

stone" species status, exerting "strong interactions" within their biotic community, in the parlance of current ecological theory. Their removal from a community, and their introduction to a community that has been without them for many decades, should thus cause major changes in community structure. In the simplest proposed scenario, based on several clear experimental studies, otters consume sea urchins that would otherwise decimate kelp populations. Urchins feeding on kelp change the nearshore rocky subtidal zone from a lush and speciose kelp bed community into a more two-dimensional and less species-rich "urchin barrens," a vast wasteland of crustose coralline algae that can resist urchin grazing indefinitely.

Stable sea otter populations might be considered beneficial to such a community, making it more like the community that was present before intense human perturbation. Kelp beds provide refuge for multitudes of fish of numerous species, owing in part to the greater habitat complexity (three dimensionality) and possibly to greater primary productivity and a rich kelp detritus-based food chain (as discussed here by Ebeling and Laur and by Duggins). Communities without otters provide abundant large urchins, abalone, and other delicacies important to sport and small commercial fisheries. Such effects are evident and demonstrable in rocky subtidal habitats, yet otters also persist along coastlines dominated by soft sediments. In the first review of otter effects on soft-substrate habitats, Kvitek and Oliver argue that otters prey preferentially on the smaller near-surface clams, whereas large clams have a refuge in deep burial. Otters do not necessarily eliminate commercially important bivalve populations even after many years of coexistence. Basic controversies for management are: can sea otter populations be allowed to expand as they are now doing, or be introduced to new sites, without decimating desirable prey species? and do otters in fact act as "keystone" predators, necessary for maintaining healthy kelp bed communities, or are there other equally important factors controlling urchin populations and thus accounting for long-term variation in kelp cover (questions expounded by Levin). Certain authors (for example, Foster and Schiel) argue that field experiments are very site-specific and cannot yet be generalized to the whole coast. Nonetheless, the effects of urchin populations on algae and other benthos (for example, mussels, reported on by VanBlaricom) are easily and repeatedly demonstrated (Estes and Harrold; Laur, Ebeling, and Coon), and the changes in urchin populations following otter range expansion are equally clear.

Overall, this volume accomplishes its



"Dense intertidal cover of *Mytilus edulis* at Spike Island, Prince William Sound, in autumn 1984. This site had been completely stripped of mussels, apparently by foraging sea otters, during winter 1979-1980. Mussel cover . . . was nearly zero in April 1980." [From G. R. VanBlaricom's chapter in *The Community Ecology of Sea Otters*]

goals admirably. It presents a concise and informative review, attempts a synthesis (in fact, alternate syntheses), and points out the gaps in our knowledge of an important ecological system, the shallow subtidal zone of the west coast of North America. One concern that leaps from the pages is the inadequacy of the current approach to funding community ecological studies, which usually focus on single sites and short time periods. The result has been that no study addresses sufficient geographic variation, and studies covering more than a few years are severely limited as to which aspects of the community are studied. The outcome of this shortsighted policy is predictable; perturbations occur where there is no adequate prior information (baseline), and management decisions must be made on the basis of fragmented field studies. Even when such studies are elegant and experimental, their limited spatial and temporal scale becomes alarmingly evident when attempts are made to apply their conclusions on a larger scale. Given these generally recognized problems, the authors of this volume have nonetheless pulled together a diverse body of information that has immediate utility for anyone interested in marine ecology, theoretical ecology, conservation biology, and environmental management.

KENNETH P. SEBENS
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Northeastern University,
Nahant, MA 01908

Books Received

Advances in Boron and the Boranes. A Volume in Honor of Anton B. Burg. Joel F. Liebman, Arthur Greenberg, and Robert E. Williams, Eds. VCH, New York, 1988. xx, 547 pp., illus. \$84. Molecular Structure and Energetics, vol. 5.

Affinity Labelling and Cloning of Steroid and Thyroid Hormone Receptors. H. Gronemeyer, Ed. Horwood, Chichester, U.K., 1988 (U.S. distributor, VCH, New York). 322 pp., illus. \$125. Ellis Horwood Series in Biomedicine.

Angels Fear. Towards an Epistemology of the Sacred. Gregory Bateson and Mary Catherine Bateson. Bantam, New York, 1988. xiv, 224 pp. Paper, \$9.95. Bantam New Age Books. Reprint, 1987 ed.

Ceroid-Lipofuscinoses. Batten Disease and Allied Disorders. John M. Opitz *et al.*, Eds. Liss, New York, 1988. xiv, 307 pp., illus. \$85. From a conference, Staten Island, NY, April-May 1987.

The Changing Lives of American Women. Steven D. McLaughlin *et al.* University of North Carolina Press, Chapel Hill, 1988. xx, 250 pp., illus. \$24.95; paper, \$12.95.

Charles Darwin's Beagle Diary. Richard Darwin Keynes, Ed. Cambridge University Press, New York, 1988. xxx, 464 pp., illus. \$59.50.

Dynamics of Membrane Proteins and Cellular Energetics. Norbert Latruffe *et al.*, Eds. Springer-Verlag, New York, 1988. xiv, 278 pp., illus. Paper, \$29.95. Manuals for the Bench.

Early Tertiary Volcanism and the Opening of the NE Atlantic. A. C. Morton and L. M. Parson, Eds. Published for the Geological Society by Blackwell Scientific, Palo Alto, CA, 1988. xii, 477 pp., illus. \$85. Geological Society Special Publications, vol. 39. Based on a conference, London, U.K., March 1987.

Fundamental Physics of Ultrasound. V. A. Shutilov. Gordon and Breach, New York, 1988. xvi, 378 pp., illus. Paper, \$98. Translated from the Russian edition (Leningrad, 1980) by Michael E. Alferieff.

General Theory of Markov Processes. Michael Sharpe. Academic Press, San Diego, CA, 1988. xii, 419 pp. \$49.50. Pure and Applied Mathematics, vol. 133.

The Greek World. Roger Ling. Bedrick, New York, 1988. viii, 152 pp., illus. \$19.95. The Making of the Past.

Handbook of Personal Competence Research. Brian H. Spitzberg and William R. Cupach. Springer-Verlag, New York, 1988. xvi, 352 pp. Paper, \$33. Recent Research in Psychology.

Multiwavelength Astrophysics. France A. Córdova, Ed. Cambridge University Press, New York, 1988. xii, 400 pp. illus. \$59.50.

A Narrative History of Experimental Social Psychology. The Lewin Tradition. Shelley Patmoe. Springer-Verlag, New York, 1988. viii, 279 pp. Paper, \$29. Recent Research in Psychology.

The National Air and Space Museum. C. D. B. Bryan. 2nd ed. Abrams, New York, 1988. 498 pp., illus. \$65.

Neighbors to the Birds. A History of Birdwatching in America. Felton Gibbons and Deborah Strom. Norton, New York, 1988. 364 pp., illus. \$18.95.

Processes in Karst Systems. Physics, Chemistry, and Geology. Wolfgang Dreybrodt. Springer-Verlag, New York, 1988. xii, 288 pp., illus. \$133. Springer Series in Physical Environment, vol. 4.

Reptile Egg-Shells, SEM Atlas. H. Hermann Schleich and Werner Kästle. Fischer, Stuttgart, 1988 (U.S. distributor, VCH, New York). viii, 123 pp., illus. \$44.50.

Rules of Thumb for Physical Scientists. David J. Fisher, Compiler. Trans Tech, Brookfield, VT, 1987. xiv, 302 pp., illus. Paper, \$65.

Sapping Features of the Colorado Plateau. A Comparative Planetary Geology Field Guide. Alan D. Howard R. Craig Kochel, and Henry E. Holt, Eds. National Aeronautics and Space Administration, Washington, DC, 1988 (available from the Superintendent of Documents, Washington, DC). viii, 108 pp., illus. Paper, \$6.

The Ubiquitin System. Milton Schlesinger and Avram Hershtko, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1988. xiv, 200 pp., illus. Paper, \$25. Current Communications in Molecular Biology. From a conference, Cold Spring Harbor, NY, Spring 1988.

The Written Word. Studies in Literate Thought and Action. Roger Säljö, Ed. Springer-Verlag, New York, 1988. x, 214 pp., illus. \$50.20. Springer Series in Language and Communication, vol. 23. From a seminar, Sydöster, Sweden, Aug. 1985.

Products & Materials

Roller Apparatus for Cell Culture

The High-PRO roller apparatus rolls as many as 86 glass or lightweight plastic bottles at once, providing a colonization area of 136,000 cm². The High-PRO has a direct drive system with solid-state circuitry and motors to prevent slippage. A digital display shows revolution speeds between 0 and 3 rpm. The High-PRO is available in two heights and in 110- and 220-V models. Optional features include a motion alarm and a battery backup power system. Bellco Biotechnology. Circle 473.

Light-Scattering Photometer

The DAWN multi-angle light-scattering photometer can be converted from a gel-permeation chromatography (GPC) detector to a batch-mode photometer. After conversion, the DAWN can perform Zimm plot analyses on unknown samples before chromatographic separation. Other experimental procedures possible in batch mode include bioassays, particle size analysis, depolarizations, and aggregation studies. In GPC detection mode, column calibration is not needed. The accompanying menu-driven software performs band-broadening corrections and averaging and smoothing routines, and it responds to autoinjection synchronization signals. Wyatt Technology. Circle 525.

Semi-Dry Blotting Transfer Cell

The Trans-Blot is a transfer cell for semi-dry blotting. The semi-dry transfers are performed horizontally with a platinum-coated titanium plate as the anode and stainless steel as the cathode. The gel and transfer media are sandwiched between layers of buffer-saturated filter paper that serve as the ion reservoirs during transfer. Because the procedure does not require a tank, only



about 200 ml of buffer are needed for operation. Transfers of large gels with proteins of molecular weights greater than 200,000 can be performed in 45 to 60 min; minigels require 15 to 30 min. Because the Trans-Blot needs less than 25 V, external cooling is not necessary. Bio-Rad Laboratories, Chemical Division. Circle 471.

Ultrasonic Processor

The SONICATOR is an ultrasonic disruption probe with a small lightweight generator. A microprocessor controls timing and pulsing. Prompted by a dot-matrix display, the user enters these parameters on a membrane-switch keypad. The timer can be programmed for as many as 10 hours in 1-s increments, and pulsing can be set for cycles as long as 1 hour in 0.1-s increments. A pause control allows the user to break into any automatic cycle. Heat Systems-Ultrasonics. Circle 531.

Hydraulic Microdrive

The MO-303 is a vernier-controlled hydraulic microdrive that permits less than $\pm 0.2 \mu\text{m}$ of drift over a 2- to 3-hour period when temperature is constant. Incremental movements of $0.2 \mu\text{m}$ are possible, as are working distances greater than 1000 μm . Axial resolution is $0.2 \mu\text{m}$ in each direction. Narishige USA. Circle 480.

Inert Ion Chromatograph

The ACTION Analyzer is an inert, high-pressure, low-dispersion ion chromatograph. The instrument features a flow capability of 0.01 to 10 ml/min, flow precision to 1%, a 281 kg/cm^2 (4000 psi) operating limit, an automated seal wash, and a full-screen display. The components are made of advanced polymers to withstand continuous contact with acidic and alkaline solvents. The researcher can control linear and non-

linear gradients as well as injection and detection parameters directly on the ACTION Analyzer. Available detectors include conductivity and ultraviolet detectors. Waters Chromatography Division of Millipore. Circle 529.

Gel-Permeation Chromatography System

The GPC System is a hardware and software system for performing gel-permeation chromatography. The system includes a pump, a detector, a column oven, multitasking software, and columns. The software performs calculations such as weight average molecular weight, number average molecular weight, and polydispersity index. It also collects and stores the raw data, calculates and plots molecular weight distribution, plots raw chromatograms, and calibrates by various standards; it can also automatically create overlays of molecular distribution curves in different colors. From \$12,550. Spectra-Physics, Autolab Division. Circle 496.

Literature

The *HPLC Column Literature Reference List* is a bibliography for polymeric reversed-phase high-performance liquid chromatography columns. Hamilton. Circle 487.

Ultra High Vacuum Instruments and Systems is an 88-page catalog of sample manipulation and transfer devices, ultrahigh vacuum chambers, ultrahigh vacuum systems, and components such as valves, bellows, and flanges. UHV Instruments. Circle 488.

The poster *Neurochemicals for the Neuroscientist* lists 400 products, including adenosines, adrenergics, cholinergics, enzyme inhibitors, and neurotoxins, and their pharmacological activities. Research Biochemicals. Circle 489.

The brochure *SIMSLAB 3* describes an instrument for secondary ion mass spectrometry. VG Ionex (United Kingdom). Circle 490.

Isotemp Refrigerators, Freezers, and Ultracold Freezers is a catalog of laboratory refrigerators and freezers. Fisher Scientific. Circle 491.

Microbiology/Tissue Culture Labware is a product flier about sterile centrifuge tubes, sterile culture tubes, and inoculating loops. Elkay Products. Circle 492.

EA 1108 Elemental Analyzer is a brochure about an instrument for determination of carbon, hydrogen, nitrogen, oxygen, and sulfur. Carlo Erba Strumentazione (Italy). Circle 515.

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

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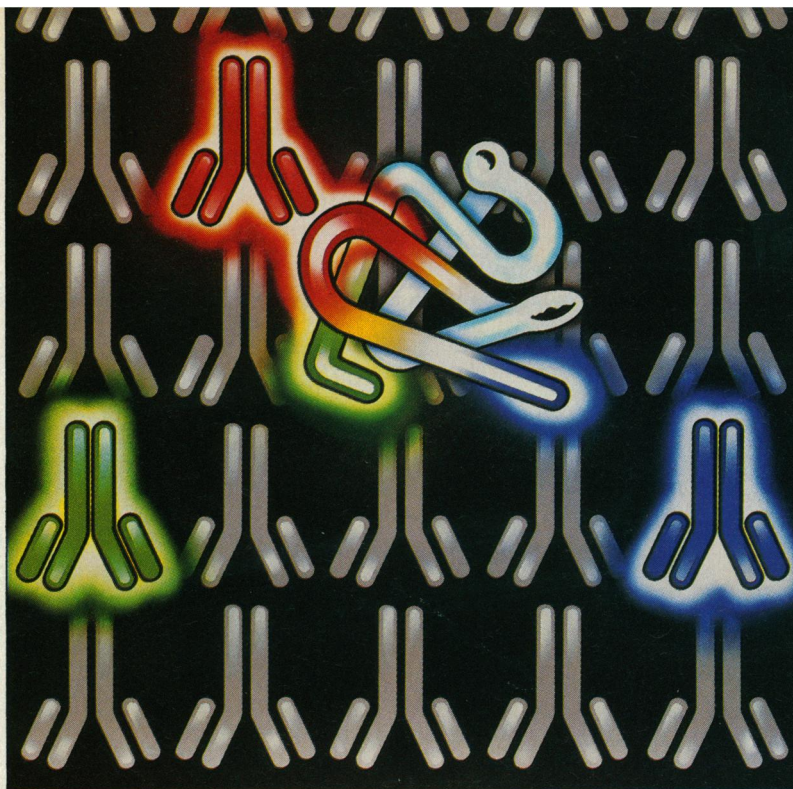
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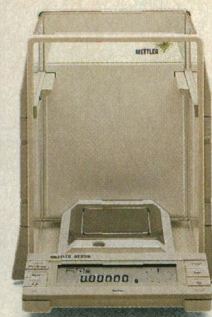
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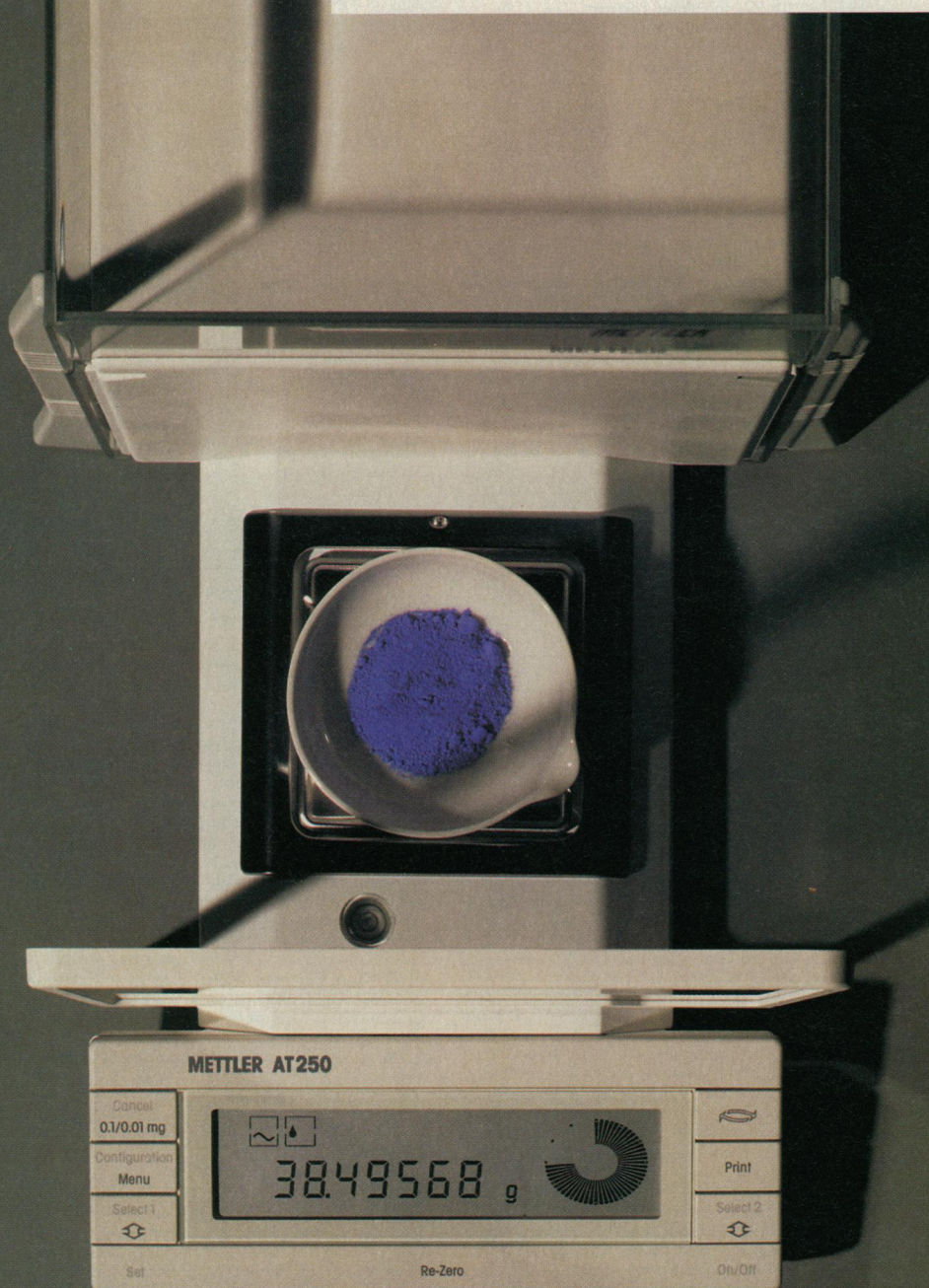
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Applicants must also be qualified to teach in the graduate and professional school courses offered by the department. Send curriculum vitae, a concise plan for future research, and names of three references to:

Dr. Simon J. Pilakis, M.D., Ph.D.
Department of Physiology and Biophysics
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Dr. James J. McGrath
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Please submit by 15 March 1989 curriculum vitae, statement of research interest, and names of three individuals who can be contacted for letters of reference to: **S. T. Kitai, Chairman, Department of Anatomy and Neurobiology, College of Medicine, The University of Tennessee, Memphis, 875 Monroe Avenue, Memphis, TN 38163.**

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

POSITIONS OPEN

ASSISTANT PROFESSOR. Research faculty appointment in the Department of Ophthalmology. Applicant must have a Ph.D. in immunology or closely related field with at least 2 years of postdoctoral research experience. Candidate is encouraged to develop independent research interests and to participate in ongoing research on the immunology of the eye and the immunobiology of corneal allografts. Salary is commensurate with experience. Interested applicants should send cover letter stating research interests, curriculum vitae, and three letters of recommendation to: **Dr. Jerry Y. Niederkorn, Department of Ophthalmology, University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9057.** *Equal Opportunity Employer.*

COLUMBIA UNIVERSITY DEPARTMENT OF PSYCHIATRY

ASSISTANT PROFESSOR LEVEL POSITION available for qualified candidate. Ph.D., 6 years of experience in eukaryotic molecular genetics to focus on mapping and sequencing of human genome with emphasis on genes expressed in the brain. Send résumé to:

**Linda A. Timmons, M.S.
Columbia University
Department of Psychiatry
722 West 168 Street, Box 1
New York, NY 10032**

Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR IN OPHTHALMOLOGY

We seek a cell biologist interested in muscle to conduct an independent research program. Willingness to interact with ongoing studies of extraocular muscle is important, but it is not required that the candidate's own research utilize extraocular muscle. We offer good space/equipment, start-up funds, possible affiliation with appropriate basic department. Ability to command external research funding indispensable. Teaching/administrative duties are minimal. Interested persons should initially submit curriculum vitae and a description of research interests to:

**Dr. Paul Witkovsky
Department of Ophthalmology
New York University Medical Center
550 First Avenue
New York, NY 10016**

An Equal Opportunity Employer.

ASSISTANT PROFESSOR—VEGETABLE PHYSIOLOGY. This is a 20% teaching and 80% research appointment in the Department of Horticulture, The Pennsylvania State University. The individual will develop and maintain a research and teaching (undergraduate and graduate) program in production efficiency, stand establishment, environmental stress adaptation, postharvest physiology, or other areas of vegetable crop physiology. Ph.D. in horticulture or closely related plant science field with training in plant physiology is required. Submit letter of application with curriculum vitae including transcripts and selected reprints and names and addresses of three references to: **Dr. Stephen J. Wallner, Department of Horticulture, The Pennsylvania State University, University Park, PA 16802.** Closing date is 1 March 1989 or until a suitable candidate is found.

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

ASSISTANT PROFESSOR(S)

Assistant professor(s) position available in the Division of Plastic and Reconstructive Surgery, Department of Surgery at The Milton S. Eshelman Medical Center of The Pennsylvania State University College of Medicine. This is a full-time tenure-track faculty position. Candidates should be qualified to be accepted for examination by the American Board of Plastic Surgery or be certified. An ongoing research program as well as a serious commitment to medical education is desired.

Please send inquiries and curriculum vitae to: **Ernest K. Manders, M.D., Chief, Division of Plastic and Reconstructive Surgery, The Pennsylvania State University College of Medicine, P.O. Box 850, Drawer SC, Hershey, PA 17033.** Application deadline: 31 March 1989. *The Pennsylvania State University is an Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

POSITIONS OPEN

ASSISTANT PROFESSOR. Environmental scientist/landscape ecologist, 12-month, assistant professor, tenure-track position at the University of Kansas to teach two courses in Environmental Studies Program and build research program in Kansas Biological Survey. Suitable research specialties include: land/water interface; remote sensing/geographic information systems; wetland ecosystem analysis; water pollution assessment; or related area. Salary: \$38,000 to \$40,000. Ph.D. required. Postdoctoral research and teaching experience preferred. Start 1 July 1989. Send application letter, curriculum vitae, copies of publications, statement of research goals and three letters of recommendation to: **Dr. Leonard C. Ferrington, Jr., Kansas Biological Survey, 2291 Irving Hill Drive, Lawrence, KS 66045.** Application must be postmarked by 1 March 1989. *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR—NONTENURED

The University of Tennessee, Memphis, Department of Physiology and Biophysics will have a nontenured faculty position available 1 July 1989. Assignment will be to the research laboratory of **Dr. James M. Krueger**, Professor in the Department of Physiology and Biophysics at the University of Tennessee. Requirements are good background in biochemistry and microbiology and experience in sleep physiology techniques. The annual salary will be \$36,000. Applicants send curriculum vitae, copies of three representative publications, and the names of three references to: **Dr. Edward G. Schneider, Professor and Acting Chairman, Department of Physiology and Biophysics, University of Tennessee, 894 Union Avenue, Memphis, TN 38163.** *An Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.*

ASSISTANT/ASSOCIATE PROFESSOR IN BIOLOGY (Tenure-track): Ph.D. Immunologist with broad undergraduate/graduate training in biology and tissue culture experience for position to begin fall 1989. Main teaching responsibilities will be immunology, general biology, major and non-major courses in applicant's interest area. Opportunity to direct B.A. and M.A. research. Application letter, curriculum vitae and three references should be sent by 24 March 1989 to: **Dr. David Hanes, Biology Department, Sonoma State University, Rohnert Park, CA 94928.** *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT OR ASSOCIATE PROFESSOR IN THE RESEARCH ASSOCIATE TRACK to assume major responsibility in a cellular electrophysiology laboratory studying the effects of arrhythmic influences and antiarrhythmic drugs on ionic currents, gap junctional conductance, and repolarization. Experience in voltage-clamping of myocytes and cell pairs useful. Excellent scientific environment. Renewable term appointment with full fringe benefits. *Equal Opportunity Employer.* Immediate availability. Please send curriculum vitae, representative reprints, and names of three references to: **Morton F. Arnsdorf, M.D., Chief, Section of Cardiology, University of Chicago Hospitals, Box 423, 5841 South Maryland, Chicago, IL 60637.**

ASSOCIATE VETERINARIAN (PATHOLOGIST)

\$3,108.33 to \$4,666.67 per month

The California Primate Research Center, University of California Davis, is recruiting for an associate veterinarian (pathologist). Duties include diagnostic pathology, characterizing animal models of human disease, training residents in pathology, participating in preventive medicine programs, and providing research service and collaboration. Candidates must have a D.V.M. degree, Board-eligibility or certification by the American College of Veterinary Pathologists, nonhuman primate pathology experience, and a background in immunopathology, teratology, or respiratory pathology.

Candidates must provide one to three references, statement of qualifications, and curriculum vitae. Position is open until filled, but not later than 30 April 1989. Required application forms may be obtained by calling 916-752-0531, Monday to Friday, 10 a.m. to 2 p.m. Please reference job (VL) #9-0040 when calling. Mail applications to: **UC Davis, Employment Office, TB-122, Davis, CA 95616** or **VS #9-0040.** *Equal Opportunity Employer.*

University of California Davis

POSITIONS OPEN

ASSOCIATE DIRECTOR, ILSI Risk Science Institute. Position available immediately for a Ph.D. with at least 3 years of experience in the biological sciences and risk assessment. The Risk Science Institute is a public, nonprofit research foundation established to improve the scientific basis for risk assessment through research and related activities. Successful applicant will work with scientists from universities, private foundations, government agencies, and industry; will be responsible for daily operations of the institute; and will assist in the implementation of the institute's programs. Send curriculum vitae to: **Dr. Carol J. Henry, Executive Director, ILSI Risk Science Institute, 1126 Sixteenth Street, NW, Suite 110, Washington, DC 20036.**

BIOLOGIST: The University is seeking a broadly trained cell biologist for a full-time appointment at the assistant professor rank in the Department of Biological Sciences (pending budget approval). The successful candidate will teach courses such as cell biology, vertebrate embryology, comparative anatomy, vertebrate physiology, human anatomy and physiology, and participate in the senior research program. Knowledge of use of computers in teaching and research helpful. Ph.D. required. Send curriculum vitae, brief description of teaching philosophy and research interests and three letters of recommendation by 31 March 1989 to: **Dr. Michael A. Kolitsky, Chair, Department of Biological Sciences, California Lutheran University, 60 West Olsen Road, Thousand Oaks, CA 91360-2787.** *California Lutheran University is an Equal Opportunity Employer.*

BIOLOGY INSTRUCTOR

Master's degree with 18 graduate semester hours in biology. Major teaching responsibilities include general biology and microbiology—lectures and laboratories. Résumés must be received by 16 March 1989 at: **Broward Community College, Human Resources Department, 225 East Las Olas Boulevard, Fort Lauderdale, FL 33301.** *Equal Access/Equal Opportunity Institution.*

CELL/MOLECULAR BIOLOGIST

Assistant professor. Fall 1989. To teach cell, molecular, and general biology. Additional expertise in developmental or plant biology desirable. Tenure-track. Requirements: Ph.D., commitment to excellent undergraduate teaching, and research program with opportunities for student participation. For detailed job description and application procedure, write promptly to: **Dr. Richard Nickerson, Biology Department, Simmons College, 300 The Fenway, Boston, MA 02115.** *An Affirmative Action/Equal Employment Opportunity Employer.*

CELLULAR AND MOLECULAR PHYSIOLOGY THE UNIVERSITY OF IOWA COLLEGE OF MEDICINE

Applications are invited to fill several positions this year at the **ASSISTANT, ASSOCIATE, OR FULL PROFESSOR** levels. We seek individuals with a strong record of research accomplishment using molecular biology, cell biology, protein chemistry or electrophysiology approaches to study mechanisms of intracellular and intercellular signalling, regulation of eukaryotic gene expression or structure and function of membrane proteins. Modern laboratory space and substantial start-up funds are available. Excellent opportunities exist for participation in established interdisciplinary programs, including Cancer, Cardiovascular, Diabetes and Endocrinology Centers. Rank and salary will be based on academic and research record. Minimum requirements include Ph.D. or M.D. degree, and 2 years of relevant postdoctoral training. Candidates should send curriculum vitae, description of research activities, representative reprints, and request three letters of recommendation to be sent, preferably by 15 March 1989, to:

**Dr. Richard Maurer
Chairman, Cell and Molecular Physiology
Search Committee
Department of Physiology and Biophysics
The University of Iowa College of Medicine
Iowa City, IA 52242**

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

POSITIONS OPEN

MEDICAL COLLEGE OF WISCONSIN CHAIRMAN, DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY

Chairman sought for this strong department in a rapidly growing private medical school. Strengths in cardiovascular pharmacology and neuropharmacology are complemented by developing interdepartmental efforts in molecular biology, cancer research, and the neurosciences.

Individuals with active scientific programs and a desire to play a leadership role in an exciting environment should contact:

John P. Kampine, M.D., Ph.D.
Chairman, Pharmacology Search Committee
c/o Office of the Dean
Medical College of Wisconsin
8701 Watertown Plank Road
Milwaukee, WI 53226

The Medical College of Wisconsin is a private, free-standing medical school located on the campus of the Milwaukee Regional Medical Center. The College has 650 full-time faculty members, admits 200 medical students annually, has a graduate school enrollment of 65 and currently receives \$26 million annually in extramural research grant support.

The Medical College of Wisconsin is an Equal Opportunity/Affirmative Action Employer committed to increasing female and minority representation in leadership positions.

CHIEF, DIVISION OF ONCOLOGY/HEMATOLOGY—Full-time academic appointment available at Southern Illinois University School of Medicine. Associate Professor or Professor of Medicine, depending on experience. Internal Medicine and Oncology/Hematology certification or equivalency is required. Teaching and patient care responsibilities with a strong interest in clinical research. Send résumés to: **Oliver E. Owen, M.D., Professor and Chairman, Department of Internal Medicine, SIU School of Medicine, P.O. Box 19230, Springfield, IL 62794-9230.** *SIU School of Medicine is an Equal Opportunity/Affirmative Action Employer.* This position will be open until April 1989 or until filled.

CONSULTING

Scientific consulting firm offering assistance in analysis of data and communication of findings in written reports and public presentations to a variety of forums seeks Ph.D.'s in biological and biochemical sciences and M.D.'s interested in consulting opportunities. Disciplines of interest include epidemiology, biostatistics, toxicology/pharmacology, cancer research, pathology, immunology, allergy, etc., and any of the medical specialties. Applicants will provide assistance on various projects. The position is intended for those people looking to supplement ongoing activities. Travel can be minimized. Retired individuals are welcome as are all academic professionals. Please reply with résumé and rate structure to: **Vice President, Suite 206, 3421 M Street, NW, Washington, DC 20007.**

ELECTRON MICROSCOPIST. Supervisor, Transmission Electron Microscope Facility. An experienced electron microscope professional is needed to oversee a departmental facility. Responsibilities include: Performance of research projects in collaboration with departmental users, user-training, and administration of facility. Bachelor's degree required. Salary very competitive and commensurate with experience. Submit curriculum vitae and have three letters of reference forwarded to: **Dr. Charles Etensohn, Department of Biological Sciences, Carnegie Mellon University, 4400 Fifth Avenue, Pittsburgh, PA 15213.** *Carnegie Mellon University is an Equal Opportunity/Affirmative Action Employer.*

ENVIRONMENTAL PATHOLOGY/TOXICOLOGY. NRSA-supported PRE- AND POSTDOCTORAL POSITIONS available with research emphasis on cellular and molecular effects (mutagenesis, neurotoxicity, biotransformation, DNA dosimetry) of toxic chemicals (especially trace metals, aromatic hydrocarbons, ozone respiratory epithelial injury, aflatoxins). Inquiries: **Dr. N. K. Mottet, Program Director, Department of Pathology, SM-30, University of Washington, Seattle, WA 98195.** *U.S. citizen/permanent resident. An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

DEAN COLLEGE OF ENGINEERING THE UNIVERSITY OF MICHIGAN ANN ARBOR

The University of Michigan currently is seeking nominations and applications for the Deanship of the College of Engineering. The Dean is the chief academic and administrative officer of the College and reports directly to the Provost. The College's activities include instruction at the undergraduate, masters, and doctoral levels and an extensive research program. The Dean provides leadership in program planning, development, and evaluation; in budget preparation and personnel administration; and in representing the College. Qualifications include an earned doctorate, a distinguished research and teaching record appropriate for a tenured appointment in the College, proven leadership and administrative ability, a commitment to affirmative action, and an understanding of budgeting processes in a complex research university.

Nominations and applications should be sent as soon as possible to:

**Provost and Vice President
for Academic Affairs
College of Engineering
Deanship Search Committee
3068 Fleming Building
The University of Michigan
Ann Arbor, MI 48109-1340**

A nondiscriminatory, Affirmative Action Employer.

DEPARTMENT HEAD, FOOD SCIENCE

The University of Illinois at Urbana-Champaign seeks a Head for the Department of Food Science, starting 21 August 1989. Requirements are a Ph.D. in food science or an allied field, strong background in research and in resident instruction or extension education, as well as demonstrated administrative skills. Applications, including résumé and the names of five references, should be received before 1 April 1989 by:

**Dr. James L. Robinson
University of Illinois
350 Animal Sciences Laboratory
1207 West Gregory Drive
Urbana, IL 61801
Telephone: 217-333-2469**

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

DIRECTOR DEPARTMENT OF CONSERVATION RESEARCH FACILITIES NATIONAL AUDUBON SOCIETY

The National Audubon Society seeks a senior conservation biologist skilled in research, administration, and land management to become the head of a new department within the Society's Division of Science and Sanctuaries.

The Director is responsible for administration of the new department, including planning, budgeting, and personnel. The department manages five sites in the Audubon Sanctuary system: Starr Ranch (California); Research Ranch (Arizona); Maine Islands (Maine); Silver Bluff (South Carolina); and Scully (New York). These sanctuaries are recognized as demonstrating particular promise for research in conservation biology. The Director's principal charge is to facilitate the growth of conservation research uses of these sites, by Audubon scientists as well as by others, while also maintaining the sites' integrity as wildlife sanctuaries.

In addition, the Director will contribute to the formulation of Audubon conservation policy at a national level, manage specific Audubon wildlife science programs (e.g., condors), and assist the Sanctuary Department in developing and implementing system-wide monitoring of ecological variables significant to the Society's sanctuaries. The Director will also participate in fund-raising and in building the Society's scientific and conservation profile in the West.

Nominations and letters of application, accompanied by curriculum vitae, supporting letters, and other materials should be mailed to:

**Dr. J. P. Myers
Senior Vice President, Science and Sanctuaries
National Audubon Society
950 Third Avenue
New York, NY 10022**

POSITIONS OPEN

ECOLOGY SWARTHMORE COLLEGE

Applications are invited for a 1-year **LEAVE-REPLACEMENT POSITION** in the Department of Biology starting September 1989. The position involves teaching an intermediate-level course in ecology, an advanced-level seminar in plant or animal ecology, and participating in the Department's introductory biology course. Send curriculum vitae and three letters of recommendation to: **Chair, Ecology Search Committee, Department of Biology, Swarthmore College, Swarthmore, PA 19081.** Closing date for applications is 15 March 1989. *Swarthmore College is an Equal Opportunity Employer.*

ENDOCRINOLOGIST—Diabetologist/Nutritionist Board-certified physician needed for a full-time academic appointment with Southern Illinois University School of Medicine. This position is needed to expand the current metabolic, endocrine, nutritional and diabetes center. Rank and salary to be negotiated. Research and service activities are integrated with an innovative teaching program. Send résumés to: **Oliver E. Owen, M.D., Professor and Chairman, Department of Internal Medicine, Southern Illinois University School of Medicine, P.O. Box 19230, Springfield, IL 62794-9230.** This position will be open until April 1989 or until filled. *SIU is an Equal Opportunity/Affirmative Action Employer.*

ENDOCRINOLOGY AND METABOLISM

The Division of Endocrinology and Metabolism, Department of Medicine, University of Alabama, School of Medicine, Birmingham, Alabama, announces the availability of additional **FACULTY POSITIONS**. Academic rank will be determined by the qualifications of the individual appointed but assistant/associate professors and instructors are being sought. The positions are open to individuals fulfilling these criteria: (i) Having a research background, being able to perform independent research, and being committed to major involvement in personal and divisional research programs, (ii) Having a firm commitment to and involvement in teaching programs for medical students, housestaff and fellows, (iii) Adding expertise in the management of patients. To apply, send full credentials to: **J. Claude Bennett, M.D., Department of Medicine, 621 Medical Education Building, University of Alabama Medical Center, Birmingham, AL 35294.** *UAB is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN PHARMACOLOGY

Faculty position at assistant/associate professor level in pharmacology, tenure-track, for individual interested in neuropharmacology. Candidates should have had at least 2 years of relevant postdoctoral experience. Submit a brief statement of research plans, curriculum vitae, bibliography, and names of three references by 20 March 1989 to: **Dr. H. George Mandel, Department of Pharmacology, George Washington University Medical Center, 2300 Eye Street, NW, Washington, DC 20037.**

*An Equal Opportunity/
Affirmative Action Employer.*

FACULTY POSITIONS MOLECULAR CELL OR DEVELOPMENTAL BIOLOGY

Three tenure-track faculty positions in molecular cell/developmental biology in a vigorous, expanding department at a major university in suburban New York City. Rank and salary open; postdoctoral experience and evidence of research productivity are required. Teaching of both undergraduates and graduate students is expected, but the successful candidate will have a primary responsibility to train Ph.D. students in a competitive, externally-funded research program. Substantial start-up funds and newly-renovated laboratory space are available. Candidates should submit curriculum vitae with list of publications, a brief statement of research interests, and the names of at least three references by 23 March 1989 to: **Dr. Richard A. Lockshin, Chair, Department of Biological Sciences, St. John's University, Jamaica, NY 11439.**



AIR FORCE HUMAN SYSTEMS DIVISION POSTDOCTORAL RESEARCH SCHOLAR POSITIONS

The Air Force Human Systems Division (HSD) is sponsoring a Scholarly Research Program to provide unique opportunities for selected engineers and scientists to pursue independent research within various HSD laboratories. HSD is the primary Air Force agency concerned solely with effectively integrating the human operator within the broad spectrum of Air Force systems and missions. The program is managed and conducted by **Operational Technologies Corporation (OpTech)**. OpTech invites applications from qualified scholars to participate in research in the areas of:

- Toxicology
- Pharmacology
- Human Factors
- Microwave Radiation
- Laser Bioeffects
- Industrial Hygiene
- Training Psychology
- Systems Engineering
- Chemistry
- Neuroscience
- Intelligent Tutors
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- Training Systems
- Statistics
- Mathematical Modelling
- Behavioral Psychology
- Environmental Science
- Biodynamics
- Biochemistry
- Behavioral Toxicology
- Bioengineering/Biophysics

While conducting research in the Air Force laboratories, scholars will enjoy status as full salaried employees of OpTech. In addition to this outstanding opportunity for professional growth, OpTech offers competitive salaries and a full range of benefits including paid leave, comprehensive medical and dental plans, and other benefits.

Appointments are for one year with opportunity for renewal. US citizenship required.

For additional information, program brochures, and application forms you are invited to call or write:

Manager, AF HSD Scholarly Research Program
Operational Technologies Corporation
5825 Callaghan Road, Suite 225
San Antonio, TX 78228
Phone (512) 684-0000 (Collect Calls Accepted)

Equal Opportunity Employer

DEAN TUFTS UNIVERSITY SCHOOL OF MEDICINE

Tufts University invites nominations and applications for the position of Dean of the School of Medicine. The school was founded in 1893, and now enrolls 600 men and women in instructional programs involving over 2,000 basic science and clinical faculty members. Located in downtown Boston, the school has clinical affiliations with over 30 hospitals. Integrated educational and research programs in the basic sciences also support graduate studies, the Schools of Dental and of Veterinary Medicine and the USDA Human Nutrition Research Center on Aging at Tufts.

The Committee seeks candidates who have had broad experience and who are respected for their work in the fields of medical education, research and clinical practice. Candidates must have demonstrated executive competency in administration, including fundraising and capital development. The ability to work in both internal and external constituencies of the University is essential. Candidates must hold an M.D. (Ph.D.) or equivalent degree.

Tufts University School of Medicine is an Equal Opportunity/Affirmative Action Employer. Women and members of minorities are encouraged to apply.

Review of candidates began February 1, 1989 and will continue until the position has been filled. Applications must contain a curriculum vitae. Contact: Thomas J. Stranova, Secretary, Medical School Dean Search Committee, Tufts University School of Medicine, 136 Harrison Avenue, Boston, MA 02111.

TUFTS
UNIVERSITY

NEUROPHYSIOLOGIST

The ICI Pharmaceuticals Group, ranked among the top pharmaceutical research organizations in the world in terms of both sales and research and development investment, is dedicated to the challenge of discovering and developing important new therapeutic agents.

Our growth and continuing commitment to research have created openings at our Wilmington, Delaware headquarters which offer excellent opportunities for individual creativity, visibility and advancement.

We are currently seeking a Neurophysiologist to assist in the design and execution of pharmacological studies to identify drugs for central nervous system disorders. Proficiency in electrophysiological techniques (stereotaxic surgery, histology, extracellular single unit recording, iontophoresis, brain slice) desired. Knowledge of electronics and computer science preferred. BS/MS in Neurobiology with experience in Neurophysiology required.

We have an excellent salary and benefits program, including tuition aid for approved graduate study.

Please send your resume including salary requirement in confidence, to: **Mary S. Carroll, ICI Pharmaceuticals Group, Wilmington, DE 19897.**



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Important Contributions To An Essential Effort.

If you've been looking for an organization where your contributions will make a strong and positive impact, may we suggest The MITRE Corporation. A not-for-profit organization providing expert systems engineering solutions to military and civil agencies of the U.S. Government, we are currently providing technical support to manage the nation's hazardous waste problems for the EPA and to meet the mandates of the Defense Environment Restoration Act. These are the essential efforts that can make excellent use of your proven expertise.

Toxicologists

McLean, VA & San Antonio, TX

We currently have openings at our Washington Center and our San Antonio Site for professionals with high levels of skill and dedication to provide quality assurance of human health risk assessments performed by contractors on Air Force Installation Restoration Sites. Specific responsibilities include evaluating work plans for adequacy of approach; reviewing risk assessments for accuracy, completeness and validity of conclusions; and analyzing expert risk reductions. You will assist the Air Force in coordinating activities with EPA regional and state offices to ensure regulatory compliance. To qualify, you must have an advanced degree in Toxicology or related discipline, plus at least 3 years of experience in conducting chemical exposure and risk assessments, preferably at hazardous waste sites. Familiarity with CERCLA/SARA, the RI/FS process and EPA guidelines for conducting risk assessment at NPL sites is essential. Excellent communications skills a must.

Please submit your resume to **N.S. Scott, The MITRE Corporation, 7525 Colshire Dr., McLean, VA. 22102. U.S. Citizenship required. An Equal Opportunity Employer.**

MITRE

Marine Environmental Chemist

Lawrence Livermore National Laboratory, the nation's premier research and development organization, is seeking a Marine Environmental Chemist for a 2 year term appointment.

Will conduct analysis of environmental and biological materials for trace organic contaminants by gas chromatography and mass spectrometry and will maintain trace organic compound analysis facility.

The selected candidate will have a BS or advanced degree in Chemistry or related field, with extensive experience in Organic Analytical Chemistry, specifically gas chromatography/mass spectrometry (GC/MS).

We offer a highly competitive salary and benefit package. Send resume to **Earl G. Morrell, Personnel Operations Division, Lawrence Livermore National Laboratory, P.O. Box 5510, Dept. KSC2P902B, Livermore, CA 94550.** U.S. citizenship required. An equal opportunity employer.

University of California



**Lawrence Livermore
National Laboratory**

The Race is Hours!

GENE-TRAK Systems is one of the largest groups in the world dedicated to the commercialization of DNA probe based products for diagnosing infectious diseases.

MICROBIOLOGISTS

Development Manager and Staff Scientist positions available to develop nucleic acid based screens assays to detect microorganisms in blood. Applicants must have a Ph.D. and previous experience with blood culture and septicemias. Positions also require product development experience.

GENE-TRAK Systems, located in the western suburbs of Boston, offers a lucrative compensation and benefits package that includes equity participation. Send your CV to: Brian Mazar, Human Resources Director, Dept. S3-89, GENE-TRAK Systems, 31 New York Avenue, Box 9013, Framingham, MA 01701.

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**GENE-TRAK
SYSTEMS**

Research Scientist/ Molecular Biology

Triton Biosciences Inc., a subsidiary of Shell Oil Company, is a fully integrated pharmaceutical and diagnostics company focused on product development opportunities in the areas of cancer and other life-threatening diseases.

The successful candidate should have a PhD in Molecular Biology (or equivalent) with 4+ years research experience. A strong background in one of the following areas is required: cell surface receptors, growth factors, or oncogenes. Experience in expressing cloned genes in mammalian cells is also essential.

Triton is located in the San Francisco Bay Area and offers competitive salaries and benefits, including relocation assistance. For consideration, send C.V. with salary history and references to: Triton Biosciences Inc., Box MB, 1501 Harbor Bay Parkway, Alameda, CA 94501. An Equal Opportunity Employer.



Triton Biosciences Inc.

RESEARCH SCIENTIST

For Novel Drug Formulations

Position available for a scientist with a Ph.D. in pharmacy, biochemistry, biophysics, or polymer chemistry; familiarity with physical chemistry or immunology desirable. Research programs include development of controlled-release microcapsule formulations for the delivery of chemical and biological drugs and the formulation of topical, oral, and injectable doses. This position provides opportunity to collaborate with scientists in academic and industrial groups on conception, development, and execution of new research projects.

Located on a 20-acre complex and with a staff of over 600, Southern Research Institute is a diversified contract research organization in its fifth decade of operation. The Birmingham area, with a population of one million, offers a mild four-season climate, lower-than-average cost of living, diverse recreational and cultural opportunities and a variety of convenient housing alternatives. Send resume to **Tracy E. Higgins, Human Resources, Dept. 383, Southern Research Institute, P.O. Box 55305, Birmingham, AL 35255-5305.**

An Affirmative Action/Equal Opportunity Employer

CANCER RESEARCH IN KANSAS

Academic Research and Training
supported by a grant from
The Wesley Foundation of Wichita, KS.

Training opportunities at both the postdoctoral and predoctoral level in a variety of research areas are available in a newly-funded interinstitutional and interdisciplinary program sponsored by The University of Kansas, Kansas State University, The Kansas University Medical Center—Kansas City, and The Kansas University School of Medicine—Wichita. Efforts are underway to identify up to thirty-five Wesley Scholars to participate in externally funded basic and clinical research programs at these Kansas academic research institutions. Major areas of cancer research supported by this program include a) Molecular Biology and Cell Growth Regulation, b) Anti-Cancer Drugs and Multiple Drug Resistance, and c) Tumor Immunology and Host Resistance. Qualifications for these positions include a strong interest in cancer related research and excellence in previous academic training. Postdoctoral positions require an M.D., Ph.D., or equivalent degree. Stipends for these positions are highly competitive. The Kansas University system is an equal opportunity, affirmative action employer.

For further information in the following areas, please write to:

Molecular Biology and
Cell Growth Regulation
Donald J. Roufa, Ph.D.
Division of Biology
Ackert Hall
Kansas State University
Manhattan, KS 66506

Anti-Cancer Drugs and
Multiple Drug Resistance
Mathias P. Mertes, Ph.D.
Dept of Medicinal Chem.
School of Pharmacy
University of Kansas
Lawrence, KS 66045

Tumor Immunology and
Host Resistance
David C. Morrison, Ph.D.
Dept of Microbiology
KU Medical Center
39th and Rainbow Blvd
Kansas City, KS 66103



SCIENTIST

Join a Group of
Biotechnology Scientists
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the World's Crop Plants

The Agricultural Division of CIBA-GEIGY, one of the world's foremost agricultural companies, is respected for both the quality of its research and the highly accomplished scientists it attracts. We are currently recruiting for a **RESEARCH SCIENTIST** to join our Biochemistry Department at our Agricultural Biotechnology Research Unit in Research Triangle Park, North Carolina.

This position involves production of monoclonal antibodies and development of immunoassays for detection and quantitation of proteins and haptens in plants.

This position requires a BS or MS in a biological science with 3-5 years experience in animal cell culture, monoclonal antibody technology and immunochemistry. Basic biochemical techniques such as gel electrophoresis, western blotting and affinity purification are required. Additional experience in biochemical separation and protein chemistry would be helpful.

Our state-of-the-art facilities in Research Triangle Park are conveniently located, with access to several outstanding universities. We offer an excellent salary and benefits package, and the opportunity to contribute to an innovative research program. For prompt and confidential consideration, forward a curriculum vitae and 3 letters of professional recommendation, to: **Dr. Mary-Dell Chilton, CIBA-GEIGY Biotechnology Research, P.O. Box 12257, Research Triangle Park, NC 27709.** We Are An Equal Opportunity Employer M/F/H/V.

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Call for Abstracts

THIRD ANNUAL NORTH AMERICAN CYSTIC FIBROSIS CONFERENCE

Tarpon Springs (Tampa), Florida
October 11-14, 1989

A multidisciplinary conference for
researchers, physicians, and allied
health professionals on the latest
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Plenary Sessions: The CF Gene—Where
We Stand • Advances in Medical Treat-
ment of CF • A Look to the Future

Symposia: Clinical Application of DNA
Technology • The CF Gene—Molecular
and Biochemical Approaches • CF 101
• Diagnosis and Management of Liver
Disease • Heart-Lung Transplantation
• Nutrition and CF • Management of
Lung Disease in the First Two Years of
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Basic Science Seminars: Pseudomonas
Colonization and Persistence • Electro-
lyte Transport—Mechanisms and
Regulation in CF

Conference proceedings will be published as
a supplement to *Pediatric Pulmonology*.

For abstract forms and registration materials,
contact the



6931 Arlington Road
Bethesda, MD 20814 U.S.A.
(301) 951-4422

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 IN BIOLOGY

A tenure-track assistant professorship is available in the Wilkes College Department of Biology for a zoologist. Ph.D. required. Applicants should have demonstrated competency in mammalogy/ornithology, with the ability to offer course(s) in animal behavior and/or parasitology. A willingness to direct independent research with undergraduate students, ideally involving field work, is also expected. The starting date is in late August 1989.

Located in a medium-sized city in northeastern Pennsylvania, Wilkes is a comprehensive, independent, coeducational institution of about 2500 students, offering bachelor's and master's degree programs in the arts and sciences, business administration, and engineering. The campus parallels the Susquehanna River and features a number of stately turn-of-the-century mansions, now used as office and dormitory facilities. The science program attracts academically-strong, motivated students, possesses modern laboratories, and emphasizes superior teaching through a strongly interactive approach to learning.

Submit curriculum vitae, a statement of teaching and research interests, copies of graduate transcripts, and have three letters of recommendation forwarded by 15 March 1989 to:

Dr. Lester J. Turoczi, Chairman
Department of Biology
Wilkes College
Wilkes-Barre, PA 18766
Telephone: 717-824-4651, extension 4754
Wilkes College is an Affirmative Action/Equal Opportunity Employer.

FACULTY POSITION IN PSYCHIATRY AND NEUROSCIENCE

Applications are invited for a tenure-track associate or full professorship beginning 1 July 1989. Candidates should document experience in the broad area of molecular biology as applied to the neurosciences and psychopharmacology. The position requires a Ph.D. degree with proven accomplishments in molecular biology. Of special interest are receptor structure and function, as well as experience with neurotransmitters and other neurochemical correlates of behavior.

A clear record of capability for generating extramural research support and for working as an independent investigator are critical factors in the selection process. Ample start-up funds are available. Salary is negotiable. Rank and salary will be commensurate with experience and productivity. A joint appointment is available in a basic science department.

Please send curriculum vitae, three representative reprints, and the names and addresses of three references to: **Dr. Anthony Kales, Department of Psychiatry, Pennsylvania State University College of Medicine, Hershey, PA 17033**. Deadline for receipt of applications is 30 March 1989.

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

POSITIONS OPEN

FACULTY POSITION UNIVERSITY OF SOUTHERN CALIFORNIA

Applications are invited for a tenure-track assistant/associate professor position at the School of Pharmacy, Division of Pharmaceutics. Outstanding candidates with research interests in aspects related to **pharmacokinetics, biochemical pharmacology, or drug targeting** are sought to join our established multidisciplinary program in novel drug delivery and cancer drug pharmacology. Participation in team teaching in graduate and professional programs is required. Please submit curriculum vitae, selected reprints, statement of research plan, and the names and addresses of three references by 10 March 1989, to: **Vincent H. L. Lee, Ph.D., University of Southern California, John Stauffer Pharmaceutical Sciences Center, 1985 Zonal Avenue, Los Angeles, CA 90033-1086**. *Equal Opportunity Employer/M/F/H.*

FACULTY POSITION DEPARTMENT OF BIOCHEMISTRY

The Department of Biochemistry at The University of Texas Health Science Center at San Antonio invites applications for a tenure-track faculty position at the assistant or associate professor level. Candidates with research expertise in any area of contemporary biochemistry or biophysics will be considered. Special consideration will be given to candidates whose research would benefit from access to state-of-the-art protein sequencing and synthesis facilities. Interested applicants should send curriculum vitae, a statement of their research interests, and the names of three professional references to:

Dr. Merle S. Olson
Department of Biochemistry
The University of Texas
Health Science Center at San Antonio
7703 Floyd Curl Drive
San Antonio, TX 78284-7760

The deadline for applications is 1 April 1989. *An Affirmative Action/Equal Opportunity Employer.*

ROOSEVELT UNIVERSITY DEPARTMENT OF BIOLOGY FACULTY POSITIONS IN GENETICS AND VERTEBRATE BIOLOGY

The Department of Biology, Roosevelt University invites applications for two assistant professor, tenure-track positions. Exceptionally well-qualified candidates may be considered for appointment at the associate professor level. Applicants for the genetics position should be able to offer an introductory genetics course and advanced undergraduate and graduate course work in their specialty. The ability to offer a graduate biostatistics course would be valuable. Applicants for the vertebrate biology position should be able to offer a vertebrate biology course and advanced undergraduate and graduate courses in their specialty. The ability to offer an undergraduate developmental biology course would be valuable. Both positions also entail offering portions of the departmental core courses. Roosevelt University is a small, privately funded, urban university located in downtown Chicago and at two suburban locations. Applicants should have a Ph.D. and a strong interest in undergraduate and master's level teaching as well as a commitment to develop an independent research program. Please send your curriculum vitae, a summary of teaching abilities and a description of your research interests and arrange to have three letters of recommendation submitted by 1 April 1989 to: **Dr. Jonathan Green, Chair, Department of Biology, Roosevelt University, 430 South Michigan Avenue, Chicago, IL 60605**. *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS IN MOLECULAR VIROLOGY AND YEAST MOLECULAR GENETICS. Tenure-track assistant or associate professor positions in a growing department with research strengths in molecular immunology and pathogenesis. Potential for collaboration with other large research programs in inflammation, oncology, atherosclerosis, and molecular genetics. The successful candidates will be expected to establish an independent research program and participate in the teaching of graduate and medical students. Send curriculum vitae, description of research goals, and names of three references to: **Dr. Steven Mizel, Department of Microbiology and Immunology, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, NC 27103**. *WFU is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

MCGILL UNIVERSITY DEPARTMENT OF PHYSIOLOGY FACULTY POSITION CELL/MOLECULAR BIOLOGIST

Applications are invited for a tenure-track position at the assistant professor level. Research areas of special interest include membrane transport, receptor-mediated signal transduction, cytokines/growth factors and molecular biology of the lung (antiproteases, antioxidants and pulmonary surfactant). Applicants should have a doctoral degree, significant postdoctoral research experience, and a demonstrated record of research accomplishments. The successful applicant will be expected to institute an independent research program emphasizing molecular biological techniques.

Send curriculum vitae, bibliography, statement of research interests and future plans, and the names of three references to: **Dr. David Goltzman, Chairman, Department of Physiology, McGill University, 3655 Drummond Street, Montreal, Canada H3G 1Y6**.

While all eligible candidates are encouraged to apply, initial preference will be given to applicants who are Canadian citizens or permanent residents of Canada in accordance with Canadian Immigration regulations.

FACULTY POSITION MICROBIOLOGIST

The Philadelphia College of Pharmacy and Science invites applications for a Ph.D., tenure-track position at the assistant/associate professor level beginning 15 August 1989.

The successful candidate will be expected to teach introductory microbiology, applied (industrial) microbiology and one elective course in area of expertise; all at the undergraduate level.

The successful candidate will also be expected to develop and maintain a research program in which undergraduates may participate.

To be considered, an applicant must have a strong interest in undergraduate education and can expect to advise biology/microbiology majors and interview prospective students.

Individuals interested in biotechnological applications are encouraged to apply.

Applications for consideration should consist of the following: (i) a letter of application addressing the above criteria, (ii) a complete résumé including a current transcript, and (iii) names, addresses and telephone numbers of three references. All applications must be submitted by 17 March 1989 to:

Dr. Gilbert L. Zink
Chairman
Department of Biological Sciences
The Philadelphia College
of Pharmacy and Science
43rd Street and Kingsessing Mall
Philadelphia, PA 19104
An Equal Opportunity and Affirmative Action Employer.

FACULTY POSITIONS DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY THE PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE

Two, full-time, tenure-track positions are available in the Department of Pharmacology and Toxicology. Appointments may be at the level of assistant or associate professor and are available 1 July 1989. Responsibilities will include development of an extramurally funded research program and instruction of graduate and undergraduate students in pharmacology and toxicology. Requirements for the positions are a Ph.D. degree in pharmacology, toxicology or related field and at least 2 years of postdoctoral training. Individuals with expertise in the areas of molecular and cellular pharmacology or toxicology are particularly encouraged to apply.

To be considered, submit a letter of interest, curriculum vitae, and a list of three professional references by 31 March 1989 to:

Chairperson, Faculty Search Committee
Department of Pharmacology and Toxicology
The Philadelphia College of
Pharmacy and Science
Woodland Avenue at 43rd Street
Philadelphia, PA 19104

An Equal Opportunity/Affirmative Action Employer.

Inhalation Research Scientist

Battelle, Pacific Northwest Laboratories located in Richland, Washington, is seeking inhalation toxicologists and engineers to perform animal inhalation toxicity studies.

The successful candidate will assist in the design, testing, and operation of animal inhalation exposure facilities; design and supervise construction of inhalation generation and monitoring systems; supervise technical specialist and exposure technicians on construction, operation, calibration and troubleshooting of exposure systems; provide engineering guidance for solution of technical problems; prepare and review reports for clients; aid in the preparation, costing, and review of proposals; and present research results and proposals to clients.

Applicants should have a Master's degree in Physics, Mathematics, Engineering, or equivalent and training in aerosol technology and toxicology. A PhD is preferred. The position requires a working knowledge of aerosol generation, characterization, and delivery systems. Knowledge in aerosol physics, engineering design of inhalation test systems, electronics, and computer data acquisition and control systems is desired.

Interested applicants should submit resume, transcript, and references to: **Manuel Chavallo, Employment Services, Battelle, Pacific Northwest Laboratories, P.O. Box 999, Department 085, Richland, WA 99352.** U.S. Citizenship required. An Equal Opportunity Employer M/F.



Battelle
Pacific Northwest Laboratories



Scientific Patent Liaison

BioTechnica International, Inc., a company active in the areas of microbial production systems, biochemical engineering, and agricultural biotechnology, seeks an experienced scientist to administer its patent and trademark program. You'll monitor scientific progress and prepare patent disclosures, act as liaison to legal counsel, and maintain computer databases.

You must have a B.A. in Molecular Biology or a related field plus 3-5 years of research experience; advanced degrees preferred. Experience with patents and/or legal matters is not mandatory, but you must have an aptitude for comprehending complex legal issues, and strong organizational and communication skills.

BTI offers a highly competitive salary and excellent benefits. **To apply, please send a letter of application with resume and names of three references to: Human Resources Department, BioTechnica International, Inc., 85 Bolton Street, Cambridge, Massachusetts, 02140.** BioTechnica International is an Equal Opportunity Employer.

**BIOTECHNICA
INTERNATIONAL, INC.**

Analytical Chemist

Monsanto Company's Environmental Sciences Center has an immediate opening for an Analytical Chemist with a strong GC/MS and Chromatography background.

The successful candidate will join a world class center for Analytical method development and environmental assessment.

Candidates should possess a Ph.D in Analytical Chemistry, should be expert in GC/MS and Chromatography and should expect to publish the results of analytical research and method development. The candidate will work closely with a top notch mass spectroscopist and will use GOOD LABORATORY PRACTICES in method development and sample analysis.

For consideration, please send resume and references to: **Dr. Gary W. Mappes; Manager, Analytical Chemistry; MONSANTO COMPANY; Mail Zone U1F; 800 N. Lindbergh Blvd.; St. Louis, MO 63167.** An Equal Opportunity Employer M/F/H/V.

Monsanto

RESEARCH SCIENTISTS MAMMALIAN CELL GENE EXPRESSION

Amgen, an industry leader in applied biotechnology, has an immediate need for 2 Research Scientists to contribute to our research programs in mammalian cell gene expression.

RESEARCH SCIENTIST CELLULAR PHYSIOLOGY

Dept. #347

This position requires a Ph.D. in mammalian cellular physiology and/or somatic cell genetics as well as a minimum of 2 years' postdoctoral experience in growth regulation and differentiation of animal cells. Familiarity with culturing various primary and established cell lines as well as experience in cloning and sorting cells and selecting metabolic and drug resistant mutants are essential. Some understanding and experience in cell culture scale-up are desirable.

RESEARCH SCIENTIST GENE REGULATION

Dept. #348

Qualified candidates for this position will have a Ph.D. and a minimum of 2 years' postdoctoral experience in eukaryotic post-transcriptional gene regulation, including protein processing and secretion. Familiarity with glycosylation pathways and signal transport at the molecular level is essential.

Amgen offers an exciting and challenging research environment as well as an excellent compensation and benefits package including equity offerings. Qualified applicants should send a c.v. including references, in confidence, to:

Recruitment, Specify Dept. #

AMGEN
1900 Oak Terrace Lane
Thousand Oaks
CA 91320

Equal Opportunity Employer

AMGEN

POSITIONS OPEN

The U.S. Geological Survey, Water Resources Division, is seeking a **GEOCHEMIST** to participate in research on watershed processes. A primary goal is to define and quantify the role of mineral-water interactions in determining the chemical compositions of surface and groundwaters. A Ph.D. or equivalent professional experience in geochemistry/geology is required. This is a career civil service position with a starting salary rate of \$28,852 to \$34,580 per annum dependent upon qualifications. Applications must be made by Standard Form 171 (application for federal employment available from any federal personnel office) and professional curriculum vitae, and must be received by 3 March 1989. Send applications and inquiries to: **Owen P. Bricker, Chair, Search Committee, U.S. Geological Survey, 432 National Center, Reston, VA 22092.** *Equal Opportunity Employer.*

University of Arizona—The College of Agriculture invites applications and nominations for the position of **HEAD** of the Department of Animal Sciences. Strong innovative interdisciplinary leadership is being sought to lead the Department in the areas of research, teaching and extension. The candidate should be a contemporary scientist with established research credentials in an area which could be considered part of a modern department of animal sciences, i.e., biochemistry, genetics, microbiology/immunology, molecular and cellular biology or physiology. Administrative experience is desirable; however, strong research credentials, coupled with a demonstrated record of being competitive in securing extramural grants, are mandatory. It is also important that the successful candidate have a strong appreciation for cooperative extension. The Department of Animal Sciences, in addition to serving the livestock industry of the state of Arizona, has important collaborative interactions with faculty in the Colleges of Medicine and Arts and Sciences.

Applicants should submit a current curriculum vitae, the names, addresses, and telephone numbers of six references, and a statement of qualifications and goals to: **Dr. Charles R. Sterling, Chairman Animal Sciences Search Committee, Department of Animal Sciences, Shantz Building, University of Arizona, Tucson, AZ 85721.** The committee will begin considering applications on 15 March 1989, but will accept applications until the position is filled. *The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer.*

HUBACHEK ENDOWED CHAIR IN FORESTRY, University of Minnesota. Full professor, 12-month, tenured position in forest ecology. This is a newly established, fully-endowed chair. Must have Ph.D. Strong record of accomplishment in forest ecology required. Send letter, résumé, statement of research interests, and names of five references by 1 April 1989, or for complete position description write to: **Dr. Carl Mohn, Department of Forest Resources, University of Minnesota, 1530 North Cleveland Avenue, St. Paul, MN 55108; telephone 612-624-3400.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

THE UNIVERSITY OF QUEENSLAND *Equal Opportunity in Employment is University Policy* **LECTURER/SENIOR LECTURER (TENURABLE) DEPARTMENT OF ANATOMY (RE-ADVERTISED)**

Applicants should have a higher degree and/or professional qualifications, and significant postdoctoral research experience in an area of comparative anatomy or biology.

The appointee will make a substantial contribution to the teaching of comparative anatomy to veterinary science students.

Salary: Lecturer: \$A30,737 to \$A40,100 per annum. Senior Lecturer: \$A40,937 to \$A47,564 per annum.

Closing date: 23 March 1989. Reference No: 06789. Further information may be obtained from: **Dr. A. W. Parker, Head, Department of Anatomy, telephone: (07) 377-2722.**

Please forward an original plus seven copies of application and résumé to: **The Director, Personnel Services, The University of Queensland, St. Lucia 4067, Queensland, Australia.**

POSITIONS OPEN

HUMAN NUTRITION RESEARCH

Two positions available for **NUTRITIONAL BIOCHEMISTS** at the Western Human Nutrition Research Center of USDA/ARS located in San Francisco, California. Candidates should have research interests aligned with the missions of the Center, to determine human nutrient requirements and to develop new techniques for nutritional status assessment. Doctoral degree in nutritional sciences, biochemistry or related field is required. Strong background in physiology is desirable. Salary \$28,286 to \$44,077; final salary will be determined by qualifications. U.S. citizenship required. For further information contact: **Dr. Nancy L. Keim, 415-556-5800.**

Equal Opportunity Employer.

IMMUNOLOGIST OR TOXICOLOGIST

The Department of Biological Sciences at Wright State University invites applications for a tenure-track assistant professorship in immunology or toxicology starting fall 1989. The successful candidate must have an earned Ph.D. before being hired. Postdoctoral experience is preferred but not required. Research responsibilities will include developing an active, extramurally-funded research program and directing graduate students. While the primary responsibility of the successful candidate will be to contribute professionally within the Department of Biological Sciences, there are opportunities for interactions with other life science departments. The department offers the M.S. degree and participates in an interdisciplinary Ph.D. program in the biomedical sciences. Teaching responsibilities will include an undergraduate course in immunology or toxicology, a graduate-level course in their area of expertise, and participating in the department's introductory biology and allied health programs. Applicants must be enthusiastic, strongly motivated toward creative research, and committed to excellent teaching. Please submit curriculum vitae, a description of proposed research projects, recent reprints, and the names, addresses, and telephone numbers of three references to: **Search Committee, Department of Biological Sciences, Wright State University, Dayton, OH 45435** by 1 April 1989. *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

THE UNIVERSITY OF WESTERN AUSTRALIA PERTH

LECTURER (REF:A09/89). Department of Anatomy and Human Biology. Applications are invited for a tenurable lectureship. The Department has strong teaching and research commitments in the Faculties of Science and Medicine. Extensive research, both basic and applied, is being undertaken in such areas of human biology as (i) evolution, genetics, variation and ecology (especially primates); (ii) comparative and functional anatomy, including biomechanics and morphometrics; (iii) reproductive biology and (iv) neurobiology. Techniques available include light and electron microscopy, surgical procedures, stereology, computer modelling, image and data analysis of various types. Applications are sought from individuals in the first two of the general areas outlined above and with any of the above techniques. Duties will include research development and supervision and co-ordination of courses, lecturing, laboratory and tutorial teaching. For further details contact, the Head of Department, **Professor C. E. Oxnard, (09) 380-3298.**

Salary range: \$A30,737 to \$A40,100 per annum. Closing date: 3 March 1989.

Benefits include superannuation, fares to Perth for appointee and dependent family, removal allowance, study leave and long service leave.

Conditions of appointment will be specified in any offer of appointment which may be made as a result of this advertisement.

Written applications quoting reference number, telephone number, date of birth, qualifications and experience, and the names and addresses of three referees should reach: **The Director, Personnel Services, The University of Western Australia, Nedlands 6009,** by the closing date.

Equal Employment Opportunity is University Policy.

POSITIONS OPEN

MAGNETIC RESONANCE IMAGING (MRI) SCIENTIST, with background in spectroscopy at the Ph.D. level, for assistant professor of radiologic science position at the Hospital of the University of Pennsylvania. Communication with M.D.'s essential; a background in clinical medicine is therefore desirable, preferably M.D. level. Additionally, experience in pulse programming the General Electric Signa MRI Scanner is highly desirable. Applicants should have demonstrated research and teaching experience in MRI/MRS, as well as outstanding written and verbal communication skills. Send curriculum vitae to: **Herbert Y. Kressel, M.D., Chief, Magnetic Resonance Imaging, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104.** *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer. Qualified female and minority candidates are encouraged to apply.*

MAMMALIAN TOXICOLOGIST

ASSISTANT PROFESSOR, tenure-track position for a toxicologist with specialization in the effects of insecticides on mammals and mammalian systems. Available after 1 September 1989. A Ph.D. or equivalent degree, with research training in toxicology is required. 11-month position, 90% research, 10% teaching. Activities include development of research program on effects and hazards of insecticides on/to mammals and mammalian systems, supervision of graduate students, participation in the entomology and environmental toxicology graduate programs and course instruction. Submit curriculum vitae, graduate transcript, recent reprints, a statement of research interests, and names and addresses of five referees to: **L. K. Gaston, Search Committee Chairman, Department of Entomology, University of California, Riverside, CA 92521.** Applications accepted until 14 April 1989 or until a suitable candidate is selected. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

MOLECULAR BIOLOGIST DEPARTMENT OF DERMATOLOGY STANFORD UNIVERSITY SCHOOL OF MEDICINE

The Department of Dermatology of Stanford University School of Medicine invites nominations and applications of individuals possessing scientific expertise in the molecular biology of the extracellular matrix for a tenure-track position on its faculty. Candidates should hold the M.D. or Ph.D. degree and present strong evidence of research accomplishments. Applicants should also be committed to the training of postdoctoral fellows in cutaneous biology. The rank of the appointed person will be commensurate with academic qualifications. *Stanford University is committed to increasing the representation of women and members of minority groups on its faculty and encourages applications from such candidates.* Interested individuals should submit curriculum vitae and direct correspondence to:

**Eugene A. Bauer, M.D.
Professor and Chairman
Department of Dermatology, R-144
Stanford University School of Medicine
Stanford, CA 94305**

MOLECULAR BIOLOGIST/ASSISTANT PROFESSOR. The Department of Nutritional Sciences at the University of Wisconsin-Madison is seeking applications for a 12-month tenure-track assistant professor position available 1 September 1989 or 1 January 1990. The successful applicant will be expected to develop a research program utilizing the techniques of modern molecular biology to study problems of nutritional interest. These would include, but not be limited to, the influence of nutrition on metabolic regulation, immunology, genetic disorders or endocrinology. Duties would include participation in the Department's undergraduate and/or graduate teaching programs, and training of graduate students in interdepartmental nutrition and molecular biology programs. Applications including curriculum vitae, statement of research interests, and three letters of recommendation should be sent to: **Robert D. Steele, Chair, Search Committee, Department of Nutritional Sciences, University of Wisconsin-Madison, Madison, WI 53706.** Telephone: 608-262-0884. Preference will be given to applications received prior to 15 March 1989. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*



Natural Sciences and Engineering
Research Council of Canada
200 Kent Street
Ottawa, Canada
K1A 1H5

Conseil de recherches en sciences
naturelles et en génie du Canada
200 rue Kent
Ottawa, Canada
K1A 1H5

REGISTER OF CANADIANS STUDYING ABROAD

The Natural Sciences and Engineering Research Council of Canada (NSERC) has recently initiated a Register of Canadian postgraduate students and postdoctoral fellows in the fields of natural science or engineering who are currently pursuing studies or research abroad. The object of the Register is to facilitate their return to Canada by providing a means of contact with potential Canadian employers.

Eligibility: Canadian citizens and permanent residents of Canada enrolled in a postgraduate degree program or holding a postdoctoral appointment at a non-Canadian university/institute, in the natural sciences or engineering, are eligible to register.

Operation: In conjunction with the Register of students and fellows, NSERC will maintain a list of interested Canadian employers in industries, universities, and government departments. Names and contact addresses of registrants meeting specified qualifications will be provided on request of these employers.

NSERC will provide initial contact between registrants and potential employers; further contact will be the responsibility of the employers. This service is offered free of charge to registrants and potential employers.

Registration: Canadian students and fellows interested in obtaining further information and/or registration forms should contact:

Administrator, Register of Canadians Studying Abroad
Natural Sciences and Engineering Research Council of Canada
200 Kent Street
Ottawa, Ontario K1A 1H5
Canada
Telephone: (613) 995-6060

Canada

Applied Plant Ecologist

**The SAVANNAH RIVER SITE offers three clear advantages:
CAREER CHALLENGES, CAREER OPPORTUNITY, AND
LOCATION NEAR AIKEN, SOUTH CAROLINA**

The Savannah River Laboratory is seeking an applied plant ecologist to join a multidisciplinary team of ecologists. Initial responsibilities will include writing and reviewing environmental reports. Long-term research opportunities exist in the areas of waste site closure, applied forestry, and soils. Strong statistical background and good writing skills required. Minimum requirements include Ph. D. in botany, forestry, or related field and two years experience.

Operated for the United States Department of Energy, the Savannah River Site produces radioactive isotopes for national defense, medicine, and America's space program. While the outstanding professional environment broadens your career horizons, our geographical location offers a mild climate with access to some of the Southeast's most attractive cultural and recreational resources.

Salary is commensurate with your training and experience. Our highly regarded benefits program includes relocation assistance. For confidential consideration, please send resume and salary history to: Professional Staffing Division, Building 719-4A, Room 113-9, Savannah River Plant, Aiken, SC 29808.



*An Equal Opportunity Employer M/F/H/V
U.S. Citizenship Required*

POSITIONS OPEN

RESEARCH INSTITUTE OF SCRIPPS CLINIC LA JOLLA, CALIFORNIA MOLECULAR BIOLOGIST MEMBRANE BIOCHEMISTRY

A staff position is immediately available for an individual trained in the field of molecular biology with experience in protein chemistry. Studies are already in progress on the molecular mechanisms in leukocyte membranes responsible for transduction of signals initiated by ligand receptor-G protein interactions. Precise understanding of these events, and experimental manipulation of the system requires the participation of molecular biologists. Considerable scholarly and educational resources are associated with the position. Excellent salary, fringe benefits, grant and technical support are available. Send curriculum vitae, description of research background and research interests, education and training to: **Charles G. Cochrane, M.D., Department of Immunology, IMM12, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, CA 92037. Equal Opportunity Employer.**

MOLECULAR BIOLOGISTS INSTITUTE OF MOLECULAR BIOLOGY ACADEMIA SINICA NANKANG, TAIPEI

The Institute of Molecular Biology, Academia Sinica invites applications for tenure-track staff positions. We are searching for individuals who are bilingual (Chinese and English) to establish independent research programs in the broadly defined area of molecular biology, including molecular immunology, virology, and x-ray crystallography of macromolecules.

Please send curriculum vitae, a statement of research interests, and three letters of reference by 15 April 1989 to:

Dr. Chien Ho
Professor
Department of Biological Sciences
Carnegie-Mellon University
4400 Fifth Avenue
Pittsburgh, PA 15213

MOLECULAR GENETICS OF RECEPTORS

SCIENTIST AND TECHNICIAN positions with Receptor Genetics Group. People with interests/backgrounds in molecular genetics, gene transfer, electrophysiology and molecular pharmacology should apply. The Group is conducting a privately funded collaboration at the Laboratory of Molecular Biology, NINDS, applying techniques of molecular genetics and pharmacology to the study of receptors. Contact: **Susan O'Malley, telephone: 303-496-0813.**

MOLECULAR NEUROBIOLOGY THE UNIVERSITY OF IOWA COLLEGE OF MEDICINE

Applications are requested from individuals with active research programs using approaches of molecular biology or membrane biophysics to address problems broadly related to mechanisms of signal transduction and synaptic communication for faculty positions at the **ASSISTANT, ASSOCIATE, OR FULL PROFESSOR** levels. Modern laboratory space and substantial start-up funds are available. Excellent opportunities exist for interaction with faculty associated with formal neuroscience and molecular biology Ph.D. programs. Rank and salary will be based on academic and research record. Minimum requirements include the Ph.D. or M.D. degree and 2 years of relevant postdoctoral training. Candidates should send curriculum vitae, description of research activities, representative reprints, and request three letters of recommendation to be sent, preferably by 15 March 1989, to:

Mary Boyle, Ph.D.
Molecular Neurobiology Search Committee
Department of Physiology and Biophysics
The University of Iowa College of Medicine
Iowa City, IA 52242

The University of Iowa is an Equal Opportunity and Affirmative Action Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

MOLECULAR VIROLOGIST

The School of Medicine at Case Western Reserve University invites applications from new or established investigators for a program in molecular virology. We are seeking faculty members with primary interests in virology, especially in the area of human retroviruses and AIDS research. The CWRU School of Medicine provides a strong and interactive environment for collaborative research among basic and clinical investigators. Ample resources and newly renovated facilities are available for this program. *Case Western Reserve University is an Affirmative Action and Equal Opportunity Employer.* Interested applicants should contact: **Hsing-Jien Kung, Ph.D. and Jerrold Ellner, M.D., Co-Chairmen, Virology Search Committee, Office of Academic Programs, Case Western Reserve University School of Medicine, 2119 Abington Road, Cleveland, OH 44106.**

MOLECULAR VIROLOGIST/ IMMUNOLOGIST

Research assistant professor faculty position in the Division of Immunology Rheumatology, Department of Pediatrics and Program in Molecular Medicine, involved in immunology/virology research. Ph.D. with extensive experience in molecular biology to interest in viral immunology group with NIH-funded projects related to Human Immunodeficiency Virus and Epstein-Barr Virus. Applicant must have a demonstrated, strong motivation toward creative research and ability for independent funding. Excellent facilities and support. Please submit curriculum vitae and reference letters to: **John L. Sullivan, M.D., Director, Division of Immunology/Rheumatology/Pediatrics, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, MA 01655. UMMC is an Equal Opportunity/Affirmative Action Employer.**

NEUROBIOLOGY OF AGING AND ALZHEIMER'S DISEASE POSITIONS

for M.D.'s and Ph.D.'s. Several positions supported by the National Institute on Aging, will be available in 1989 for post-residence M.D.'s and Ph.D.'s who are interested in research training in the neurobiology of aging and/or Alzheimer's disease. Positions available as postdoctoral fellows, research associates and junior faculty (non-tenure-track). We encourage applicants with diverse backgrounds who wish to apply their past training to problems of the aging CNS. We are particularly interested in persons with prior training in molecular biology, cell culture, protein chemistry, neuropathology, immunocytochemistry, or neurology. The training program offers an intense research apprenticeship in fundamental research, contact with a variety of laboratories, seminars, and clinical activities. Twenty potential preceptors are in the Departments of Neurology, Neurobiology and Anatomy, Medicine, Biochemistry, and Psychology. The University of Rochester is notable for its absence of barriers among laboratories, facilities, and departments so work in facilities outside the formal preceptor list is also possible. There are over 70 laboratories devoted to the study of the nervous system. Molecular biology is another area of strength at the University of Rochester. *U.S. citizens or permanent U.S. residents only.* Apply to: **Dr. Paul D. Coleman, Department of Neurobiology and Anatomy, University of Rochester Medical Center, Rochester, NY 14642.**

PHARMACOLOGIST/ NEUROPHARMACOLOGIST

Assistant professor/instructor/postdoctoral. Multidisciplinary neuroscience research division seeks pharmacologist/biochemist with experience in receptor/second messenger systems as related to traditional neurotransmitter and peptide systems to join in research related to novel neurotransmitter and trophic agents in brain. Please send curriculum vitae and bibliography to: **K. Koenig/D. J. Reis, Division of Neurobiology, Cornell University Medical College, 411 East 69th Street-KB410, New York, NY 10021. Equal Opportunity Employer/Affirmative Action/M/F/H/V.**

POSITIONS OPEN

NEUROPHARMACOLOGIST

The Eunice Kennedy Shriver Center, a multidisciplinary research institute affiliated with the Massachusetts General Hospital and Harvard Medical School and located in suburban Boston, Massachusetts, is seeking a neuropharmacologist with M.D. or Ph.D. degree to develop a clinical research program relevant to development disabilities and mental retardation, possibly with special interest in the clinical, biochemical, and genetic aspects of autism. Applications from individuals with experience in this field as well as those doing basic and/or applied research in neurotransmitters and the pharmacology of behavior disorders in children are invited to apply. The Shriver Center has established programs in neurochemistry, molecular neurogenetics, and behavioral neurology which are strongly interested in collaborative research in neuropharmacology. Salary level and academic appointment to be arranged commensurate with experience. Interested candidates should send their curriculum vitae to: **Director, Neuropharmacology Search Committee, Shriver Center, 200 Trapelo Road, Waltham, MA 02254. The Shriver Center is an Equal Opportunity Employer.**

NMR SPECTROSCOPIST CENTER FOR ADVANCED RESEARCH IN BIOTECHNOLOGY

The Center for Advanced Research in Biotechnology (CARB) is seeking an NMR spectroscopist to fill a faculty level, tenure-track position of the University of Maryland. The successful candidate will be especially interested in using NMR methods to study macromolecular structure and function, and will be expected to build a vigorous research program. The level of the appointment is open, depending on background and experience.

CARB's Mission: CARB is a joint basic research venture between the University of Maryland and the National Institute of Standards and Technology (NIST, formerly the National Bureau of Standards). Our goal is to build a center of research excellence in the area of protein structure, function, engineering and design. CARB's new 40,000-square-foot research facility is situated just outside Washington D.C., on the newly established Shady Grove Campus of the University of Maryland, and in the heart of Maryland's rapidly growing biotechnology community.

State-of-the-art Labs: CARB has developed groups in protein crystallography, macromolecular theory and modeling, molecular biology and physical biochemistry, and is now focusing on developing a strong research program in the use of NMR techniques to study protein structure and function. Our labs are equipped with state-of-the-art instrumentation, including a minisupercomputer, microvax, and several graphics workstations. The University has committed to the purchase of a 500-MHz instrument in FY 1989 to enhance the development of CARB's NMR group.

Please send a current curriculum vitae, an outline of future research interests and goals, a list of individuals who will serve as references, and request that at least three letters of reference be sent to: **The CARB NMR Search Committee, CARB, 9600 Gudelsky Drive, Rockville, MD 20850. The University of Maryland is an Equal Opportunity Employer.**

PHYSICAL ANTHROPOLOGIST

Applications are invited from physical anthropologists for a tenure-stream appointment at the assistant or associate professor level at the University of Toronto, St. George Campus (budget permitting). The successful candidate should have a doctorate and a strong record of research and teaching. Ongoing research should be at the forefront of physical anthropology. Duties include undergraduate and graduate teaching and supervision, and administrative responsibilities. Teaching at the undergraduate level should include strengths in paleoanthropology and/or primatology. Suggested date of appointment is 1 July 1989. Applications should be sent to: **Professor S. Nagata, Chairman, Department of Anthropology, Sidney Smith Hall, University of Toronto, 100 St. George Street, Toronto, Ontario, M5S 1A1, and include curriculum vitae, copies of relevant publications, and the names and addresses of three referees. Application deadline: 15 March 1989. The University of Toronto encourages both women and men to apply for positions.**

POSITIONS OPEN

NUCLEAR REACTOR SCIENTIST—Responsible for leading efforts to analyze fission product transport within nuclear reactors under accident conditions, understanding technical analyses of current research, circumstances which impact on the department's role to protect the public, and determining appropriate department actions. Requires thorough knowledge of nuclear reactor systems, transport of fission products under severe accident conditions, and analytical tools used to investigate such transport. M.S. degree or equivalent experience in chemistry, chemical or nuclear engineering, or nuclear physics desired. Strong oral and writing skills required.

ATMOSPHERIC SCIENTIST—Responsible for leading efforts to develop state-of-the-art atmospheric dispersion and dose assessment models for use during severe reactor accidents, and understanding technical analysis of current research. Requires thorough knowledge of atmospheric transport and deposition of radionuclides, and analytical tools used to perform environmental radiological dose assessments. M.S. degree or equivalent experience in meteorology, health physics, or related physical science with emphasis on environmental transport of radionuclides is desired. Strong oral and writing skills required. Computer modeling experience with environmental transport and dosimetry of severe reactor accidents, and familiarity with atmospheric data and field studies desired. Send résumés to: **John Q. Hall, Illinois Department of Nuclear Safety (IDNS), 1035 Outer Park Drive, Springfield, IL 62704. IDNS is an Equal Opportunity Employer and encourages applications from qualified female, minority, and handicapped candidates.**

The Department of Pathology of the University of Illinois, College of Medicine at Chicago, has an immediate opening for an academically oriented **PEDIATRIC PATHOLOGIST** at the assistant professor level. Salary dependent on experience and credentials. Applicant must be certified in anatomic pathology. The appointee is expected to share in teaching and service duties while continuing research activities. This is an excellent opportunity within the nation's largest medical school system. For fullest consideration, applicants should respond by 31 March 1989. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

Direct inquiries and submit curriculum vitae to: **Luna Ghosh, M.D., Chief of Surgical Pathology, Department of Pathology, University of Illinois at Chicago, 1853 West Polk Street, Chicago, IL 60612.**

Ph.D. RESEARCH SCIENTIST: to study the cell biology and genetics of human endometrial adenocarcinomas, using cellular, cytogenetic, and molecular techniques. The position provides salary and benefits, a well-equipped laboratory and a full-time research technician. Academic affiliation is available depending on qualifications. Background in cytogenetics is preferred, but not essential. Please send curriculum vitae and names of three references to:

Susan Heyner, Ph.D.
Albert Einstein Medical Center
Klein Professional Building
Department of Obstetrics and Gynecology
Suite 410
5401 Old York Road
Philadelphia, PA 19141-3025

PLANT BIOLOGIST WASHINGTON UNIVERSITY—ST. LOUIS

Position available for assistant or associate professor in the Department of Biology and in the Center for Plant Science and Biotechnology. The Center was recently established to encourage the "Discovery, Recovery, and Use" of novel traits in plant biotechnology. The successful candidate should be interested in cellular and/or molecular aspects of plant biology and applications of his/her research to biotechnology in an area that complements current research strengths in the department. Limited teaching required during the first 2 years; training of graduate students and postdoctoral scientists is expected. *Women and minorities are especially urged to apply: Washington University is an Equal Opportunity Employer.* Apply with curriculum vitae, statement of research experience and future interests, copies of two recent research publications, and names of three references to: **Dr. Roger N. Beachy, Department of Biology, Box 1137, Washington University, One Brookings Drive, St. Louis, MO 63130**

POSITION AVAILABLE:

Assistant Professor (Tenure Track) Cytogenetics

Department of Laboratory Medicine
& Pathology,
University of Minnesota

A tenure track faculty position is available for candidates with an M.D. or Ph.D. in genetics or a closely-related discipline. Candidates must be board certified or board eligible in Clinical Cytogenetics and have a minimum of two years experience in a clinical cytogenetics laboratory. Demonstration of research productivity is necessary with evidence of publications in peer-reviewed journals.

Responsibilities will include teaching of cytogenetics to residents, postdoctoral fellows, graduate students, medical students and technologists. The incumbent in this position will be expected to develop an independent research program in cytogenetics and/or a related discipline. This position assumes partial responsibility for daily operation of the laboratory—emphasis on prenatal diagnosis and related studies (included chorionic villi, amniotic fluid, skin fibroblast and peripheral blood specimens as indicated); supervise tissue culture, slide making, chromosomal banding and analysis; interpret and report results of cytogenetic analyses; coordinate send-out of specimens for other biochemical and molecular biologic assays.

Applicants should send curriculum vitae and 3 references to:

Cytogenetics Search Committee
Department of Laboratory Medicine and Pathology
Box 198 UMHC, 420 Delaware Street SE
Minneapolis, MN 55455

Deadline for receipt of applications is April 30, 1989. The University of Minnesota is an equal opportunity educator and employer and specifically invites and encourages applications from women and minorities.

RESEARCH SCIENTIST

Calgon Vestal Laboratories, Division of Merck & Company, Inc. is seeking a research scientist to lead company efforts in the development of skin care technology. As part of a collaborative team, you will conduct research developing new technologies and products for skin care applications. Additionally, you will coordinate clinical studies. Significant interface with other disciplines within the company, with outside companies, and with regulatory agencies is required.

Candidates must have a PhD in Biochemistry, Microbiology, Physiology or other biomedical science, and two to five years relevant experience in skin care technology, either in industry or in a clinical setting. A knowledge of transdermal absorption and delivery is an asset. Good interpersonal and communication skills are a must in this multi-disciplinary research environment.

We offer a competitive salary, comprehensive benefits and a challenging research environment. For consideration, please send resume and salary history to:

Calgon Vestal Laboratories
Personnel Department—Manchester Site
P.O. Box 147
St. Louis, MO 63166



Inflammation/Osteoarthritis Enzymology

Postdoctoral Position

CIBA-GEIGY Pharmaceuticals Division's 100-acre headquarters complex in Summit, New Jersey is engaged in research and development of drugs to treat inflammation and other disorders.

We seek a Ph.D. in Biochemistry, Molecular Biology or a related field to participate with Dr. Bruce Seligmann in independently designing and conducting experiments and developing new methods to investigate the mechanisms by which phagocytic cells are primed and activated. State-of-the-art spectrophotometric, flow cytometric, and image analysis methods will be utilized to monitor functional responses and changes in activation and biochemical parameters including ligand binding, subcellular translocation, gene expression and in situ hybridization. The successful candidate will develop research proposals and present the results both orally and as manuscripts.

To qualify for this challenging postdoctoral opportunity, you should also have training or experience in cell biology and/or immunology. In addition, you should be skilled in some of the following: cell culture, cell isolation, subcellular fractionation, functional and kinetic activation assays, spectroscopy, image analysis, flow cytometry, gene expression, ligand binding.

CIBA-GEIGY offers a highly professional environment with competitive salary and benefits. Apply in confidence with resume and salary history to: **CIBA-GEIGY Corporation, Staffing Center, Pharmaceuticals Division, Dept I/OE, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

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POSITIONS OPEN

PLANT BIOLOGIST

The Botany Department of the University of Maryland at College Park seeks applications for an assistant professor, 12-month, tenure-track appointment to start 1 July 1989. The applicant should have a Ph.D. degree in plant biology with promise of, or a proven record of creative endeavors in plant science, teaching, and curriculum improvement. The successful candidate will be expected to teach one or two courses each semester in introductory biology or botany at the undergraduate level and to coordinate the General Biological Sciences Program. The latter responsibility will include being the principal advisor of undergraduates in that major, including freshmen and new transfer students, administering the General Biological Sciences Honors Program, and recruiting new students. The successful candidate will be expected to improve undergraduate curriculum, conduct research in plant biology or in biology education, publish in appropriate journals, and obtain extramural funding to support these activities. Applicants should submit a current résumé, graduate transcripts, statement of professional goals, and reprints, and arrange for three letters of recommendation to be sent to: **Dr. J. David Lockard, Chair, Plant Biologist Search Committee, Department of Botany, University of Maryland, College Park, MD 20742** by 15 March 1989 for full consideration.

An Equal Opportunity/Affirmative Action Employer.

PLANT MOLECULAR BIOLOGY/GENETICS

The Department of Biology at Colorado State University invites applications for two **TENURE-TRACK POSITIONS** in the following areas:

Plant Molecular Biology—gene structure, expression and regulation.

Plant Genetic Engineering—isolation, analysis and transfer of genes.

Qualifications—A Ph.D. in plant science, biochemistry, genetics, or a related area, postdoctoral experience preferred, demonstrated expertise in plant molecular biology, a strong background in plant biology, evidence of potential for independent and innovative research, and a willingness to cooperate with the broad spectrum of plant scientists present on campus.

The department anticipates filling at least one position at the assistant professor level. To apply, please send a letter stating the position of interest and your research and teaching interests. Also include curriculum vitae, transcripts, names, addresses and telephone numbers of three references, and three publications by 31 March 1989 to: **Dr. F. B. Reeves, Plant Molecular Biology Search Committee, Department of Biology, Colorado State University, Fort Collins, CO 80523**. The search may be extended if suitable candidates are not found.

Ethnic minorities and women are encouraged to apply. Colorado State University is an Equal Opportunity/Affirmative Action Employer. EO Office: 314 Student Services Building.

Harvard Medical School and Children's Hospital, Boston, Massachusetts—**POSTDOCTORAL FELLOW**. Major emphasis is on cell and molecular biology of connective and skeletal tissue, cells and noncollagenous proteins. Candidate should have some experience in isolation and characterization of proteins and genes. Write or send résumé to:

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

POSTDOCTORAL FELLOW IN IMMUNOPARASITOLOGY. Position available immediately to study the immunobiology of *Cryptosporidium* and *Isospora* infections in avian and mammalian hosts. Successful applicant will possess a Ph.D. degree in immunology. Research will involve techniques in protein biochemistry and application of monoclonal antibodies. An individual with experience in veterinary immunoparasitology is preferred. Interested, qualified individuals should submit curriculum vitae, statement of research interests and goals, and three letters of recommendation to: **Dr. Byron L. Blagburn, Department of Pathobiology, 122 Greene Hall, College of Veterinary Medicine, Auburn University, AL 36849-5519**. Auburn University is an Equal Employment Opportunity Employer. Minorities and women are encouraged to apply.

POSITIONS OPEN

PLANT OR ANIMAL CELL BIOLOGIST. Tenure-track appointment, may be at senior rank. Undergraduate teaching in cell biology and research specialty. Maintenance of active research, preferably on aquatic organisms essential. Submit curriculum vitae, three representative publications, and names, addresses, and telephone numbers of three referees by 15 March 1989 to: **G. E. Newsome, Department of Biology, St. Francis Xavier University, Antigonish, Nova Scotia, Canada, B2G 1C0. Telephone: 902-867-2274**. Preference will be given to Canadian citizens and permanent residents.

The Bionetics Corporation is extending its search for a **PLANT PHYSIOLOGIST** to work in the Space Biology Program at the Kennedy Space Center. Candidates must have a Ph.D. in plant physiology with a strong emphasis in biochemistry and/or cellular biology and at least 5 years of research experience. The candidate will conduct in-house research on the effects of space environment on plant growth and metabolism.

Submit letter of application and curriculum vitae by 10 March 1989 to:

J. R. Puleo
BIO-1
Kennedy Space Center, FL 32899
Equal Opportunity Employer.

POSTDOCTORAL. Research in yeast molecular biology and genetics. Ph.D. background in molecular biology, cellular biology, or biochemistry required. Experience with yeast system preferred, but not required. Send résumés/applications by 24 April 1989 to: **Dr. Carol Wood Moore, Department of Microbiology, City University of New York Medical School, Room J-910, City College of CUNY, Convent Avenue at 138th Street, New York, NY 10031**. An Affirmative Action/Equal Opportunity Employer M/F.

POSTDOCTORAL: AQUATIC ECOLOGIST

A postdoctoral fellowship in aquatic ecology is available beginning 1 July 1989 at the University of Toledo. Opportunities exist for research endeavors related to water quality concerns in the lower Maumee River/Western Lake Erie basin. Strong research potential and commitment required; a strong chemistry background and expertise in aquatic toxicology preferred. Salary of \$24,000 plus benefit package (value approximately \$6,000) annually. Send curriculum vitae and list of three references to: **Dr. Woon Jyung, Department of Biology, The University of Toledo, Toledo, OH 43606**.

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

Immediate position for **POSTDOCTORAL FELLOW** (M.D. or Ph.D.) interested in gene transfer and gene therapy. Ongoing project in molecular and cellular biology transferring human globin genes in retroviral vectors into mice. Tissue culture and molecular biology techniques currently used will be available to applicant. Previous experience in molecular biology preferred. Opportunity for career advancement. Please send résumé to: **Dr. Arthur Bank, Columbia University, HHSC 1602, 701 West 168th Street, New York, NY 10032**.

POSTDOCTORAL FELLOWSHIP available immediately for NIH-funded studies on molecular mechanisms and regulation of brain development. Background in neuroscience, experience in molecular biology and tissue culture desirable. Send curriculum vitae, recent reprints, and the names of three references to: **Dr. Robert Fellows, Department of Physiology and Biophysics, The University of Iowa, 5-660 Bowen Science Building, Iowa City, IA 52242**. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION is available immediately to study genetic regulation of the cell cycle in mammalian cells. Isolation of recombinant clones encoding genes which play a significant role during the cell cycle, expression/regulation of such genes and their encoded mRNA/mRNP complexes, and the impact such genes have on tumorigenesis will be pursued as part of an ongoing research program. Starting salary is \$24,000. Send curriculum vitae and three letters of reference to: **Dr. R. Curtis Bird, Department of Pathobiology, Auburn University, AL 36849**. Auburn University is an Equal Employment Opportunity Employer. Minorities and women are encouraged to apply.

POSITIONS OPEN

POSTDOCTORAL FELLOW: HHMI-SAN FRANCISCO-UCSF Immunology-Molecular Neurobiology. A position is available beginning summer 1989 in a laboratory studying neuropeptide receptor function, gene structure and regulation. Applicants should have an M.D./Ph.D. or Ph.D. Experience with recombinant DNA techniques is essential. Send curriculum vitae, statement of interests and three letters of reference to: **Dr. Donald G. Payan, U-426, University of California San Francisco, 3rd and Parnassus, San Francisco, CA 94143**.

POSTDOCTORAL POSITION available to work in a newly-equipped laboratory on the isolation and structural characterization of novel regulatory peptides from mammalian and non-mammalian tissues. Proficiency in chromatographic techniques is required and experience in radioimmunoassay would be advantageous. Applicants should send curriculum vitae and names and addresses of referees to:

Professor J. M. Conlon
Division of Biochemistry
Creighton University Medical School
Omaha, NE 68178
Telephone: 402-280-2917

POSTDOCTORAL POSITION

Applications are invited for a postdoctoral position to study lysosomal sugar transport. A Ph.D. in biochemistry/molecular biology is required and previous experience with transport mechanisms would be helpful. Send curriculum vitae and three names of reference to: **Adam J. Jonas, M.D., Division of Medical Genetics, Harbor-UCLA Medical Center, 1124 West Carson Street, Torrance, CA 90502**.

POSTDOCTORAL POSITION available immediately to study the molecular biology of potassium channels. Experience in molecular biology is desirable. Work includes cDNA library construction and screening, DNA sequencing, mutagenesis, tissue culture cell transfections, in vitro RNA synthesis, and unique use of some molecular techniques. Research involves a strong collaboration with in-house electrophysiology laboratory. Send curriculum vitae and addresses of three references to: **Dr. John Adelman, Vollum Institute, Oregon Health Sciences University, L474, 3181 SW Sam Jackson Park Road, Portland, OR 97201**. OHSU is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION

A postdoctoral position is available in a multidisciplinary group investigating the design and synthesis of artificial metalloenzymes. Applicant should have a strong background in organic chemistry, bioorganic chemistry, or molecular biology. Please send curriculum vitae and names of three references to: **Dr. M. R. Ghadiri, The Research Institute of Scripps Clinic, Department of Molecular Biology MB9, 10666 North Torrey Pines Road, La Jolla, CA 92037**.

POSTDOCTORAL POSITION available immediately to study gene expression and the role of transcriptional activators in the biosynthesis and degradation of proline in yeast. Research involves molecular genetics in the isolation and characterization of regulatory genes. Send curriculum vitae and three letters of reference to: **Dr. Marjorie C. Brandriss, Microbiology and Molecular Genetics, New Jersey Medical School, 185 South Orange Avenue, Newark, NJ 07103**.

POSTDOCTORAL POSITION

A 2- or 3-year postdoctoral position will be available 1 July 1989 in the area of resistance of human tumors to antineoplastic agents. The research is targeted at extra-chromosomal DNA as a mechanism for drug resistance. Requirements include a Ph.D. in molecular biology or cell biology and a willingness to work with a team of basic scientists and clinicians who deal daily with cancer patients. Salary commensurate with level of experience. Send curriculum vitae to: **Daniel D. Von Hoff, M.D., Section of Drug Development, Department of Medicine/Oncology, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78284-7884**. UTHSC is an Equal Opportunity/Affirmative Action Employer.

PROTEIN CHEMISTRY/CELL BIOLOGY

The Protein Chemistry/Cell Biology Department of the Medical Research Division of American Cyanamid is seeking several scientists who are interested in working in an integrated, competitive research environment comprised of molecular biologists, protein chemists and cell biologists to join its Molecular Biology Research Section.

These positions will focus on research exploring the structures and functions of growth factors/cytokines, oncogene proteins, and viral proteins for the purposes of better understanding the molecular and cellular mechanisms of diseases and for identifying new drug targets. A BS or MS in biochemistry, cell or molecular biology is required as well as a background in the following:

PROTEIN CHEMISTS must have thorough working experience with a variety of major protein chemistry

techniques. Experience with peptide synthesis is a plus.

CELL BIOLOGISTS must possess excellent credentials in cell culture techniques and a background working with diverse mammalian cells. Experience with immunological methods (antibody production, immunohistochemistry) is desirable.

We offer an excellent salary, comprehensive benefits including 401k savings plan, and a highly professional environment in Rockland County, just 25 miles north of New York City. If you're interested in pursuing research with a major pharmaceutical company dedicated to it, send your resume and the names of three references to: Professional Employment Office, Lederle Laboratories, Middletown Road, Pearl River, NY 10965. We are an equal opportunity employer.



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POSITIONS OPEN

POSTDOCTORAL POSITION. Applications are invited for postdoctoral research positions at the University of Pennsylvania beginning in the Spring of 1989 to study molecular structure and function of the T and B cell repertoire during autoimmune differentiation; molecular structure of nephritogenic antigens, antigen-specific lymphokines, and cross-reactive idiotypes; gene regulation of MHC determinants in somatic cells and gene regulation of extracellular matrix modulated by autoimmune responses. Experience in eukaryotic molecular biology and/or biochemistry is desirable. Applicants must be eligible for funding from the NIH (*U.S. citizens and permanent residents*). Send letter of application, curriculum vitae, and two letters of reference to: **Dr. Eric G. Neilson, Chief, Renal-Electrolyte Section, 860 Gates Pavilion, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104.** *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available to study any of various aspects of actin including protein engineering, folding-unfolding processes, characterization of actin gels, interactions with actin-binding proteins and characterization of the polymerization process in vitro and in vivo. Send curriculum vitae and names of three references to: **Dr. Carl Frieden, Department of Biochemistry and Molecular Biophysics, 660 South Euclid, Box 8094, Washington University School of Medicine, St. Louis, MO 63110.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN MOLECULAR DEVELOPMENT—Available 1 April 1989 to study regulation of gene expression during maturation of the mammalian intestine. Demonstrated research experience in basic techniques of molecular biology required. Send curriculum vitae, the names and phone numbers of three references, and statement of career goals to: **Dr. Susan J. Henning, Department of Biology, University of Houston, Houston, TX 77204-5513.** *UH is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS (two) available immediately to study the metabolism of arginine and lysine in ferret and bovine tissues. Experience in protein chemistry and/or molecular biology required. Send curriculum vitae and three letters of reference to: **Dr. Devendra R. Deshmukh, Wayne State University, 2343 Scott Hall, Detroit, MI 48201.** Telephone: 313-577-3839. *Wayne State University is an Affirmative Action/Equal Opportunity Employer.*

TWO POSTDOCTORAL POSITIONS available from February 1989 for candidates with a background in physiology or biophysics to perform studies on an animal model for ischemia/reperfusion in sickle cell vasoocclusion, using gamma camera and magnetic resonance imaging and physiology or biochemistry to study ion transport in sickle cells. Send curriculum vitae and references to: **M. E. Fabry, Department of Medicine, Ullman Room 921, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461.**

POSTDOCTORAL/RESEARCH ASSOCIATE— GENE EXPRESSION

Available immediately to investigate molecular mechanisms of regulated secretions. We are studying gene expression, segregation and sorting of salivary proteins, i.e., histatins and proline-rich proteins. Candidates must have Ph.D. and experience in recombinant DNA methods. Send curriculum vitae and three letters of recommendation to: **Dr. Frank Oppenheim, Room G-217B, Department of Oral Biology/Biochemistry, Boston University Medical Center, 100 East Newton Street, Boston, MA 02118.**

POSTDOCTORAL RESEARCH ASSOCIATE IN PLANT BIOCHEMISTRY. A biochemist with a strong background in protein chemistry and/or enzymology is required for a research project focused on isolating and characterizing the proteolytic enzymes of germinating barley. Applications, including curriculum vitae, a summary of research interests, and names and addresses of three references should be submitted to: **Dr. Berne L. Jones, USDA, ARS, MWA, 501 North Walnut Street, Madison, WI 53705.**

POSITIONS OPEN

POSTDOCTORAL POSITION TUMOR VIROLOGY NYU MEDICAL CENTER

We have recently discovered RNA covalently linked to SV40 TAG and to the oncogene product p53. The RNAs, the bonding and the possible significance to oncogenic transformation will be studied. Must be U.S. citizen or permanent resident. Send curriculum vitae and names of three references to:

**Dr. Robert Carroll
Department of Pathology
New York University Medical School
550 First Avenue
New York, NY 10016**

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE DEPARTMENT OF ANATOMICAL SCIENCES

Two **POSTDOCTORAL POSITIONS** are available which may be taken in the fields of neuroscience, cell/developmental biology or reproductive endocrinology. Opportunity exists for gaining teaching experience in the gross anatomy laboratories. Recent Ph.D. graduates in anatomy are encouraged to send curriculum vitae and names of three references to: **Search Committee, Department of Anatomical Sciences, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190.**

We are an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS AIDS RETROVIROLOGY

Two postdoctoral positions are available: (i) to produce anti-envelope glycoprotein monoclonal antibodies against synthetic peptides [see *Science*, 239, 1021-1023, (1988)] for studies of in vitro neutralization HIV infectivity and possible clinical use, (ii) to perform site-directed mutagenesis of HIV envelope gene sequences important for binding or fusion, polymerase chain amplification of proviral DNA from clinical samples, and epitope scanning mutagenesis. Send inquiries and curriculum vitae to: **Dr. Mark Gurney, Department of Microbiology-Immunology, Northwestern University, Ward Building, 303 East Chicago Avenue, Chicago, IL 60611.**

POSTDOCTORAL POSITIONS SENSORY NEUROPHYSIOLOGY AND BEHAVIORAL NEUROSCIENCE

The research involves neurophysiological, neuroanatomical, and behavioral studies of olfaction, taste, and ingestive behavior in primates and rodents. Four positions will be filled, the first in May 1989. Applicants should send curriculum vitae and the names of three references to: **Dr. Ralph Norgren or Dr. Thomas C. Pritchard, Drawer 0-1, Department of Behavioral Science, The Pennsylvania State University, The M. S. Hershey Medical Center, P.O. Box 850, Hershey, PA 17033.** Deadline for receipt of applications is 15 April 1989. *An Affirmative Action/Equal Opportunity Employer, Women and minorities are encouraged to apply.*

POSTDOCTORAL RESEARCH ASSOCIATE

Research project: Nonenzymatic Glycosylation and Oxidation of Proteins in Diabetes and Aging—characterization and quantitation of chemical modifications of proteins using HPLC and GC- or LC-MS. Send curriculum vitae and two letters of recommendation to: **Professor John W. Baynes, Department of Chemistry, University of South Carolina, Columbia, SC 29208.** Telephone: 314-362-7474.

POSTDOCTORAL RESEARCH FELLOW for college in northeast Ohio to conduct advanced biochemical research on enzymes involved in oxidative metabolism of endogenous substrates (such as steroids, fatty acids, prostaglandins, leukotrienes and biogenic amines) with focus on molecular mechanism and gene regulation of cytochrome P-450 isozyme. No experience required in job described, however, applicants will qualify with M.S. in biochemistry and 2 years of experience in biochemical research. Forty hours per week 8 a.m.-5 p.m. \$18,720 per year. Qualified applicants reply immediately with resumé to: **R. Lechler, JO# 0007991, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH: Biodehalogenation, microbial, enzymatic, and active site dehalogenation reactions: ^{14}C synthesis, metabolism, quantitation of pathways and kinetics, active site chemistry. Available 1 February 1989. Send resumé and three letters of recommendation to: **Dr. C. E. Castro, Nematology Department, University of California at Riverside, Riverside, CA 92521.**

POSTDOCTORAL TRAINING IN NEUROBIOLOGY OF RECOVERY FROM SPINAL CORD INJURY: Positions available in the Departments of Anatomy, Neurology, and Pharmacology, Medical College of Pennsylvania, as part of a program project grant to study the biological basis for the recovery from spinal cord injury. Research programs include studies of generating and non-regenerating central and peripheral neurons using tissue culture and molecular biological (M. F. Chesselet, P. Levitt, M. Murray, A. Tessler), quantitative morphological (M. Goldberger, P. Levitt, M. Murphy, M. Murray, A. Tessler), electrophysiology (H. Murphy, M. Pinter), and motion analysis (M. Goldberger, P. Levitt) methods. Transplantation procedures are used to enhance central regeneration and quantitative anatomical, physiological and behavioral analyses are used to assess recovery. Collaborative interactions are encouraged. Previous experience in molecular or cell biology, electrophysiology or behavior is desirable. Send curriculum vitae, statement of research interests, and names of three references to: **Marion Murray, Department of Anatomy, Medical College of Pennsylvania, 3200 Henry Avenue, Philadelphia, PA 19129.**

POSTDOCTORATE POSITIONS

The Department of Radiation Oncology University of Southern California is seeking to fill two postdoctorate positions:

Available February 1989: Knowledge of in vitro and in vivo assays of radiation damage, biochemical or cell biology background. Interest in mechanisms of chemotherapy, and radiation interaction in full. Studies will include biochemical and cell kinetic analyses of low dose continuous 5 fluorouracil plus radiation administered to in vitro and in vivo models.

Available July 1989: Knowledge of in vitro assays and molecular biology required. Studies included mutagenesis, restriction fragment analysis, DNA damage and repair after irradiation of rodent and human cell with fast neutrons.

Please send resumé and the names of three referees by 1 April 1989 to:

**Dr. Colin K. Hill
Cancer Research Laboratories
University of Southern California
School of Medicine
1414 South Hope Street
Los Angeles, CA 90015**

RADIOIMMUNOASSAY EXPERT: Ph.D. to supervise core laboratory for radioimmunoassay of cAMP and arachidonic acid metabolites, production of antibodies to prostaglandins, leukotrienes, and HETES, and HPLC analysis of metabolites. Samples are submitted by about ten investigators working on cystic fibrosis. Over 50% time will be devoted to the Core; remainder may be used for independent or collaborative research in a rich and interactive environment. Send curriculum vitae and names of three references to: **Pamela B. Davis, M.D., Ph.D., Pediatric Pulmonary Division, Case Western Reserve University/Rainbow Babies and Childrens Hospital, 2101 Adelbert Road, Cleveland, OH 44106.** *An Equal Opportunity Employer.*

RESEARCH ASSOCIATES: Three positions available immediately for research on glycoconjugates. (i) Biochemist for study of glycosidases and glycosyltransferases. Desire background in glycoprotein- and glycolipid-related enzymology. Experience with structural studies on glycoconjugates helpful. (ii) Chemist for synthesis of oligosaccharides. Desire background in carbohydrate chemistry and NMR skills. (iii) Immunologist for study on synthetic oligosaccharides as immunogens. Knowledge and background in carbohydrates helpful. Experience with HPLC helpful in each case. Send curriculum vitae and two letters of reference to: **Dr. Khushi L. Matta, Roswell Park Memorial Institute, Elm and Carlton Streets, Buffalo, NY 14263.** *RPMI is an Affirmative Action Employer.*

Pharmaceutical

Regional Medical Associate

Pharmaceutical Marketing

Currently we have an opening in the Minneapolis/St. Paul area for a Regional Medical Associate, to combine scientific expertise and marketing skills. This position will report directly to the Regional Marketing Manager. Responsibilities are to establish effective relationships within key medical institutions, providing scientific liaison and indepth information essential to appropriate use of SK & F's products. Will also have training responsibility at the Representative, Medical Staff, and Pharmacy levels. 30-40% travel.

Qualifications include PharmD or PhD in Pharmacology, Biochemistry, Microbiology or other Life Sciences. Must possess initiative, strong communication skills, and interest in Marketing.

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BUTLER UNIVERSITY Dean of the Holcomb Research Institute

Butler University is seeking a Dean for The Holcomb Research Institute. The Dean will be a scholar committed to the basic aims and objectives of the Institute and to the further development of the research and teaching programs of the University.

Holcomb Research Institute, a unit of Butler University, has an endowment of \$19 million and projected revenues for 1988-1989 of \$2.5 million from endowment, grants, and contracts. It is housed in a modern three-story building with 50,000 sq. ft. of research space. It is presently staffed by 41 individuals, including 10 doctoral-level investigators and 10 research assistants. The Institute is a multidisciplinary, environmental research center with programs in Water Science, Biotic Resources, and Environmental Economic and Policy Analysis.

Under the terms of the Institute's charter, the Dean will lead the Institute, whose "purpose, power and function is to engage in, promote, and finance fundamental scientific research in all fields, but especially . . . [the environmental sciences]; to train students, undergraduate and graduate, in these fields; and to disseminate the knowledge derived from the research." The Dean will develop cooperative programs and joint appointments with appropriate University departments. He or she is expected to be a senior academic worthy of appointment to the tenured faculty of one of the University's senior colleges.

Butler is an independent, non-sectarian university with a total student population of 3,912 (full-time equivalent of 2,986), located on a 280-acre campus in a residential section of one of America's most lively and livable cities. Some 60% of the students are campus residents. Enrollment is growing, with applications for 1989-1990 showing a 30% increase over the previous year. The University's long-term plan calls for significant further expansion.

Nominations and applications for the position are presently being sought, with screening to begin April 1. Applicants should submit a letter indicating interest, curriculum vitae, and the names, addresses, and phone numbers of at least three references.

Butler is an affirmative action, equal opportunity employer.

Please submit applications to:

Dean Robert A. Sandmann, Chair
HRI Search Committee
Butler University
4600 Sunset Avenue
Indianapolis, Indiana 46208

THE SCIENCE RECRUITMENT "FOUR DAY CLOSE"

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POSITIONS OPEN

RESEARCH ASSOCIATE—ECOLOGICAL MODELER. The Konza Prairie LTER program, Kansas State University (KSU) wishes to hire an ecological modeler. Applicants should have a Ph.D. in an environmental science, with proven capabilities of constructing and using ecological models. Modeling will make use of an extensive biophysical and ecological data base. Applicants will work with FORTRAN and be interested in interfacing ARC-INFO and ERDAS software to create and verify models. Salary: about \$22,000; the appointment is renewable on annual basis. The position is available as early as 15 May 1989. Applicants should submit a letter of current research interests, curriculum vitae, reprints, and a list of three references by 31 March 1989 to: **T. R. Seastedt, Division of Biology, Ackert Hall, KSU, Manhattan, KS 66506.** Kansas State University is an Equal Opportunity Employer and strongly encourages applications from minorities and women.

THE UNIVERSITY OF CALGARY RESEARCH IN SIGNAL TRANSDUCTION

The University of Calgary Faculty of Medicine Cell Regulation Group invites applications for **FACULTY POSITIONS** at the assistant professor level or higher in the area of biochemical mechanisms in signal transduction.

Successful candidates will be expected to develop an independent research program in the general area of signal transduction processes, but priority will be given to applicants who propose to investigate guanine nucleotide binding proteins (G-proteins) and/or phosphoinositide turnover. Well-qualified candidates will be eligible to apply for salary and establishment support by competitive application to the Alberta Heritage Foundation for Medical Research. Establishment support will cover the cost of setting up a new laboratory with both major and minor equipment, and operating funds for an initial 2-year period.

Applicants require an M.D. and/or Ph.D. and research training at the postdoctoral level. Remuneration will be based on salary scales at The University of Calgary relative to training and experience. Successful applicants will have 75% of their time protected for research.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Calgary is committed to employment equity.

Interested candidates should submit their curriculum vitae, names of three references, and a letter stating their aims and research interests by 1 March 1989 to: **Dr. David Severson, Chairman, Cell Regulation Research Group, Faculty of Medicine, The University of Calgary, 3330 Hospital Drive N.W., Calgary, Alberta T2N 4N1 Canada.**

RESEARCH INVESTIGATOR/Solid Dosage Formulations responsible for research and development of pharmaceutical dosage forms; will select proper pharmaceutical excipients and combine them using unit processes such as wet granulation, drying, milling, blending and compression; will utilize mixers, blenders, capsule-filling equipment and tablet presses together with understanding of the relationship between pharmaceutical excipients and the physical/chemical properties of the materials produced by each unit process to convert investigational new drugs from their pure chemical state into safe and effective forms; will utilize computer instrumentation in measuring tablet press parameters; prepare clinical trial materials and pertinent IND (Investigational New Drug) documents; maintain state-of-the-art knowledge regarding GMPs (Good Manufacturing Practices), GLPs (Good Laboratory Practices), and SOPs (Standard Operating Procedures). Bachelor of science degree in pharmacy required. Applicants must possess 8 years of experience in the job offered or 8 years of experience as a research pharmacist in the pharmaceutical industry. The 8 years of experience as research pharmacist must have involved directing the development of Solid Dosage Forms with tablet film coating utilizing fluidized bed granulation and measurement of single punch tablet press parameters using computer instrumentation. Will accept applicants whose functional title has been group leader rather than research pharmacist. Forty hours, Monday to Friday, 8:00 a.m. to 4:30 p.m., \$43,900 per year. Send résumés to: **Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, IL 60605, Attention: Robert S. Felton, Ref. # V-IL 8841-F. An Employer Paid Ad.**

POSITIONS OPEN

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.**

RESEARCH ASSOCIATE/ASSISTANT IN PHARMACOLOGY/TOXICOLOGY FLORIDA A&M UNIVERSITY COLLEGE OF PHARMACY AND PHARMACEUTICAL SCIENCES

Ph.D. in veterinary science, pharmacology or biochemistry. Demonstrated research productivity with publications. Conduct research in metal (Se) toxicity in animals. Send résumé and three letters of recommendation to: **Ms. Frances James, Florida A&M University College of Pharmacy, Tallahassee, FL 32307.** Application deadline is 15 March 1989.

RESEARCH MOLECULAR BIOLOGIST

Molecular investigation of the role of homeobox-containing genes in the control of blood cell growth/differentiation. Two years of previous experience required in DNA cloning and sequencing and RNA isolation and northern blotting. Previous experience in protein purification also required. Ph.D. or equivalent in molecular biology or biochemistry required. Work in an active, modern, well-equipped laboratory with five other Ph.D. molecular biologists in a multi-disciplinary team in the Martinez VA Medical Center, located approximately 60 miles from University of California, Davis, and 20 miles from University of California, Berkeley. Salary is \$27,700 per year. *Equal Opportunity Employer.* Contact: **Dr. Corey Largman, Ph.D., Research Room 140, Martinez VA Medical Center, 150 Muir Road, Martinez, CA 94553.**

RESEARCH SCIENTIST—Plant genetic transformation. Responsible for development of transformation/regeneration systems in flower crops. Requires Ph.D. or equivalent with substantial experience in plant transformation, tissue culture, or regeneration systems. Send résumé with names of three references to: **Dr. Karol E. P. Robinson, DNA Plant Technology Corporation, 6701 San Pablo Avenue, Oakland, CA 94608.** *Equal Opportunity Employer.*

RESEARCH SCIENTIST— NUCLEAR PHYSICS UNIVERSITY OF VIRGINIA

We are seeking an outstanding person for a senior research scientist position (non-tenured) to join our electromagnetic nuclear physics program at SLAC. Applicants must be able to locate in the Stanford area and work independently with no supervision. Experience in CAMAC instrument control and data acquisition systems, cryogenic targets, wire chambers, Cerenkov detectors, scintillation counters, and a general knowledge of electromagnetic nuclear physics theory at high energies is required. Applicant must have done original, creative, independent research in these areas. Send curriculum vitae and three names for references to: **Professor James S. McCarthy, Director, Institute of Nuclear and Particle Physics, University of Virginia, Charlottesville, VA 22901.** *The University of Virginia is an Equal Opportunity Employer.*

RESEARCH TECHNICIANS: At S.K.I., your research today leads to tomorrow's breakthroughs. We are currently seeking technicians with two or more years in a basic science laboratory with experience in mammalian tissue culture techniques. Your responsibilities will include management of a tissue culture laboratory and execution of experiments under supervision which involves work with HIV. B.A. or B.S. is required. Competitive salaries and a generous benefits package which includes 100% tuition reimbursement are part of what you'll discover in our state-of-the-art environment. To apply, please call or send résumé to: **Ms. S. Randolph, Employment Department #767, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021. Telephone: 212-639-3028.** *An Equal Opportunity Employer, M/F/H/V.*

POSITIONS OPEN

RESEARCH POSITION in biomedical engineering available for basic and clinical research on bone density using quantitative computerized tomography (QCT), dual photon absorptiometry, and bone scintigraphy. Candidate will have the opportunity to collaborate with large multidisciplinary laboratory focusing on bone and mineral metabolism. Candidate must have a Ph.D. in bioengineering, biophysics, or allied field. Experience in bone density desirable but not necessary. Salary competitive. Potential postdoctoral fellows or research assistant professors are invited to apply. Send curriculum vitae and two letters of reference to: **Dr. Donald Sausser, Radiology Department, Loma Linda University, Loma Linda, CA 92354.**

SCIENTIST

Immediate opening for individual to identify and develop methods to inactivate viruses in cellular components of blood using photochemical techniques. Candidates must have a strong background in biochemistry, the physics of light transmission and measurement, and the kinetics of biological photochemical reactions. Experience in hematology and microbiology desirable. Opportunity to become part of results-oriented R&D team with expected academic and industrial collaboration. Salary \$28,500 to \$46,500 based on experience. Submit résumé to: **Jerry Roberts (G094), Personnel Office, American Red Cross, Holland Laboratory, 15601 Crabbs Branch Way, Rockville, MD 20855.** *Equal Opportunity Employer/M/F/H/V.*

School for Field Studies (SFS) seeks **SENIOR/AND ASSOCIATE FACULTY** for summer programs: 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; Monk Seals/Greece; Spinner Dolphins/Hawaii; Humpback Whale Ecology/North Atlantic; Bottlenose Dolphins/Alabama; Endangered Primates/Mexico. Ph.D. (M.S. for associate faculty), excellent teaching skills, experience in field research and experiential education. Send detailed letter, curriculum vitae, and references to: **The Dean, SFS, 16 Broadway, Beverly, MA 01915. Telephone: 508-927-7777.**

SENIOR RESEARCH SCIENTIST (SPECIALIZING IN COMPUTATIONAL MECHANICS)

The National Center for Supercomputing Applications on the campus of the University of Illinois at Urbana-Champaign has an immediate opening for a senior research scientist. The successful applicant will pursue frontier research in computational mechanics on our advanced scientific supercomputing facility, which includes a CRAY X/MP-48, a CRAY-2, two ALLIANT FX/8's, a Scientific Visualization Facility, and a host of scientific workstations. The successful applicant will become a part of NCSA's growing Computational Science Program, consisting of staff research scientists, faculty researchers, computer scientists, postdoctoral fellows and graduate research associates, which will be housed in the Beckman Institute of the University of Illinois. A Ph.D. is required in mechanical engineering, civil engineering, or related field, along with 5 years of research experience at the postdoctoral level in structural analysis/continuum mechanics problems. Familiarity with applications software such as NASTRAN, ANSYS, FIDAP, DYNA, NIKE or TOPAZ is highly desirable. The successful candidate should be able to interact constructively with NCSA's staff, Strategic Vendors, Industrial Partners, and UIUC faculty and students.

This is a 12-month, 100% time appointment (contingent upon receipt of funding) with regular University benefits. Salary is commensurate with experience. Starting date is negotiable.

To ensure full consideration, please send letter of application, curriculum vitae, and three letters of reference by 31 March 1989 to:

**Dr. Michael L. Norman
National Center for Supercomputing Applications
152 Computing Applications Building
605 East Springfield Avenue
Champaign, IL 61820
Telephone: 217-244-2006**

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

International Meeting
NITRIC OXIDE FROM L-ARGININE:
A BIOREGULATORY SYSTEM

14th/15th September 1989
at The Royal Society, London, England

Evidence now emerging from various unrelated fields of research is revealing the existence of a biochemical pathway for the formation of nitric oxide from the amino acid L-arginine. This meeting will be an up-to-date discussion of the biological implications of nitric oxide formation.

Participants include:

Prof. A. Barbul (USA) Prof. J. B. Hibbs, Jr. (USA)
Prof. R. Furchgott (USA) Prof. M. A. Marletta (USA)
Dr. J. Garthwaite (UK) Prof. F. Murad (USA)
Dr. R. M. J. Palmer (UK)

Attendance will be limited to 150. Prospective participants are asked to apply to the organizer for further details and abstract forms by 15th March, 1989.

Organizer:

Dr. S. Moncada, F.R.S.,
The Wellcome Research Laboratories,
Langley Court,
Beckenham, Kent BR3 3BS, U.K.
Telephone: 01-658-2211 Fax: 01-658-2278

ImmuCell Corporation is a young, publicly held company engaged in the development of diagnostics, immunoprophylactics and immunotherapeutics for the animal and human health care industries. Recent growth has created the following new positions within our research and development group.

Scientists/Group Leaders

These positions require ambitious, energetic, results-oriented individuals with training and experience as indicated. All positions require excellent organizational and communication skills.

Diagnostics: Ph.D. with postdoctoral training in immunochemistry or some commercial experience in non-isotopic immunoassay development. Projects include development and evaluation of field and laboratory immunoassay products.

Immunotherapeutics/vaccines: Ph.D. with postdoctoral training in microbiology and academic or commercial experience in development of immunotherapeutics.

Bioprocess development: BS/MS with commercial experience in scale up of protein purification; familiarity with FDA GMPs and USDA licensing procedures important.

ImmuCell offers a competitive compensation package that includes potential equity participation, as well as a beautiful coastal New England setting with a unique quality of life.

ImmuCell

Please send resume and salary history to:
Ms. Virginia Hebert, Administrator
ImmuCell Corporation
966 Riverside Street
Portland, ME 04103

**RESEARCH
SCIENTIST**

Kabi, Inc., number one in total parenteral nutrition, has an immediate opening for a Research Scientist to participate in the start-up of a new R & D facility in Clayton, North Carolina (near Raleigh, NC). This position will enable the selected candidate to design and develop novel emulsions for safe and efficacious drug delivery, improve perfluorocarbon emulsions for oxygen delivery and incorporate new oils into emulsions designed to specific pharmacological or diagnostic purposes.

The candidate we seek will have a Ph.D. in Chemistry with specialization in surface, physical or oil chemistry, and a minimum of 1-3 years post-doctoral experience.

Kabi offers a competitive salary/benefits package and an outstanding opportunity for highly motivated, creative individuals to participate in a dynamic and rapidly expanding organization.

If you meet the above qualifications, please forward your resume to: **Personnel Department, Kabi, Incorporated, PO Box 597, Clayton, N.C. 27520**

KABI

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**POSTDOCTORAL
SCIENTIST –
PHARMACOLOGY**

Amgen, an emerging leader in the biopharmaceutical industry, is seeking a Postdoctoral Scientist to participate in a research program examining the influence of colony stimulating factors and lymphokines on the regulation of phagocytic cell function and the inflammatory response.

Qualified candidates must have a Ph.D. in pharmacology, microbiology or a related discipline with experience in one or more of the following areas: infectious disease, inflammation, myelopoiesis or phagocytic cell function. The ability to work with laboratory animals and proficiency in statistical analysis of data are essential.

Amgen offers a challenging and stimulating research environment with opportunity to participate in exciting multidisciplinary research programs. Amgen also offers an excellent compensation and benefits package for Postdoctoral Scientists. If you would like the opportunity to contribute to our on-going research efforts, please send a complete CV to:

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AMGEN
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Thousand Oaks
CA 91320

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POSITIONS OPEN

UNIVERSITY OF HONG KONG SENIOR LECTURER/LECTURER IN ZOOLOGY

Applications are invited for a Senior Lectureship/Lectureship in the Department of Zoology. Preference will be given to applicants specializing in any area of experimental zoology, developmental biology or fish biology. The appointee will be expected to share in the teaching of the general area of zoology as well as developing courses in his/her specialty.

Annual salaries (superannuable) are on the scales: Senior Lecturer: HK\$311,400 to HK\$418,380 (9 points) (approx. US\$=HK\$7.80); Lecturer: HK\$200,340 to HK\$334,860 (11 points) (approx. US\$=HK\$7.80) (dollar equivalent as at 13 January 1989). Starting salary will depend on qualifications and experience. At current rates, salaries tax will not exceed 15½% of gross income. Children's education allowances, leave, and medical benefits are provided; housing or tenancy allowances are also provided in most cases at a charge of 7½% of salary.

Further particulars and application forms may be obtained from: **Appointments (35968), Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, UK**, or from: **The Appointments Unit, Registry, University of Hong Kong, Hong Kong**. Applicants are additionally requested to provide, in respect of their major research area: a short descriptive title; and a brief summary of the work they have undertaken, and the direction in which their work is proceeding. Closes 31 March 1989.

SENIOR SCIENTIST BIOCHEMICAL PHARMACOLOGY

UPSA Research Center, which comprises 180 scientists and technicians, is located in well-equipped laboratories 5 kilometers west of Paris.

The head of the Biochemical Department we are looking for is a scientist with a minimum of 5 to 10 years of experience in biochemistry applied to pharmacological development of original molecules. He/she also has the skill to lead a staff of ten scientists.

The candidate should have a Ph.D. in biochemistry or in biochemical pharmacology with "hands-on" research experience. Experience within pharmaceutical industry and basic French knowledge would be particularly appreciated.

Please write and send applications (curriculum vitae, handwritten letter, personal goals in research, photo) to:

**Direction des Ressources Humaines
Laboratoires UPSA
128, rue Danton
92500—Rueil Malmaison
France**

TENURE-TRACK ASSISTANT PROFESSOR.

Texas Christian University seeks talented applicants in any area of chemistry, including interdisciplinary areas such as biophysical chemistry or the chemistry of materials. The successful applicant will be expected to develop an extramurally funded research program and teach students in both the undergraduate and Ph.D. programs. Position available fall 1989, but applicants who wish to start in 1990 will be seriously considered. Submit curriculum vitae, research plans, and three letters of recommendation to: **Chairman, Search Committee, Department of Chemistry, Texas Christian University, Fort Worth, TX 76129**. Consideration of applicants begins 1 April 1989, continues until position filled. *Affirmative Action/Equal Opportunity Employer.*

Athens State College, a 2-year, upper-division institution located in northern Alabama invites applications for the following full-time **TENURE-TRACK POSITIONS**:

BIOLOGY: Teach advanced undergraduate courses; prepare and oversee lab sessions for all biology courses. Master's degree required, to include 18 semester hours of graduate level biology coursework.

MATHEMATICS: Teach advanced undergraduate math courses. Minimum of master's degree in mathematics required.

PHYSICS/INSTRUMENTATION: Teach undergraduate courses in physics and/or instrumentation. Earned doctorate in physics or related science or engineering discipline desired.

Submit letter of application, résumé, and transcript(s) by 15 March 1989 to: **Dr. Carl Witty, Academic Dean, Athens State College, Athens, AL 35611**.

POSITIONS OPEN

TOXICOLOGIST: Animal welfare organization based in Boston seeks toxicologist with interest in alternatives to animal testing. Duties include extensive library research and report development, and consultations with government regulators and organizations interested in testing issues. Please send curriculum vitae and writing sample to: **Mr. Aaron Medlock, 333 Washington Street, Suite 850, Boston, MA 02108-5100**.

VERTEBRATE BIOLOGIST. Texas A&I University, Department of Biology, seeks a qualified Ph.D. for a tenure-track assistant professor appointment starting in late August 1989 (pending budget approval). Candidates must be able to develop a vigorous research program within 2 years. Teaching responsibilities will include upper level and graduate vertebrate biology and taxonomy courses and participation in the basic biology program. Postdoctoral experience desirable. Applicants should include with their curriculum vitae, official transcripts and statement of current research and teaching interests. Application and three letters of reference should reach the committee by 22 March 1989. Apply to: **Dr. Carl E. Wood, Chairman, Biology Department, Texas A&I University, Kingsville, TX 78363**.

Texas A&I is an Equal Opportunity/Affirmative Action Employer.

CONGRESS

5TH FEDERATION OF ASIAN AND OCEANIAN BIOCHEMISTS CONGRESS Seoul, Korea 13-18 August 1989

The scientific program is composed of seven plenary lectures, seventeen symposia in various fields of biochemistry, colloquia, and poster sessions. Invited speakers will include distinguished scholars from all parts of the world. Colloquia and poster sessions are open to all participants for presentation of their research results. Bioexpo '89 Seoul will be organized during the Congress. Submissions of abstract is due by 31 March 1989.

For information, please contact: **5th FAOB Congress, Secretariat, c/o Korea Convention Services, Ltd., K.P.O. Box 233, Seoul 110-602, Korea. Telephone: 82-2-739-2141/4; Fax: 82-2-739-2145**.

INTERNSHIP

CURATORIAL INTERNSHIP NATIONAL ZOOLOGICAL PARK SMITHSONIAN INSTITUTION

Provides practical experience in the daily management of an exhibit collection of exotic animals (mammals, birds, reptiles, amphibians, and invertebrates), and experience in zoo administration, education, and conservation. Provides opportunity to conduct original research in a zoo.

Candidates must have a recent doctorate in life sciences; research or employment experience in zoology, environmental biology, or conservation and a career interest in conservation, zoo administration, or conservation education.

Not to exceed 2 years beginning 1 October 1989, at \$18,000 per year.

Send introductory letter, curriculum vitae, reprints, and three letters of reference by 30 June 1989 to: **Elizabeth Franke Stevens, Curatorial Intern Search Coordinator, National Zoological Park, Washington, DC 20008**.

All qualified candidates, including qualified handicapped individuals with eligibility, are invited to apply. The National Zoological Park, Smithsonian Institution, is an Equal Opportunity Employer.

PROGRAM

CAREER CHANGE OPPORTUNITY

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

REQUEST FOR PROPOSALS

CALL FOR RESEARCH PROPOSALS

The Center for Alternatives to Animal Testing (CAAT) of the Johns Hopkins School of Public Health is soliciting proposals for the 1990-91 grant period. These research proposals should provide the fundamental knowledge needed to develop alternative methods to whole animals for the safety evaluation of commercial products.

The CAAT encourages the development of methods using human cells/cell lines and studies in the area of hypersensitivity and phototoxicity in addition to other in vitro approaches to toxicity evaluation. At present funds are not available for mutagenicity and carcinogenicity.

Guidelines for preparation of proposals can be obtained from: **Mrs. Joan Poling, The Johns Hopkins Center for Alternatives to Animal Testing, 615 North Wolfe Street, Baltimore, MD 21205; Telephone: 301-955-3343**.

Deadline for submission of preproposal abstract—15 March 1989. Deadline for submission of research proposals—31 May 1989.

FELLOWSHIPS

INTERNATIONAL CANCER RESEARCH FELLOWSHIP

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

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

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

MARKETPLACE

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We are specialists in raising funds for medical research projects and public health education in the USA.

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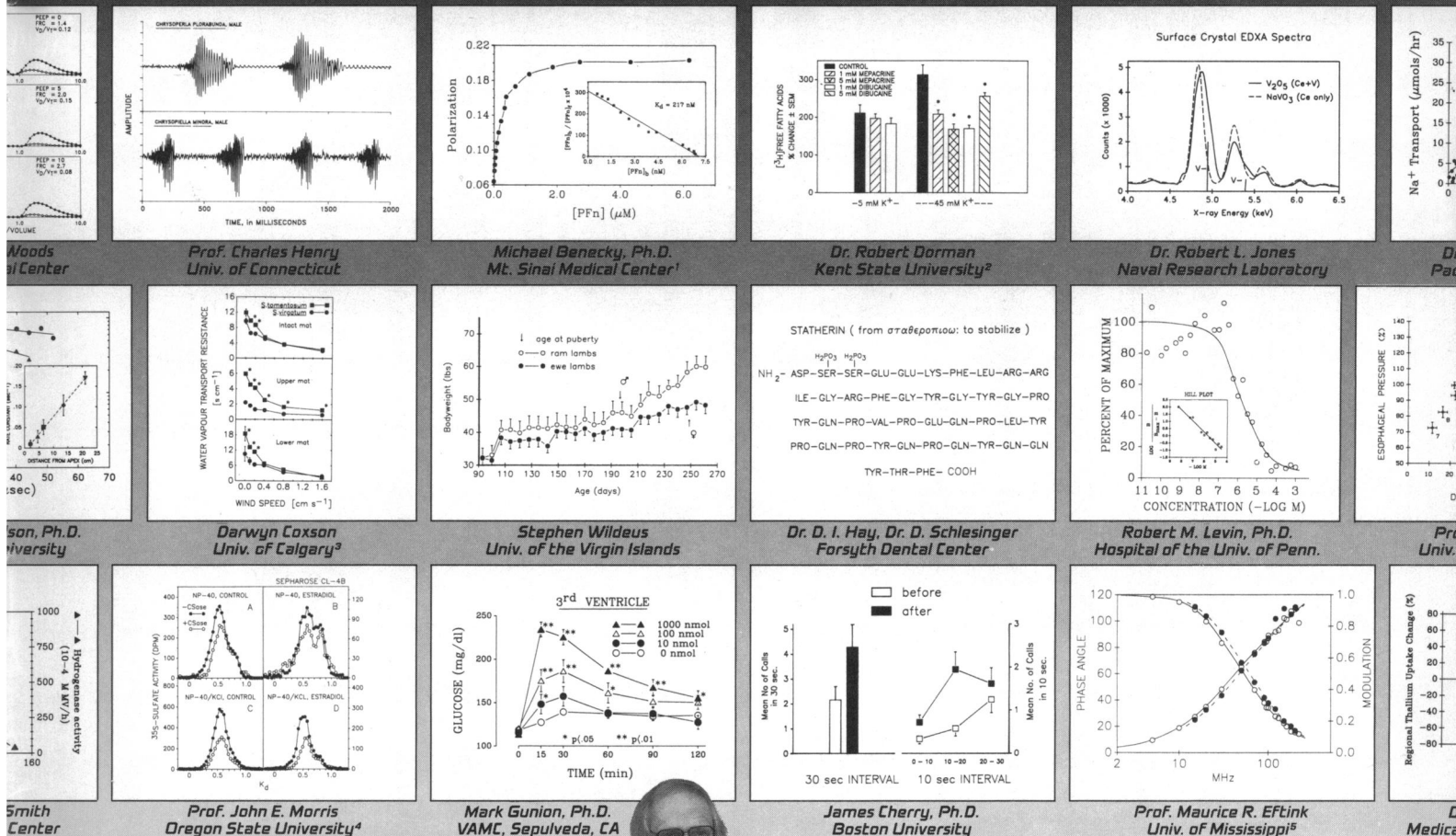
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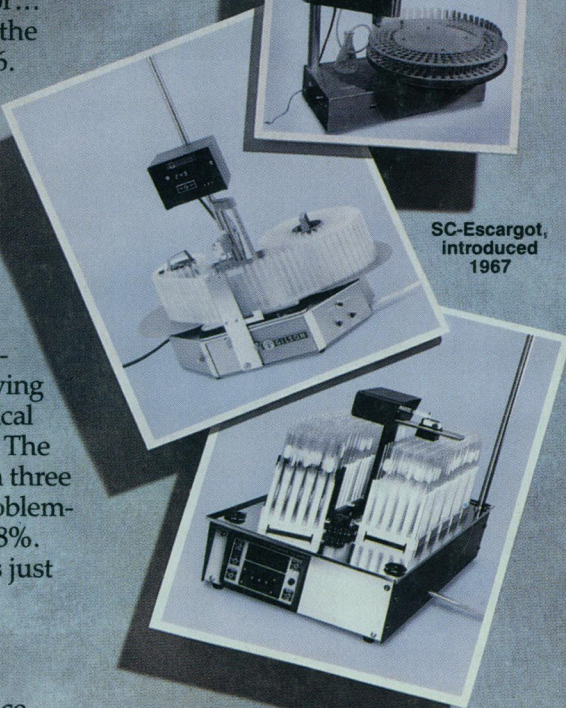
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SB-1,
introduced
1958



SC-Escargot,
introduced
1967



FC-220 Racetrack,
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