

research in sociology. The opening group, headed Survey Research, contains reflections of an "older practitioner" by Glock, discussions of methodology for surveying racial attitudes by Schuman and Bobo and of confidentiality and political infringements thereon by Diamond, and a consideration of why ethnomethodology has "failed so far to become a coherent alternative in sociology" or "to develop its implicit political line" by Lemert. Part 2, Reference Groups, contains papers by Zuckerman (on role models), O'Gorman, Merton (on invisible colleges and deviant behavior in science), and Bay. The remaining groups of papers are headed Social Psychology, Public Opinion, Inequality, and Mass Media. Among the subjects research on which is discussed are political participation (Rosenberg), definition of psychosis (Miller and Jaques), attitudes toward nuclear power (S. Cole and Fiorentine), equality in education (Coleman), news coverage of the relation between cholesterol and heart disease (J. Cole), and moviegoing (Bogart).—K.L.

Oxidases and Related Redox Systems. Tsou E. KING, HOWARD S. MASON, and MARTIN MORRISON, Eds. Liss, New York, 1988. xxvii, 789 pp., illus. \$140. Progress in Clinical and Biological Research, vol. 274. From a symposium, Portland, OR, Oct. 1987.

This volume of proceedings of the Fourth International Symposium on Oxidases and Related Redox Systems is distinguished from its predecessor by the inclusion of a symposium honoring the centennial of the birth of David Keilin, the discoverer of cytochrome. Keilin, who was born in Moscow and grew up in Poland, received his doctorate in parasitology from the Sorbonne and in 1915 went to Cambridge University, where he spent his entire career, becoming interested in biochemistry through his work on insects. Keilin's own account of his research was published in his posthumous *History of Cell Respiration and Cytochrome* (1966; reviewed in *Science* 152, 1493). In the present volume six of his sometime associates—Tsou E. King, Thad-

deus Mann, E. C. Slater, Peter Nicholls, E. Margoliash, and C. L. Tsou—present their reminiscences and reflections. Themes in addition to the research itself that recur are Keilin's breadth as a biologist, his other intellectual interests, and the atmosphere of the Molteno Institute at Cambridge, of which he was director and where his research was centered. Photographs are included, and King provides a bibliography of Keilin's biochemical publications. The remainder of the volume (p. 93ff) consists of 40 technical papers on copper proteins, cytochrome P-450, cytochrome c oxidase, and other subjects. A brief memorial to Martin Morrison is also included.—K.L.

Books Received

Continental Shelves. H. Postma and J. J. Zijlstra, Eds. Elsevier, New York, 1988. x, 421 pp., illus. \$189.50. Ecosystems of the World, vol. 27.

Crystal Growth from the Melt. G. Müller. Springer-Verlag, New York, 1988. viii, 138 pp., illus. \$77.60. Crystals, vol. 12.

The Cytogenetics of Mammalian Autosomal Rearrangements. Art Daniel, Ed. Liss, New York, 1988. (Continued on page 1187)

Advances in Cognitive Science: Steps Toward Convergence

Edited by Manfred Kochen, *University of Michigan*, and Harold M. Hastings, *Hofstra University*

Computer science and biology—two fields that were once widely divergent—are increasingly influencing one another and converging into a new, more comprehensive area of cognitive science. This book, based on a AAAS Annual Meeting symposium, focuses on issues of evolutionary learning, thereby stimulating fresh ideas for research. Its multidisciplinary discussions integrate methods and concepts in imaginative ways, offering a unique perspective on the state of the field and on directions for future study. This volume should prove valuable to psychologists, computer scientists, biologists, and anyone interested or involved in artificial intelligence or cognition.

\$45.00; AAAS members \$36.00 (include membership number from *Science*). 283 pp., 1988. AAAS Selected Symposium 104.

Order from: Westview Press, Dept. AAAS, 5500 Central Avenue, Boulder, CO 80301. (Add \$2.50 postage and handling for the first copy, 75 cents for each additional copy; allow 4–6 weeks for delivery.)

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Products & Materials

80386-Based Laptop Computer

The ProSpeed 386 is a 8-kg laptop computer that converts to a desktop computer. For desk use, the user slides the computer up to the optional Docking Station and locks it in place. The Docking Station, which has three expansion slots for IBM AT-compatible cards and one for an IBM XT-compatible card, powers the ProSpeed 386. Built-in software automatically configures the computer for either laptop or desktop mode, whichever is appropriate. A 2400-baud modem is also built in. Based on the 80386 microprocessor, the computer comes with 2 megabytes of random-access memory, expandable to either 4 or 10 megabytes. Hard disks of 40 and 100 megabytes are available. The detachable screen features a 640 pixel by 400 pixel display. From \$7699. NEC Home Electronics (U.S.A.) Inc. Circle 506.

Liquid Scintillation Counter

The System 1400 is a liquid scintillation counter that holds 1248 samples. The counter counts from any desired vial. Rack movement is controlled by direct sensors and stepping motors. As many as 50 protocols may be stored. The method that calculates disintegrations per minute yields accurate double and triple label counting without regard to the relative proportions of isotopes. The built-in central processor coordinates counts, calculates results, preformats, and transfers data to the data logger or an external computer. Pharmacia LKB Nuclear. Circle 513.

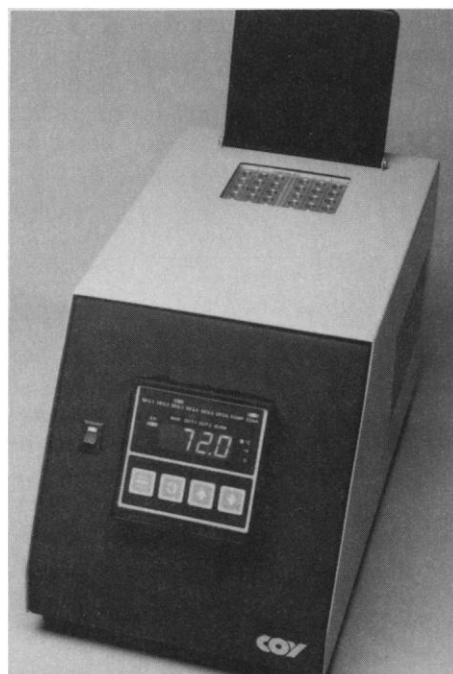
pH Electrode for Small Volumes

The PHR-146 Micro pH Electrode measures the pH of liquid samples as small as 10 μ l. The solid-state electrode has a 1-mm active element with a flat sensor tip for

making surface measurements on filter paper and electrophoretic agar surface gels. The small size of the electrode makes it suitable for measurements in microtiter plates, culture tubes, cuvettes, micro test tubes, serum cups, and nuclear magnetic resonance tubes. The pH sensor has no glass and is unbreakable. Lazar Research Laboratories. Circle 521.

Programmable Microtube Incubator

The model 50 TEMPCYCLER incubates 35 500-ml microtubes at once. The microprocessor-based instrument can be programmed by the user to cycle through heat-



ing and cooling stages between 0° and 105°C. The model 50 TEMPCYCLER can store eight temperature profiles, each consisting of as many as six independent ramp and soak intervals. Thermoelectric modules cool the samples faster than cooling by water and more cheaply than cooling by compressed gas. Samples may be frozen at the end, if desired. Coy Laboratory Products. Circle 512.

Cloning Systems for cDNA

The cDNA Cloning System λ gt10 and cDNA Cloning System λ gt11 are kits for cloning double-stranded cDNA into bacteriophage vectors. The systems are based on the Eco RI linker addition. The manual tells how to methylate internal Eco RI sites, repair DNA termini, phosphorylate linkers,

ligate linkers to DNA, digest linkers, remove linkers by column chromatography, and ligate DNA to the vector. A positive control DNA monitors the success of each step; a marker in the control DNA makes phage with insert DNA form blue plaques, while phage containing linkers remain colorless. The systems come with enzymes, nucleic acids, buffers, bacterial strains, and chromatography columns, and each contains enough reagents for five reactions containing 0.5 to 2.5 μ g of cDNA each. Bethesda Research Laboratories. Circle 509.

Software for Chemical Inventory Management

MDL/CIMS is a customizable software system that tracks the status and location of laboratory chemicals by means of bar codes. The software can automate sample log-in, weighing, data entry, and barcode assignment. Chemists can search the inventory by chemical structure, view material safety data sheets, track the progress of a sample through the lab, or submit requests to the stockroom. The system can automatically generate bills and order forms. MDL/CIMS operates on Fujitsu, IBM VM/CMS, IBM MVS, and DEC VAX/VMS mainframe computers. Molecular Design. Circle 508.

Literature

Designer Genes is a catalog of whole synthetic ready-to-use genes. Beckman Instruments, Bioanalytical Systems Group/Consumables. Circle 501.

High Performance Liquid Chromatography Products is a 24-page brochure that describes a line of columns and accessories for high-performance liquid chromatography. J & W Scientific. Circle 503.

Molecular Connection is a triannual newsletter that features software for chemical applications. Molecular Design. Circle 504.

ScaleUp is a newsletter about products for preparative high-performance liquid chromatography. Separations Technology. Circle 505.

Plastalk is a quarterly newsletter of hints and protocols for cell culture. Plastek Cultureware. Circle 518.

Reverse Osmosis for Water Purification Made Easy is a brochure that describes a laboratory water purification unit that produces 600 to 4000 liters per day. Osmonics. Circle 523.

GELoader Tip for Improved Sample Loading is a product information sheet about a disposable capillary pipette tip that dispenses volumes from 0.5 to 10 μ l. Brinkmann Instruments. Circle 524.

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.

(Continued from page 1185)

xvi, 921 pp., illus. \$295. Progress and Topics in Cytogenetics, vol. 8.

The Dynamics of Polyandry. Kinship, Domesticity, and Population on the Tibetan Border. Nancy E. Levine. University of Chicago Press, Chicago, 1988. xviii, 309 pp., illus., + plates. \$47.50; paper, \$17.95.

Ecology and Behavior of Food-Enhanced Primate Groups. John E. Fa and Charles H. Southwick, Eds. Liss, New York, 1988. xx, 355 pp., illus. \$59.50. Monographs in Primatology, vol. 11.

Effective Social Science. Eight Cases in Economics, Political Science, and Sociology. Bernard Barber. Russell Sage Foundation, New York, 1988 (distributor, Russell Sage Foundation/CUP Services, Ithaca, NY). x, 205 pp. \$17.95.

Employment Futures. Reorganization, Dislocation, and Public Policy. Paul Osterman. Oxford University Press, New York, 1988. xii, 207 pp. \$24.95.

The Field Guide to Water Wells and Boreholes. Lewis Clark. Open University Press, Milton Keynes, U.K., and Wiley, New York, 1988. xii, 155 pp., illus. Paper, \$31.95. Geological Society of London Handbook Series.

The Growing Plant Cell Wall. Chemical and Metabolic Analysis. Stephen C. Fry. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xviii, 333 pp., illus. Paper, \$49.50. Monographs and Surveys in the Biosciences.

Growth Regulation of Cancer. Marc E. Lippman, Ed. Liss, New York, 1988. xviii, 246 pp., illus. \$80. UCLA Symposia on Molecular and Cellular Biology, vol. 74. From a symposium, Park City, UT, Jan. 1987.

A Guide to Commercial Artificial Intelligence. Fundamentals and Real-World Applications. Wendy B. Rauch-Hindin. Prentice-Hall, Englewood Cliffs, NJ, 1988. xxvi, 523 pp., illus. Paper, \$28.95.

Handbook of Multivariate Experimental Psychology. John R. Nesselroade and Raymond B. Cattell, Eds. 2nd ed. Plenum, New York, 1988. xxx, 966 pp., illus. \$95. Perspectives on Individual Differences.

IBM. The Making of the Common View. Michael Killen. Harcourt Brace Jovanovich, New York, 1988. xx, 284 pp., illus. \$17.95.

Immunotoxins. Arthur E. Frankel, Ed. Kluwer, Norwell, MA, 1988. xx, 565 pp., illus. \$152.50. Cancer Treatment and Research.

In Search of Nautilus. Three Centuries of Scientific Adventures in the Deep Pacific to Capture a Prehistoric—Living—Fossil. Peter Douglas Ward. Simon and Schuster, New York, 1988. 238 pp., illus. \$19.95. A New York Academy of Sciences Book.

Industrial Aromatic Chemistry. Raw Materials, Processes, Products. H.-G. Franck and J. W. Stadelhofer. Springer-Verlag, New York, 1988. xiv, 486 pp., illus. \$79. Translated from the German edition (Berlin, 1987).

Insect Development. Photoperiodic and Temperature Control. Victor A. Zaslavski. Springer-Verlag, New York, 1988. xii, 187 pp., illus. \$99. Translated from the Russian edition by V. B. Vasilyev.

Lotus in the Lab. Spreadsheet Applications for Scientists and Engineers. Glenn I. Ouchi. Addison-Wesley, Redwood City, CA, 1988. x, 196 pp., illus. \$34.50; paper, \$22.75.

Membrane Activation in Immunologically Relevant Cells. Elmer L. Becker, Ed. Karger, Basel, 1988. xvi, 312 pp., illus. \$146.75. Progress in Allergy, vol. 42.

Numerical Solution of the Shallow-Water Equations. F. W. Wubs. Centrum voor Wiskunde en Informatica, Amsterdam, The Netherlands, 1988. iv, 115 pp., illus. Paper, Dfl. 17.80. CWI Tract 49.

Optical Channels. Fibers, Clouds, Water, and the Atmosphere. Sherman Karp *et al.*, Eds. Plenum, New York, 1988. xiv, 405 pp., illus. \$75. Applications of Communications Theory.

Optics. Francis Graham Smith and J. H. Thomson. 2nd ed. Wiley, New York, 1988. xvi, 320 pp., illus. \$27.95. Manchester Physics Series.

Passion of Youth. An Autobiography, 1897–1922. Wilhelm Reich. Mary Boyd Higgins and Chester M. Raphael, Eds. Farrar, Straus and Giroux, New York, 1988. x, 178 pp. + plates. Translated from the German edition.

Perfecting the World. The Life and Times of Dr. Thomas Hodgkin, 1798–1866. Amalie M. Kass and Edward M. Kass. Harcourt Brace Jovanovich, New York, 1988. xxx, 642 pp., illus. \$34.95.

Vitamins and Minerals in Pregnancy and Lactation. Heribert Berger, Ed. Raven, New York, 1988. xxvi, 450 pp., illus. \$49. Nestlé Nutrition Workshop Series, vol. 16. From a symposium, Innsbruck, Austria, Sept. 1986.

Personnel Placement

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

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Flow Cytometry Operator experienced in immunofluorescence and cell cycle analysis, lymphokine activation, membrane potential and sorting. Available immediately. Will relocate. 2558 South King Road #253, San Jose, CA 95122.

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Japanese Life Sciences Translations: articles, patents, opposition statements, other documents translated from Japanese in cell biology, microbiology, mycology, plant pathology, immunology, pharmacology, and related fields. 1025 Laurel Street #3, Menlo Park, CA 94025. Telephone: 415-321-6317.

POSITIONS OPEN

ANATOMIST/NEUROSCIENTIST

The Department of Anatomy at the University of Mississippi Medical Center invites applicants for a tenure-track position of assistant or associate professor. The department has modern facilities and active research programs in systems and cellular neuroscience, stroke, and the biology of cell interactions. Individuals with research interests in cerebellar neurobiology are encouraged to apply. However, all qualified applicants with research interests related to those of the department will be considered. Candidates must be capable of teaching medical anatomy courses, including gross anatomy, and have significant potential for extramural research support. Submit curriculum vitae, bibliography, research plans, and the names, addresses, and telephone numbers of three references to: **Dr. Duane E. Haines, Professor and Chairman, Department of Anatomy, University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216.** The selection process will begin by 1 February 1989. *Equal Opportunity Employer, M/F/H/V.*

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POSTDOCTORAL POSITION available immediately to assist in defining host responses to parasites, with the goal of developing a vaccine against an ectoparasitic protozoan of fish. Applicants with relevant experience in cell culture, immunological and biochemical techniques will be given preference. Knowledge of fish parasitic diseases desirable, but not essential. Position is renewable annually, for up to 3 years. Send a curriculum vitae and three letters of reference to: **Dr. Edward J. Noga, College of Veterinary Medicine, North Carolina State University, 4700 Hillsborough Street, Raleigh, NC 27606.**

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

ASSISTANT PROFESSOR OF ANATOMY

The Department of Anatomy, The Ohio State University, is seeking candidates for a tenure-track position at the assistant professor level. The department has strong research programs in neuroscience and cell biology. We are seeking a neuroscientist with expertise using cellular or molecular approaches. Candidates must have a Ph.D. or M.D., the ability to establish a strong independent research program, and at least 2 years of postdoctoral experience. Teaching responsibilities will be in neuroscience for professional and graduate students. *We especially encourage minority applicants to apply.* Send curriculum vitae and three letters of reference by 4 February 1989 to: **James S. King, Ph.D., Professor and Chairman, Department of Anatomy, The Ohio State University, 333 West 10th Avenue, 4072 Graves Hall, Columbus, OH 43210-1239.** The Ohio State University is an Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT FACULTY MEMBER, Department of Pediatrics. Research in cell biology and immune interaction in the area of mechanisms by which cytotoxic T lymphocytes and T helper cells control the immune system and fight disease. Direct research of technicians, graduate students, and postdoctoral fellows. Minimum requirements: Ph.D. biochemistry and 3 years of experience. Salary: \$48,000 per year. Forty-hour week. For consideration, send résumé to: **Colorado Department of Labor and Employment, 600 Grant Street, Suite 900, Denver, CO 80203-3528**. Refer to order #CO2918095.

ASSISTANT PROFESSOR—BIOLOGY

The joint Biology Department of St. John's University and the College of St. Benedict seeks to fill a tenure-track position beginning fall term 1989. The successful candidate will be responsible for a year-long human anatomy/physiology course for nursing students, and general physiology (fall term) and comparative physiology (spring term), both upper division courses. A strong commitment to undergraduate liberal arts education and the ability to direct upper division students in independent research is highly desirable. A Ph.D. is required and expertise in comparative or ecological physiology is preferred. Send curriculum vitae, three letters of recommendation, and transcripts to: **Personnel Director, St. John's University, Collegeville, MN 56321**. Applications received after 16 December 1988 cannot be guaranteed consideration. *Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR MOLECULAR NEUROBIOLOGY CASE WESTERN RESERVE UNIVERSITY

The newly established Center for Neurosciences at Case Western Reserve University School of Medicine has a tenure-track opening at the assistant professor level for a person using molecular biological techniques to study neural function. Candidates should have a strong background in molecular biology, at least 2 years of postdoctoral research experience, and should be ready to start an independent research program. Renovated laboratory space and start-up funds will be available. Teaching duties will involve lecturing on the Neurosciences to graduate and medical students. The Center for Neurosciences currently includes six primary faculty appointments and will expand over the next several years to approximately twice that size. In addition, more than fifteen neuroscientists with appointments in other departments play an active role in the research and teaching activities of the Center. The research interests of the current faculty are focused on neuronal development and neuronal plasticity in adult organisms. Interested candidates should send their curriculum vitae, a brief summary of their future research plans, and the names of four references to: **Dr. Story C. Landis, Center for Neurosciences, Case Western Reserve University School of Medicine, 2119 Abington Road, Cleveland, OH 44106-2333**, by 1 January 1989. *Case Western Reserve University is an Affirmative Action/Equal Opportunity Employer.*

UNIVERSITY OF CALIFORNIA— RIVERSIDE ASSISTANT PROFESSOR—ZOOLOGY

The Department of Biology, University of California, Riverside, invites applications for a tenure-track position at the assistant professor level. The appointment will be effective 1 July 1989, with duties commencing in September. Minimum qualifications include postdoctoral training, demonstrated excellence in research, and a commitment and demonstrated ability to teach. Acceptable areas of research include behavior, physiology, and population biology of animals in their natural environment. Teaching duties are graduate and undergraduate courses in the individual's specialty and may include general biology, vertebrate anatomy, and/or field biology. To apply, send curriculum vitae, statement of research and teaching interests, and copies of representative publications. Also arrange to have sent three to five letters of recommendation, which speak to research and teaching, by 15 January 1989 to: **Zoology Search Committee, Department of Biology, University of California, Riverside, CA 92521**. *The University of California is an Equal Opportunity/Affirmative Action Employer and minority and female candidates are encouraged to apply.*

POSITIONS OPEN

ASSISTANT PROFESSOR—The Lung Biology Center at the University of California, San Francisco, is seeking a cell and molecular biologist to lead an independent research program examining the molecular biology of cell surface adhesion, with special reference to molecules potentially relevant to lung injury and repair. This faculty member will also be expected to take part in the regular teaching activities of the departments of Medicine and Pharmacology.

Candidates must have a Ph.D. degree, and at least 4 years of postdoctoral research experience in adhesion receptor biology. The annual salary will be \$50,000 to \$60,000, depending upon experience.

Please send résumé and the names and addresses of four references to: **Dean Sheppard, Director, Lung Biology Center, Building 1, Room 150, San Francisco General Hospital, 1001 Potrero Avenue, San Francisco, CA 94110**.

Deadline for receipt of application is 1 October 1989. *The University of California, San Francisco, is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR: Cell biologist-biochemist. Half teaching/half research 11-month position at Earlham College. For 2 years—renewable. Desired skills in protein separation, HPLC, cell culture, recombinant technology. Involves supervision of student research, cooperative team teaching, work with minority students, and course and curricular development. Ph.D. required. Postdoctoral experience desirable. Department known for curricular innovation, quality teaching, high proportion of majors going on to Ph.D.'s. Send curriculum vitae, teaching and research philosophy statement, transcripts, and three recommendations to: **Dr. John Iverson, Biology, Earlham College, Richmond, IN 47374**. Review begins 8 February 1989. *Women/minorities encouraged to apply. Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF BIOLOGY

The Department of Biology seeks applications for a non-tenure position to begin September 1989 to fill a vacancy due to a faculty retirement. Ph.D. required. Subject area: genetics. The successful candidate should have a general and molecular background and demonstrate teaching experience in his/her primary area of interest. A biochemistry and microbiology background would be most beneficial. Computer proficiency is desirable. All courses include a laboratory experience and he/she will be expected to plan and conduct a quality laboratory program in assigned courses. He/she will be expected to participate in the department's Senior Directed Studies research program and in the freshman major and non-major biology program. Saint Anselm College is a private, 4-year liberal arts college situated in southern New Hampshire. It is committed to excellence in undergraduate education and has approximately 1800 students. Send curriculum vitae and the names of three references to: **Dr. Robert F. Normandin, Chairman, Search Committee, Saint Anselm College, Manchester, NH 03102**. Application deadline: 16 December 1988.

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ASSISTANT PROFESSORS: Three tenure-track positions in biology. **VERTEBRATE BIOLOGIST.** One-half of position devoted to teaching (e.g. Wildlife Management, Natural History of Vertebrates) and research. Should have knowledge of habitat management; up to one-half of job will be to supervise University natural areas. **VERTEBRATE BIOLOGIST.** One-half of position devoted to teaching (e.g. Ichthyology, Fisheries Management) and research. Other half to coordinate introductory biology laboratories. **BIOLOGY EDUCATION.** Should have an interest in science education; would be in charge of course for elementary education majors. Responsibilities include continuing education courses for elementary teachers. Public school classroom experience considered important. Also may be asked to teach introductory biology courses and a specialty course. Ph.D. in a biological discipline required. Beginning date 18 August 1989. Screening will begin 9 January 1989 and continue until positions are filled. Send letter, curriculum vitae, and names of three references to: **Dr. Gaylen Neufeld, Division of Biological Sciences, Emporia State University, Emporia, KS 66801**. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

Tenure-track **ASSISTANT PROFESSOR** position available to interact and collaborate with a group in regulation of metabolism at cellular and/or organismal levels. Qualifications include background in engineering or physics and regulatory biochemistry or physiology; experience in experimental physiology, computer modeling and diabetes research. Teach didactic medical school courses and graduate courses in theoretical analysis of physiological systems. Candidates should be able to compete independently for research funds. Send curriculum vitae and three references to: **Richard N. Bergman, Department of Physiology and Biophysics, USC School of Medicine, 1333 Zonal Avenue, Los Angeles, CA 90033**. *The University of Southern California is an Equal Opportunity Employer.*

The University of Kentucky Medical Center, Division of Neurosurgery has an opening at the **ASSISTANT PROFESSOR** level. Candidates should have a Ph.D. degree and an interest in metabolism or nutrition with at least 2 years of postdoctoral work and 3 years of related experience.

Send curriculum vitae to:

**Byron Young, M.D.
Johnston-Wright Chair of Surgery
Department of Surgery
University of Kentucky Medical Center
800 Rose Street
Lexington, KY 40536-0084**

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

ASSISTANT PROFESSOR, BIOCHEMISTRY—Tenure-track position to begin 1 August 1989. Ph.D. in biochemistry is expected. Applicants must present evidence of exceptional qualifications and potential for outstanding teaching and research at the undergraduate level. Courses to be taught include biochemistry, introductory food chemistry and some general chemistry. The department is ACS approved. Applicants should arrange for three letters of reference and supply a complete curriculum vitae (including copies of transcripts) to: **Dr. Charles Harding, Department of Chemistry, The University of Tennessee at Martin, Martin, TN 38238**. Deadline: 17 January 1989. *UTM is an Affirmative Action/Equal Employment Opportunity Employer which specifically invites and encourages applications from women and minorities.*

ASSISTANT/ASSOCIATE PROFESSOR PHYSIOLOGY/PEDIATRICS (CRITICAL CARE MEDICINE) EASTERN VIRGINIA MEDICAL SCHOOL

The Physiology/Pediatrics program is seeking to fill a faculty position at the assistant/associate professor level beginning July 1989 or sooner. Applicant expected to foster an independent research program and interact with ongoing research in the department of pediatrics. Candidates should have a Ph.D. in physiology, and demonstrated abilities in research and teaching. Send a letter of application, curriculum vitae, statement of research plans, and three names of references to: **Dr. G. J. Pepe, Chairman, Department of Physiology, P.O. Box 1980, EVMS, Norfolk, VA 23501**. *EVMS is an Affirmative Action/Equal Opportunity Employer and encourages applications from protected and minority groups.*

The Department of Physiology and Biophysics at the University of Arkansas for Medical Sciences invites applications for a tenure-track position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. All areas of physiology will be considered. However, candidates who will complement ongoing departmental research activity in the areas of endocrinology and neuroscience are particularly urged to apply. Candidates for the position should have the potential and desire to develop a strong, independent research program and be able to participate in the teaching of physiology to medical and graduate students. Applicants should send curriculum vitae, summary of research plans, and three letters of recommendation by 15 December 1988, to: **Dr. Lawrence E. Cornett, Department of Physiology and Biophysics, Slot #505, University of Arkansas for Medical Sciences, 4301 West Markham Street, Little Rock, AR 72205**. *UAMS is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF PHARMACOKINETICS UNIVERSITY OF ILLINOIS AT CHICAGO

Applications are invited for the position of Assistant Professor, Department of Pharmacodynamics/Pharmacokinetics, College of Pharmacy, University of Illinois at Chicago. The effective date of appointment is March 1989.

Qualifications should include Ph.D. in pharmacology or related science, preferably with 2 years of research/training experience after the degree and an active independent research program in pharmacokinetics and/or drug metabolism.

Send résumé before 2 January 1989 to: **Dr. Eugene F. Woods, Department of Pharmacodynamics, College of Pharmacy, 833 South Wood Street, M/C 865, Chicago, IL 60612.**

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

ASSISTANT PROFESSORS. Tenure-track positions available for outstanding candidates with training in cell physiology, biophysics or regulatory biology. Candidates who plan to establish an independent research program involving neurobiology, angiogenesis or growth factors are encouraged to apply, but outstanding candidates in other fields will be considered. The abilities of the applicants are more important than specific research areas. Candidates should submit curriculum vitae, description of future research program, and have three letters of reference sent to: **James T. Stull, Ph.D., Chairman, Department of Physiology, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9040. An Affirmative Action/Equal Opportunity Employer.**

ASSISTANT/ASSOCIATE PROFESSOR: Applications are invited for a tenure-track position in the Department of Structural and Cellular Biology available 1 June 1989. Candidates must have a minimum of 2 years of postdoctoral experience and be able to establish a fundable research program in some aspect of cellular biology (e.g. receptors, cell-cell interactions, secretion, cytoskeleton, organelles, neurotransmission, developmental biology). Successful applicant will be expected to participate in Departmental (medical/graduate) teaching programs in the anatomical disciplines. Send curriculum vitae, one-page statement of research interests and career goals, plus the names of three references by 1 February 1989 to:

**Dr. Glenn L. Wilson
Department of Structural and Cellular Biology
College of Medicine, Room 2042 MSB
University of South Alabama
Mobile, AL 36688**

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

ASSOCIATE OR FULL PROFESSOR MOLECULAR AND CELLULAR IMMUNOLOGY UNIVERSITY OF CALIFORNIA, BERKELEY

The University of California at Berkeley is seeking, pending budgetary approval, an established immunologist to join the Division of Immunology in the newly formed Department of Cell and Molecular Biology. Qualifications include: (i) an earned doctorate in immunology or related field, (ii) an ongoing and outstanding research program in molecular and cellular immunology, (iii) effective communication skills, and (iv) demonstrated management capabilities. Duties include participation in graduate and undergraduate instruction in immunology, maintenance of a strong independent research program to provide training for graduate students and postdoctoral fellows, and involvement in the administration of the newly formed Division of Immunology. Applications/nominations along with curriculum vitae, statement of research interests and representative reprints, and the names of three references should be sent by 1 January 1989 to:

**Dr. Marian E. Koshland
Chairperson, Search Committee
Department of Microbiology and Immunology
University of California
Berkeley, CA 94720**

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

POSITIONS OPEN

ASSISTANT PROFESSOR BEHAVIORAL NEUROSCIENCE

The Department of Behavioral Neuroscience at the University of Pittsburgh seeks applicants for a tenure-track position which could begin in the fall 1989. Applicants should be interested in the involvement of second messenger systems in neural function and/or in molecular neurobiology. Applicants will be selected for interviews on the basis of their record of research accomplishment, their potential for developing a strong and interactive research program, and their ability to participate in undergraduate and graduate education. Curriculum vitae, selected reprints, a brief statement of future research interests, and three letters of reference should be sent to: **Faculty Search Committee, Department of Behavioral Neuroscience, University of Pittsburgh, Pittsburgh, PA 15260.** Applications will be reviewed beginning 15 January 1989.

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

ASSISTANT PROFESSORS. The Biology Department, Rutgers University-Camden, is seeking three biologists for tenure-track positions beginning 1 September 1989. A Ph.D. is required. **Estuarine Biologist:** While applicants from any area of estuarine biology are encouraged to apply, we are especially interested in the fish ecology area. **Microbiologist:** Applicants with strong microbiological orientation are being sought; however, those combining this background with expertise in immunology would be preferred. **Neuroscientist:** We are seeking applicants for any area of neuroscience, especially those demonstrating expertise in electron microscopy. Applicants should submit curriculum vitae, statement of research interest, and three letters of recommendation to: **Dr. H. Lee, Chairman, Biology Department, Rutgers University, Camden, NJ 08102. Rutgers University is an Equal Opportunity/Affirmative Action Employer.**

ASSISTANT RESEARCH SCIENTIST. Independent basic/applied research in area of gastrointestinal physiology with emphasis on motility studies in which existing theory or methods may be limited or lacking. Responsibility for identifying and selecting research problems, determining methods used to obtain research results. Responsible for preparation of grant proposals and follow-up; coordinate gastrointestinal research; responsible for publication of research results. Successful candidate must hold an M.D. or Ph.D. in health sciences, have knowledge of esophageal disease, clinically related research experience in gastrointestinal disease, and surgical skills. Candidate must also have experience with computer systems for data and statistical analysis. Salary: \$30,000 per year. Contact: **Dennis Domsic, Administrator, Department of Surgery, 1562 JCP, University of Iowa, Iowa City, IA 52242.**

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

TRUDEAU INSTITUTE, INC. BASIC RESEARCH SCIENTISTS

The Trudeau Institute is always interested in receiving applications for tenure-track, full-time research staff positions, from appropriately trained individuals. Appointments may be made at the assistant, associate, or full member (professor) levels, depending on scientific ability and past performance. Successful applicants will be expected to develop independent research programs in immunology, immunopathology, molecular immunology or related fields.

The Trudeau Institute is a free-standing, not-for-profit, basic research institute with modern facilities, up-to-date equipment, in-house animal production, efficient management and an international reputation for excellence. Current staff interests include: cancer immunology, transplantation immunology, immunity to infectious and parasitic diseases, regulation of immune responses, and the production and function of cytokines. Adequate start-up funding for new projects is available from Institute resources. Salaries and benefits are competitive, and working conditions are conducive to a productive career in research.

Applications consisting of curriculum vitae, the names and addresses of three references, and a brief description of research interests, should be addressed to:

**Dr. Robert J. North, Director
Trudeau Institute, Inc.
P.O. Box 59
Saranac Lake, NY 12983**

POSITIONS OPEN

ASSISTANT PROFESSOR OF BOTANY: SUPERVISOR OF ELECTRON MICROSCOPE LABORATORY

A tenure-track position is open at Arizona State University to begin 14 August 1989, at the rank of assistant professor in the Department of Botany. A Ph.D. is required with preference given to individuals with post-doctoral experience. The successful applicant will assume the following responsibilities. (i) Oversee the operation of a state-of-the-art electron microscopy facility serving the departments of Botany, Microbiology, and Zoology. The Supervisor is assisted by a full-time academic professional. (ii) Teach fundamental and advanced electron microscopy. (iii) Develop a focused research program in plant biology. Send curriculum vitae, statement of research interests, and names and addresses of three references to: **Dr. J. M. Aronson, Department of Botany, Arizona State University, Tempe, AZ 85287-1601.** Evaluation of applications begins 9 January 1989, and continues until a suitable candidate is selected. *Arizona State University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSORS: The Biology Department of The University of Texas at Arlington (UTA) invites applications for two tenure-track positions starting fall 1989:

MICROBIAL PHYSIOLOGIST using molecular techniques to study metabolic or developmental processes of bacteria in aquatic systems.

QUANTITATIVE/POPULATION GENETICIST using theoretical and empirical approaches to study evolution in natural populations of plants or animals. UTA (23,000 enrollment) is located between Dallas and Fort Worth. The Department of 22 faculty and 40 graduate students occupies an 80,000-square-foot facility. Send curriculum vitae, recent publications, research interests, and three letters of recommendation to: **E.D. Brodie, Jr., Chairman, Department of Biology, The University of Texas at Arlington, Arlington, TX 76019.** Search opens 5 January 1989. *Equal Opportunity/Affirmative Action Employer.*

BIOCHEMISTRY FACULTY POSITION—The Department of Chemistry at The University of Texas at Arlington invites applications for a position at the assistant professor level. We are specifically interested in candidates with research interests utilizing recombinant DNA techniques that are in current use in modern molecular biology. A Ph.D. in biochemistry or closely related area is required. The successful candidate will be expected to teach at both the undergraduate and graduate levels (including a course in biochemical genetics) and should have a demonstrated record of excellence in research and outstanding potential for developing a vigorous, independent research program with external funding. Applicants should submit a résumé, a brief description of future research plans, and arrange to have three letters of recommendation sent to: **Dr. Edward Bellion, Biochemistry Search Committee, Department of Chemistry, P.O. Box 19065, The University of Texas at Arlington, Arlington, TX 76019.** Deadline is 15 December 1988. *An Equal Opportunity/Affirmative Action Employer.*

BIOLOGY—The University of Montevallo invites applications and nominations of persons with proven records in teaching, scholarship and leadership for the position of **CHAIRPERSON** of the Department of Biology. The chairperson, who reports to the Dean of the College of Arts and Sciences, will hold a tenurable faculty position and devote one third to one half of his or her time to administrative responsibilities. The chairperson is responsible for leadership for the department in all areas of the department's operation, including curriculum, budget, personnel selection and evaluation, and short and long term planning. The department, which includes five full-time biologists and a geologist, offers an undergraduate major and minor in biology and provides basic preparation for graduate and professional schools. The University of Montevallo, a state-supported institution with a strong liberal arts tradition, is located in the Birmingham metropolitan area and has an enrollment of 2,700 students. Send inquiries and letters of application or nomination to: **Dean John B. Lott, College of Arts and Sciences, Station #6025, University of Montevallo, Montevallo, AL 35115.** Deadline is 15 February 1989 or until filled. *UM is an Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR: MOLECULAR BIOLOGY

The Department of Pharmacology at SUNY Health Science Center at Syracuse invites applications for a tenure-track position available from July 1989. Candidates using molecular biological techniques to study cardiovascular cell biology, neurobiology, or membrane transport are especially encouraged to apply. The qualified individual will be expected to have or to develop a productive, extramurally funded research program and to participate in teaching, medical and graduate students. Send a statement of research interests, curriculum vitae, and direct three letters of reference by 1 January 1989 to: **Dr. Karina Meiri, Department of Pharmacology, SUNY Health Science Center at Syracuse, 766 Irving Avenue, Syracuse, NY 13210.**

An Equal Opportunity/Affirmative Action Employer.

BACTERIOLOGIST, FACULTY POSITION.

Applications are invited for a tenure-track assistant/associate professorship, especially from investigators with interest and expertise in the molecular characterization of bacterial systems. The successful applicant is expected to establish an independent research program and participate in the teaching of medical and graduate students. Candidates should submit curriculum vitae, statement of current and future research interests and list of three references to: **Bacteriology Search Committee, Department of Microbiology, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226.** *An Equal Opportunity Employer.*

BIOCHEMIST—Temple University is seeking a biochemist to join a research group studying protein interactions in the early stage of blood coagulation. Applicants should have a Ph.D. in biochemistry with at least 3 years of postdoctoral experience in protein chemistry including purification, characterization, kinetics and selected physical methods. Familiarity with HPLC immunochemical methods and end group analysis desirable. This is a nontenured faculty position with full benefits and the rank of research assistant professor. Send résumé and three references to: **Robert W. Colman, Director, Thrombosis Research Center, Temple University Health Sciences Center, 3401 North Broad Street, Philadelphia, PA 19140.** *An Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF DELAWARE CHAIR, DEPARTMENT OF PHYSICS AND ASTRONOMY

We seek a lively scholar and teacher to lead an already strong department to further prominence. There are 23 members of the department and three additional positions are expected to be filled by fall 1989. The Bartol Research Institute, with its own director and 13 faculty members, is housed with the Physics Department. The Department and Bartol jointly operate a successful graduate program with over 50 students and 15 postdocs. The two faculties publish a total of some 100 papers per year.

The active research areas of the Department include condensed matter physics, atomic and molecular physics, astronomy and astrophysics, particle theory, acoustics, and biophysics. The Physics Department cooperates in research and teaching with many other groups in science and engineering. There is substantial external funding from government and industry.

The University is a state-assisted institution with an endowment of over \$250,000,000. The University is located in a small town in northern Delaware with easy access to Philadelphia, Baltimore, Washington, and New York City.

Applications and nominations are welcome and should be sent to:

**Ivar Stakgold, Chair
Physics Search Committee
Department of Mathematical Sciences
University of Delaware
Newark, DE 19716**

Applications should be received before 1 February 1989. If the position is not filled, the search will be reopened.

The University of Delaware is an Equal Opportunity Employer which encourages applications from qualified minority groups and women.

POSITIONS OPEN

BIOCHEMIST—MOLECULAR ENDOCRINOLOGIST: Research assistant professor, research associate, postdoctoral research positions available for studies related to biochemistry of reproduction. Emphasis is on mechanism of hormone action, receptor purification and chemistry, hormone binding inhibitors, synthesis and characterization of hormone analogs. Postdoctoral training grant positions also available. Please forward curriculum vitae, summary of research skills and experience, and names of three references to: **Leo E. Reichert, Jr., Ph.D., Department of Biochemistry A-10, Albany Medical College, Albany, NY 12208.**

Albany Medical College is an Equal Opportunity Employer.

BIOCHEMISTS

GS12 and GS13 positions open U.S. Army Institute of Dental Research, Washington, D.C. Individual needed to extract and isolate bioactive bone factors from bone, prepare bone implants for experimental animal use, and investigate and characterize biodegradable polymers. Individual should have some background in protein and/or polymer chemistry and biomedical engineering, and a good background in analytical chemistry. Both positions require Ph.D. in biochemistry or related science. GS13 position requires 3 to 5 years of postdoctoral experience. Positions are available immediately. Contact: **Dr. Jeffrey Hollinger at 202-576-3764.**

BIOLOGY: Three **FACULTY POSITIONS.** Applications are invited for two assistant professors and one instructor position beginning August 1989 (Ph.D. required for assistant professor positions). (i) Cell biologist/microbiologist with expertise to teach related courses. (ii) Physiologist with broad general background. (iii) Coordinator of freshman labs. Ability and willingness to teach freshmen biology is required of all candidates. Xavier University is a small, Black, Catholic, liberal arts institution. Application deadline: 31 December 1988. Send résumé and three letters of recommendation to: **Search Committee, Biology Department, Xavier University, New Orleans, LA 70125.**

CELL PHYSIOLOGIST—BIOCHEMIST ASSISTANT PROFESSOR

The Biology Department at Williams College anticipates an opening for a broadly trained cellular physiologist with background in biochemistry to teach courses in modern cell biology and biochemistry. Interest in endocrinology particularly desirable, but not essential. Ph.D. required. Postdoctoral experience desirable. Faculty are expected to conduct active research programs in which qualified undergraduates may be involved. Start up funds for research are provided. Position available 1 July 1989. Please send curriculum vitae, statement of research/teaching interests, and three references by 31 January 1989 to: **Chair, Department of Biology, Williams College, Williamstown, MA 01267.**

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

CHAIRPERSON DEPARTMENT OF AGRONOMY

The University of Kentucky, Lexington invites applications for Chairperson of a large department which includes research, teaching and extension faculty and ARS/USDA adjunct faculty. Research areas include soil sciences, plant breeding and molecular biology, plant physiology and biochemistry, crop physiology, crop ecology and management, weed science, seed science and turf management. Applicants should hold a Ph.D. in agronomy, crop science, soil science, or a closely related discipline, have a national reputation for scholarly excellence, a commitment to the Land-Grant University system, and leadership and administrative ability. Salary is open. Screening (letter, curriculum vitae, and list of references) will begin 15 December 1988 and continue until a suitable candidate is found. Send to: **Dr. L. D. Jones, Chairman, Agronomy Search Committee, Room 509, Ag Science South, University of Kentucky, Lexington, KY 40546-0215.**

The University of Kentucky is an Equal Opportunity Employer.

POSITIONS OPEN

CELLULAR NEUROPHYSIOLOGIST

The Department of Physiology invites applications for a tenure-track position at the assistant professor level. Preference will be given to individuals using biophysical and molecular approaches to study synaptic physiology and membrane excitability. The successful candidate will be expected to develop an independent research program and to participate in the teaching of medical and graduate students. The department will provide ample start-up funds, laboratory space, and access to our staffed electronics and machine shops. Extensive opportunities exist for interactions with other neuroscientists within the department and in the campus-wide Center for Neuroscience. Applicants should have a Ph.D. and/or M.D. and postdoctoral experience. Send curriculum vitae, summary of research interests, and names of three references to: **Daniel J. Simons, Ph.D., Chairman, Physiology Search Committee, Department of Physiology, University of Pittsburgh School of Medicine, Pittsburgh, PA 15261.** *The University is an Equal Opportunity/Affirmative Action Employer.*

CHAIR, DEPARTMENT OF MEDICAL GENETICS—The Oregon Health Sciences University School of Medicine is seeking applicants for the position of Chairperson of the Department of Medical Genetics. This university-based program has M.D. and Ph.D. faculty engaging in clinical genetic diagnostic and patient care services, research, and the teaching of medical students, Ph.D. graduate students and fellows. The position requires strong academic, organizational and administrative skills. Submit a complete curriculum vitae and names and addresses of references to: **Richard T. Jones, M.D., Ph.D., Chairman, Medical Genetics Search Committee, L224, Oregon Health Sciences University, Portland, OR 97201.** *An Affirmative Action/Equal Opportunity Employer.*

CLINICAL AND EXPERIMENTAL IMMUNOLOGIST. The Department of Pathobiology, School of Veterinary Medicine, Purdue University invites applications for a tenure-track faculty position as a clinical and experimental immunologist. The successful candidate will be expected to develop an independent, competitively funded research program in collaboration with other scientists at Purdue University, participate in veterinary and graduate courses in the department's graduate and residency training programs, direct graduate students and consult with the Clinical Pathology laboratory in the Veterinary Teaching Hospital.

The ideal candidate will possess a D.V.M. or equivalent degree and a Ph.D. degree in immunology or a closely related discipline. Postdoctoral research experience as evidenced by publications and successful grant applications is required.

The position will be filled at assistant, associate or full professor status depending upon the candidate's qualifications.

Please submit curriculum vitae, a statement of career goals, and the names of three references to: **Dr. Larry Glickman, Head, Department of Pathobiology, School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907.** Final review of applications will begin 1 January 1989. *Purdue University is an Affirmative Action/Equal Opportunity Employer/Educator. Women and minority candidates are encouraged to apply.*

CONSULTING—Technical consulting firm offering assistance in analysis of data and communication of findings to government and others, seeks Ph.D. in biological or biochemical science with 2 to 3 years of experience to participate in projects and grow into the consulting business. Please reply: **Box 173, SCIENCE.**

CYCLOTRON ENGINEER

Immediate opening for an Engineer/Scientist experienced in the operation and maintenance of medical cyclotrons, preferably TCC equipment. Prefer electrical experience, but all qualified individuals are encouraged to apply. Salary commensurate with experience and excellent benefits are offered. Send résumé to: **Thomas Boothe, Ph.D., Cyclotron Facility, Mount Sinai Medical Center, 4300 Alton Road, Miami Beach, FL 33140.** *An Equal Opportunity Employer.*



**Agricultural
Research
Service**

**United States
Department of
Agriculture**

**POSTDOCTORAL RESEARCH ASSOCIATE
AND RESEARCH SCIENTIST POSITIONS,
EASTERN REGIONAL RESEARCH CENTER
(ERRC), WYNDMOOR, PA**

ARS is seeking a two-year Postdoctoral Research Associate with a Ph.D. in Plant Physiology who is experienced in the area of symbiotic root-mycorrhizal systems, and a permanent Research Scientist who preferably has a Ph.D. in microbiology with an additional 2-5 years experience in the area of VA-mycorrhizae and Rhizosphere microbiology. ERRC is a major research center of ARS located in a suburban environment just outside the city limits of Philadelphia. The successful candidates will be members of a multidisciplinary team that is studying the bidirectional movement of nutrients and metal ions between VA mycorrhizae and plant tissues using a variety of novel methods including high field, multinuclear, *in vivo* NMR spectroscopy. Familiarity with NMR spectroscopy would be useful but is not a necessary requirement for these positions. Salaries are commensurate with experience (27-43K). For further information on the position, contact **Dr. Philip E. Pfeffer (215) 233-6469**. For information on application procedures and forms contact **Mr. Lee Triplett (301) 344-1863 by December 12, 1988**. Permanent research scientist positions require U.S. citizenship. Applications in response to the **Research Associate** position should be marked **8NA0159** and for the **Research Scientist** should be marked **8NA0162**.

*AN EQUAL OPPORTUNITY EMPLOYER. WOMEN
AND MINORITIES ARE ENCOURAGED TO APPLY.*

**FACULTY POSITIONS
IN DEPARTMENT OF PSYCHIATRY
SCHOOL OF MEDICINE
UNIVERSITY OF PENNSYLVANIA**

The Department of Psychiatry invites applications and nominations for three tenure-track faculty positions at an assistant or associate professor level. Candidates should have a Ph.D. and/or M.D. degree and substantial research experience as independent investigators with proven research accomplishments. Laboratory space will be available in the School's new Clinical Research Building, scheduled for completion in 1989. This facility will underpin the Department of Psychiatry's expanding programs in cellular and molecular neuroscience.

CHRONOBIOLOGY

Individual studying brain mechanisms underlying periodic behavior, and the pathogenesis of psychiatric disorders. All outstanding candidates in behavioral neuroscience will be considered, but preference will be given to applicant with demonstrated expertise in at least one basic neurobiological technology. Interaction with established programs in chronobiology, behavioral pharmacology, developmental neurobiology, neuroendocrinology, and brain imaging is encouraged. Send CV, a brief description of research interests, and three letters of recommendation to: **Mark S. Bauer, M.D.**, Chairman, Chronobiology Search Committee, Department of Psychiatry, 302 Piersol, Hospital of the University of Pennsylvania, Philadelphia, PA 19104-4283.

MOLECULAR GENETICS

Psychiatry's new programs in molecular neuroscience operate in close collaboration with the Department of Genetics and the Howard Hughes Medical Institute. Research specialty within molecular genetics is open. Send CV, three letters of reference, a statement of research interests, and representative publications to: **Dr. R. Arlen Price**, Chairman, Molecular Genetics Search Committee, Department of Psychiatry, University of Pennsylvania, Philadelphia, PA 19104-6021.

NEUROENDOCRINOLOGY

An individual with outstanding basic science background in neuroscience and endocrinology. While all candidates will be considered, preference will be given to applicants with strong molecular and cellular biology background and with interests in hormonal control of behavior. Candidates are expected to develop their own independent research program. Interaction with established clinical and basic research programs is anticipated. Send CV, a description of research interests, and three letters of reference to: **Dr. Terry Reisine**, Chairman, Neuroendocrinology Search Committee, Department of Pharmacology, University of Pennsylvania, 103 John Morgan Building, 36th and Hamilton Walk, Philadelphia, PA 19104-6084.

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



**UCAR Visitor Research Programs for
Senior and Postdoctoral Scientists**

The University Corporation for Atmospheric Research (UCAR) announces the continuation of its Visiting Research Programs, which provide research opportunities at the Naval Environmental Prediction and Research Facility (NEPRF) in Monterey, California, and the National Meteorological Center (NMC) in Camp Springs, Maryland. The program offers visiting research appointments in the atmospheric and related sciences at two of the premier R&D centers devoted to operational weather prediction in the United States.

Openings in the UCAR program include positions for senior and postdoctoral scientists. Remuneration will be commensurate with the experience of the scientists and local living costs, and will be competitive with analogous university and government appointments. Appointments will be for up to two years.

No formal application form is required. Qualified scientists are encouraged to apply for these programs by sending a resume along with a statement of how their research interests and experience relate to the areas of scientific interest at the host institution. Applicants should designate their choice of program site and should include a brief description of proposed work. All applications should include four professional references.

The application deadline is 16 January 1989. Send the required information to Meg Austin, Corporate Projects, UCAR, P.O. Box 3000, Boulder, CO 80307. For further information or to receive a flyer describing the program in more detail, please contact her at 303-497-8995.

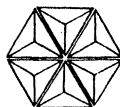
**BIOCHEMIST
Infectious Disease Research
Department of Virology**

The Bristol-Myers Company, a worldwide leader in the research, development and marketing of pharmaceutical, medical care, consumer, and nutritional products, has a broad program in antiviral research, encompassing diagnostics, prophylactics and chemotherapeutics. The Department of Virology of the infectious disease research program is committed to the discovery and development of novel chemotherapeutic agents of natural, semi-synthetic or synthetic origin. We are now entering a new phase with several candidate antiviral agents already under clinical evaluation.

The Department of Virology has a vacancy in the Biochemistry group for a RESEARCH SCIENTIST. This is an excellent opportunity to study biochemical aspects of the action of antiviral drugs with activity against herpes viruses and the human immunodeficiency virus.

Candidates should have a Ph.D. and two or more years of experience in biochemistry or a related discipline. Hands-on laboratory experience with HPLC, FPLC, and protein purification techniques are essential. Experience with enzyme kinetics, protein chemistry, and immunological techniques are definite assets.

Bristol-Myers offers excellent research facilities in superbly equipped laboratories in a new research complex; an interactive, fertile and interdisciplinary scientific environment; a commitment towards antiviral drug development; an excellent salary and a comprehensive benefits package. For confidential consideration, forward your resume, including salary history to: **Bristol-Myers Company, Pharmaceutical Research & Development Division, Department SS9-SC10, 5 Research Parkway, Wallingford, CT 06492-7600**. An equal opportunity employer.



Bristol-Myers Company

Pharmaceutical Research & Development Division

POSITIONS OPEN

UNIVERSITY AT BUFFALO CHAIR DEPARTMENT OF PSYCHOLOGY

The State University of New York at Buffalo invites applications and nomination for the position of Chair of the Department of Psychology to begin in the fall semester 1989. Applicants should be well established scholars who are capable of providing leadership for the future growth of the department.

Applicants should be qualified for tenured appointment at the full professor or advanced associate professor level, and should demonstrate a substantial scholarly publication record as well as administrative and teaching experience. Salary is very competitive, according to experience and qualifications.

The Psychology Department at Buffalo has 40 full-time faculty in five primary areas of specialization: clinical, social, cognitive, developmental and biopsychology. The department is popular for undergraduate majors and has 130 Ph.D. students. The faculty has been successful in securing extramural support for both training and research. It operates an active clinical service and has extensive, newly-equipped research laboratories.

Applicants should send a letter of application, résumé, and names of three references to: **Donald Henderson, Search Committee Chair, Office of the Dean of Social Sciences, State University of New York at Buffalo, Buffalo, NY 14260.** Applications should be received by 30 January 1989, at which time screening of candidates for interviews will begin. *SUNY at Buffalo is an Equal Opportunity and Affirmative Action Employer.*

CHAIRPERSON—BIOLOGY

The Department of Biology, St. Louis University, is seeking a person with a proven record of achievement in research, securing grants, and teaching, to chair a Ph.D.-granting department of eleven faculty. Although we especially encourage applicants in cellular and molecular biology, area of specialization is open. Appointment will be at the senior level effective 1 July 1989. Send curriculum vitae and the names and addresses of three references to: **Chair, Search Committee, Department of Biology, St. Louis University, 3507 Laclede Avenue, St. Louis, MO 63103.** Closing date is 15 January 1989, or until position is filled. *Affirmative Action/Equal Opportunity Employer M/F/H/V.*

CLINICAL PHARMACOLOGIST: Tenure-track position. Accepting applications at assistant/associate/full professor level. Must have M.D. or M.D./Ph.D. degree, significant postdoctoral research experience and demonstrated ability to be productive in an academic setting. Salary will be commensurate with experience. Special consideration will be given to candidates with expertise in cancer/immune pharmacology. Successful applicants will be expected to have or develop strong, independent research programs with external funding as well as participate in teaching at both graduate and medical student levels. A wide variety of interactions with current faculty members is possible and encouraged. Closing date is 30 December 1988. Candidates should submit a letter of application, a brief statement of research objectives, curriculum vitae, and five letters of recommendation to: **Diane H. Russell, Ph.D., Professor and Chairperson, Department of Pharmacology and Therapeutics, College of Medicine, MDC-9, University of South Florida, Tampa, FL 33612.** *The University of South Florida is an Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF ILLINOIS— CORN BREEDING (MOLECULAR GENETICS EMPHASIS)

ASSISTANT OR ASSOCIATE PROFESSOR position available 21 August 1989. Research (80%) will emphasize application of molecular biology techniques to corn improvement. Teaching (20%) of advanced course in area of expertise and supervision of graduate students required. Ph.D. with strong training and experience in plant breeding required. Experience with plant molecular biology techniques needed. Send curriculum vitae, college transcripts, statements of interest and experience in research and teaching, and three letters of recommendation by 21 January 1989 to: **Dr. L. E. Schrader, Head, Department of Agronomy, University of Illinois, 1102 South Goodwin Avenue, Urbana, IL 61801.** *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

CHAIRPERSON, DEPARTMENT OF PATHOLOGY. Description: The Department of Pathology, College of Veterinary Medicine and Biomedical Sciences, Colorado State University is seeking outstanding candidates for the position of chairperson to join and lead an energetic department composed of a large, diverse faculty subdivided into traditional groups of anatomical pathologists, clinical pathologists, and basic research pathobiologists. The department is seeking a Chairperson who can provide leadership essential to continued faculty evolution in the departmental research, teaching, and service objectives. As a faculty member, the Chairperson is expected to participate in a self-defined program of academic activity commensurate with his or her interests and aptitudes. A listing of administrative responsibilities includes: faculty/graduate student recruitment, faculty evaluation, fiscal/budgetary planning, personnel management, and extra-departmental representation. Chairperson candidates must possess a D.V.M. or equivalent degree and/or Ph.D. degree in a discipline related to pathobiology. Desirable qualifications include board certification in a specialty of the candidate's area of expertise and experience as a principal investigator in management of extramurally funded research. Application materials consisting of curriculum vitae, a letter outlining professional interests and goals, three reprints representative of the candidate's research activity, and names of three references capable of evaluating the candidate's potential as a chairperson should be sent to:

**Dr. Dennis McCurnin, Chair
Pathology Search Committee
Veterinary Teaching Hospital
Colorado State University
Fort Collins, CO 80523**

Applications will be accepted until 1 February 1989, or until a suitable candidate is identified. *Applications from women and minority candidates are encouraged. A detailed job description is available upon request. Colorado State University is an Equal Employment Opportunity/Affirmative Action Employer. EO Office: Room 314, Student Services Building.*

CURATOR—ENTOMOLOGY

The University of Colorado Museum and the Department of Environmental, Population, and Organismic Biology of the University of Colorado, Boulder, invite applications for a joint tenure-track opening as curator. Preference will be given to candidates at the assistant professor level, but candidates at all levels will be considered. Primary responsibilities will be to curate the entomology collection, to carry out research in the curator's field of specialization, and to teach undergraduate and graduate courses in the biology department. The field of research is open, but must be consistent with the goals and objectives of the Museum, e.g., systematics, ecology, or behavior. Applicants must possess the Ph.D. degree (or equivalent) and have substantial training and experience in entomology; applicants with curatorial experience will be given preference. *The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity in all areas. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities, and disabled individuals.* Curriculum vitae, representative publications, and names of five references may be sent to: **Entomology Search Committee, University of Colorado Museum, Box 218, University of Colorado, Boulder, CO 80309-0218.** Applications must be received by 15 January 1989.

DEAN, COLLEGE OF PHARMACY, University of Utah. A distinguished educator/scientist is sought to provide educational, scientific and fiscal leadership for the College. The Dean is the chief administrator of the College, reporting directly to the Vice President for Health Sciences. The College of Pharmacy is research-intensive and committed to excellence in professional and graduate education. Applications will be accepted until 6 January 1989 or until a suitable candidate has been identified. Please send curriculum vitae and names, addresses, and telephone numbers of three or more referees to: **Dr. Douglas E. Rollins, Chairman of the Search Committee, Center for Human Toxicology, College of Pharmacy, University of Utah, Salt Lake City, UT 84112.** *The University of Utah is an Equal Opportunity/Affirmative Action Employer; applications from qualified female/minority candidates are encouraged.*

POSITIONS OPEN

DEAN COLLEGE OF NATURAL SCIENCES AND MATHEMATICS UNIVERSITY OF HOUSTON

The University of Houston, the third largest university in Texas, invites nominations and applications for the position of Dean of the College of Natural Sciences and Mathematics. The College offers baccalaureate, master's and doctoral degrees in biochemical and biophysical sciences, biology, chemistry, computer science, geosciences, mathematics, and physics; and also houses the following research institutes: Allied Geophysical Laboratories, Institute for Beam Particle Dynamics, Molecular Biology, Molecular Design, Theoretical and Engineering Sciences, Space Vacuum Epitaxy Center, and the Texas Center for Superconductivity.

Qualifications: Significant scholarly or professional achievement in one of the disciplines of the college, administrative experience equivalent to that of department chair or higher.

Position available: June 1989.

Application deadline: 15 January 1989; applications should include a complete curriculum vitae and a list of at least five references. Nominations and applications should be sent to:

**Dr. James H. Pickering
Chairman, NSM Search Committee
Office of the Senior Vice President
University of Houston
Houston, TX 77204-2162
Telephone: 713-749-4425**

The UH is an Affirmative Action/Equal Employment Opportunity Employer.

DEAN OF VETERINARY MEDICINE

Iowa State University of Science and Technology is seeking candidates to fill the position of Dean of the College of Veterinary Medicine. The Dean of Veterinary Medicine, the chief academic officer of the college, is responsible for extension and service activities, the Veterinary Medical Research Institute, the Veterinary Diagnostic Laboratory, and the Veterinary Teaching Hospital. Candidates must possess the degree of Doctor of Veterinary Medicine or its equivalent. A graduate degree or specialty board certification in Veterinary Medicine or a related field is also desirable. Candidates should have administrative experience, and have demonstrated a strong commitment to excellence in instruction, research, and the service functions of the profession. Interested candidates or individuals wishing to suggest nominations should write to: **Dr. R. C. Seagrave, Chair of the Dean of Veterinary Medicine Search Committee, Office of the Provost, 110 Beardshear Hall, Iowa State University, Ames, IA 50011.** Review of applications, which should include a letter of application and curriculum vitae, will begin on 15 February 1989. The position becomes available on 1 July 1989.

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

DIRECTOR. The Thomas Burke Memorial Washington State Museum, University of Washington, seeks a scholar in a relevant academic discipline with extensive museum experience and demonstrated research, teaching, and development skills to serve as director. As the state's oldest and largest natural history institution, the Burke Museum emphasizes a Pacific Rim perspective; contains significant anthropological, geological, and zoological collections; and maintains active research, exhibition, and public service programs. The museum is an academic unit of the College of Arts and Sciences and the director reports to the Dean. Applicants should have a substantial background in museum management and the academic qualifications appropriate for appointment at the rank of professor in a University of Washington department. A letter of interest, curriculum vitae, and at least four references should be sent to: **Professor Stephen Porter, Chair of the Burke Museum Director Search Committee, Geological Sciences AJ-20, University of Washington, Seattle, WA 98195.** Nominations received prior to 1 December 1988 and applications submitted prior to 15 December 1988 will receive priority consideration. *The University of Washington is an Equal Opportunity/Affirmative Action Employer.*

ANNOUNCING POSTDOCTORAL & SENIOR
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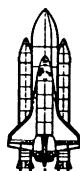
The National Research Council in cooperation with the U.S. Army Medical Research Institute of Chemical Defense will offer competitive research awards in 1989 for independent scientific research. Recipients will be free to work on problems of their own choice as guest investigators at USAMRICD. Duration of awards is one year renewable to a maximum of three. This program is open to U.S. citizens who are senior scientists as well as recent Ph.D. graduates. Stipends will begin at \$30,000 for recent graduates and will be appropriately higher for seniors. Relocation reimbursement and funds for professional travel on tenure are available, and a health insurance program is offered.

For further information and application materials please write to:

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

Application deadlines are January 15
and August 15, 1989.

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In Space Biology



The DIVISION OF BIOLOGY at KANSAS STATE UNIVERSITY is offering an exciting opportunity for you in BIOSERVE SPACE TECHNOLOGIES, A NASA CENTER FOR THE COMMERCIAL DEVELOPMENT OF SPACE. Graduate assistantships, with an annual stipend of \$10,200, are being awarded to qualified students for studies that combine interests in SPACE with research careers in BIOLOGY.

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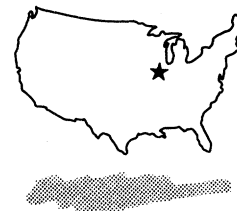
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MANHATTAN, KS 66506

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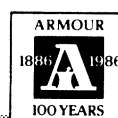
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Senior Development Scientist Individual will plan and carry out experiments in new product development, product improvement, and cost reductions. Responsibilities include evaluating new methodologies and bringing new products to market in conjunction with R&D and Operations. The ideal candidate will have a Ph.D. in Biochemistry with extensive experience in protein fractionation. Knowledge of coagulation, fibrinolysis, and protein chemistry is desirable, as well as post-doctoral research and industrial experience in handling human therapeutic fractions.

Manager, Parenteral Manufacturing Responsibilities include overall management of two parenteral manufacturing departments as well as the development of personnel. Individual will also maintain a high production quality level and recommend cost reduction measures. We require a Bachelor's or related degree in Biology or Chemistry and at least 5-10 years of parenteral manufacturing experience.

As a division of Rorer Industries, we offer an excellent salary, medical/dental/life insurance, 401(k), bonus plan and relocation program. In Kankakee you'll find terrific schools, a low cost of living, and great recreational facilities for boating, hunting, fishing, golfing, or whatever you enjoy. You'll also like the no-hassle commute to Chicago. So come and discover the possibilities. You'll love all Armour and Kankakee have to offer. Please send your resume to: **Armour Pharmaceutical Co., P.O. Box 511, Kankakee, IL 60901.** Attn: Human Resources, EOE/M/F/H/V. Armour hires only U.S. citizens and lawfully authorized alien workers.

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COMPANY**

POSITIONS OPEN

DIRECTOR OF THE GULF COAST RESEARCH LABORATORY

Applications and nominations are solicited for the position of Director of the Gulf Coast Research Laboratory (GCRL), located in Ocean Springs, Mississippi, on the Gulf Coast 65 miles from Mobile, Alabama and 90 miles from New Orleans. It is governed by the Board of Trustees of Institutions of Higher Learning of the State of Mississippi and administered through the University of Southern Mississippi, a comprehensive university with a growing academic and research program in marine science. GCRL is affiliated with nearly 50 academic institutions throughout the southern and central United States. Responsibilities of the position include leadership of approximately 140 faculty and staff involved in a variety of research, service, and educational activities in the marine and environmental sciences. The Director will be expected to exhibit leadership in program development, set operational and administrative policy for GCRL, maintain and strengthen relationships with local, state, and federal governmental agencies, and with private industry, and expand academic and general educational programs. The successful applicant should have a Ph.D. and a record of scientific accomplishment sufficient for appointment at the rank of professor, have demonstrated the ability to obtain extramural research funding, and have had administrative responsibilities which include program director, supervision of personnel, and preparation of budgets. Nominations and applications along with current résumés and the names and addresses of four references should be submitted to: **Chair, Director Search Committee, Gulf Coast Research Laboratory, P.O. Box 7000, Ocean Springs, MS 39564.** The Search Committee will begin reviewing applications on 15 February 1989, although applications will be considered until the position is filled. The position is expected to be filled by 1 July 1989. *Equal Opportunity Employer.*

DIRECTOR MARY BABB RANDOLPH CANCER CENTER WEST VIRGINIA UNIVERSITY

Applications and nominations for the position of Director of the Mary Babb Randolph Cancer Center at West Virginia University are invited. The Cancer Center, which is currently under construction, will have 43,000 net square feet of space immediately adjacent to the new Ruby Memorial Hospital. West Virginia University is committed to developing a center devoted to excellence in multidisciplinary cancer research, education, and patient care. Both state and federal funding is committed to meet the Cancer Center's goals.

The Director must be a widely recognized scientific leader in the mainstream of cancer research, care and education. The Director must have proven ability in scientific program planning and administration, and be able to interact effectively with faculty from all segments of the University, health care practitioners, state agencies, elected public officials, and the public. The Director will have responsibility for and authority over all cancer center personnel, facilities, core services, equipment and budgets, and reports directly to the Dean of School of Medicine on academic program matters. Please forward curriculum vitae and three references by 1 January 1989 to:

Stephen Wetmore, M.D.
Chairman, Department of Otolaryngology
Chairman, Cancer Center Search Committee
West Virginia University
Morgantown, WV 26506

West Virginia University is an Equal Opportunity Employer

ECOSYSTEMS MODELER. The Fish and Wildlife Service is seeking candidates for a **RESEARCH POSITION** to construct landscape-level models to predict coastal wetland habitat changes and to work with an existing successional model (FORFLO) that predicts changes in forested wetland communities. Proven ability, or clearly demonstrated potential, in ecosystems modeling is required. A Ph.D. and experience in wetlands ecology or a closely related discipline is preferable. Salary will be at the GS-11 level (\$28,852.). Applicants should contact: **Dr. Edward C. Pendleton, U.S. Fish and Wildlife Service, National Wetlands Research Center, 1010 Gause Boulevard, Slidell, LA 70458,** for further information on how to apply. Deadline: 15 December 1988. *The Fish and Wildlife Service is an Equal Opportunity Employer.*

POSITIONS OPEN

Senior tenure-track faculty appointment (full-time) in the Department of Psychiatry as **DIRECTOR** of the University of Michigan Substance Abuse Center and Director of the Residential Service of the University of Michigan Alcohol Program. Responsibilities include facilitation of University research efforts in substance abuse and supervisory responsibilities for 24 alcohol/drug rehabilitation beds. Candidates must have documented track record in research, teaching, clinical leadership and administration; Medical Degree with Board Certification in Psychiatry from an accredited training program; eligible for licensure in Michigan. Send a letter of interest and curriculum vitae to: **Thomas P. Beresford, M.D., Search Committee Chairman, University of Michigan Alcohol Research Center, 400 East Eisenhower Parkway, Suite A, Ann Arbor, MI 48104.** *The University of Michigan is an Equal Opportunity/Affirmative Action Employer.*

ENDOCRINE ASSAY LABORATORY MANAGER: Position available immediately for experienced endocrine technician (B.S./M.S.) with management experience. Located in rural Piedmont of Blue Ridge Mountains. Duties include personnel supervision, budgetary management, development/application of technology and quality control. Experience with immunoassay, radioiodination, steroid technology, ligand binding assays, and bioassays desirable. Contact: **Dr. Don Koritnik, Department of Comparative Medicine, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, NC 27103.** *Affirmative Action/Equal Opportunity Employer.*

ENTOMOLOGIST

A tenure-track position is available at the assistant professor level to begin August 1989. Candidates should have a Ph.D. with training in entomology or a cognate field with a strong entomological background, postdoctoral experience and/or other evidence of scientific accomplishment. Salary competitive. The appointee will be expected to conduct an innovative research program in some area of insect biology and to participate in the departmental teaching program and the supervision of students in entomology and related graduate programs. For full consideration, applications should be received by 15 January 1989. Send a detailed description of formal training, statement of short and long term research interests (not to exceed five pages), reprints, history of independent funding, if applicable, and names of three references to: **Dr. Gilbert P. Waldbauer, Chair, Search Committee, Department of Entomology, University of Illinois, 320 Morrill Hall, 505 South Goodwin Avenue, Urbana, IL 61801.** Telephone: 217-333-1265. *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

EXPERIMENTAL IMMUNOPATHOLOGIST. The Department of Pathobiology, School of Veterinary Medicine, Purdue University invites applications for a tenure-track faculty position in experimental immunopathology. The successful candidate will be expected to develop an independent, competitively funded, creative research program in collaboration with other scientists at Purdue University, participate in veterinary and graduate courses in the department's graduate and residency training programs, direct graduate students, and serve as a consultant to the Clinical Pathology laboratory in the Veterinary Teaching Hospital.

The ideal candidate will possess a D.V.M. or equivalent degree and graduate training in immunopathology and immunology. Board certification in pathology and demonstrated interest in either immunopathology, comparative neuropathology, or cancer pathogenesis are desirable, but not essential.

The position will be filled at assistant or associate professor level depending on the candidate's qualifications. Purdue University provides an exciting research environment with an international reputation in engineering, biology, and pharmaceutical sciences, molecular virology, paralysis research, and comparative oncology.

Please submit curriculum vitae, a statement of career goals, and the names of three references to: **Dr. Larry Glickman, Head, Department of Pathobiology, School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907.** Final review of applications will begin 1 January 1989. *Purdue University is an Affirmative Action/Equal Opportunity Employer/Educator. Women and minority candidates are encouraged to apply.*

POSITIONS OPEN

Bowdoin College seeks **DIRECTOR OF WOMEN'S STUDIES PROGRAM** for teaching, research and program administration/development. Tenure-track appointment in program and academic department. Rank is dependent on teaching experience and scholarly achievement. Departmental specialization open. Three years of university or college teaching, administrative experience, participation in women's studies programs, and scholarly publications in women's studies preferred. The position combines teaching three women's studies courses (two interdisciplinary core courses, and one disciplinary course per year) and women's studies curricular development (the planning and implementation of a coordinate major). Send letter of application, curriculum vitae, and names of references by 15 January 1989 to: **Dean Helen Cafferty, Chair, Women's Studies Committee, Bowdoin College, Brunswick, ME 04011.** *Bowdoin College is committed to Equal Opportunity through Affirmative Action.*

EPIDEMIOLOGIST. The Department of Pathobiology, School of Veterinary Medicine, Purdue University invites applications for a tenure-track faculty position in epidemiology from persons with expertise in analytic epidemiology and an interest in using epidemiologic methods to broaden our understanding of disease etiology, pathogenesis, and environmental health. The successful candidate will be expected to develop an independent, competitively funded, creative research program in collaboration with other scientists at Purdue University, participate in courses for veterinary and graduate students, and help to initiate a campus-wide undergraduate course in epidemiology and contemporary health issues.

The ideal candidate will possess a D.V.M./M.D. degree and graduate training in analytic epidemiology and computer sciences or a Ph.D. degree in analytic epidemiology and training in the biomedical sciences. Salary and professional rank are negotiable depending on the applicant's qualifications.

The successful candidate will join four other epidemiologists in the Department with broad interests in comparative epidemiology and epidemiologic methods.

Please submit curriculum vitae, a statement of career goals, and the names of three references to: **Dr. Larry Glickman, Head, Department of Pathobiology, School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907.** Final review of applications will begin 1 January 1989. *Purdue University is an Affirmative Action/Equal Opportunity Employer/Educator. Women and minority candidates are encouraged to apply.*

EUKARYOTIC MOLECULAR GENETICIST. The Department of Biological Sciences at Illinois State University seeks applicants for a tenure-track appointment at the assistant or associate professor level. Applicants using molecular techniques to study gene regulation and/or development are preferred, and should have demonstrated research potential through postdoctoral experience and recent publications. The successful candidate will be expected to maintain an independent, extramurally funded research program, and to participate in the training of M.S. and Ph.D. candidates. Teaching responsibilities will include a graduate course in the candidate's specialty and involvement in the undergraduate program. Applicants should send their curriculum vitae, a brief description of future research plans, and the names, addresses, and telephone numbers of three references by 6 January 1989 to: **Dr. David Borst, Department of Biological Sciences, Illinois State University, Normal, IL 61761.** *Illinois State University is an Equal Opportunity/Affirmative Action Employer.*

EVOLUTIONARY BIOLOGIST

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



THE UNIVERSITY OF MANITOBA
invites applications and nominations for
the position of

DEAN OF THE FACULTY OF SCIENCE

The Faculty of Science at The University of Manitoba has a complement of approximately 220 faculty and 90 support staff. Its twelve departments and units span the Biological and Physical Sciences and Mathematics; they offer a full range of undergraduate Science programs for approximately 2,700 students enrolled in the Faculty, courses for a large number of students from other faculties and schools, and M.Sc. and Ph.D. programs for about 260 graduate students.

Candidates should have an active commitment to research in a major field of Science or Mathematics, a commitment to advancing higher education in Science, and have strong leadership and administrative abilities. Relevant administrative experience and knowledge of the Canadian educational system would be assets.

The appointment is expected to commence July 1, 1989, and normally will be for a term of five to seven years. Reappointment is possible under the University's policies.

Both women and men are encouraged to apply. In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents.

Enquiries, applications and nominations should be forwarded to:

DR. T. P. HOGAN, ASSOCIATE VICE-PRESIDENT (ACADEMIC) AND CHAIRPERSON, ADVISORY COMMITTEE FOR THE DEAN OF SCIENCE, 208 ADMINISTRATION BUILDING, WINNIPEG, MANITOBA, CANADA R3T 2N2.

The first review of candidates will take place after December 16, 1988.

HEALTH SCIENCE ADMINISTRATOR (Biological Sciences) GM-13/14

The National Institute of Allergy and Infectious Diseases (NIAID), National Institutes of Health (NIH), invites applications for scientists to serve as Executive Secretary of a research review subcommittee in the Program and Project Review Branch, NIAID. Applicants must have a Ph. D. or equivalent with research training and experience in conducting independent research in microbiology, virology, immunology, epidemiology or related fields. Experience in research program administration is desirable, as is familiarity with NIH extramural programs. A full position description is available upon request. This position is available immediately. Applicants should submit an Application for Federal Employment (SF-171) and curriculum vitae to:

NIAID Personnel Office
Room 7A-27, Building 31
9000 Rockville Pike
Bethesda, MD 20892

For additional information, call Ms. Diane Dorsch or Elizabeth Holmes on (301) 496-4634. Applications must be received or postmarked by January 5, 1989. Applicants must be U.S. citizens.



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POSTDOCTORAL POSITIONS

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s one of the most dynamic and progressive pharmaceutical and medical research organizations in the world. Scientists who join Hoffmann-La Roche find professional challenges and rewards that can not be equalled. We currently have several post-doctoral openings:

ASTHMA/ALLERGY RESEARCH

2 positions

One position will involve the study of signal transduction and the regulation of mediator release from mast cells/basophils. To qualify, you will need a PhD in Biochemistry/Pharmacology; experience with SDS-PAGE electrophoresis, intracellular Ca^{+2} measurement techniques, protein phosphorylation and phospholipid metabolism are desirable. **Please refer to Position AG on resume.**

The other position will involve the investigation of the biochemistry of eosinophils, as well as the role of eosinophils and eosinophil products in lung inflammation and airway hyperreactivity. A PhD in Biochemistry, Pharmacology or Physiology is required; experience with inflammatory mediators is desirable. **Please refer to Position WS on resume.**

CARDIOVASCULAR RESEARCH

1 position

This position will involve the study of signal transduction mechanisms and covalent protein modification in heart muscle-cell pathobiology. A PhD in Myocardial Biochemistry, Cell Biology or Physiology is required; experience with myocardial fractionation, protein electrophoresis, ex vivo working hearts, enzyme assay and protein/enzyme purification is desirable. **Please refer to Position DJ on resume.**

CHEMOTHERAPY/MICROBIAL RESEARCH

1 position

You will research the rational design of new antibiotics through biochemical studies of antibiotic targets and mechanisms of resistance. A PhD in Biochemistry, or a related field with training in Membrane Biochemistry is required; knowledge of mechanisms of antibiotic action is desirable. **Please refer to Position NG on resume.**

INFLAMMATION RESEARCH

2 positions

The first position involves investigating the role of lipid mediators in animal models of intestinal inflammation, by developing techniques to quantify these mediators in intestinal tissues and fluids; and investigating the influence of anti-inflammatory drugs on the mediators. A PhD in Biochemistry, Chemistry or Pharmacology is required; experience with RIA's, HPLC, TLC and lipid metabolism are desired. **Please refer to Position PW on resume.**

The second position will involve the study of phospholipases at sites of inflammation, and the regulation of arachidonic acid metabolism in macrophages. A PhD in Biochemistry, Pharmacology or Immunology is required; experience with RIA's, HPLC, TLC and lipid metabolism would be helpful. **Please refer to Position DM on resume.**

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POSITIONS OPEN

UNIVERSITY OF MARYLAND COLLEGE PARK

The Department of Zoology invites applications for two tenure-track positions. Rank is open. The successful candidates will be expected to attract major funding for her/his research, develop courses and direct graduate student research, and participate in the undergraduate teaching program of the Department. Please forward curriculum vitae, a brief description of research and teaching interests, sample publications and the names and telephone numbers of at least three people who might be contacted as references. Closing date: 27 January 1989 or until suitable candidates are found.

EVOLUTIONARY BIOLOGIST

Applicants with strong theoretical and experimental research programs in the genetic aspects of evolution, including population genetics, quantitative genetics, and/or molecular evolutionary biology, will be given preference. Address: **Evolutionary Biology Search Committee, Department of Zoology, University of Maryland, College Park, MD 20742.**

NEUROBIOLOGIST

Preference will be given to individuals with interests in neuronal function, integration, or communication at the cellular or molecular level. Address: **Neurobiology Search Committee, Department of Zoology, University of Maryland, College Park, MD 20742.**

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

FACULTY OPENING IN PHYSICS (NUCLEAR PHYSICS) UNIVERSITY OF CALIFORNIA AT BERKELEY

The Department of Physics at the University of California at Berkeley and the Lawrence Berkeley Laboratory (LBL), pending budgetary approval, expect to make a joint appointment in nuclear physics at the assistant professor, tenured associate professor, or full professor level, effective 1 July 1989; candidates in either theoretical or experimental nuclear physics are encouraged to apply. The appointee will teach in the Physics Department and have research facilities in the Nuclear Science Division at LBL. Summer research salary will be provided by LBL.

Applicants should send curriculum vitae, bibliography, statement of research interests, and list of references to **Professor P. Buford Price, Chairman, Department of Physics, University of California, Berkeley, CA 94720**, before 15 February 1989. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN BONE AND MINERAL RESEARCH MAYO CLINIC AND FOUNDATION

Endocrine Research Unit has a career opportunity for a highly qualified scientist (Ph.D./M.D., or M.D./Ph.D.) to develop independent research programs in the areas of bone and mineral metabolism. Candidates should have advanced training in basic sciences related to their research, in such areas as membrane, receptor, or hormone biochemistry; immunology; molecular or cellular biology; or mechanisms of hormone action.

The Endocrine Research Unit has seven NIH-funded staff investigators (five in diabetes/metabolism, two in bone/mineral research), training grant support, ample modern research space and equipment, and active collaborations with members of other departments. Start-up funds are available for establishment of new laboratory programs. Mayo Medical Center encompasses Mayo Clinic, Mayo Medical School, and the Mayo Graduate School of Medicine. These are career research opportunities with a strong, active, multidisciplinary group.

Qualified candidates should submit detailed curriculum vitae, bibliographies and names of three references to: **B. L. Riggs, M.D., Mayo Clinic, 5-164 West Joseph Building, Rochester, MN 55905. Telephone: 507-285-4300.** *An Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

THE UNIVERSITY OF CALIFORNIA AT SAN FRANCISCO FACULTY POSITION IN DEVELOPMENTAL BIOLOGY

Candidates are sought for a tenure-track faculty position at the assistant professor level, but appointments at a more senior level will be considered. The successful applicant will be expected to conduct a research program that combines classical, genetic and/or molecular approaches to problems in developmental biology. In addition, participation in the teaching activities of the Graduate Program in Developmental Biology and the Anatomy Department will be expected. Applicants should send curriculum vitae, bibliography with copies of publications and a summary of research plans, and should arrange to have three letters of recommendation sent to: **Chairperson, Developmental Biology Search Committee, Department of Anatomy, University of California, CA 94143-0452.** Applications should be received by 31 January 1989. *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION IN PLANT DEVELOPMENTAL BIOLOGY THE UNIVERSITY OF CALIFORNIA AT BERKELEY

The Department of Plant Biology invites applications for a faculty position at the associate or full professor level for the 1989 to 1990 academic year, pending final budgetary approval. The research interests of the candidate should be in the area of plant development, and a broad base in developmental biology is essential. Research interests should include the application of the techniques of cell biology, genetics or molecular biology to developmental problems in higher plants. Teaching responsibilities will include undergraduate and graduate level courses in plant developmental biology. Applicants should send curriculum vitae, a statement of teaching and research objectives, and names of three references to: **Dr. Richard Malkin, Molecular Plant Biology, 309 Hilgard Hall, University of California, Berkeley, CA 94720.** The closing date for applications is 31 March 1989. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Applications being accepted for tenure-track **FACULTY POSITIONS** in aquaculture, geographic information systems, and wildlife ecology. Closing date is 31 December 1988. For information write or call: **Head, Department of Forestry and Natural Resources, Purdue University, West Lafayette, IN 47907. Telephone: 317-494-3590.** *Purdue is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS SLOAN-KETTERING INSTITUTE CELL BIOLOGY AND GENETICS PROGRAM

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

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

POSITIONS OPEN

Emory University, **FACULTY POSITION IN BIO-CHEMISTRY.** Applications are invited for a tenure-track position of assistant professor in the Department of Biochemistry. The successful applicant will be chosen on the basis of research excellence and exceptional promise for future productivity rather than on the area of research. This individual will be expected to establish an outstanding, externally funded, independent research program and to participate in departmental teaching responsibilities. The applicant must have a doctoral degree with additional postdoctoral experience. Salary is competitive and start-up funds are available. Administratively, the Department of Biochemistry is in the School of Medicine with research programs and graduate training structured within the Division of Biological and Biomedical Sciences of the Graduate School of Arts and Sciences. Divisional programs include Biochemistry and Molecular Biology, Genetics, Neuroscience, Cell Biology and Immunology. This provides unique university-wide opportunities for interdisciplinary interactions and collaboration. The university campus is located in a residential area about 5 miles from downtown Atlanta and is adjacent to the Centers for Disease Control and the national headquarters of the American Cancer Society. In the coming year, the Department will occupy laboratories and offices in the new Rollins Research Center. Applicants should send a detailed curriculum vitae, relevant reprints, a statement of research plans, and the names of three references to: **Dr. Jack Kinkade, Chairman, Search Committee, Department of Biochemistry, Emory University School of Medicine, Atlanta, GA 30322.** Although applicants will be accepted until the time a successful applicant has been identified, a timely submission of credentials is encouraged. *Emory University is an Equal Opportunity/Affirmative Action Educator and Employer and specifically invites and encourages applications from women and minorities.*

FACULTY POSITION IN MOLECULAR GENETICS OPPORTUNITY FOR COLLABORATION IN GENE THERAPY RESEARCH

The University of Pennsylvania School of Veterinary Medicine invites applications for a full-time tenure-track appointment as assistant/associate professor of molecular genetics. Interested applicants should have significant research experience in an area of molecular genetics relevant to the study of basic mechanisms in genetic diseases. The individual chosen will be expected to develop his/her own independent program of research and to participate in an expanding program of graduate and postdoctoral training in genetics within the school and university. A major activity in the School is a well-supported program of gene therapy research, and preference will be given to applicants who have an interest and experience in the identification, mapping, cloning, and characterization of genes involved in disease. Faculty members already working collaboratively in an active Gene Therapy Research Group include scientists specializing in the genetics, pathology, and biochemistry of genetic diseases, cell and tissue transplantation, and the use of retroviral vectors for correction of genetic diseases by gene transfer. Strong ties exist with the Department of Human Genetics and other departments within the University involved in graduate education and research in molecular biology and genetics.

Candidates should submit curriculum vitae and the names and addresses of three references to: **Dr. Donald F. Patterson, Chair, Search Committee, Section of Medical Genetics, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, PA 19104-6048.**

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

FACULTY POSITION MOLECULAR PHARMACOLOGY

The Department of Pharmacology, Medical College of Ohio, seeks an outstanding individual with research interests in a modern area of membrane biology. The appointment is expected to be made at the assistant professor level, though exceptional senior candidates for a tenured position will also be considered. Excellent facilities, competitive salary, and generous start-up funds are available. Please contact: **Dr. Amir Askari, Department of Pharmacology, Medical College of Ohio, Toledo, OH 43699.** *Medical College of Ohio is an Equal Opportunity Employer.*

Post-Doctoral Fellowship In Microbial Ecology

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

A Post-doctoral fellowship position at the Department of Energy's Savannah River Laboratory is available immediately in Microbial Ecology. The 2-year fellowship is for a researcher interested in serving on a research team effort on the Microbiology of the Deep Subsurface Program at Savannah River Laboratory. Applicants must have a Ph.D. in Microbial Ecology, Soil Microbiology, or Geomicrobiology. Desirable skills would include ecological immunofluorescent investigations, nucleic acid probes, xenobiotic degradation, anaerobic techniques, and geological familiarity. The position offers applicants an opportunity for innovative research in a well-equipped laboratory on basic and applied microbial ecology projects.

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, applicants should submit curriculum vitae, reprints and the names, addresses, and telephone numbers of three references to Dr. Carl B. Fliermans, Savannah River Laboratory, Environmental Sciences Division, Aiken, SC 29808.



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

Molecular Genetics Research Scientists and Assistant Scientists



It is clear that in the coming decades molecular biology research will reveal new targets and enable new approaches to be used for the discovery of drugs. Furthermore, the pharmaceutical industry will need innovative molecular biology research to provide the necessary tools for conventional drug discovery programs. To ensure that this potential of molecular biology is fully realized, Pfizer has recently committed to expand its Molecular Genetics Research Department. Part of this expansion will take place in the Molecular Pharmacology group whose role is to:

- target mRNA production as a site for drug intervention
- clone and express genes essential for discovery pharmacology programs

Pfizer is particularly interested in attracting people who are interested in applying their skills in the following areas to the challenging endeavor of drug discovery:

- cDNA cloning
- expression in mammalian cells
- regulation of eukaryotic transcription
- excitatory molecule cloning/characterization

These positions offer an exciting opportunity for people with strong molecular biology backgrounds to interact closely with discovery pharmacology groups and to capitalize on Pfizer's clear commitment to develop new drug discovery approaches based upon molecular biology techniques and insights. In addition to the above qualities, you must have a minimum of two years postdoctoral experience in molecular biology and a proven track record including published research.

Opportunities also exist for Assistant Scientists in the Molecular Pharmacology group. These candidates should possess a BS or MS in Microbiology and laboratory experience in one or more of the areas described above.

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

POSITIONS OPEN

MASSACHUSETTS INSTITUTE OF TECHNOLOGY

The Department of Earth, Atmospheric and Planetary Sciences at MIT invites applications for a **FACULTY POSITION IN SPACE GEODESY**. We seek an individual interested in applying space-geodetic techniques to the measurement and interpretation of crustal strain and related aspects of geodynamics. An ability to conduct original research leading to new techniques and applications of space geodesy is essential and should be proven by a record of technical and scientific publications. Interest and ability to teach at graduate and undergraduate levels are also essential. Applicants should have sufficiently broad research interests to interact productively with geologists and geophysicists working on problems of crustal dynamics. Although the department wishes to make an appointment at the level of assistant professor, it will consider applications from more senior scientists. MIT is a non-smoking environment. Interested individuals should send curriculum vitae and names of three references to: **Thomas H. Jordan, Department Head, Department of Earth, Atmospheric and Planetary Sciences, Massachusetts Institute of Technology, Building 54-918, Cambridge, MA 02139. An Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION IN STRUCTURAL BIOCHEMISTRY ARIZONA STATE UNIVERSITY

The Department of Chemistry seeks to fill a tenure-track faculty position in structural biochemistry, pending final budgetary approval. Rank is the assistant professor level. Applicants using x-ray crystallographic methods for structural analysis are especially sought, although other experimental approaches will also be considered. This position is associated with the newly-established ASU Center for the Study of Early Events in Photosynthesis and includes access to center resources and one or more years of release time from teaching and committees. The successful candidate is expected to develop an internationally respected independent research program that includes work related to the mission of the Center, but may also involve other areas of biochemistry.

Applicants should submit their curriculum vitae and a statement of research goals, and have three letters of reference sent to: **Robert Blankenship, Director, ASU Center for the Study of Early Events in Photosynthesis, Department of Chemistry, Arizona State University, Tempe, AZ 85287-1604.** Review of applications will begin 31 January 1989, and continue until a suitable candidate has been selected. *Arizona State University is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL CENTER

The Department of Biochemistry is seeking two talented individuals for tenure-track positions of assistant or associate professor available in fall 1989. Applicants must have postgraduate research experience in molecular biology or biochemistry and be capable of developing an independent research program in one of the following areas:

Developmental Biology, especially the application of combined genetic and molecular biological techniques to developmental problems.

Molecular Biology, especially the maintenance and flow of genetic information in yeast and other eukaryotes.

Protein Structure and Function, especially protein engineering, protein folding and enzyme mechanisms.

Metabolism and Lipids, especially lipid metabolites as second messengers in cellular regulation.

Applicants should be interested in teaching medical and graduate students in selected areas of biochemistry and molecular biology. Applicants should submit curriculum vitae, brief summaries of past research experience, and a proposed research program and three letters of reference to:

**Faculty Search Committee
Department of Biochemistry
University of Texas Southwestern Medical Center
Dallas TX 75235-9038
*An Equal Opportunity Employer***

POSITIONS OPEN

SENIOR AND JUNIOR FACULTY DEPARTMENT OF DEVELOPMENTAL BIOLOGY STANFORD UNIVERSITY SCHOOL OF MEDICINE

Stanford University is seeking applicants for senior and junior positions within the new Department of Developmental Biology, to be activated beginning January 1989 and thereafter under the chairmanship of Professor **Lucy Shapiro**. This Department is one of four interrelated academic units to be located within the Beckman Center for Molecular and Genetic Medicine. The research interests of current faculty include: the developmental decisions taken in the generation of asymmetry in the predivisional cell of *Caulobacter*; the nature of the genetic program regulating fruiting body development in *Myxococcus*; the hierarchical molecular genetic mechanisms operating in early development of *Drosophila*; and the role of nuclear genes regulating differential mitochondrial biogenesis during development and in end-stage cells. It is expected that additional research programs will also draw upon a wide range of techniques and talents common to molecular genetics, biochemistry and cell biology in the pursuit of a basic understanding of the developmental process in both invertebrate and vertebrate systems. The responsibilities of this department will include the teaching of developmental biology to graduate and medical students and of advanced courses for graduate and medical students that will reflect the interests of the faculty.

Applications should include curriculum vitae, a brief statement of research objectives, and names, addresses, and telephone numbers of three references. Please send applications to: **The Developmental Biology Search Committee, c/o Assistant Dean Marian Knox, Stanford University School of Medicine, Room M-121, Stanford University, Stanford, CA 94305-5302.**

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

FACULTY POSITIONS—UMBC Department of Biological Sciences. The Department of Biological Sciences, University of Maryland Baltimore County (UMBC), invites applications for two tenure-track positions. Applicants should have strong training and research experience in one of the following areas: cellular immunology, virology, or molecular biology. The successful applicants will be expected to establish externally funded research programs, supervise students in our Ph.D. and M.S. programs (including Applied Molecular Biology) and participate in undergraduate programs. Currently, over 75 graduate students and 400 undergraduates are enrolled in our programs. The primary teaching responsibility will be either immunology, including monoclonal antibody technology, or recombinant DNA technology/genetic engineering.

The Department of Biological Sciences is a modern, well-equipped research oriented department that presently consists of 21 tenure-track faculty and six instructors. Six additional tenure-track positions will be filled during the next 3 years. The research and support facilities of the department include: an outstanding electron microscopic facility, flow cytometry instrumentation, a DNA synthesis facility, a hybridoma center, a NIH-approved vivarium, a complete greenhouse, and machine, electronics, and photographic/illustrative shops.

Submit curriculum vitae, a statement of future research plans, and the names of three references to: **Dr. Ronald Yasbin, Chair, Department of Biological Sciences, University of Maryland Baltimore County, Baltimore, MD 21228. UMBC is an Affirmative Action/Equal Opportunity Employer. Qualified minorities, women, and disabled persons are encouraged to apply.**

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

POSITIONS OPEN

FACULTY POSITION—MEDICAL GENETICS

The Division of Medical Genetics, Department of Pediatrics at Harbor/UCLA has an opportunity available at the assistant or associate professor level for a physician-scientist with strong research interests in biochemical or molecular genetics. Candidates must be board eligible or board certified in genetics and must have completed fellowship training. Salary and rank will be commensurate with background.

Interested parties may contact:

**Adam J. Jonas, M.D.
Division of Medical Genetics E-4
Harbor/UCLA Medical Center
1124 West Carson Street
Torrance, CA 90502
Telephone: 213-533-3673**

FACULTY POSITION—NEUROBIOLOGY AND BEHAVIOR. The Department of Psychiatry, Albert Einstein College of Medicine, seeks to recruit a new research faculty member at the assistant professor level. Applicants must be engaged in preclinical research on mechanisms of neural regulation of behavior. Preference will be given to candidates who have interest and experience in examining transmission in and receptor function of monoamine and/or opiate-regulated neural systems. Applicants must have a Ph.D. or M.D. plus at least 2 years of relevant postdoctoral experience and must show clear potential for developing a productive, independent research program to be supported from extramural funding sources. Send curriculum vitae, a brief statement of research plans, and a list of three references to: **Dr. A. M. Etgen, Department of Psychiatry E-113, Albert Einstein College of Medicine, Bronx, NY 10461. An Equal Opportunity Employer.**

LAKE SUPERIOR ECOSYSTEM SCIENCE

Applications are invited for two new tenurable positions at the **ASSOCIATE OR FULL PROFESSOR** level: one in the Department of Biological Sciences and one in the School of Forestry and Wood Products. The positions are to provide critical expertise to a group of 16 research-oriented environmental scientists in development of an interdisciplinary ecosystem study of the Lake Superior Basin. In Biological Sciences, we seek an aquatic ecosystem scientist. In Forestry we seek a terrestrial ecosystem or atmospheric/terrestrial scientist, preferably with a strong physical science background and expertise in an area such as biometeorology, plant physical or physiological ecology, or atmospheric deposition effects. For both positions, research program development and supervision of graduate students are first priorities. Preference will be given to applicants with experience in management and funding of ecosystem scale research. Submit curriculum vitae, a statement of research interests and the names, addresses, and telephone numbers of four referees to: **Dr. Stephen H. Bowen, Head, Department of Biological Sciences, Michigan Technological University, Houghton, MI 49931. Telephone: 906-487-2025.** Review of applications will begin in late December 1988. *Michigan Technological University is an Equal Opportunity Educational Institution/Equal Opportunity Employer.*

Yale University/METAMORPHIC PETROLOGY. The Department of Geology and Geophysics invites applications for a **JUNIOR FACULTY** appointment in the topic area of metamorphic petrology. We are particularly interested in field-based studies of regional-scale metamorphism. Examples of research areas include the tectonic evolution of metamorphic belts, fluid and heat flow during metamorphism, physico-chemical and kinetic constraints on the history and evolution of metamorphic rocks, and the chronology of metamorphic events. The appointment will complement existing programs in stable isotope geochemistry, diagenesis, reaction kinetics, genesis of mineral deposits, fluid-rock interactions, tectonics of convergent margins, and processes of granitic magmatism.

Applicants should submit a letter of application, curriculum vitae, publications, and the names and addresses of at least three references to: **Dr. Barry Saltzman, Chairman, Department of Geology and Geophysics, Yale University, P.O. Box 6666, New Haven, CT 06520.** Completed applications must be received by 1 March 1989.

Yale University is an Equal Opportunity/Affirmative Action Employer.



Your Career and our Future are Complementary: BioTechnica Diagnostics

BioTechnica Diagnostics, Inc. is a rapidly growing DNA probe diagnostics company developing technology for dental, healthcare, environmental, agricultural, and industrial applications. As a result of an expanding commercial program and exciting new technologies, BTD has several positions of challenge and responsibility open immediately, and will

continue over the next few years to have opportunities for highly motivated and skilled individuals with a desire to move forward with us. Immediate openings exist for the following positions:

TECHNICAL OPERATIONS

Supervisor

Requires a Ph.D. with experience in DNA probe analyses. The position is responsible for technical support of our DNA probe reference lab as well as overseeing probe manufacture and the implementation of automated approaches to our present assay. This position reports directly to the Vice President of Operations. (Ref. #T01)

Assistant Scientist

Requires a B.S./M.S. with experience in DNA probe analyses. The position is responsible for reagent manufacture and troubleshooting our reference lab operations. This position reports to the Supervisor of Technical Operations. (Ref. #T02)

RESEARCH AND DEVELOPMENT

Research Scientists:

Biochemistry

Requires a Ph.D. with experience in molecular biology and the enzymes of nucleic acid metabolism, to work on our proprietary amplification technology. Characterization and cloning of novel polymerases, nucleases, and other enzymes will be an important aspect of this position, as well as adaptation to diagnostics of the reactions catalyzed by these enzymes. (Ref. #RD1)

Nucleic Acid Physical Chemistry

Requires a Ph.D. with experience in the preparation and purification of nucleic acids from biological materials. Identification and rapid, effective elimination of contaminants in prepared nucleic acids which interfere with enzymatic reactions is a major responsibility in this position. (Ref. #RD2)

Nucleic Acid Chemistry

Requires a Ph.D. with experience in derivatization and labelling of biological species, especially nucleic acids. In addition to labelling, familiarity with spectroscopy and methods of detection is essential. (Ref. #RD3)

Assistant Scientists:

Molecular Biology/Enzymes

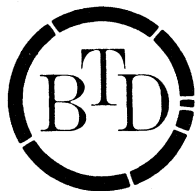
Requires a B.S. and 1-2 years' experience in molecular biology, enzyme reactions and cloning. Development of biochemical aspects of BTD's novel amplification technology constitutes the major responsibility of this position. (Ref. #RD4)

Molecular Biology/Nucleic Acids

Requires a B.S. and 1-2 years' experience in molecular biology, nucleic acid hybridization, and cloning. This position will have a role in the development of specific probes to be included in our product line. (Ref. #RD5)

Biophysical Chemistry

Requires a B.S. and 1-2 years' experience in the area of physical chemistry of biological systems. Experience with mathematical analysis and the use of data manipulation software is also necessary. (Ref. #RD6)



In addition to excellent salaries and benefits, we provide a proven career path and a dynamic, supportive work environment. To apply, please send your resume and cover letter to: **Personnel Department, BioTechnica Diagnostics, Inc., 61 Moulton St., Cambridge, MA 02138.** We are an equal opportunity employer.

BIO TECHNICA DIAGNOSTICS

POSITIONS OPEN

FACULTY POSITIONS MICROBIAL AND VERTEBRATE PHYSIOLOGY

The Department of Biology, California State University, Fresno is soliciting applications for two tenure-track positions at the assistant/associate professor level for the 1989 to 1990 academic year. One position will be filled with a microbial physiologist with demonstrated ability for creative research and teaching microbiology at the graduate and undergraduate levels. While the specific emphasis is open, the department is particularly interested in applicants whose research focuses on environmental microbiology, fermentation technology, or the molecular aspects of regulation. The other position will be filled with a vertebrate physiologist with outstanding potential for creative research and teaching in vertebrate physiology at the graduate and undergraduate levels. The department is particularly interested in applicants with research interests in endocrinology. Successful candidates will be required to develop externally-funded research programs which will be supported internally during the initial stages by resource allocations and reduced teaching responsibilities. The Ph.D. is required, and recent recipients of the degree with postdoctoral research experience are strongly preferred. Applicants should submit a letter of interest, a current curriculum vitae, a summary of research plans, and the names and addresses of three references by 27 January 1989 to: **Dr. William K. Collin, Chair, Department of Biology, California State University, Fresno, Fresno, CA 93740-0073.** *The California State University is an Equal Opportunity/Affirmative Action Employer.*

FLOW CYTOMETRIST/ IMMUNOHISTOCHEMIST Northeast Maryland/ Wilmington-Newark, Delaware Area

Terumo Medical Corporation, a growing medical device manufacturer, is seeking to expand its Hematology Research and Development staff. A research laboratory position is available immediately for a M.S. or Ph.D. with appropriate experience in the operation of flow cytometer/cell sorter systems. Background in immunophenotyping and human lymphocyte and platelet antigen labeling/sorting required. Past experience with the Coulter Epics a plus, but not mandatory. Must have ability to develop methods, operational protocols, and to initiate and maintain computerized data handling systems.

Opportunity for professional growth in an environment of expanding product-oriented research. We offer a highly competitive salary and benefits package. Send résumé and salary history to: **Jeffrey Miripol, Terumo Medical Corporation, P.O. Box 605, Elkton, MD 21921.** *An Equal Opportunity/Affirmative Action Employer.*

HEAD OF METEOROLOGY DEPARTMENT TEXAS A&M UNIVERSITY

Texas A&M University in College Station, Texas seeks a head of the Department of Meteorology, which together with Geography, Geology, Geophysics, and Oceanography comprise the College of Geosciences. The new department head will be charged with developing a world class research program and strong academic programs.

The department has 12 faculty members, and 175 students (100 undergraduate, and 75 graduate students). Present academic and research programs cover a broad range of interests and facilities. Special activities include the Office of State Climatologist and the Climate System Research Program. Meteorology is to be strengthened by many near-term opportunities for hiring new faculty and by developing closer ties with ocean science components within Geosciences.

Qualifications: A doctoral degree in atmospheric science or a closely related field. Must have extensive knowledge of atmospheric science, a strong record of scholarly research, ability to recruit high-quality faculty, and experience in developing funded research programs.

Rank and salary are commensurate with qualifications and experience. The available date is 1 September 1989. Send résumé and three references to:

**Professor Worth D. Nowlin, Jr.
College of Geosciences
Texas A&M University
College Station, TX 77843
Telephone: 409-845-1443**

An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

GENETICIST

Tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Successful candidate will be expected to develop a vigorous research program and to play a major role in expanding educational opportunities in genetics at all academic levels. Substantial institutional set-up funds will be available. While the specific field of expertise is open, preference will be given to applicants whose interests complement those of a faculty with particular strength in environmental biology and an increasing emphasis in genetics and molecular disciplines. Review of applications will begin on 2 January 1989 and will continue until the position is filled. Please send letter of application (including statement of research and teaching interests), curriculum vitae, representative reprints, and the names (with addresses) of three professional references to: **Dr. Peter L. Starkweather, Chair, Department of Biological Sciences, University of Nevada, Las Vegas, NV 89154.**

UNLV is an Equal Opportunity/Affirmative Action Employer.

INORGANIC CHEMISTRY AND ANALYTICAL BIOCHEMISTRY—The Chemistry Department of Williams College invites applications for two tenure-track positions at the **ASSISTANT PROFESSOR** level for fall 1989. Candidates should have a Ph.D. (postdoctoral experience is preferred) and a strong commitment to teaching at the undergraduate level and developing a productive research program. The teaching assignments for the inorganic chemist will include inorganic chemistry and physical chemistry and for the biochemist will include biochemistry and instrumental methods of analysis. Additional assignments for both will be from other courses in the curriculum consistent with the individual's background and interests and the needs of the Department. A semester teaching load normally includes complete responsibility for one course including the laboratory, and supervision of student research projects. Authorization for one position has been granted and authorization for the second is pending. Appointment at a senior level is possible under special circumstances. Williams College is a highly selective, coeducational liberal arts institution of approximately 260 faculty and 1950 undergraduates, located in northwestern Massachusetts. The Chemistry Department, with nine faculty members and 25 to 35 majors each year, is accredited by the ACS and has excellent facilities for teaching and research. Send résumé, undergraduate and graduate transcripts, description of research projects for undergraduates, and three letters of recommendation to: **Dr. Lawrence J. Kaplan, Chairman, Department of Chemistry, Williams College, Williamstown, MA 01267,** by 30 December 1988. *Equal Opportunity/Affirmative Action Employer. We are especially interested in identifying minority and women candidates.*

MOLECULAR IMMUNOLOGIST

The Rocky Mountain Multiple Sclerosis Center (RMMSC), a private, nonprofit research and comprehensive care facility at Swedish Medical Center in Denver, is recruiting for a Ph.D. scientist to conduct research into the molecular immunology of MS. Competitive salary and benefit package. Submit curriculum vitae to: **Ron Murray, M.D., RMMSC, Box 2901, 501 East Hampden Avenue, Englewood, CO 80110.**

MOLECULAR VIROLOGIST

Children's Hospital is a 279-bed acute care teaching facility seeking a molecular biologist (virology) to provide particular focus on gene regulations and gene expression techniques for application to retroviruses. Major research focus will include human immunodeficiencies and other retroviruses. The successful candidate must possess a Ph.D., M.D., or equivalent and be broadly experienced in molecular virology/biology techniques and equipment, must be open to close collaboration with basic and clinical investigators.

We offer a competitive salary and a comprehensive benefits package. Please send current résumé to: **Karen G. Tomilson, Employment Manager, Human Resources, Room 1900.**

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

Equal Opportunity Employer M/F

POSITIONS OPEN

IMMUNOCHEMISTRY

Seradyn Inc., a progressive medical diagnostic company, has an immediate opening for an experienced **SCIENTIST** within the immunoassay products group. The position encompasses broad responsibilities from conception of technical ideas and reduction to practice to market introduction of new products.

The individual we seek should have 3 to 5 years of experience in immobilization of biological material in addition to experience in non-isotopic immunoassay development. The successful candidate should be highly self-motivated and goal-oriented with strong oral and written communication skills. A Ph.D. is desired, but not necessary providing stated qualifications are satisfied.

Seradyn offers competitive salary and benefit programs. For confidential consideration, send résumé and salary history to: **Personnel Manager, Seradyn Inc., P.O. Box 1210, Indianapolis, IN 46206.**

Equal Opportunity Employer.

United States Department of Agriculture, Agriculture Research Service (ARS), Clay Center, Nebraska is seeking a **MICROBIOLOGIST, OR VIROLOGIST, OR AN EPIDEMIOLOGIST.** The successful applicant will join a team of scientists in the new Animal Health Systems Research Unit in the new ARS laboratory facility (\$4,000,000) that will be completed in 1989. This Unit, in cooperation with the University of Nebraska and Kansas State University, will function as part of the Center for Advanced Studies in Food Animal Health. This position will be part of a multidisciplinary team that will develop and utilize both fundamental and applied technologies in creating effective animal health systems. These systems will be created to control the major clinical and subclinical diseases in large populations of livestock and reduce the negative influences of these disease on efficient animal production. This position offers a unique opportunity to conduct collaborative multidisciplinary (animal disease, reproduction, genetics, nutrition, meats, production systems) research utilizing over 25,000 head of livestock on a 35,000 acre production facility with a staff of over 250 people. Ph.D. is desirable, and special consideration will be given to applicants who also have a D.V.M. or equivalent training. *Must be a U.S. citizen.* Salary is commensurate with experience (GS 11/12/13, \$27,716 to \$51,354 per annum). For information on the research program, contact: **Dr. Travis Littledike at: 402-762-4177.** For application procedures and forms, contact: **Ms. Julia A. Murchison at 301-344-3138.** Applications in response to this advertisement should be marked SW-005 and addressed to: **Dr. Travis Littledike, Roman L. Hruska U.S. Meat Animal Research Center, Box 166, Clay Center, NE 68933,** and received by 23 December 1988. *An Equal Opportunity Employer.*

NEUROSCIENTIST/ COMPUTER SCIENTIST/BIOLOGIST

Individual with background in neurosciences, computer graphics/image processing, and/or optical recording techniques to manage and direct computer and imaging resource for large multidisciplinary neuroscience research laboratory. Own research encouraged. Please send curriculum vitae and bibliography to: **D. J. Reis/K. Koenig, 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.*

PLANT PHYSIOLOGIST: Tenure-track position, anticipated September 1989, at **ASSISTANT PROFESSOR** level to teach undergraduate courses in plant physiology, botany, and cell biology, and a biology course for nonmajors. Candidate will be expected to develop a fundable research program and direct undergraduate and masters-level student research. Submit résumé, statement of research interests, and three references to: **Dr. Bonnie Sampson, Department of Biology, State University College at Buffalo, 1300 Elmwood Avenue, Buffalo, NY 14222** by 1 February 1989. *Buffalo State College is an Equal Opportunity/Affirmative Action Employer.*

Nominations and Applications are Invited for the Position of Director of Libraries Michigan State University

Michigan State University, a member of the American Association of Universities, is one of the nation's leading land-grant institutions with fourteen colleges enrolling approximately 40,000 students. The MSU Libraries have an annual budget of approximately 10.0 million dollars, over 200 staff, of which approximately 75 are librarians, and a rapidly growing collection of more than three million volumes with approximately twenty-five thousand separate serial titles received regularly. Most library materials and services reside in a four-story, two-wing central library, but specialized collections in fields such as Business Administration, Chemistry, Engineering, Geology, Mathematics, Music, Physics/Astronomy and Urban Planning are located in the respective departments, schools and colleges. A separate Biomedical library is in the planning/development stage. The Library has membership in the Association of Research Libraries and in the Center for Research Libraries in Chicago. Its special collections have been recognized in a number of areas, e.g., history of veterinary medicine, French monarchy, and radical organizations. The Library also has responsibility for the University Archives and Historical Collections. Increasingly Library processes are becoming automated and special attention is paid to information networking techniques. The position of Director of Libraries, which reports directly to the University Provost, requires policy development and implementation capacities as well as line responsibility for Library services and facilities. Special features of the position of Director of the MSU Libraries include the following:

1. Exercise of strong leadership and management responsibility for MSU's library resources to underwrite excellence in the University's teaching, research and service functions.
2. Experience and expertise in key administrative activities such as planning, budgeting, and personnel selection and development.
3. Thorough knowledge of state of the art in library technology and systems. A commitment to flexibility and responsiveness in adjusting library resources to the changing mission and clientele of Michigan State University is critical.
4. Cooperation with key academic administrators in fields such as Academic Computing, Instructional Media and Instructional and Public Television is essential.
5. Experience and ability to play an effective leadership role in state, regional and national library operations.

An applicant should have earned the Ph.D. or its equivalent and provide evidence of strong academic scholarship through a record which might meet standards for an appointment at the rank of full professor (with tenure) in an academic department or school in one of MSU's colleges. The candidate also must have an advanced degree in Library or Information Science and must provide evidence of substantial leadership experience in library administrative activities in higher education or related fields. A profound sensitivity to the mission of a premier land-grant/AAU university is essential.

Effective starting date is July 1, 1989 or as soon as possible thereafter.

Applications and nominations should be submitted preferably by December 15, 1988; late submissions will be considered if a suitable candidate pool is not identified by the deadline. Submit applications/nominations to David K. Scott, Provost, Michigan State University, 438 Administration Building, East Lansing, Michigan 48824-1046.

*Michigan State University is an Affirmative Action/
Equal Opportunity Institution*

MOLECULAR BIOLOGIST

(Research Fellow)

\$A30,100-\$A36,937

DIVISION OF PLANT INDUSTRY
BLACK MOUNTAIN, CANBERRA, ACT
AUSTRALIA

GENERAL: The Division of Plant Industry has the broad aim of increasing the efficiency of agricultural production through research in the plant sciences, including molecular biology, biochemistry, physiology, plant nutrition and microbiology, and for the development of new crops and agricultural management practices. Currently the Division is seeking to appoint a Research Fellow to collaborate in its program concerned with Molecular Mechanisms of Plant Photosynthesis.

THE JOB: To undertake research on the mechanisms regulating the expression of genes encoding enzymes of C4 photosynthesis. The project involves the reintroduction of cloned genes in C4 and C3 plants to determine the DNA sequences responsible for gene regulation. This will be part of a larger research program involved in enzyme regulation, protein engineering and metabolite transport in C4 plants. The appointee will collaborate closely with others involved in these related areas.

THE PERSON: A recent PhD degree or equivalent qualifications in an appropriate area of study together with proven laboratory technical expertise and record of productivity and independence. Experience with DNA cloning is essential, while experience with plant cell culture, plant transformation and cytology would be advantageous. Knowledge of photosynthesis, plant cell biology and development would be desirable.

CONDITIONS: A term of three years with Australian Government superannuation benefits available.

MORE INFORMATION: Prospective applicants are invited to contact Dr W.C. Taylor 61 62 46 5223 for further information. A copy of the detailed duty statement and selection criteria may be obtained from address given below or by telephoning 61 62 46 5206.

APPLICATIONS: Applications should quote reference number A0773, be framed against the selection criteria, and state relevant personal particulars including details of qualifications and experience.

Applicants should nominate at least two referees and address their applications to:

The Chief
CSIRO
Division of Plant Industry
GPO Box 1600
Canberra, ACT 2601
AUSTRALIA
by 4 weeks after publication.



CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

MOLECULAR VIROLOGIST. The Department of Microbiology at Washington State University (WSU) invites applications for a tenure-track faculty position at the assistant/associate professor level. Preference will be given to individuals with research interests in the molecular basis of pathogenesis. Applicants must have postdoctoral training. The successful candidate will be expected to establish an active research program and participate in graduate, medical student and undergraduate teaching. Send curriculum vitae, statement of research interests and professional objectives, and names of three references to: **Dr. L. P. Mallavia, Search Committee, Department of Microbiology, WSU, Pullman, WA 99164-4340.** Application deadline 3 January 1989 or until position is filled. *An Equal Opportunity/Affirmative Action Educator and Employer. Protected group members are encouraged to apply.*

NEUROBIOLOGIST—Assistant professor—Tenure-track—The candidate must have expertise in neurophysiology and will teach neurobiology, animal physiology and cell physiology. The candidate will also be expected to develop a research program that involves undergraduates. Interest in participating in interdisciplinary programs such as Gender Studies or American People of Color is welcome. Ph.D. required. Macalester College is a highly selective undergraduate liberal arts institution. The Biology Department is committed to providing a high quality research-based curriculum for our students. Additional information can be obtained from the department chair. Applicants should submit curriculum vitae, reprints and the names of three references to: **Dr. James R. Smail, Chair, Department of Biology, Macalester College, St. Paul, MN 55105.** Application deadline is 31 December 1988. *Macalester College is an Equal Opportunity/Affirmative Action Employer.*

PHARMACOLOGY

The Department of Pharmacology, Division of Functional Biology, of the West Virginia School of Osteopathic Medicine (WVSOM), seeks an **ASSISTANT OR ASSOCIATE PROFESSOR** of pharmacology. Applicants must have a background in general physiology and pharmacology, with experience in cardiovascular and renal pharmacology. Significant teaching experience and a demonstrated ability to conduct independent research are also required.

Rank and salary will be commensurate with qualifications. Send current curriculum vitae and three letters of recommendation to: **Chairperson, Pharmacology Search Committee, c/o Personnel Office, WVSOM, 400 North Lee Street, Lewisburg, WV 24901.** The position is available immediately.

WVSOM is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL ASSOCIATE

A postdoctoral position is available to study either the regulation of maternal mRNA expression in early *Xenopus* development [cf. *Development* 101, 741 (1987); *Develop. Biol.* 128, 349 (1988)] or the molecular biology of adenovirus E1A using injected *Xenopus* oocytes [cf. *Mol. Cell. Biol.* 7, 3049 (1987); *EMBO J.* 7, 3171 (1988)]. Send curriculum vitae and three references to: **Dr. Joel Richter, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

An Equal Opportunity/Affirmative Action Employer M/F/H.

POSTDOCTORAL FELLOW: Molecular biologist to study prolactin-stimulated genetic transcription in lymphocytes. Expertise in cell culture, RIA or EIA, Western and Northern blots. Opportunity to uncover new insight into cell function related to proliferative diseases. Salary commensurate with NIH guidelines. Closing date will be 30 December 1988. Résumé to: **Diane H. Russell, Ph.D., Professor and Head, Department of Pharmacology and Therapeutics, University of South Florida, College of Medicine, MDC-9, Tampa, FL 33612.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOW—Position available in laboratory involved in research on molecular basis of cell proliferation in animal cells. Ph.D. or equivalent. Write to: **Dr. Renato Baserga, Department of Pathology, Temple University School of Medicine, Philadelphia, PA 19140.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA, IRVINE POSITIONS IN EXPERIMENTAL PSYCHOLOGY/ COGNITIVE SCIENCE

Over the next 3 years, the Cognitive Sciences Department at UCI plans to fill five new tenure-track positions in experimental psychology/cognitive science. Positions are available at all academic ranks, from assistant to full professor. The research areas of primary interest to us are cognition (reasoning and decision making), development, auditory perception, learning and memory, and cognitive neuropsychology. This year we invite applications for two positions in the areas of cognition (as defined above), and learning and memory, to be filled by the start of academic 1989 to 1990. Applicants should submit a letter of interest, curriculum vitae, and names of at least three references to: **Recruitment Committee, Cognitive Sciences Department, University of California, Irvine CA 92717.** Please do not solicit letters of recommendation: we will handle that. Candidates are expected to have a strong record of research accomplishment commensurate with their academic rank, and a serious commitment to graduate and undergraduate teaching in psychology. Applications must be received by 31 January 1989 to guarantee consideration.

We also invite exploratory inquiries at any time from scientists in the other areas mentioned above who might be prepared to move to UCI in 1990 to 1991 or 1991 to 1992.

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

Seeking **POSTDOCTORAL FELLOW** to work on studies involving the regulation and expression of neurotransmitter synthetic enzymes. Experience in molecular biology and biochemistry essential. Experience in tissue culture desirable. Projects focus on genomic transcriptional and translational regulation of neurotransmitter enzymes in vivo and in vitro. Funding available immediately. Send copy of curriculum vitae and three letters of reference to: **Dr. Dona Lee Wong, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, CA 94305.** *Stanford is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to apply.*

POSTDOCTORAL POSITION

Available immediately for work on redox proteins. The candidate should be familiar with large scale bacterial growth, enzyme purification and characterization. Since this research will be pluridisciplinary, the candidate should have basic knowledge in molecular biology, spectrometric methods and computer modeling. However, this remains a position for a microbial enzymologist, provided such a discipline still exists.

Send curriculum vitae and letters of recommendation by 16 December 1988 to:

**Jean LeGall
Professor of Biochemistry
and Microbiology
Department of Biochemistry
The University of Georgia
Athens, GA 30602**

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

POSTDOCTORAL POSITION available to study the role of polyphosphoinositides and their derived second messengers in smooth muscle contraction. Applicants should send curriculum vitae and names and addresses of three referees to: **Dr. Ata Abdel-Latif, Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, GA 30912-2100.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS (funded by NHLBI Training Grant) are available for recent Ph.D. or M.D./Ph.D. recipients to study the roles and regulations of tissue kallikreins and their vasodilator kinin products in hypertension and epithelial ion transport. Experience in cell and/or molecular biological techniques will be helpful. Curriculum vitae and letters of reference to: **Dr. Harry Margolius, Department of Pharmacology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.** Telephone: 803-792-2471. *MUSC is an Equal Opportunity, M/F, Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION in cell and developmental biology available immediately to study the effects of cannabinoids on fertilizing capacity of sea urchin sperm. Experience in protein purification, ligand binding, or gamete biology is desirable. Position is for 3 years. Starting salary \$20,000 to \$23,000 depending on experience. Send letter describing experience and research interests, curriculum vitae, reprints, and three letters of recommendation to: **Dr. Herbert Schuel, Department of Anatomical Sciences, School of Medicine and Biomedical Sciences, University at Buffalo, SUNY, Buffalo, NY 14214.** *SUNY is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION. Postdoctoral position available to investigate the biosynthesis of secondary metabolites in *Streptomyces*. Applicant should have experience in microbiology and in prokaryotic molecular biology. Research to involve preparation of blocked mutants, cosynthesis experiments with mutants, and cloning of antibiotic biosynthesis genes. Send résumé and three letters of reference to: **R. J. Parry, Department of Chemistry, Rice University, P.O. Box 1892, Houston, TX 77251.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION IN PHYSICAL/ANALYTICAL CHEMISTRY, immediately available in calcium oxalate crystallization and urolithiasis. The successful candidate will be appointed for up to two years and will interact with other chemists, medical staff and materials scientists on aspects of surface chemistry, adsorption of biological molecules, effect of inhibitors on nucleation and aggregation, and equilibria in urine-like solutions. This position is supported by an NIH program project grant now in its 12th year of continuous funding. Apply to: **Daniel Purich, Chairman of Biochemistry, University of Florida, JHMC Box J-247, Gainesville, FL 32610.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS CLINICAL CHEMISTRY WASHINGTON UNIVERSITY

We are recruiting individuals with the M.D. and/or Ph.D. degree with a strong motivation for training in clinical chemistry and in the basic sciences. Our unique program, now in its 12th year, provides the opportunity for academic clinical chemistry training in one of the largest Laboratory Medicine Divisions in the country. In addition to clinical training, successful candidates will actively participate in an area of active research. Current areas of faculty interest include: antibody response to carbohydrate and protein antigens, effect of lymphokines on B cell development, mechanism(s) of insulin action rapid diagnosis of myocardial infarction, mechanism(s) of insulin secretion, placental transport of nutrients and electrolytes, and association behavior of multi-subunit proteins. Two to three candidates are generally accepted per year. For further information please contact: **Jack Ladenson, Ph.D., Division of Laboratory Medicine, Washington University School of Medicine, 660 South Euclid Avenue, Box 8118, St. Louis, MO 63110.**

POSTDOCTORAL POSITIONS IN IMMUNOLOGY. Several NIH-funded postdoctoral positions are immediately available to pursue the following projects: (i) role of the CD3/T cell antigen receptor complex in the organization of lymphocyte membrane domains and (ii) structural basis of immunogenicity in antibody responses. Interested applicants who have experience in immunology, cell biology, or molecular biology should contact: **Dr. George K. Lewis, Department of Microbiology and Immunology, University of Maryland School of Medicine, Baltimore, MD 21201.** Telephone: 301-328-3329/301-328-7110.

POSTDOCTORAL POSITIONS IN MOLECULAR VIROLOGY available immediately. Topics include (i) structure/function relationships of viral polypeptides, (ii) studies on the replication of influenza virus, and (iii) viral etiology in the development of Type I Diabetes. Background in molecular biology and/or virology is desirable. Competitive salary, subsidized housing available. Send curriculum vitae and names of three references to: **Dr. Mark Krystal, Department of Microbiology, The Mount Sinai School of Medicine, Box 1124, One Gustave L. Levy Place, New York, NY 10029-6574.** *An Equal Opportunity Employer.*

UNIVERSITY OF HONG KONG
**Reader/Senior Lecturer/
 Lecturer in Anatomy**

Applications are invited for the post of Reader/Senior Lecturer/Lecturer in the Department of Anatomy. Applicants for appointment at Reader/Senior Lecturer level should have a medical or dental degree or a higher degree in a relevant scientific subject. An appointee at this level will be expected to be an experienced teacher who can provide academic leadership in the teaching of one or more of the anatomical subspecialties as well as to have a strong commitment to research with evidence of original achievement in his or her chosen field. Applicants for appointment at Lecturer level should have a medical or dental degree or a higher degree in a relevant scientific subject. The appointee will be expected to undertake general teaching duties for pre-clinical students in one or more of the anatomical subspecialties and to undertake research.

Preference will be given to candidates who have research interests in one of the Department's existing areas of expertise which include Neurobiology, Neuro-endocrinology, Cell and Cancer Biology, Reproductive Biology, Human Growth and Development, Anthropology and Oral Anatomy.

Annual salaries (superannuable) are on the scales:

Reader: HK\$324,840-431,640 (9 points)
 Senior Lecturer: HK\$311,400-418,380 (9 points)
 Lecturer: HK\$200,340-334,860 (11 points)

(US\$1 = HK\$1.780 as of September 27, 1988.) Starting salary will depend on qualifications and experience. A medically-qualified appointee who has just completed his pre-registration year will be appointed as Lecturer at the minimum point of the scale. 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 the Appointments Officer, Association of Commonwealth Universities, 36 Gordon Square, London WC1H 0PF, UK, or from the Appointments Unit, Registry, University of Hong Kong, Hong Kong. Closes 13 January 1989.

**Director-Center for Great
 Lakes and Aquatic Sciences**
The University of Michigan, Ann Arbor

The University of Michigan is searching for a Director for the Center for Great Lakes and Aquatic Sciences (CGLAS). The Center is the locus of a broad variety of research efforts both on the Laurentian Great Lakes and on other aquatic systems worldwide. CGLAS is an independent research unit within the University's College of Literature, Science, and the Arts and has substantial facilities including laboratories, libraries, and an 80-foot UNOLS research vessel. Forty persons are affiliated with the Center, including 14 primary and associated researchers, and an administrative staff of 5. The Director will be responsible for the overall research directions and growth of the Center, and will represent CGLAS and the University at local, state, national, and international levels. Ann Arbor is the location of several state and federal research laboratories that focus on the Great Lakes in addition to the University programs. Appointment to the Directorship will be on a half-time basis and will be made in conjunction with an appointment as a tenured associate or full professor in the appropriate university department.

We are searching for an outstanding aquatic scientist who has a strong record of external funding and is familiar with the agencies that fund aquatic science, is capable of enhancing a program based on external funding, and, preferably, has some administrative experience. The successful candidate should hold a Ph.D. degree and must demonstrate a record of scholarship that will qualify for a tenured position in the University's College of Literature, Science, and the Arts.

Applications and nominations will be accepted until February 15, 1989, although the search will remain open if suitable candidates are not found by then. Interested persons should submit curriculum vitae and the names of five persons who can be contacted as references to: **Prof. David K. Rea, Chair, Director Search Committee, Center for Great Lakes and Aquatic Sciences, The University of Michigan, 2200 Bonisteel Boulevard, Ann Arbor, Michigan 48109-2099.**



The University of Michigan

A non-discriminatory, affirmative action employer

Research Biologist

Eisai Research Institute of Boston, Inc., a newly established pharmaceutical research company in the Boston area, wishes to locate for immediate consideration a motivated research associate to participate in the screening of potential drug entities.

Suitable candidates will have a B.S. or M.S. degree in a relevant biological science and one to three years' experience in the laboratory. We are looking for familiarity in the areas of animal cell culture preparation and pharmacological assay methodology, including enzyme and receptor binding assays. Knowledge of statistical analysis and computers is desirable. The successful candidate should have proven ability to work independently as well as to collaborate with members of a dynamic multidisciplinary research team.

We offer a very competitive salary and benefits package and the opportunity to make significant contributions toward innovative solutions to challenging pharmaceutical problems.

Interested candidates should send a resume and salary requirements to Constance C. Kokubo, Director of Administration,, 128 Spring Street, Lexington, MA 02173.

an equal opportunity employer



**EISAI RESEARCH
 INSTITUTE OF BOSTON**

**SENIOR
 IMMUNOLOGIST**

Wyeth-Ayerst Laboratories is a world leader in research and development in the pharmaceutical industry. We currently have a unique opportunity for an Immunologist (PhD) with experience in viral systems to join a multi-disciplinary team engaged in the development of recombinant human viral vaccines at its Biotechnology and Microbiology Division in Radnor, PA.

The ideal candidate will have 2-3 years post-doctoral experience which should include expertise in tissue culture, virus propagation, and viral serology. Experience in hybridoma techniques is desirable.

We offer a highly competitive salary, extensive benefits and a state-of-the-art environment in a convenient suburban location. Qualified candidates are invited to submit CV or resume with salary requirements in confidence to: **WYETH-AYERST**

LABORATORIES, INC., Recruitment Manager, Position #298, P.O. Box 8299, Philadelphia, PA 19101. Equal Opportunity Employer, M/F/H/V responses encouraged.



PHD SCIENTISTS & ENGINEERS

APPLY FOR RESIDENT & POST- DOCTORAL ASSOCIATESHIP AWARDS

Unique opportunities for independent
research in the fields of:

- CHEMISTRY • PHYSICS
- EARTH & ATMOSPHERIC SCIENCES
- ENGINEERING, MATHEMATICS &
APPLIED SCIENCES
- LIFE & MEDICAL SCIENCES & BIOTECHNOLOGY
- SPACE & PLANETARY SCIENCES

The National Research Council in cooperation with 30 selected federal laboratories announces three competitions in 1989 for approximately 450 research awards for independent scientific research. Recipients will be free to pursue research problems of their own choice as guest investigators at the federal laboratories. Duration of award is one year renewable to three. Annual stipend for recent Ph.D's vary from \$27,150 to \$35,000, depending upon the program sponsor, and are appropriately higher for senior researchers. Relocation reimbursement and funds for professional travel on tenure are available, and a health insurance program is provided.

For further information and application materials write to:
Associateship Programs (GR 430A/S4)

NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue, N.W.
Washington, DC 20418

Deadlines for application are: January 15
(December 15 for NASA), April 15 and August 15

JPL/NASA VISITING SENIOR SCIENTIST

Life Sciences Division Global Ecology/Biospherics Research

The Jet Propulsion Laboratory invites application to the Visiting Senior Scientist Program in the area of Global Ecology and Biospherics Research. The position requires a PhD or equivalent research experience in ecology, plant physiology, remote sensing, or a related field; a record of research publications in the refereed literature; a demonstrated ability to work with other scientists and to synthesize advisory information, and strong communication skills. Tenured faculty members familiar with activities of NASA's programs in Earth System Science and Biospherics are the preferred choice, but other interested scientists are encouraged to apply.

Responsibilities include aiding in the planning and implementation of the Biospherics Research Program within the Life Sciences Division at NASA Headquarters, in the context of expanding NASA programs in Earth System Science and global change. Duties include continuing extensive contacts with the research community, conducting peer reviews of research proposals, recommending selection of investigations, and assisting in the maintenance of a balanced and productive program within available budgetary resources. The appointee is expected to work closely with managers at several NASA centers and to advise potential investigators from the NASA Centers and the university community how their plans relate to the NASA program as well as to assure that research activities are integrated with current and planned flight missions and available sensor platforms.

Frequent travel and residence near NASA Headquarters (in the Washington, D.C. area) will be required. Normal assignment in the Visiting Senior Scientist Program does not exceed two years. Appointee must be a U.S. citizen or Permanent Resident, and is expected to return to his/her home institution following this NASA assignment. Please provide curriculum vitae, bibliography and the names of four references to:

Dr. Harry Ashkenas, 180-900
Department U80
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109
(818) 354-8251

An Equal Opportunity Employer M/F



TOXICOLOGIST

Rhone-Poulenc Inc., Rhone-Poulenc Ag Company and Stauffer Chemical Company are the growing U.S. subsidiaries of one of the largest diversified chemical companies in the world. Our Toxicology Department, located in Research Triangle Park, NC is expanding again to meet the growing needs of these companies.

This new entry-level position for a mammalian toxicologist is available immediately. The successful candidate will assist in establishing and maintaining toxicological testing programs for U.S. products, provide technical expertise to marketing groups, assist in the design, monitoring and reporting of contracted laboratory studies, and assist in the preparation of regulatory-compliance documentation.

A Ph.D in Toxicology or a related discipline is required, with 0-2 years of related experience. Formal training in mammalian toxicology is essential. Familiarity with environmental toxicology is also desirable.

Rhone-Poulenc offers a competitive salary, attractive benefits and the chance to join a growing, vital, dynamic organization in a position with opportunities for career growth. Send resume (including salary requirements and date of availability) to:

Employment Coordinator

RHÔNE-POULENC
PO BOX 12014
Research Triangle Park, NC 27709

An Equal Opportunity/Affirmative Action Employer

Manager Risk Assessments

Envirosphere Company, the rapidly growing environmental consulting division of EBASCO SERVICES INCORPORATED, currently has a senior level position available for a Manager, Risk Assessments, at its Lyndhurst, NJ Headquarters.

The ideal candidate will have a Ph.D. or M.S. in Toxicology, Public Health, Chemical, or Biological sciences coupled with a strong background in determining the fate, transport, and effects of chemicals in the environment. Experience in a consulting firm, business development, and management of interdisciplinary technical groups are desired qualities.

For prompt consideration, please forward resume including salary requirements to: T.A. Caparo, EBASCO SERVICES INCORPORATED, 160 Chubb Avenue, Lyndhurst, N.J. 07071. An equal opportunity employer m/f/h/v.

EBASCO

An ENSERCH Engineering and Construction Company



GLAXO INSTITUTE FOR MOLECULAR BIOLOGY S.A.

The Geneva biotechnology research unit of the largest U.K. pharmaceutical group has a vacancy for an

EXPERIENCED MAMMALIAN CELL BIOLOGIST

A Ph.D. or equivalent degree plus postdoctoral research experience are required for this position. Previous experience on one or more of the following subjects would be an advantage:

- control of gene expression;
- control of protein secretion;
- expression of recombinant genes in animal cells;
- analysis of receptors.

The Institute has a staff of over one hundred, grouped in small teams of specialists from several domains of modern biology. We are part of the Glaxo Group – one of the largest pharmaceutical companies in the world – which has an outstanding reputation for the quality of its research and products.

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

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



UNIVERSITY OF HAWAII AT MANOA DEAN COLLEGE OF NATURAL SCIENCES

The University of Hawaii at Manoa invites nominations and applications for the position of Dean of the College of Natural Sciences. The individual chosen must be a dynamic leader with a strong commitment to teaching and research and have a vision of the College's future that is compatible with Hawaii's unique attributes.

Duties: The Dean serves as chief academic and executive officer of the College and reports directly to the President of the University. The College of Natural Sciences consists of 150 faculty members in eight departments (Botany, Chemistry, General Science, Information and Computer Sciences, Mathematics, Microbiology, Physics and Astronomy, and Zoology) and one program (Biology). The Dean works closely with the Deans of the other three Arts and Sciences colleges, the Dean of the new School of Ocean and Earth Science and Technology (which includes the departments of Geology and Geophysics, Meteorology and Oceanography), as well as Deans of professional schools and Directors of organized research units. The Dean oversees an annual budget in excess of \$10 million.

Minimum Qualifications: Qualified candidates must have an earned doctorate in the natural sciences or related discipline, plus a distinguished research record and university teaching experience commensurate with appointment to the rank of professor. Knowledge of higher education instructional and research policies and issues and three years academic or scientific administrative experience or equivalent are also essential.

Desirable Qualifications: Candidates should have the ability to recognize and support excellence in research, teaching and service activities. Applicants should have demonstrated leadership in the acquisition and management of substantial budgets and extramural funding as well as have extensive knowledge of the needs of the various natural sciences represented in the College. Experience as a dean,

associate dean or equivalent position in a program of comparable size and scope is desirable. Candidates should have the ability to establish collaborative relationships with other educational and research units and should possess the ability to articulate the achievements of the natural sciences to a variety of constituencies as well as have an awareness of the implications for the natural sciences of Hawaii's geographic setting. Candidates should possess knowledge of higher education trends, issues and developments in both undergraduate and graduate education.

Starting Date: July 1, 1989, or as soon thereafter as possible.

Salary: Commensurate with qualifications.

Application Deadline: December 30, 1988. Nominations must be received by December 12, 1988. Applications should include letter of interest, curriculum vitae and the names and addresses of three references and must be postmarked by December 30, 1988. Applications should be sent to: **Dr. Mary Carol Perrott, University of Hawaii at Manoa, Office of the Vice President for Academic Affairs, 2444 Dole Street, Honolulu, Hawaii 96822.** Inquiries (Dr. Perrott): (808) 948-8445.

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

POSITIONS OPEN

POSTDOCTORAL POSITION—Penn State: The Department of Dairy and Animal Science is currently seeking applicants for a postdoctoral position of Research Associate to study the role of insulin-like growth factor binding proteins (IGF-BP) in the regulation of pig growth. Projects include purification and cloning of pig IGF-PBs. Ph.D. required; experience in biochemistry or molecular biology would be helpful. Starting salary is \$25,000 with a liberal benefits package. Send curriculum vitae and the names and addresses of three references no later than 15 December 1988, to: **Dr. Terry D. Ether-ton, Department of Dairy and Animal Science, 301 W. L. Henning Building, Pennsylvania State University, University Park, PA 16802.** *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

ROGER WILLIAMS CANCER CENTER AT BROWN UNIVERSITY POSTDOCTORAL POSITIONS

The Roger Williams Cancer Center has positions for three postdoctoral fellows in a vigorous research program studying the biochemical mechanisms controlling normal and neoplastic cell growth, with a particular focus on angiogenesis. Postdoctoral candidates should have training in biochemistry, cell, or molecular biology.

Projects include:

Biochemistry: (i) characterize and purify growth-factor receptors involved in the angiogenic response; (ii) study specific cellular functions controlled by cellular substrates of these growth-factor-receptor tyrosine kinases; (iii) study the mechanisms whereby activators and inactivators of protein kinase C modulate the angiogenic response.

Molecular Biology: (i) clone and sequence λ gt11 cDNAs coding for key cellular substrates of receptor-protein-tyrosine kinases; (ii) perturb the angiogenic response by modifying the expression of these genes and their encoded proteins.

Applicants should submit curriculum vitae and names of three references to: **A. R. Frackelton, Ph.D., Roger Williams Cancer Center, 825 Chalkstone Avenue, Providence, RI 02908.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION available to examine mechanisms of signal transduction through the lymphocyte plasma membrane. Experience in cellular biochemistry and/or molecular biology required. Salary initially in the range of \$18,000 to \$20,000 commensurate with qualifications. Send curriculum vitae and the names of two or more references to: **Dr. Peter D. Chantler, Department of Anatomy, Medical College of Pennsylvania, 3200 Henry Avenue, Philadelphia, PA 19129.** *Equal Opportunity Employer, M/F.*

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION available now. Biochemistry/cell biology/pharmacology. Project to evaluate the role of a natural purine and its analogues on cell development, malignant expression, and cell surface carbohydrates. Salary negotiable. Opportunity for independence. Submit curriculum vitae, availability, reprints and names of three references to: **Dr. Douglas Armstrong, Cancer Research Center, La Jolla Cancer Research Foundation, 10901 North Torrey Pines Road, La Jolla, CA 92037.**

An Equal Opportunity/Affirmative Action Employer.

PROGRAM COORDINATOR (PROJECT DEVELOPMENT COORDINATOR). The University of Illinois at Chicago (UIC) seeks to fill the position of Project Development Coordinator in the Office of Industry Research Relations. The Project Development Coordinator reports to the Director and is responsible for the establishment of long-term research partnerships with industry.

Minimum qualifications are an advanced degree, preferably a Ph.D., and at least 2 years of experience in project development. The successful candidate will have outstanding interpersonal, negotiation and communication skills, coupled with a fundamental understanding of university/industry relations.

Salary is competitive and commensurate with experience. To ensure full consideration, send complete résumé by 9 December 1988 to: **Director, Office of Industry Research Relations (M/C 672), University of Illinois at Chicago, Box 6998, Chicago, IL 60680.**

UIC is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION available to study the regulation of myosin in muscle and non-muscle cells. Experience in protein biochemistry and/or cell biology and/or molecular biology required. Salary initially in the range of \$18,000 to \$20,000 commensurate with qualifications. Send curriculum vitae and names of two or more references to: **Dr. Peter D. Chantler, Department of Anatomy, Medical College of Pennsylvania, 3200 Henry Avenue, Philadelphia, PA 19129.** *Equal Opportunity Employer, M/F.*

POSTDOCTORAL POSITIONS (two) available immediately for studies on structure-function analysis of a growth regulatory protein. Require expertise in nucleic acid technology and/or protein purification techniques. Stipend in the NIH range. Send résumé to: **Dr. M. Das, Department of Biochemistry and Biophysics, University of Pennsylvania, School of Medicine, Philadelphia, PA 19104-6059.**

PROTEIN BIOCHEMIST

Applications are invited for an associate research protein biochemist for appointment in early 1989 at the Veterinary Research Laboratory (VRL), Montana State University. Non-tenure track, research faculty 12-month appointment, in infectious diseases of livestock. Salary range \$25,000 to \$30,000 per year based on experience and qualifications.

Required qualifications: Ph.D. in protein biochemistry or related field, postdoctoral experience in protein biochemistry and record indicating the ability to perform independent research and potential to obtain extramural funding. A willingness to undertake research on the biochemistry of infectious diseases of livestock and to collaborate with other VRL faculty is essential. Interested applicants should send letter of application, curriculum vitae, and the names and addresses of three current professional references to: **D. E. Burgess, Veterinary Research Laboratory, Montana State University, Bozeman, MT 59717.** Screening of applicants will begin 15 January 1989 and continue until a suitable candidate is found. *An Equal Employment Opportunity/Affirmative Action Employer.*



NATIONAL UNIVERSITY OF SINGAPORE DEPARTMENT OF BIOCHEMISTRY

Applications are invited for teaching appointments in the Department of Biochemistry.

For appointments at Lectureship level and above, candidates should have either a PhD degree or an approved basic medical or dental degree with a recognised higher professional qualification. A good research record will be a decided advantage.

Candidates applying for Senior Tutorships must possess either a first class honors degree in Biochemistry or an approved basic medical or dental degree. Under the Senior Tutorship Scheme, the appointee will be given the opportunity to pursue a relevant higher qualification, upon receipt of which he will be considered for appointment to a Lectureship.

Gross annual emoluments range as follows:

Senior Tutor	SS\$23,470-38,660
Lecturer	SS\$44,870-58,680
Senior Lecturer	SS\$53,160-94,090

(US\$1.00 = S\$2.04 approximately)

The commencing salary will depend on the candidate's qualifications, experience and the level of appointment offered. In addition, appointees at Lectureship level and above who possess an approved basic medical or dental degree and a recognised higher professional qualification may opt to retain consultation fees up to 60% of their annual gross salary or to receive a fixed annual clinical allowance as follows:

Lecturer	SS\$6,000/9,000
Senior Lecturer	SS\$15,000

Leave and medical benefits will be provided. Depending on the type of contract offered, other benefits may include: provident fund benefits or an end-of-contract gratuity, a settling-in allowance of S\$1,000 or S\$2,000, subsidized housing at nominal rentals ranging from S\$100 to S\$216 p.m., education allowance for up to three children subject to a maximum of S\$10,000 per annum per child, passage assistance and baggage allowance for the transportation of personal effects to Singapore.

The Department of Biochemistry is a department in the Faculty of Medicine. There are 8 faculties in the National University of Singapore with a current student enrollment of some 14,000. All departments are well-equipped with a wide range of facilities to enhance the teaching and research activities of staff members. The University is linked to BITNET, an international network that interconnects almost 500 mainframe computers at 200 institutions of higher learning and research centres around the world.

Application forms and further information on terms and conditions of service may be obtained from:

**The Director
Personnel Department
National University of Singapore
10 Kent Ridge Crescent
Singapore 0511**

**The Director
North America Office
National University of Singapore
780 Third Avenue, Suite 2403
New York, NY 10017, U.S.A.
Tel: (212) 751-0331**

Enquiries may also be sent through BITNET to: **PERSDEPT @ NUSVM**

Terrestrial Ecologist

NSI Technology Services Corp. is recruiting up to three Terrestrial Ecologists to work as members of the Acid Rain/Forest Team at the Environmental Research Lab in Corvallis, Oregon. You will quantify forest ecosystem response to air pollutants, identify and communicate emerging environmental issues, develop research goals and plans for the team and implement steps to achieve those goals. Research results will be published in peer-reviewed journals.

Position requires a PhD in Ecology, Forestry or a related science with 4-5 years of research experience and a demonstrated publication record. Substantial knowledge of forest and other terrestrial ecosystems is required. Experience in implementing research programs and writing scientific evaluations of forest environmental issues is desired. Excellent written and oral communication skills are essential.

Submit a cover letter, cv, and the names and telephone numbers of three references. Cite reference number 72 in your correspondence. Applications will be accepted until the positions are filled.

**HUMAN RESOURCES
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CORVALLIS, OREGON 97333
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Research Scientists

BioTechnica International, Inc., a company specializing in the development of next-generation technologies in the areas of agricultural biotechnology, microbial production systems, and diagnostics, has openings at its Cambridge, MA facility for highly motivated Research Scientists in the following area:

Microbial Products and Processes—BTI is seeking Scientists with expertise in molecular genetics and DNA cloning to work on gene expression in *Bacillus* and *Pseudomonas*. A Ph.D. degree is required. (Position No. RS13)

BioTechnica Agriculture, a subsidiary of BioTechnica International specializing in the application of recombinant DNA technology to crop plants, has openings in its Cambridge, MA facility for highly motivated Research Scientists in the following areas:

Transgenic Plants—The research is focused on the cloning, characterization, and expression of genes that will confer resistance to insect pests. The scientist should have expertise in the manipulation of DNA and preferably should be experienced in the expression of genes in plants. A Ph.D. degree is required. (Position No. RS14)

Product Development Microbiology—The successful candidate will participate in a research program designed to develop and evaluate various inoculant delivery systems in terms of their effects on bacterial viability, establishment, and competitive ability. The program requires extensive laboratory and field experimentation and would suit a soil microbiologist with a background in chemistry. Candidates with experience in the development of seed coatings are also encouraged to apply. Candidates must have a Ph.D. (Position No. RS40)

BioTechnica offers competitive salaries and excellent benefits. To apply, please send a letter referring to the appropriate position number and a *curriculum vitae* with the names of three references to:

Personnel Administrator
Department of Human Resources
BioTechnica International, Inc.
85 Bolton Street
Cambridge, MA 02140

BioTechnica International is an Equal Opportunity Employer.

BIOTECHNICA INTERNATIONAL, INC.

POSITIONS OPEN

POSTDOCTORAL RESEARCH on the effects of incorporating nucleoside analogs into DNA. A position is available in an ongoing research project for a candidate with experience in enzymology or nucleic acid research. Training will be provided in methods of studying enzymes involved in DNA synthesis, including the use of transient state kinetics. Starting salary: \$22,000 or higher depending on relevant experience. To apply send curriculum vitae and three references to: **Dr. R. L. Blakley, Department of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101.** *An Equal Opportunity Employer.*



Agricultural Research Service
United States Department of Agriculture

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE

POSTDOCTORAL RESEARCH ASSOCIATE AND RESEARCH SCIENTIST POSITIONS, USDA Poultry Research Laboratory, Georgetown, Delaware.

ARS is seeking a research physiologist/biochemist for a 2-year research associate appointment and a permanent research chemist/physiologist (poultry) to be part of a research team investigating biochemical and physiological mechanisms affecting growth and body compositions. The research associate will investigate the characterization measurement of membrane proteins involved with hormone sensitivity and fat deposition. A recent Ph.D. with knowledge of biochemistry and physiology is required. Skill in electrophoresis and the ability to purify protein and assay protein binding or activity is desirable. The permanent research position involves investigation of liver biochemistry and blood lipid transport primarily by characterization and measurement of regulatory pathways controlling fat synthesis and fat deposition. Knowledge of biochemistry and physiology is required. A Ph.D. with expertise with enzyme assays and/or lipoproteins and cell culture techniques is desirable. *Must be U.S. citizen.*

Salaries are commensurate with experience (minimum \$28,000). For information on the research program and positions, call: **Dr. Lee Cartwright at 302-856-0046.** For information on application procedures/forms, call **Mr. Lee Triplett at 301-344-1863** by 12 December 1988. (8NA1615)

*An Equal Opportunity Employer
Women and minorities are encouraged to apply*

A non-tenure position at the level of **RESEARCH ASSISTANT PROFESSOR** is available in the Thrombosis Research Center for an individual with a Ph.D. in biochemistry or related field. Experience in protein chemistry is required and specific experience in the purification and characterization of coagulation proteins and the production and utilization of monoclonal antibodies as well as experience and interest in recombinant DNA technology is desirable. Research projects will involve structure function studies of coagulation proteins and their interactions with platelets. Qualified applicants should send curriculum vitae, detailed statement of accomplishments and research interests, and names and addresses of three references to: **Dr. Peter N. Walsh, Thrombosis Research Center, Temple University School of Medicine, 3401 North Broad Street, Philadelphia, PA 19140.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE—LRGB. Burn research laboratory involved in cultured epithelium and dermis, allogeneic transplantation, Langerhans cells physiology is seeking dynamic individual to: (i) supervise various research projects (MRC funded) and graduate students, (ii) help draft grant proposals, (iii) represent the LRGB in various meetings, (iv) supervise the construction of a new research facility. Minimum requirement: Ph.D. in cell biology or biochemistry; 1 year of postdoctoral training and tissue culture experience, basic French knowledge. \$25,000 to \$31,500 per year. Send résumé, before 15 December 1988, with three references to: **Dr. François Auger, Director LGB, Hôpital St-Sacrement, 1050, Chemin Ste-Foy, Québec, Canada, G1S 4L8; Attention: Poste AR-1.**

POSITIONS OPEN

RESEARCH ASSOCIATE—conduct research in the design, synthesis and testing of inhibitors of the medically relevant enzyme, tissue kallikrein, including preparation of inhibitors of tissue kallikrein based on the structure of aprotinin. Duties include molecular modeling of the kallikrein molecule, chemical synthesis of appropriate inhibitors as well as in vitro and in vivo testing of these compounds. Requirements include Ph.D. in organic chemistry with at least 1 year of experience in the application of chemical training to biological problems. In addition, the individual must possess a strong background in biochemistry, analytical chemistry, and computational chemistry. Salary \$21,375 per year, forty hours per week. Respond with résumé only to: **Job Order #9126, Division of Employment Security, Government Center, Boston, MA 02114.**

RESEARCH ASSOCIATE AND POSTDOCTORAL POSITIONS available to study the biosynthesis and gene structure of mucin glycoproteins in trachea epithelial cells. Studies will include carbohydrate characterization, enzyme and RNA isolation, preparation of antibodies, DNA synthesis and cloning procedures. Background in biochemistry, cell, or molecular biology desirable. Salary commensurate with experience. Send résumé to: **Dr. Joseph Mendicino, Department of Biochemistry, University of Georgia, Athens, GA 30602.**

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

RESEARCH FACULTY POSITION

The Public Health Research Institute (PHRI) invites applications for appointment as a member of its research faculty at either the junior or senior level. Candidates must have training and experience of the highest quality and an exciting research program addressing fundamental questions in eukaryotic or prokaryotic cell biology, virology, or molecular genetics. The research program must be funded or, in the case of a junior applicant, eminently fundable.

The PHRI is an independent, not-for-profit research organization founded in 1942. Its current programs center on basic molecular biology and molecular genetics.

The PHRI offers an excellent research environment and laboratory facilities, start-up funds, and a generous benefits package. Salary is negotiable.

Candidates should submit curriculum vitae, a statement of research interests and accomplishments, and a list of at least three references. Review of applications will begin on 11 December 1988, but applications will be accepted until the position has been filled. Applications should be sent to: **Dr. Leonard Mindich, Chairman, Recruiting Committee, Public Health Research Institute, 455 First Avenue, New York, NY 10016.**

The PHRI is an Equal Opportunity Employer.

RESEARCH SCIENTIST: to perform solid state/superconductivity research, development of improved image gathering and processing techniques and digital image processing. Must have Ph.D. in physics; educational background in pure and applied physics, knowledge of large scale computer simulation of dynamical systems, signal processing and digital systems, statistical theory and Wigner representations of theory required. Forty-hour week, 9 a.m. to 5 p.m., \$26,000 per year; work in Hampton, Virginia. To apply, mail résumé with copy of advertisement to: **M. J. Hotchkiss, VEC, 5145 East Virginia Beach Boulevard, Norfolk, VA 23502; J.O. No. VA8102712.**

POSITIONS OPEN

RESEARCH PROJECT LEADER

Kallestad Diagnostics is a leading manufacturer of medical diagnostics located in suburban Minneapolis, MN. Our rapid growth, in the area of reagents as well as instrumentation, is creating opportunities for experienced individuals to develop new immunoassays. We are currently seeking Project Leaders with an appropriate degree and 3+ years industrial experience in developing immunoassays. Individuals with thesis or postdoctoral experience in developing immunoassays will also be considered. Experience with immunoprecipitation, enzyme or fluorescent immunoassay is very desirable. We offer competitive salary and benefits and pleasant working conditions. If you have the above qualifications and are interested in joining a rapidly growing company where your achievements will be recognized, send detailed résumé in confidence: **c/o R. Gay, Kallestad Diagnostics, 1000 Lake Hazeltine Drive, Chaska, MN 55318.** *Equal Opportunity/Affirmative Action Employer.*

RESEARCH SCIENTIST/SENIOR TECHNICIANS—PDS Research Laboratories is seeking individuals with Ph.D./M.S. degrees or B.S. degree with laboratory experience in cellular immunology or cell biology. The positions (which are open immediately) involve research on immunological aspects of the interaction of HIV with target cells with specific focus on cellular immune response in humans. Salary commensurate with experience and comprehensive benefits. Send your résumé to: **PDS Research Laboratories, Attention: Lynn Harrell, 13 Taft Court, Rockville, MD 20850. Telephone: 301-294-2297.**

RESEARCH SCIENTISTS INSTITUTE OF BIOMEDICAL SCIENCES ACADEMIA SINICA, TAIPEI, TAIWAN, R.O.C.

Several positions are available, at both the junior and senior levels, in a newly established research institute on the outskirts of Taipei, Taiwan. Each position carries full-time salary, well-equipped laboratories, set up funds, as well as salaries for research technicians. Candidates should have a background in biochemistry, molecular biology, or cell biology. There is an on-going research project in the Laboratory of Cell Biology directed at structural and functional analysis of proteins of the cell nucleus specific for differentiation states in esophageal epithelium. We are especially interested in candidates who can direct this program and/or complement it. Applicants should send curriculum vitae, a statement of research interests and arrange to have three letters of recommendation sent to: **Dr. Cheng-Wen Wu, Director, Institute of Biomedical Sciences, Academia Sinica, Taipei 11529, Taiwan. FAX: 886-2-782-5573.** Application material should be received by 5 January 1989. Qualified candidates will be notified for interviews at ASBMB/ASCB meeting to be held 29 January to 3 February 1989 at San Francisco, CA.

AUSTRALIAN MUSEUM—SYDNEY

The Australian Museum is seeking two **SCIENTIFIC OFFICERS**, Grade 1-4; salary: A\$22,576 to A\$43,052.

TERRESTRIAL ECOLOGY/ENVIRONMENTAL MANAGEMENT. Position No: AM 88/34. Conduct original research in terrestrial ecology/environmental management. Co-ordinate Museum submissions on environmental matters, participate in education/interpretive programs, answer public/professional enquiries. Essential: Science Degree in terrestrial ecology and/or environmental management, demonstrated research ability; understanding of environmental issues. Additional information: 612-339-8111 (**Dr. G. Pyke**).

INVERTEBRATE PALAEONTOLOGY. Position No: AM 88/35. Conduct research on fossil invertebrates, answer public/scientific enquiries concerning fossil invertebrates, participate in educational/interpretive programs, supervise staff/manage resources. Essential: Tertiary qualifications in geology and/or zoology, demonstrated research experience and publication record, superior knowledge of diversity/evolution of fossil invertebrates, experience in supervising staff. Additional information: 612-339-8245 (**Dr. D. Hoes**).

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Applications should be forwarded to: **The Staff Manager, Australian Museum, 6-8 College Street, Sydney, 2000 N.S.W. Australia by 27 January 1989.**

Analytical Chemists

Your Knowledge Of Polymer Chemistry Can Help Shape The Future Of Health Care.

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

Section Manager/Principal Scientist

In this highly demanding and extremely visible position, you will be responsible for supervising a group of scientists and technicians in the area of polymer characterization. Supporting the efforts of both suture and mechanical R&D, you will be responsible for troubleshooting material-related problems in both manufacturing and process development. In addition to demonstrated management abilities, you should possess at least 5+ years' experience in polymer characterization, including supervision at the Ph.D. level. We also expect that you will have hands-on experience in x-ray diffraction, thermal analysis, optical and electron microscopy and polymer structure property relationships. A Ph.D. in Polymer Science,

Chemistry, Chemical Engineering or a related discipline is required.

Scientist/Senior Scientist

As a key member of an interdisciplinary project team, you will support the development of new suture fiber and mechanical wound closure devices by providing morphological and structural data in optimizing properties and performance of polymeric materials. In addition to a Ph.D. in Polymer Science or Engineering, Materials Science, Physical Chemistry or Chemical Engineering, you'll need 0-5 years' post-doctoral or industrial experience in elucidating structure/property/processing relationships in polymers. A knowledge of x-ray diffraction, thermal analysis and microscopy is desirable.

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

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AAAS MASS MEDIA SCIENCE AND ENGINEERING FELLOWS PROGRAM

The American Association for the Advancement of Science (AAAS) invites outstanding students in the natural and social sciences and engineering, preferably those at the graduate level, to apply for the 1989 Mass Media Science and Engineering Fellows Program. Students majoring in English, journalism, or other nontechnical fields are not eligible for these fellowships.

Fellows will work as reporters, researchers, production assistants, and script consultants for 10 weeks during the summer at newspapers, news magazines, and radio and television stations across the country. Fellows will have the opportunity to participate in the news making process, to increase their understanding of editorial decision making, and to develop skill in conveying to the public a better understanding and appreciation of science and technology.

AAAS pays a \$300 weekly stipend and travel expenses. Deadline for receipt of applications is 1 February 1989. *Minorities and persons with disabilities are especially encouraged to apply.*

For further information and applications, write:

**Mass Media Science and Engineering
Fellows Program
AAAS
1333 H Street, NW
Washington, D.C. 20005**

SECTION HEAD Neurochemistry

The division of Neurochemistry within the department of Experimental Therapeutics at Wyeth-Ayerst Research has an immediate opening for a senior level candidate to head this Section.

This position directs the activities of 3 Ph.D. research supervisors along with their support teams in the discovery of mechanism-based drugs for anxiety, depression, schizophrenia and dementia. Key project contributions will be in the areas of mechanism based neurochemical screens and functional pharmacological assessment, neurochemical profiling and neurotransmitter metabolic effects of novel psychotherapeutic compounds.

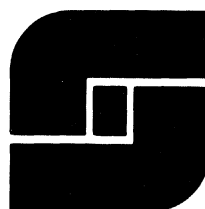
Candidate should possess a Ph.D. in a basic medical science with a broad neuroscience background. Management experience in an R&D setting is required.

Wyeth-Ayerst Research is a division of Fortune 100 American Home Products and offers an excellent salary and benefits package along with opportunities for career advancement. Our modern laboratory facilities are located in central New Jersey. Interested candidates should forward their curriculum vitae indicating salary history to:

Personnel Manager, Dept. EM

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PHARMACOLOGIST (Chemical Disposition)

Southern Research Institute is seeking candidates for a position in an ongoing research program on drug disposition and pharmacokinetics.

The successful candidate should have a doctoral degree in pharmacology, biochemistry, or other appropriate field. Requirements include a good understanding of the biological and chemical mechanisms that govern absorption, distribution, metabolism, and excretion of drugs; good analytical techniques in the analysis of biological fluids; and effective written and oral communication skills. Post-doctoral experience is not required.

A primary responsibility of this position is to evaluate the relationship between chemical structure and the physiological mechanisms that determine pharmacokinetic parameters in animals. The opportunity is available to develop and execute new research programs, especially in collaboration with scientists in other groups.

With a staff numbering over 700, Southern Research offers a stimulating work environment, generous benefits, modern research facilities, and an extensive technical library.

Qualified candidates should send their curriculum vitae to Tracy E. Higgins, Human Resources, Dept. 323, SOUTHERN RESEARCH INSTITUTE, P.O. Box 55305, Birmingham, AL 35255.

An Affirmative Action/Equal Opportunity Employer.

Molecular/Cell Biologists

Abbott Laboratories has made a long-term commitment to outstanding research. We now seek two Research Associates to bring their talent and experience to our Corporate Molecular Biology Group.

MOLECULAR NEUROBIOLOGY

A B.S. or M.S. in molecular biology, cell biology, biochemistry, or related field, and extensive laboratory experience is required. Research, focusing on the molecular biology of synaptic proteins, will involve the cloning, characterization and expression of neurotransmitter receptors. Familiarity with neurobiology and pharmacology is helpful. Knowledge and experience in the following is desired: cloning strategies, library screening, subcloning, DNA sequencing, blot hybridization, eukaryotic gene expression, and cell culture. Strong communication skills and the ability to work independently are important.

ONCOGENES/TUMOR SUPPRESSION

A B.S. with 5 years relevant experience or M.S. with 3 years relevant experience is desired. We seek a mammalian cell culture specialist to work as part of a team in the isolation of human oncogenes and tumor suppressor genes. Skills in any of the following areas would be beneficial: cell fusion, soft agar cloning, cytogenetics, transfection, and animal handling. Strong communication skills are also required.

Abbott Laboratories, located in an attractive suburb 30 miles north of Chicago, offers a stimulating scientific environment, excellent salaries and extensive benefits which include profit sharing and stock retirement plans. For consideration, send resume including names and phone numbers of 3 references with salary history to: **Sarah Reiff, Corporate Placement, Dept. SCI/11-25, Abbott Laboratories, Abbott Park, IL 60064.** Abbott is an Affirmative Action Employer.

ABBOTT LABORATORIES



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Research Scientists

Triton Biosciences Inc. is a fully integrated pharmaceutical & diagnostics company focused on product development opportunities in the areas of cancer and other life threatening diseases. This entrepreneurial subsidiary of Shell Oil Company is seeking goal-oriented researchers with experience in the diagnostics industry to help create high quality products that fill critical medical needs. Current opportunities include:

Infectious Disease Scientist

Requires a PhD in Microbiology or equivalent experience. Duties will include the purification and antigenic analysis of viral proteins, evaluation of monoclonal antibodies and the construction of sensitive immunoassays. Refer to Box SC.

Molecular Immunology Scientist

Requires a PhD in Immunology or Biochemistry with further postdoctoral experience in the immunological and molecular characterization of protein antigens. Background in tumor markers, cancer immunology and immunoassay development desirable. Refer to Box RW.

New Cancer Marker Scientist

Requires a PhD in Biological Sciences or equivalent experience with expertise in cancer biology. Duties include effective interaction with a multidisciplinary team in evaluating new cancer markers for diagnostic use. Refer to Box YT.

Process Development Scientist

Requires a PhD in Chemistry or Biological Sciences or equivalent with industrial experience in immunochemistry. Duties will include optimising the manufacturing processes for immunoassay kit components at commercial scale, transferring the technology to Manufacturing, and providing technical support to Manufacturing after transfer. Refer to Box BW.

Triton offers competitive salaries and benefits including relocation assistance. For consideration, send CV, with salary history and references to: Triton Biosciences Inc., 1501 Harbor Bay Parkway, Alameda, CA 94501. An Equal Opportunity Employer.



Triton Biosciences Inc

DIRECTOR, NEUROTOXICOLOGY DIVISION

The U.S. Environmental Protection Agency (EPA) is seeking candidates for the position of Director, Neurotoxicology Division (NTD). This position is located in the Health Effects Research Laboratory (HERL), Research Triangle Park, NC. This is a permanent full-time position with a salary range of \$54,907 to \$71,377 per annum commensurate with qualifications.

HERL has a staff of about 325, over 100 of whom hold doctoral level degrees. The Laboratory has a diverse program which includes *in vitro*, animal, human clinical, and epidemiological research designed to address issues related to the health effects of air and water chemical and biological pollutants.

THE NTD is a multidisciplinary program organized into three branches: Behavioral Toxicology, Neurophysiology and Systems Engineering with a combined staff of 33. The Division is a focal point for planning, conducting, coordinating, supporting and evaluating a program aimed at studying the effects of chemical and/or physical agents on nervous system functions. The program includes both intramural investigations and extramural arrangements with universities, industry, private research institutions and other government agencies. The primary responsibilities of the Director are to direct and manage the program. This includes developing the program to meet the evolving needs of EPA, presenting the program, developing and managing budgets, supervising the staff, directing the progress of the program, and ensuring the scientific quality and productivity of the program.

Qualifications for the position include:

1. Advanced degree in Pharmacology, Toxicology, Psychology, Physiology or Biology with a minimum of six years of professional research experience in any of these areas. Applicable graduate coursework may be substituted for a portion of the required experience. This required education and experience must include a substantial background in neurotoxicology.
2. Experience in developing and managing budgets.
3. Experience as supervisor of a scientific/professional staff.
4. Applicants must have recognized scientific expertise as evidenced by multiple publications in peer-reviewed literature and invitations to participate in national and international meetings/panels.
5. Proven ability to provide leadership in directing the development and progress of a creative and effective research program in neurotoxicology.
6. U.S. Citizenship is required.

Forward curriculum vitae and names of three references prior to December 9, 1988 to:

**Dr. Lawrence W. Reiter
c/o Terri Burrell, HRMD (MD-29)
U.S. Environmental Protection Agency
Research Triangle Park, NC 27711**

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RESEARCH ASSOCIATE, POSTDOCTORAL, OR MASTER'S DEGREE WITH EXPERIENCE to study theoretical (evolutionary biology, ecology) and applied (fisheries biology) molecular population genetics of marine vertebrates and invertebrates. Experience in techniques of obtaining, and analysis of, mitochondrial or single-copy DNA restriction fragment patterns is required. Knowledge of DNA sequencing techniques and proven publication ability is desirable. Position is available at a multidisciplinary research facility with a state-of-the-art molecular genetics laboratory. Salary is \$22,000 to \$25,000 per annum, benefits not included. Send curriculum vitae, names of three references, recent publications, and transcripts if graduated within the past 3 years, by 20 December 1988 to: **Personnel Office, Florida Marine Research Institute, 100 Eighth Avenue Southeast, St. Petersburg, FL 33701. An Equal Opportunity/Affirmative Action Employer.**

SCIENTIST—conduct research in the area of solid state imagers for application in electronic still photography. Design, conduct and analyze experiments in the development of semiconductor-based detectors. Use computers to design and analyze experiments and model device response; use sophisticated fabrication equipment to generate devices for testing; relate fundamental material properties to device performance. Requirements include Ph.D. in physics; strong background in experimental solid state physics and interaction of radiation with matter; solid-solid interfaces; material characterization techniques and their application to determine atomic structure, electronic states, electronic transport, etc. in semiconducting, metallic and superconducting materials; state of the art epitaxial thin film growth techniques, such as MOCVD or MBE; determination of growth mechanism; semiconductor device fabrication techniques; computer modeling and programming as applied to semiconductor device physics; as well as thorough knowledge of VAX/VMS operating system and C/Pascal/Fortran languages. No experience required. Salary: \$42,465 per year; 40 hours per week. Respond with résumé only to: **Job Order #9121, Division of Employment Security, Government Center, Boston, MA 02114.**

SENIOR PROFESSORSHIP IN THE SPACE SCIENCES UNIVERSITY OF CALIFORNIA, LOS ANGELES

UCLA seeks an outstanding scientist, theoretical or experimental, in the space sciences, broadly construed as any physical science dependent upon, or stimulated by, data collected by space techniques. The appointment may be singly in any one of the Departments of Astronomy, Atmospheric Sciences, Chemistry, Earth and Space Sciences, or Physics, or jointly between departments and/or the Institute of Geophysics and Planetary Physics. Strengths of UCLA that the appointment might complement include: space plasma physics, solar-planetary relationships, climate dynamics, star formation, cosmochemistry, and planetary physics.

Interested individuals should contact: **Professor William M. Kaula, Department of Earth and Space Sciences, University of California, Los Angeles, CA 90024-1567. Telephone: 213-825-4363. UCLA is an Affirmative Action/Equal Opportunity Employer.**

SENIOR RESEARCH INVESTIGATOR. Establish and maintain a capability for research in molecular biology, recombinant DNA and microbial genetics; to use these techniques to generate novel microbial strains for improved phenylalanine production and potential new products. Specifically, to contribute special skills in the areas of gene synthesis and protein engineering to the research program as well as contribute to the development of new projects. Ph.D. in molecular genetics or microbiology required together with 1 year and 6 months of experience in the job offered or 1 year and 6 months of experience as a postdoctoral research associate or scientist. The required experience must have involved the conduct of research and development in the production of phenylalanine and in the design, construction and expression of a thaumatin gene and conducting analysis of the protein interaction with the sweetness receptor by site-directed mutagenesis. Forty hours, Monday to Friday, 9 a.m. to 5 p.m.; \$55,000 per year. Send résumé and Social Security number to: **Illinois Department of Employment Security, 401 South State Street—3 South, Chicago, IL 60605, Attention: Mr. Robert S. Felton, Reference # V-IL 8623-F. An employer-paid ad.**

POSITIONS OPEN

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Synbiotics Corporation, a San Diego based leader in the field of biotechnology, is enjoying continued growth. We are seeking individuals to join us for the following opportunities:

SENIOR SCIENTIST: will be instrumental in developing substances with novel pharmacological characteristics. Ph.D. in biochemistry with knowledge of enzymology, immunology and receptors preferred.

SCIENTIST: will be synthesizing small peptides of pharmacological interest. Knowledge of protein chemistry and computer proficiency (dBase, Lotus 1-2-3 preferred).

Synbiotics offers competitive salaries and benefits and a stimulating work environment. Please submit your curriculum vitae in confidence to: **R&D Professional Staffing, Synbiotics Corporation, 11011 Via Frontera, San Diego, CA 92127. Equal Opportunity Employer.**

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The Catholic University of America invites applications for one or two faculty positions at the **ASSISTANT PROFESSOR** level in a vigorous and expanding Department of Biology. Investigators working in the areas of virology (molecular virology or viral/host interactions), molecular neurobiology or cellular immunology are particularly encouraged to apply. The successful candidate will be expected to initiate an active research program that will complement training of undergraduate and graduate students. The candidate will also have opportunities to participate in the activities of The Center for Advanced Training in Cell and Molecular Biology and The Institute for Biomolecular Studies. For full consideration, send curriculum vitae, statement of research goals, and three letters of reference by 20 January 1989 to: **Dr. John Golin, Department of Biology, Catholic University of America, Washington, D.C. 20064. An Affirmative Action/Equal Opportunity Employer.**

Early alert: Editing scientific papers in forestry and related fields; **GS-9 WRITER-EDITOR** position opening soon. Send résumé to: **M. H. Brookes, Pacific Northwest Research Station, USDA Forest Service, P.O. Box 3890, Portland, OR 97208. Minorities encouraged to respond.**

POSITIONS OPEN

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

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

GRADUATE STUDIES

GRADUATE STUDY IN CHEMICAL AND BIOLOGICAL SCIENCES at the Oregon Graduate Center. Highly qualified, strongly motivated students sought for interdisciplinary research programs specializing in microbial and higher plant biotechnology, membrane chemistry, and metallobiochemistry. OGC offers intensive research experience in a dynamic, growing department with maximal student-faculty interaction. Research assistantships and tuition scholarships available to qualified Ph.D. applicants. Write: **Dr. Ninian Blackburn, Department of Chemical and Biological Sciences, Oregon Graduate Center, Beaverton, OR 97006-1999.**

PROGRAM

DOCTORAL PROGRAM IN MICROBIOLOGY seeks quality candidates to study molecular genetics, cell biology, virology, immunology, pathogenic microbiology, microbial biochemistry, biotechnology, and applied and environmental biology in a cooperative program between Rutgers, The State University of New Jersey, and the University of Medicine and Dentistry of New Jersey. Seventy-five faculty from various university departments, research centers and institutes participate in the program to provide excellent research training and employment opportunities. Fellowships, assistantships, and scholarships provide up to \$11,000 stipend plus tuition to qualified applicants on a competitive basis. Contact: **Dr. Alan D. Antoine, Graduate Program in Microbiology, Rutgers University, P.O. Box 231, New Brunswick, NJ 08903. Telephone: 201-932-9881. An Affirmative Action/Equal Opportunity Employer.**

DOCTORAL STUDIES IN BIOLOGY AND MOLECULAR BIOLOGY

The Department of Biological Sciences of the University of Maryland Baltimore County offers courses of study leading to Ph.D. degrees in Biological Sciences, Molecular and Cell Biology and Marine Estuarine-Environmental Studies. The research interests of the 25 faculty of the Department include microbiology, molecular biology of prokaryotes and eukaryotes, plant biology, genetics, cell and developmental biology, physiology, ecology and evolution. The Department is equipped with state-of-the-art facilities for modern research in biology, and is located in the most rapidly growing campus of the University of Maryland system. Graduate assistantships offered to incoming students include a 12-month stipend of \$10,325 and remission of tuition. To obtain an application form and further information please write to: **Dr. Paul S. Lovett, Chairman, Graduate Programs in Biological Sciences, Department of Biological Sciences, University of Maryland Baltimore County, 5401 Wilkens Avenue, Baltimore, MD 21228.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP. We invite inquiries from candidates with a Ph.D., M.D./Ph.D. or M.D. for a 3-year postdoctoral fellowship in immunology. The laboratory studies the biochemical regulation of human T lymphocyte immune effector functions in health and in autoimmune disorders. This position is supported by an NIH training grant. Please address inquiries accompanied by curriculum vitae to: **Gary M. Kammer, M.D., Division of Rheumatic Diseases, Department of Medicine, University Hospitals of Cleveland, 2074 Abington Road, Cleveland, OH 44106.**

RESEARCH/ TEACHING SPECIALIST

Research technician for transgenic mouse laboratory. Responsibilities include working under the direction of faculty members in developing DNA constructs and injection, and subsequent implantation of fertilized egg. Requires Bachelor's degree in a relevant science, Ph.D. candidates preferred. Please send resume to: **Ms. Mila C. Gendrano, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, Human Resources Department (S), 675 Hoes Lane, Piscataway, NJ 08854-5635.** The UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer M/F/H/V



DIRECTOR, MOLECULAR BIOLOGY RESEARCH AND DEVELOPMENT

Bionetics Research Institute conducts cancer and diagnostic product development under the umbrella of the Pharma Division of Akzo, N.V., a worldwide organization with commercial endeavors in 50 countries. We are currently conducting recruitment for a high level scientist for the position of **DIRECTOR, MOLECULAR BIOLOGY AND RECOMBINANT DNA LABORATORY.**

This individual will direct a group of scientists developing recombinant proteins for cancer and viral therapeutic and diagnostic use. This individual will also interact with other laboratory directors to coordinate collaborative research projects on cytokines, human tumor antigens, human monoclonal antibodies, immunotoxins, and recombinant viral proteins.

Experience should include five plus years of research in gene cloning and prokaryotic and eucaryotic expression with a strong publication record and sound supervisory and interpersonal skills.

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The principle duties of the position include designing, conducting, supervising and evaluating pulmonary pharmacologic research activities aimed at: (i) testing, selecting and developing novel pharmacological entities which may provide therapies for the treatment of bronchial asthma and other respiratory disorders; (ii) gaining a full understanding of the basic mechanisms underlying airway hyperactivity associated with bronchial asthma and other respiratory disorders, including the influence of epithelium-derived factors on airway smooth muscle reactivity, the excitation-contraction coupling mechanisms involved in the contraction of airway smooth muscle, and the phenomenon of functional antagonism in airway smooth muscle; (iii) supervising the performance of laboratory personnel of planned experimentation and coordinating, evaluating and drawing conclusions from experimental data; (iv) recommending modification, curtailment or expansion of current pulmonary pharmacologic research projects and the initiation of new projects; and (v) representing the Company's Department of Pharmacology at appropriate scientific conferences and professional meetings.

The minimum requirements for the position are a Ph.D. degree in Pharmacology and six (6) years experience in pharmacologic research including four (4) years research experience relating to the basic mechanisms underlying airway hyperactivity associated with respiratory disorders, including analyzing the influence of epithelium-derived factors on airway smooth muscle reactivity and the excitation-contraction mechanisms involved in the contraction of airway smooth muscle and two (2) years experience in analyzing leukotriene receptor antagonist activity in both in vitro and in vivo testing systems and in performing ⁴⁵Ca flux measurements and phosphatidylinositol (PI) turnover studies and utilizing radioimmunoassays (RIA), cultured airway epithelial cells and perfusion/bioassay cascade systems.

Salary of \$49,925 with liberal employee benefits. No fee charged. For prompt and confidential consideration, send resume to: The Philadelphia Job Bank, Job Order Number 4208539, 444 N. 3rd Street — 3rd Floor, Philadelphia, PA 19123. Equal Opportunity Employer, M/F/H/V.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP. We invite inquiries from candidates with a Ph.D., M.D./Ph.D. or M.D. for a 3-year postdoctoral fellowship in studies of connective tissue cells and matrix, and osteoarthritis, including chondrocyte biology, and animal models of arthritis. This position is supported by an NIH training grant. Please address inquiries accompanied by curriculum vitae to: **Roland W. Moskowitz, M.D., Division of Rheumatic Diseases, Department of Medicine, University Hospitals of Cleveland, 2073 Abington Road, Cleveland, OH 44106.**

ALEXANDER HOLLAENDER DISTINGUISHED POSTDOCTORAL FELLOWSHIP PROGRAM provides research opportunities in the life, biomedical, and environmental sciences. Fellowships are tenable at various Department of Energy and university laboratories with programs supportive of the Office of Health and Environmental Research. Stipend is \$35,000. A doctoral degree received after 1 April 1987 is required, as is U.S. citizenship or PRA status. Deadline is 17 January 1989. For application materials contact: **Hollaender Postdoctoral Fellowships, University Programs Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3190.**

FELLOWSHIPS IN REPRODUCTIVE BIOLOGY NORTHWESTERN UNIVERSITY

Postdoctoral and predoctoral fellowships are available in reproductive biology for outstanding students. A diverse but cohesive program offers research in the biochemical, molecular, cellular, physiological, and behavioral aspects of reproduction. Participating faculty include: **Erwin Goldberg** (Immunochemistry and reproductive biochemistry); **Mary Hunzicker-Dunn** (Ovarian protein kinase; adenyl cyclase); **William Klein** (Receptors; CNS differentiation); **Jon Levine** (Neuroendocrinology); **Kelly Mayo** (Gene regulation in the mammalian neuroendocrine system); **Neena Schwartz** (Gonadal-pituitary endocrinology); **Joseph Takahashi** (Circadian rhythms and photoreception); and **Fred Turek** (Photoperiodism and biological rhythms). Send curriculum vitae and names of three references to: **Dr. Jon E. Levine, Department of Neurobiology and Physiology, Northwestern University, 2153 Sheridan Road, Evanston, IL 60208.**

Applicants must be eligible for the N.I.H. Training Program (U.S. citizen or permanent resident).

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GRADUATE STUDENT AND POSTDOCTORAL FELLOWSHIPS IN ENVIRONMENTAL MOLECULAR AND CELLULAR CARCINOGENESIS AND MUTAGENESIS

The University of Cincinnati College of Medicine offers a modern interdepartmental training program in environmental molecular and cellular carcinogenesis and mutagenesis. Cincinnati is a leading academic and industrial center for environmental studies providing numerous employment opportunities. Experimental approaches within the program include the role of growth factors and oncogenes in cellular transformation, the use of transgenic cells and animals, and molecular toxicology. Participating faculty are: **Dr. Roy Albert** (carcinogenic mechanisms and risk assessment); **Dr. Stuart Baxter** (tumor promotion); **Dr. Michael Lieberman** (growth factors and differentiation); **Dr. John Loper** (P450 systems in yeast); **Dr. Steven Potter** (insertional mutagenesis in transgenic mice); **Dr. Howard Shertzer** (chemoprevention of carcinogenesis); **Dr. Peter Stambrook** (mutagenesis in transgenic cells and mice); **Dr. Edward Stavnezer** (oncogenes and cell transformation); **Dr. James Stringer** (recombination and gene targeting in ES cells); and **Dr. David Warshawsky** (mechanisms of chemical carcinogenesis).

Positions are immediately available and are funded through a national research training program. Applicants must have U.S. citizenship or permanent residency and have completed a Ph.D. degree or equivalent. Candidates should send curriculum vitae and three letters of recommendation to: **Dr. Peter J. Stambrook, Department of Anatomy and Cell Biology, University of Cincinnati College of Medicine, Cincinnati, OH 45267. An Equal Opportunity/Affirmative Action Employer.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP IN ANIMAL BEHAVIOR. The National Zoological Park, Smithsonian Institution, and the Laboratory of Comparative Ethology, National Institute of Child Health and Human Development, are sponsoring a 2-year postdoctoral fellowship (in residence) in the fields of mammalian and avian communication, developmental behavior, comparisons of behavior in laboratory, field, and exhibit settings, and interspecific compatibility. All applicants must submit a detailed proposal, justification for conducting research in residence and an application form by 15 January 1989. Senior postdoctoral (degree held more than 7 years), stipend \$25,000 plus allowances; junior postdoctoral (degree held less than 7 years), stipend \$20,000 plus allowances. Contact: **Dr. Edwin Gould, Curator of Mammals, National Zoological Park, Washington, DC 20008** or **Dr. Steve Suomi, Director, Laboratory of Comparative Ethology, 9000 Rockville Pike—#31, Bethesda, MD 20205.**

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Tourette Syndrome Association, Inc.

ANNOUNCES . . .

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POSTDOCTORAL FELLOWSHIP in intracellular calcium, biochemistry, molecular biology, genetics, renal metabolism and hypertension is available immediately through an NIH Research Training Program at the Medical College of Virginia (MCV). Salary \$24,000 to \$27,000 plus travel, tuition and other benefits. Opportunity for professional growth. Candidate must have a Ph.D., M.D. or equivalent degrees and be a permanent resident or citizen of the United States. Applicants should send curriculum vitae, concise statement of research interest, and the names of three references to: **Dr. J. C. M. Chan, Box 498 MCV Station, Richmond, VA 23298-0498.**

STATEMENT

U.S. POSTAL SERVICE

Statement required by the Act of 12 August 1970, Section 3685, Title 39, United States Code, showing the ownership, management, and circulation of:

1-6. *Science* is published weekly on Friday, except the last week in December, at 1333 H Street, NW, Washington, DC 20005. Date of filing: 7 November 1988. This is also the address of the publisher, the editor, and the managing editor, who are, respectively, **Alvin W. Trivelpiece, Daniel E. Koshland, Jr., and Patricia A. Morgan.**

7. The owner is American Association for the Advancement of Science, 1333 H Street, NW, Washington, DC 20005. Stockholders: None.

8. Known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities: None.

9. The purpose, function, and nonprofit status of this organization and the exempt status for federal income tax purposes have not changed during the preceding 12 months.

10. The average number of copies of each issue during the preceding 12 months is (A) Total number of copies printed: 161,037; (B) Paid circulation: (1) sales through dealers and carriers, street vendors, counter sales: None; (2) Mail subscriptions: 151,584; (C) Total paid circulation: 151,584; (D) Free distribution by mail, carrier, or other means: samples, complimentary, and other free copies: 3,258; (E) Total distribution: 154,842; (F 1) Office use, leftover, unaccounted, spoiled after printing: 6,195; (F 2) Returns from news agents: None; (G) Total: 161,037.

Actual number of copies of single issue published nearest to filing date are (A) Total number of copies printed: 162,690; (B) Paid circulation: (1) Sales through dealers and carriers, street vendors, counter sales: None; (2) Mail subscriptions: 150,555; (C) Total paid circulation: 150,555; (D) Free distribution by mail, carrier, or other means: samples, complimentary, and other free copies: 6,055; (E) Total distribution: 156,610; (F 1) Office use, leftover, unaccounted, spoiled after printing: 6,080; (F 2) Returns from news agents: None; (G) Total: 162,690.

I certify that the statements made by me above are correct and complete. (signed) **John Colson, Director, Membership/Circulation.**

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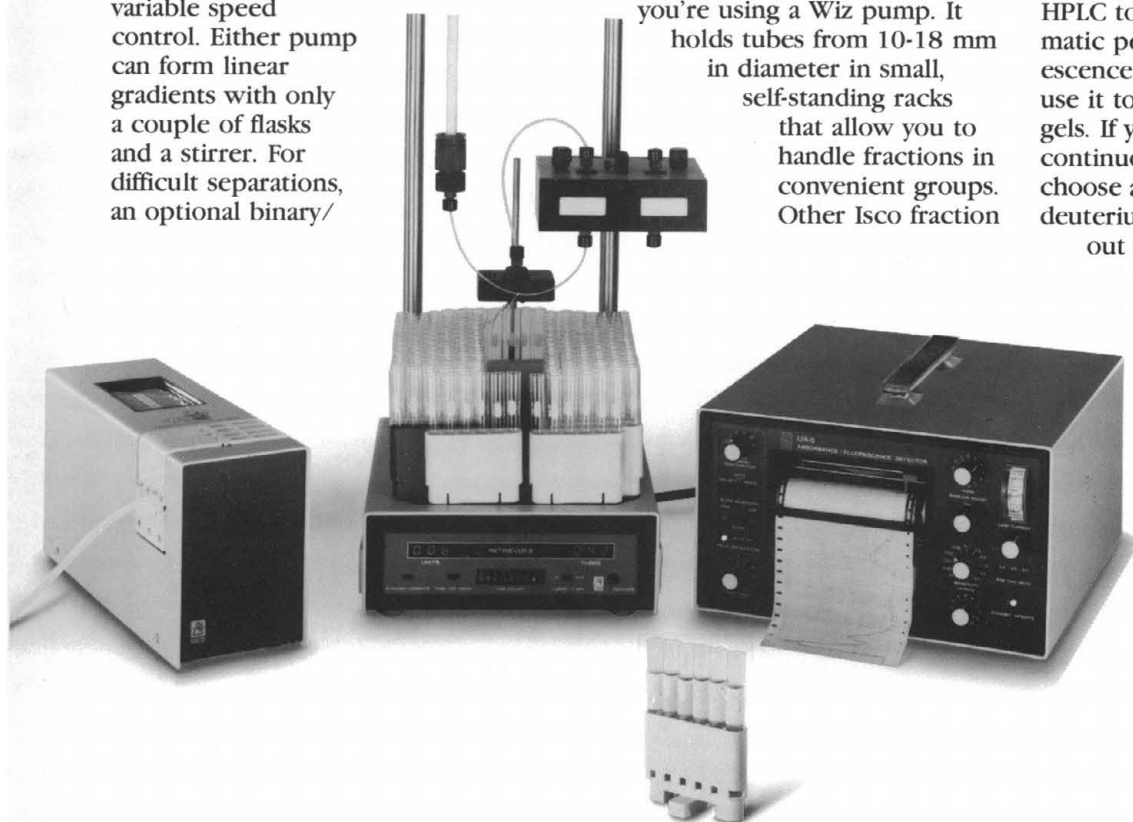
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