements include a Ph.D. in Toxicology, Pharmacology or other related disciplines and 3-5 years of experience in general toxicology. Pharmacokinetics, drug metabolism or neurobehavioral toxicology experience a plus.

LAB ANIMAL MANAGER


Responsible for management of a large Technical staff involved in the implementation of toxicology studies including scheduling of manpower, allocation of equipment, ensuring adherence to good laboratory practices, protocols as well as quality and safety standards. Requirements include a B.S. degree in Biology, Toxicology or Animal Sciences and 3-5 years supervisory experience in a pharmaceutical, chemical or research and development organization engaged in research. Personnel management and organizational skills are essential.

All positions require the ability to effectively interact with all levels of management in addition to superior oral and written communication skills.

We offer a competitive starting salary, superior benefits package and the opportunity to join an organization that is on the forefront of toxicology research.

Please send a confidential resume including salary history and requirements to:

Personnel Manager—Dept. 5106



Bio/dynamics Inc.
 Mettlers Road, PO Box 2360, East Millstone, New Jersey 08875-2360
 An Equal Opportunity Employer (M/F/V/H)

VIROLOGY



As a progressive leader in pharmaceutical research and development, Hoffmann-La Roche offers Scientists significant opportunities to make important contributions to human health care.

Due to a recent expansion, we are seeking two individuals with either a BS or MS degree in a Biological Science to join our antiviral research program. You will develop and apply new biochemical and cell-based antiviral assays; mechanism of action studies will be an important element of your research. To qualify, you must have proven ability in Virology, ideally gained through experience in a research laboratory. Familiarity with procedures used in working with infectious materials or a knowledge of biochemistry or molecular biology is highly desirable.

In return, we offer salaries commensurate with your background, an outstanding benefits program, and a state-of-the-art environment that provides many learning opportunities. For consideration, please send your resume with salary history/requirements, to: **Mr. John G. Nathan, Dept. IS, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.** We are an equal opportunity employer.



Hoffmann-La Roche

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CURRENT DISTRIBUTION 160,000

POSITIONS OPEN

INSTITUTE OF ECOSYSTEM STUDIES VERTEBRATE ECOLOGIST

Assistant Scientist position available for an ecologist with a strong interest in **vertebrates**. It is expected that this individual would develop a strong research program and would interact with a diverse group of aquatic and terrestrial ecologists with an ecosystem focus. Ph.D. required, postdoctoral experience desirable.

POSTDOCTORAL ASSOCIATES

One or more postdoctoral positions are available. We particularly seek individuals with interests in **soils, physiological ecology** (plant, animal or microbial), or **ecological modeling** but will consider other fields as well. The postdoctoral positions are for 1 year and may be renewed for a second year. Applicants must have a Ph.D.

For both positions; applications, along with the names of three referees should be sent to: **Dr. Gene E. Likens, Search Committee, Institute of Ecosystem Studies, The New York Botanical Garden, Box AB, Millbrook, NY 12545**. Deadline: We would love to have your application by 14 February 1989. *Equal Employment Opportunity.*

WATER QUALITY ANALYST with training in hydrology, ecology, chemistry, or related fields. Multidisciplinary research/advocacy requiring strong verbal, analytical, and personal skills for work on water supply/quality issues in western U.S.; familiarity with water law/policy, agriculture, forestry desirable. Initial 2-year commitment with medical, other benefits. Send résumé, writing sample, to: **David Yargas, Environmental Defense Fund, 5655 College Avenue, Oakland, CA 94618**.

SUMMER SCHOOL

SECOND ANNUAL COMPLEX SYSTEMS SUMMER SCHOOL 4 to 30 June 1989, Santa Fe, New Mexico.

For graduate students and postdoctoral fellows, an intensive introduction to "complex" behavior in mathematical, physical and living systems. Topics include nonlinear dynamics, computational neurobiology, disordered systems, chemical oscillators, pattern formation in biological systems, and design of parallel-processing algorithms.

Subsistence stipends available. Application deadline: 1 March 1989.

Director: **Erica Jen**, Los Alamos National Laboratory.

Information: **Andi Sutherland**, Santa Fe Institute, 1120 Canyon Road, Santa Fe, NM 87501. Telephone: 505-984-8800; fax: 505-982-0565; email summerschool@sfi.edu.

COURSES

MOLECULAR ENDOCRINOLOGY AND TECHNIQUES FOR HORMONE ACTION 20 to 25 February 1989

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

Co-Directors: **M. R. Hughes** and **B. W. O'Malley**. Fee: \$365 (\$245: fellows and students).

For further information contact:

Bonnie Cuthbert
Department of Cell Biology
Baylor College of Medicine
Telephone: 713-799-6200
Deadline: 29 January 1989

COURSES

GENETICS SHORT COURSE 17 to 28 July 1989

30th Annual Short Course in Medical and Experimental Mammalian Genetics. Conducted by Johns Hopkins University and The Jackson Laboratory at Bar Harbor, Maine. Morning and evening lectures covering the field are supplemented by workshops, tutorials, and demonstrations. Inquiries, applications to: **Dr. T. H. Roderick, c/o Training and Education Office, The Jackson Laboratory, 600 Main Street, Bar Harbor, ME 04609-0800**; or **Dr. V. A. McKusick, 292 Carnegie Building, Johns Hopkins Hospital, 600 North Wolfe Street, Baltimore, MD 21205**.

GRADUATE STUDIES

GRADUATE TRAINING IN VIRAL ONCOLOGY AND IMMUNOLOGY. Stipends are available for students pursuing a Ph.D. in molecular oncology or immunology beginning September 1989. The principal interests of participating faculty are viral and cellular oncogenes, growth control, and molecular, cellular and tumor immunology.

Students will be supported chiefly by an NIH programmatic training grant, requiring U.S. citizenship or resident status. Limited funding is also available outside of this source. Information and application forms available from: **Dr. R. B. Carroll, Graduate Student Advisor, Department of Pathology, New York University Medical School, 550 First Avenue, New York, NY 10016**. *NYU is an Equal Opportunity Employer.*

SYMPOSIUMS

BIOCHEMICAL ENDOCRINOLOGY SYMPOSIUM

The Eleventh Annual University of California, Riverside-Nichols Institute Symposium on Cellular and Molecular Endocrinology will be held Thursday and Friday, 30 March and 31 March 1989 on the University of California, Riverside, campus at the foot of the Box Springs Mountains.

The purpose of the meeting is to foster communication among scientists who are interested in the cellular, biochemical and structural aspects of endocrinology. The meeting will have four sessions devoted to the topics of (i) Steroids: Their Metabolizing Enzymes and Receptors, (ii) Regulation of Gene Expression, (iii) Cytokines, and (iv) Sex Differentiation.

Fourteen internationally recognized scientists will present lectures on their work in these areas. They include the following: **Steven K. Dower** (Seattle), **Judith C. Gasson** (Los Angeles), **Helen L. Henry** (Riverside), **Peter T. Lomedico** (New Jersey), **Claude J. Migeon** (Baltimore), **Walter L. Miller** (San Francisco), **J. Wesley Pike** (Houston), **Robert G. Roeder** (New York), **Anita B. Roberts** (Bethesda), **Larry J. Shapiro** (Los Angeles), **Stephen R. Spindler** (Riverside), **John M. Taylor** (San Francisco), **Inder Verma** (San Diego), and **Elizabeth M. Wilson** (Chapel Hill).

Registration fees for the meeting are \$25 per participant [\$15 for postdoctoral students/fellows; \$10 for students and \$125 for physicians wishing to enroll in the Continuing Medical Education (CME) Program (Category I) through the University of California, Los Angeles School of Medicine].

For registration and further information please write: **Dr. Anthony W. Norman, Endocrinology Symposium, Division of Biomedical Sciences, University of California, Riverside, CA 92521**; telephone: 714-787-5705.

HOW TO MAKE MICROCAPSULES— A HANDS-ON COURSE

A laboratory course designed to teach the art and science of microcapsule making. Suitable for biologists, pharmacists, chemists, life scientists and engineers. Enrollment limited to 12. Lectures and laboratory sessions by **Dr. Curt Thies**, Professor of Chemical Engineering at Washington University in St. Louis. Spring Sessions: 26 to 29 March and 23 to 26 April 1989. For information, call: 314-889-6066.

CONFERENCE

FOURTH INTERNATIONAL SYMPOSIUM ON VIP AND RELATED PEPTIDES Stockholm, Sweden 21 to 23 September 1989

Topics will include chemistry, biosynthesis, receptors, physiology, morphology, and clinical relevance. For more information, contact: **Registration VIP Symposium, Biochemistry II, Karolinska Institute, Box 60 400, S-104 01 Stockholm, Sweden**.

TRAINING PROGRAMS

The Department of Pharmacology and Molecular Sciences and the Anticancer Drug Development Program at the Johns Hopkins University School of Medicine offer **Ph.D. TRAINING PROGRAMS** fostering innovative, interdisciplinary research in the following general areas: (i) protein and carbohydrate structure/function, (ii) molecular biology and gene regulation, (iii) parasitology and virology, (iv) biomedical mass spectroscopy, (v) neuropharmacology, and (vi) design, synthesis, and testing of new drugs. Stipends are available for qualified applicants. Interested individuals are encouraged to contact: **Dr. Mette Strand, Director of Graduate Training, Department of Pharmacology and Molecular Sciences, Johns Hopkins School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205**. Telephone: 301-955-7117.

This comprehensive, yet flexible, multidiscipline program encompasses 24 months of full-time investigative training in biochemistry, cardiology, pharmacology, or physiology and is designed to provide **POSTDOCTORAL RESEARCH TRAINING** to individuals with Ph.D. degrees in biomedical science or M.D. degrees who are interested in academic medicine. Trainees supervised by a faculty sponsor will have opportunities to acquire the knowledge and skills necessary to become independent investigators in cardiovascular research. Inquiries should be made through **Dr. Robert O'Rourke, Division of Cardiology**, **Dr. Vernon Bishop, Department of Pharmacology**, or **Dr. Merle Olson, Department of Biochemistry, The University of Texas Health Science Center at San Antonio, TX 78284**.

POSTDOCTORAL TRAINING PROGRAM CELLULAR AND MOLECULAR ENDOCRINOLOGY

Postdoctoral traineeships are available starting in 1989 in an NIH-supported program. Trainees with a Ph.D. or M.D. degree having U.S. citizenship or permanent residence in the United States will participate in a research program with one of thirteen faculty from the Biochemistry Department and the Division of Biomedical Sciences on the campus of the University of California, Riverside. The purpose of the program is to provide for research training at the postdoctoral level in the following five major areas of focus:

- insulin, related growth factors, and their actions;
- endocrinology of vitamin D, calcium and bone cell metabolism;
- production and actions of lymphokines, hemopoietic growth factors and cytokines;
- molecular and cell biology of hormone synthesis and action;
- transductive and intracellular events in hormone action.

For detailed information and application forms write to:

Dr. Anthony W. Norman, Program Director
Division of Biomedical Sciences
University of California
Riverside, CA 92521
Telephone: 714-787-5705

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WAKE FOREST UNIVERSITY

VICE PRESIDENT FOR ACADEMIC AFFAIRS

Applications and nominations are invited for the position of Vice President for Academic Affairs at Wake Forest University.

The chief academic officer of the university reports directly to the president and is responsible for supervising and administering the academic programs and plans of the university. Reporting to the vice president for academic affairs are the deans of Wake Forest College, the School of Business and Accountancy, the Graduate School of Arts and Sciences, the School of Law, and the Babcock Graduate School of Management.

Wake Forest seeks a person with a deep commitment to academic excellence to provide leadership during a period of substantial development of all its programs. Applicants must hold an earned doctoral degree and possess scholarly accomplishments commensurate with the rank of tenured full professor. Further criteria include:

- a strong belief in the importance of a liberal arts education;
- a commitment to graduate and professional education;
- successful teaching and research experience at the collegiate level;
- a record of distinguished leadership in academic administration;
- a firm commitment to the mission of the university;
- experience with strategic planning as it relates to nonprofit institutions;
- demonstrated ability to work effectively with faculty, students, and staff in fostering academic excellence;
- ability to build a consensus and work effectively with all groups in the university; and
- a vision of liberal arts education in the twenty-first century.

Salary will be commensurate with experience and qualifications. Projected appointment date is July 1, 1989.

Applicants should send a letter stating their academic and administrative philosophies and should enclose a curriculum vitae. Those persons nominating candidates should send a letter stating the candidate's qualifications. The deadline for applications and nominations is February 15, 1989.

Wake Forest University, located in Winston-Salem, North Carolina, is a 154-year old liberal arts university with approximately 5,100 students and 800 faculty in six schools (including the Bowman Gray School of Medicine).

Correspondence should be addressed to:

Dr. John P. Anderson
Chair, Search Committee
Wake Forest University
P.O. Box 7249
Winston-Salem, NC 27109

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SUMMER 1989 TEN ENVIRONMENTAL SCIENCE AND ENGINEERING FELLOWSHIPS

Applications Invited

The American Association for the Advancement of Science (AAAS) invites applications for ten Environmental Science and Engineering Fellowships available for summer 1989. The Fellows will work closely with the Environmental Protection Agency (EPA), Office of Research and Development, and other program offices, in Washington, DC, and assist in identifying and assessing the significance of long-range environmental problems and opportunities. The ten-week appointments are scheduled for 5 June through 11 August 1989. The awards will be announced prior to the end of April 1989.

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

The 1989 Environmental Fellows will receive a taxable stipend of \$750 per week and a nominal additional amount for temporary relocation expenses and travel in connection with the fellowships.

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

For further information and specific application requirements contact:

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

Deadline for applications is 1 March 1989

RESEARCH ASSOCIATE FERMENTATION PROCESS DEVELOPMENT

Amgen, an innovative leader in applied biotechnology, has an immediate opportunity for a BS or MS level scientist to contribute to our on-going fermentation research efforts.

Responsibilities for this position will include fermentation research and process development with an emphasis on expression of recombinant proteins in microbial systems.

Candidates for this position must have a BS or MS in Microbiology, Biochemical Engineering or a related discipline. Prior hands-on experience in microbial fermentation is highly desirable.

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The Sterling Research Group, the worldwide pharmaceutical research and development organization of Sterling Drug, Inc., announces openings for Sr. Research Biologists in its Immunopharmacology Department of its Rensselaer, New York facility.

We are currently expanding our Immunopharmacology research program. Scientists who have achieved a record of excellence in the study of molecular immunology of lymphokines and their receptors or in T Cell activation are invited to apply. We seek highly motivated individuals with superior bench skills, supervisory ability, and a willingness to collaborate with other scientists in a team effort to develop novel drugs for the treatment of diseases related to the immune system. A Ph.D. degree with post-doctoral experience is required.

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WORKSHOPS

FIRST ANNUAL SUNCOAST WORKSHOP ON THE NEUROBIOLOGY OF AGING

will be hosted by the Center for the Neurobiology of Aging at the University of Florida. The Workshop will take place at the Tradewinds Beach Resort, St. Petersburg, Florida, from 26 February to 1 March 1989. The topics will include novel treatments and models for Alzheimer's Disease, with a focus on growth factors, cholinergic agents, and neuronal transplantation. The program includes morning seminars, an informal evening discussion and poster/slide presentations. For registration information contact:

Edwin M. Meyer, Ph.D.
Department of Pharmacology and Therapeutics
University of Florida, College of Medicine
P.O. Box J-267, J.H.M.H.C.
Gainesville, FL 32610

ELEANOR ROOSEVELT Institute

SOMATIC CELLS AND MOLECULAR GENETICS WORKSHOP

An NCI-sponsored workshop in Denver, Colorado, 14 July to 30 July 1989, combining key procedures in both somatic cell and molecular genetics for cloning and functional analysis of mammalian genes. Laboratory exercises will include isolation of somatic cell mutants, somatic cell hybridization, DNA and RNA preparation and manipulation, DNA-mediated gene transfer, Northern, Southern, Westerns, DNA sequencing, pulse-field gel electrophoresis and preparation and use of cDNA and genomic libraries. The exercises are designed to provide an intensive introduction to current genetic technology for professional researchers wishing to apply these techniques to active programs. Those with research interests in malignancy are particularly encouraged to apply. No registration or tuition fees are charged, and a per diem will be provided to help with living expenses during the course. Applicants should submit curriculum vitae and a short paragraph describing research interests and expected contributions of this course to their program by 15 March 1989 to:

Dr. Sherry Leonard, Program Director, Somatic Cell and Molecular Genetics Workshop, Eleanor Roosevelt Institute for Cancer Research, 1899 Gaylord Street, Denver, CO 80206. Citizens or green card holders only.

FELLOWSHIPS

MID-CAREER FELLOWSHIPS INTERNATIONAL SECURITY AND ARMS CONTROL

Stanford University's Center for International Security and Arms Control announces 1-year fellowships designed to provide mid-career scientists an opportunity for study in problems related to international security, defense policy and planning, and arms control starting in the fall of 1989. Application deadline is 15 March 1989. For information, contact: Ms. Gerry Bowman, 320 Galvez Street, Stanford, CA 94305-6165; telephone: 415-723-9626.

GRADUATE FELLOWSHIPS IN MICROBIOLOGY AND MOLECULAR GENETICS. The Department of Microbiology at the University of Vermont invites applications from persons interested in a career in molecular biology. Current research opportunities include study of: The enzymology and regulation of cellular DNA repair processes; self-splicing mechanisms of RNA; structure and function of yeast chromatin; cloning and regulation of yeast ras/rho homologs; cloning and regulation of Schizosaccharomyces mating type genes; molecular mechanisms of bacterial adhesion; methyl-directed regulation of mammalian transcription; RNA polymerase II/DNA interactions in eukaryotic cells; initiation and control of the carcinogenic state; and receptor-mediated endocytosis and intracellular processing of protein toxins and viruses by cultured mammalian cells. Tuition remission plus current stipend of \$10,130 per year. Write: Dr. Thomas J. Moehring, Department of Microbiology, The University of Vermont, Given Building, Burlington, VT 05405.

FELLOWSHIPS



THE GEORGE WASHINGTON UNIVERSITY MEDICAL CENTER PREDOCTORAL FELLOWSHIPS IN THE BIOMEDICAL SCIENCES

The Departments of Anatomy, Biochemistry, Microbiology, Pharmacology, and Physiology including the interdepartmental programs in Molecular Biology, Immunobiology, and Neurobiology have the following support for new applicants to our doctoral programs:

Presidential Merit Fellowships, with a stipend of \$14,000 and 18 credits of tuition per year, are offered to exceptionally well qualified candidates.

Research Assistantships, which provide an average annual salary of \$11,500 and remission of tuition, may also be available to students.

Medical Center Scholars, receive an annual base stipend, supplemented to varying extents by the student's major department, and full remission of tuition.

Deadline for receipt of completed applications and supporting materials is 1 March 1989.

Further information and applications may be obtained from

Charles E. Rice, Assistant Dean
The Graduate School of Arts and Sciences
The George Washington University
Academic Center T-212
Washington, DC 20052
Telephone: 202-994-6210

PREDOCTORAL FELLOWSHIPS

Are you interested in a career devoted to solving health problems associated with chemical pollution of the environment? Perhaps you should consider earning a Ph.D. in environmental toxicology in The Joint Graduate Program in Toxicology of Rutgers, The State University of New Jersey and The University of Medicine and Dentistry of New Jersey/Robert Wood Johnson Medical School. The program is a component of The Environmental and Occupational Health Sciences Institute which also contains the newest National Institutes of Health Environmental Health Center. We are conducting a national search for scholars who wish to earn the M.S. and/or Ph.D. in Toxicology. Our internationally recognized faculty will provide an opportunity for you to conduct research in cellular/molecular toxicology, immunotoxicology, hepatotoxicology, solvent toxicology, carcinogenesis, inhalation/respiratory toxicology, neurotoxicology, environmental and aquatic toxicology, and metabolism of environmental chemicals. Sources of graduate student support include a N.I.E.H.S. training grant, graduate teaching assistantships, and a variety of graduate research fellowships, which provide a stipend of \$10,000 per year plus tuition and fees. For further information please contact: Dr. Robert Snyder, Director, Joint Graduate Program in Toxicology, Rutgers University College of Pharmacy, Piscataway, NJ 08855-0789. Telephone: 201-932-3720. Rutgers, The State University of New Jersey is an Equal Opportunity/Affirmative Action Employer.

CLINICAL PHARMACOLOGY FELLOWSHIPS—Applications from Board-eligible/Board-certified physicians are solicited for positions starting 1 July 1989 and 1 July 1990 in the Brown University Department of Medicine. Areas of research emphasis include geriatric pharmacodynamics, molecular pharmacology of antineoplastic agents, mechanisms of antihypertensive drug action, and adrenergic nervous system function in disease states. In addition to M.D. and M.D./Ph.D. applicants, highly qualified Ph.D. applicants will be considered. For further information, contact: Darrell R. Abernethy, M.D., Ph.D., Director, Division of Clinical Pharmacology, Brown University, Department of Medicine, Roger Williams General Hospital, 825 Chalkstone Avenue, Providence, RI 02908.

FELLOWSHIPS

PREDOCTORAL FELLOWSHIPS SAVANNAH RIVER ECOLOGY LABORATORY (SREL) UNIVERSITY OF GEORGIA

As a research facility of the University of Georgia, SREL has conducted ecological research in the Southeastern Coastal Plain for over 30 years with a diverse array of environmental scientists, including biogeochemists, botanists, and zoologists. Applications are now being solicited for a new fellowship program that will support Ph.D. students at their home institutions during completion of course work and prior to full-time residence at SREL to conduct their dissertation research. It is expected that an SREL faculty member will serve on the student's doctoral committee, preferably as major or co-major professor. Support includes stipend and tuition and is contingent on acceptance into a Ph.D. program. All applicants must be U.S. citizens. For further information and application forms contact: Ms. J. Gregory, Savannah River Ecology Laboratory, P.O. Drawer E, Aiken, SC 29801. Deadline for applications is 15 February 1989. Equal Opportunity/Affirmative Action Employer.

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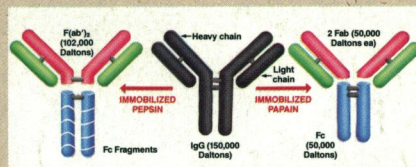
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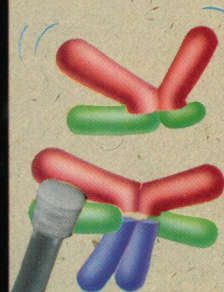
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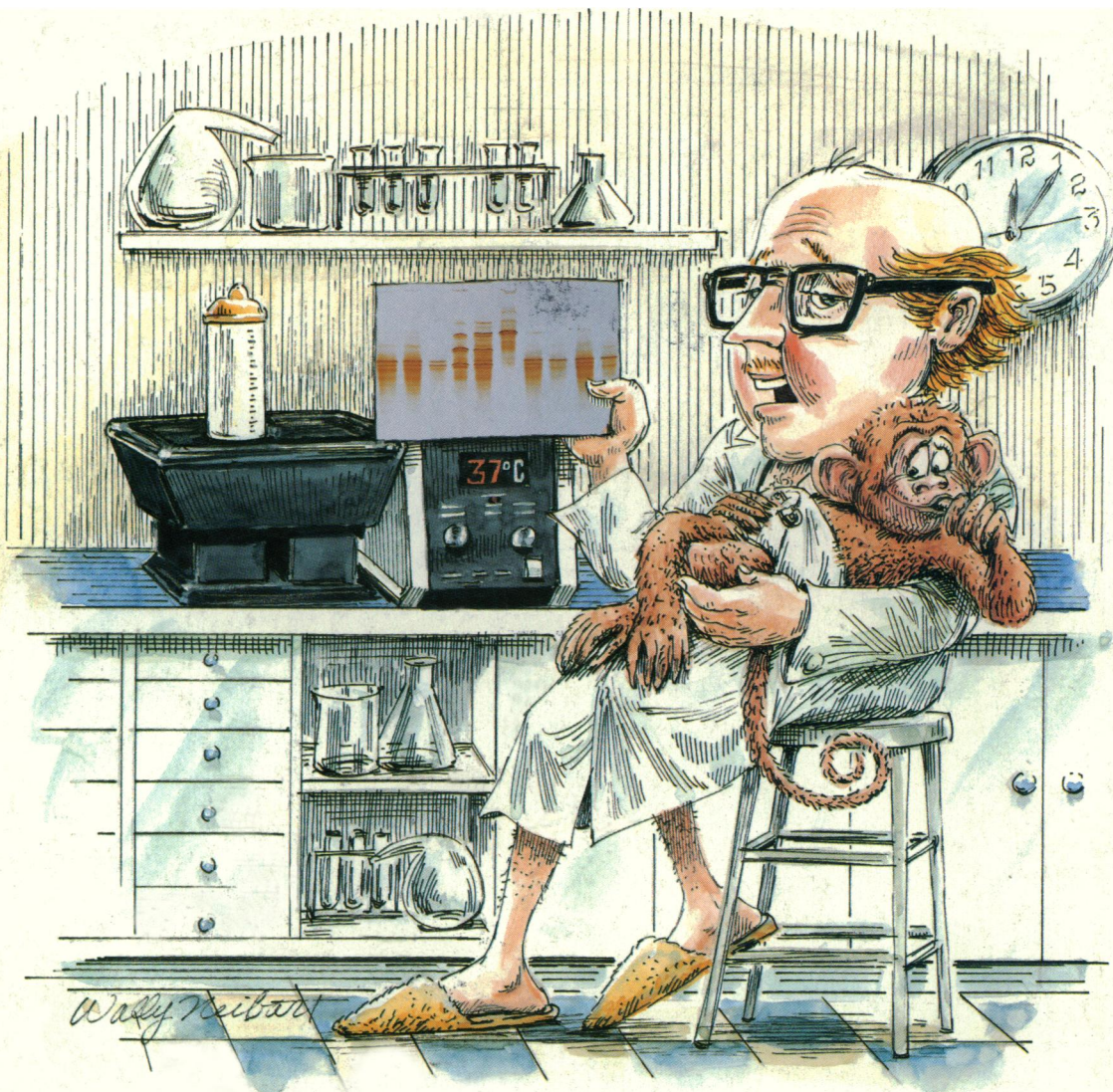
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