

The heteropod *Atlanta peroni*, lateral view. "Heteropods are highly modified for life in the open ocean, the major morphological adaptations including a reduction in the size and weight of the aragonite shell or a loss of the shell associated with an increase in body size; the development of a single swimming fin derived from the gastropod foot; and a tendency for the body and shell to be transparent." [Magnification about 5; from *Pelagic Snails*]

limited familiarity with these animals. The book will be of interest to a wide range of readers. It is unique in being the first book devoted exclusively to the fascinating and little-known groups that comprise the pelagic snails.

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Uncertainties about Mammals

Evolution of Life Histories of Mammals. Theory and Pattern. MARK S. BOYCE, Ed. Yale University Press, New Haven, CT, 1988. xvi, 373 pp., illus. \$45. Based on a symposium, Edmonton, Alberta, Aug. 1985.

Useful compilations or syntheses usually tell us one of two things: we know a lot more about something than we suspected; or we know a lot less about something we thought we had just about got right. Boyce's compilation on mammalian life histories does more the latter. Mammals have occupied a disproportionate share of the literature on life history evolution, and much of that literature reflects an overconfidence that the theoretical and empirical foundations of the subject are well settled. The 16 diverse contributions in this volume leave me even more convinced that this self-satisfaction is unjustified.

Boyce himself points out that there is an ever-increasing gap between the analysis of life history evolution from a theoretical perspective and attempts to test theory empirically. In particular, far too little is known about fluctuating environments. Unfortu-

nately, the empirical contributions to this book (for example, Negus and Berger's) stress the inadequacy of simple theoretical models with only a few parameters, while a theoretician berates empiricists for underestimating the complexity hidden in simple models (Schaffer). Because the conspicuous geographic variation in life history traits that prompted the interest in the first place is often not obviously dependent on tradeoffs (Cameron and McClure; Dobson), the implicit or explicit assumption of most theory may not be applicable to many of the trends we seek to explain. Even where tradeoffs seem to occur, the currency may be obscure, as indicated by Bujalska's claim that the high mortality of female voles during reproduction has little to do with the energetic costs of lactation and gestation but is rather dependent on sex-specific territoriality.

We do suspect that quantitative genetics would tell us a lot about the opportunity for, and response to, selection regimes in fluctuating environments. However, our capacity to measure the appropriate parameters in the field (Boonstra and Boag) is quite rudimentary. Although great sophistication can be achieved in laboratory studies (Leamy and Bradley), the evolutionary significance of tradeoffs observed in the laboratory needs to be treated with caution, as any phenotypic correlations may be dominated by the unusual and often benign environment.

Allometric and phylogenetic conservatism in the distribution of life history traits among higher taxa leads some authors to suggest that life history evolution is dictated largely by selection on body size (Lindstedt and Swain) or that interesting variation is often confined to higher taxonomic levels (Harvey and Read). These increasingly common claims sit uneasily with the substantial interspecific and intraspecific variability reported elsewhere in the volume, particularly in Smith's elegant review of research on pikas. In any case, allometric analysis remains a field dominated by a plethora of correlations yet lack of mechanistic explanations. As Harvey and Read comment, "Comparative life-history studies of mammals have so far done little more than describe patterns. Now that a general picture is beginning to emerge, attention must inevitably turn to explaining it."

The book has few errors, though the literature citations are often poorly checked. Its best feature is the papers that draw together large quantities of data and grope toward synthesis or that show special dedication. Some of these studies are certainly heroic in their breadth or implementation. Harvey and Read manage to cover the methods and results of interspecific compar-

isons of mammalian life histories with extraordinary clarity and admirable brevity. Dobson provided four tonnes of high-protein horse feed to show that ground squirrels have plastic life history traits! A surprising number of people have devoted large parts of their lives to measuring litter sizes of the cotton rat. Perhaps the central problems are the omissions and balance. Two topics I was surprised to find scarcely addressed are the currently exciting interface between behavioral and population ecology and the growing body of long-term field studies where lifetime consequences of life history variation can be assessed. Despite a token chapter on didelphid marsupials (Eisenberg), there is a strong bias toward herbivores in general, and rodents in particular. Even among herbivores, with the exception of Harvey and Read's contribution, the book follows the tendency of mammalogists to ignore primates or treat them as a group belonging to someone else. Although the most widely cited advantages of studies of rodents are their short lifespans and complex demography, facilitating measures of reproductive effort in a changing selective milieu, almost all the empirical studies deal with single atomized traits, such as body size or litter size.

So where do we go from here? All students of mammalian life histories will benefit from at least some of the contributions, yet the rewards are more from syntheses of past research than from a clear guide to profitable future directions. There is a nice catalog of unanswered questions scattered through the volume, but I suspect we need better selection of species suited for addressing particular questions and more focus on what special attributes mammals have to offer to the understanding of life history evolution in general, rather than a *posteriori* attempts to force pet study species into a theoretical straightjacket. My own biases are toward exploitation of the tractable fecundity, the complexity of social evolution, and the diversity of diet and habitat structure revealed in this most fascinating of groups.

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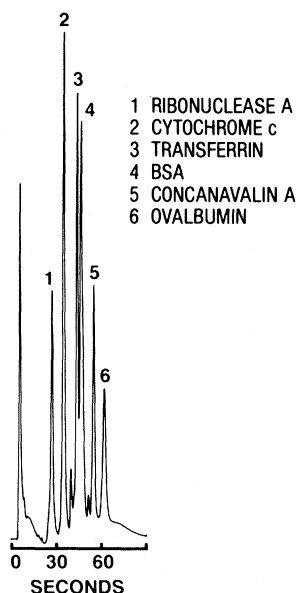
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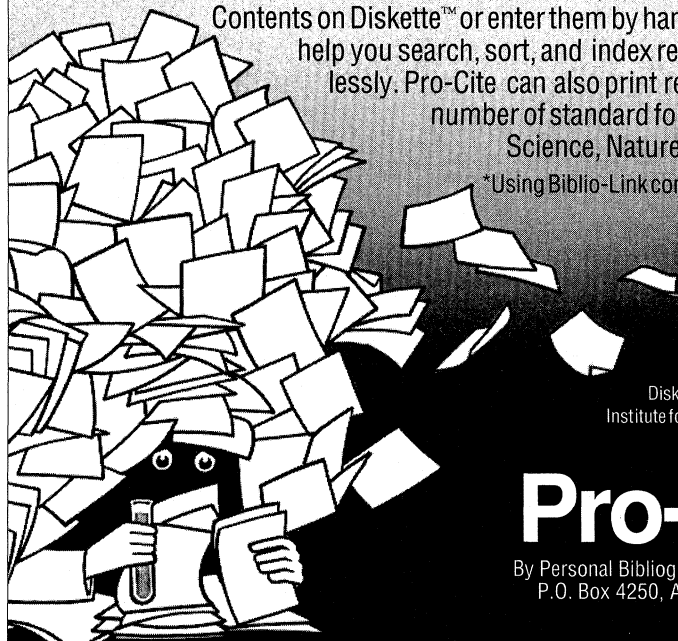
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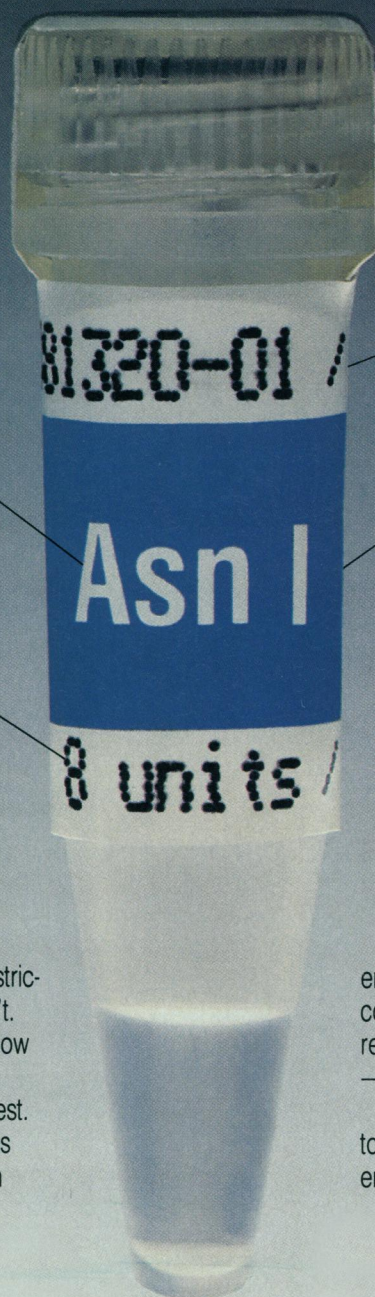
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Implantable Blood Pressure Monitor

The PhysioTel PA series implantable transmitters monitor blood pressure, heart rate, and physical activity continuously in rats, dogs, primates, and similarly sized animals while they move freely about their cages. The patent-pending devices eliminate the infections, stress, and maintenance associated with tethers and vascular access ports. The batteries, which have a 6-month continuous-use life, can be turned on and off in vivo via a magnetic switch. The devices come calibrated, sterile, and ready for implantation. Validation studies in rats have demonstrated that 85% are within 5 mmHg in systolic, diastolic, and mean pressure 8 weeks after implantation. Data Sciences. Circle 471.

Videotape Displays Mapped Stream Flow

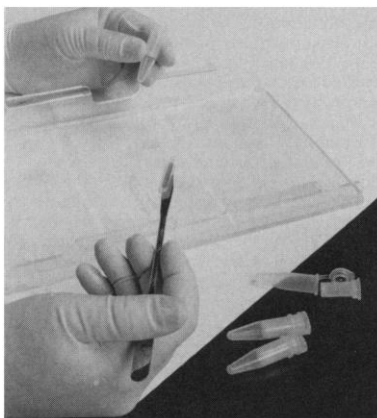
Time-Lapse Streamflow is a 1-hour VHS videotape that displays mapped, daily stream flow over most of North America for the 1930–1988 period. It condenses 21,535 days of color-coded, normalized stream-flow maps into a visual, time-lapse format. It

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.

is a research tool for climatologists, hydrologists, water supply managers, and others concerned with large-scale climate phenomena or surface water supplies. It provides a new approach for studying the development and movement of major droughts and storms over the past 59 years. Associated products are 35-mm slides of monthly stream flow, annual maps of continental stream flow, and the raw normalized data collected and processed for the time-lapse display. Time-Lapse Systems. Circle 473.

Centrifugal Device for DNA Sample Prep

The Ultrafree-MC filter unit can be used for a variety of DNA sample preparation applications. Depending on the membrane, the unit can be used for removal of DNA



from agarose gels; for concentration buffer exchange or dialysis; or for purification by separating DNA from free nucleotides, primers, probes, or other small DNA fragments. The Ultrafree-MC unit consists of a 400- μ l sample cup with a membrane sealed to the bottom that sits inside a 1.5-ml microcentrifuge tube. This design allows filtration and storage in one tube. Millipore. Circle 482.

Software for Protein Chemists

The AAQUANT programs contain the routines most commonly used by protein chemists. AAQUANT 1.0 is designed for researchers performing quantitative amino acid composition analysis and includes routines to create and update standards and hydrolysis data files. It can create and update protein sequence files, generate amino acid composition reports of known sequences, search a known protein for a region of specified amino acid composition, and construct proteolytic digestion maps of proteins. AAQUANT 1.5 includes fast se-

quence search and alignment routines, and performs hydropathy, hydrophobic moment, and secondary structure analysis of proteins. AAQUANT 2.0 is supplied with the National Biomedical Research Foundation protein database and includes database access routines. The programs run on IBM PC/AT, XT, PS2, or compatibles. Savant Associates. Circle 484.

Abbreviations Turned into Paragraphs

The Professional Version of PRD+ (Productivity Plus) enables the user to type abbreviations instead of whole words, phrases, mathematical formulas, and even paragraphs. If the user types an abbreviation and then hits the space bar or any punctuation key, PRD+ replaces the abbreviation with the long form for which it stands (up to 4000 characters). Long forms may be commands as well as text. PRD+ allows scientists to avoid disrupting their train of thought to think how words or formulas are spelled, and to write them the way they think about them with a laboratory abbreviation. Productivity Software International. Circle 485.

Literature

Fisher 89S is a 66-page catalog that lists more than 1500 products in the new smaller sizes recommended by the American Chemical Society for safety, economy, convenience, and easier storage and disposal. Among the materials in the new smaller packaging are acids, atomic absorption standards, biological stains, buffers, electrophoretic-grade reagents, high-performance liquid chromatography reagents, ion-exchange resins, solvents, normality solutions, organics, primary standards for colorimetry, salts, scintillation cocktails, silica gels, spectrophoretic solvents, and standard solutions. Fisher Scientific. Circle 521.

1989 Analytical Supplies Catalog and Chromatography Reference Guide is a 256-page catalog with information on products and supplies such as columns for gas and liquid chromatography, syringes, paper, chemical samples, and supplies for the entire range of chromatography instruments. Hewlett-Packard. Circle 522.

Productivity Tools for the Life Sciences is a catalog featuring radioisotope counting systems, thin-layer chromatography (TLC) imaging scanners, instruments for measurement and photography of TLC plates and electrophoresis gels, and radiation monitoring devices. Bioscan. Circle 523.

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.

LINE CLASSIFIED ADVERTISING DEADLINES:

Thursday, 10 a.m., 2 weeks prior to issue date (mailed on issue date). For deadlines for display advertising, please contact Scherago Associates.

POSITIONS WANTED: 40¢ per word, plus \$4 for use of box number, per week. \$10 minimum, per week. Prepayment required. This rate is available only to individuals seeking jobs.

LINE CLASSIFIED (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth): \$40.00 per line; \$400 minimum, per week (minimum charge covers one inch on a single column; one inch equals 10 lines of 52 characters and spaces per line). No charge for use of box number. No agency commission for ads less than 4 inches. No cash discount. Prepayment required for all foreign ads. Purchase orders required for all other advertising.

TO ESTIMATE ad cost:

Structure ad copy on a separate page, on lines of 52 characters and spaces. Include any desired heading. Each line of heading, and/or extra line spaces, and all partial lines (including centered reply information) are counted as full lines. Ad titles located within the text are printed in boldface caps and are only 32 characters per line. In ESTIMATING the cost, multiply total lines × \$40.00 = approximate cost of ad. (This is an approximate cost ONLY: Allow for variation between estimated lines and actual typeset lines and the resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.)

CANCELLATION POLICY:

NOTE: Ad cancellations made after Thursday, TWO weeks prior to issue date incur a 10% production charge. Final deadline for cancellations is 12 p.m. Tuesday, ONE week prior to issue date. Cancellations must be in writing.

Send copy for all **Positions Wanted** ads and **Line Classified** ads less than 1/6 page in size (39 lines) to:

SCIENCE Classified Advertising
1333 H Street, NW, Room 940
Washington, DC 20005
Telephone: 202-326-6555

Send copy for **Fractional Display** ads, 1/6 page and larger, and all **Marketplace** ads to:

Scherago Associates, Inc.
1515 Broadway
New York, NY 10036
Telephone: 212-730-1050

Blind ad replies should be addressed as follows:

Box (give number)
SCIENCE
1333 H Street, NW
Washington, DC 20005

POSITIONS WANTED

Biochemist, Ph.D.—Recombinant DNA, plant biochemistry, anticancer drug development. Seeks R/D position in start-up biotechnology company anywhere in world. VERMA, 15611 Southland Boulevard, Taylor, MI 48180.

Computer Scientist seeks research position with biomedical imaging, biotechnology, or molecular genetics research organization. Ph.D. plus 8 years of academic and industry experience in artificial intelligence, digital image processing, heuristic search, symbolic programming and databases. Skilled in statistics, grant writing, project management, graduate-level teaching and publishing. Box 218, **SCIENCE**.

POSITIONS WANTED

Cell Biologist, Ph.D. Extensive experience in immunology, anti-HIV drug screening, genetic toxicology, carcinogenesis, cell culture, electron microscopy, cytogenetics. Also, writing grant proposals, manuscript editing. Seeking position in industry, government, academia. Box 216, **SCIENCE**.

Neurochemist/Biopsychologist, Ph.D., with 15 years experience in aging and Alzheimer's disease research, excellent publication record and extensive teaching background, seeks challenging academic position. Box 217, **SCIENCE**.

POSITIONS OPEN

ANAEROBIC PARASITE BIOCHEMIST—Applications are invited for a tenure-track position as assistant professor of biology with research experience and expertise in anaerobic parasite enzymology and biochemistry. Preference will be given to individuals who (i) have research experience and expertise in trichomonad enzymology and biochemistry, (ii) are willing to collaborate on hydrogenosomal biogenesis research, (iii) initiate a research program on *ENTAMOEBAS*, and (iv) have experience with other parasites (*Leishmania*, *Trypanosoma*, etc.). The candidate must have postdoctoral experience (2 years minimum). The position will be within the Biology Department, as part of the OBOR Academic Challenge Program in Molecular Parasitology. Candidates will be expected to maintain an active research program in trichomonad enzymology and biochemistry and develop a research program in *Entamoeba* biochemistry. The candidates will be expected to develop graduate and undergraduate courses in areas of expertise and teach introductory biology. Applicants should send curriculum vitae, current reprints, research interest, and arrange to have three letters of recommendation sent before 25 November 1989 to: **Dr. Donald G. Lindmark, Department of Biology, Cleveland State University, East 24th and Euclid Avenue, Cleveland, OH 44115.** Equal Opportunity Employer, M/F/H.

ANALYTICAL CHEMIST. Applications are invited for a tenure-track position beginning fall 1990 at the assistant professor level in the Department of Chemistry at Connecticut College. The department offers an ACS-certified major in chemistry and also awards the B.A. degree in biochemistry. Excellent teaching and research equipment is available, including high-field NMR. Primary teaching responsibilities include courses in analytical chemistry, instrumental methods and an elective course for nonscience majors. The successful candidate will be expected to develop an active research program in which undergraduates can participate. Applicants must have a Ph.D. degree. Postdoctoral experience is preferred, but not required. Connecticut College is a selective, coeducational, private liberal arts college in New London, Connecticut. Faculty normally teach five courses a year. Laboratory sections are equivalent to courses. Untenured faculty on full-time appointments receive funding for a summer of research and other forms of research support. Tenured faculty receive eighty percent of salary during a sabbatical year. Connecticut College is an Affirmative Action/Equal Opportunity Employer and encourages applications from minorities and women. Interested individuals should send curriculum vitae, graduate transcripts, brief statement of research plans, and three letters of recommendation by 15 December 1989 to: **Professor Bruce R. Branchini, Connecticut College, Department of Chemistry, New London, CT 06320.**

The Department of Anthropology, Columbia University, seeks applicants for a regular appointment at the level of **ASSISTANT PROFESSOR** in physical anthropology beginning 1 July 1990. Candidates should have the Ph.D. and be strongly committed to undergraduate/graduate teaching and basic research. Applications are especially encouraged from women and members of minority groups. Research specialization is open, but preference will be given to candidates with an interest in primate behavioral ecology and field experience. Curriculum vitae and references should be submitted to: **Chair, Physical Anthropology Search Committee, Department of Anthropology, Columbia University, New York, NY 10027.** Columbia University is an Equal Opportunity/Affirmative Action Employer. Closing date for applications: 15 January 1990.

POSITIONS OPEN

ASSISTANT PROFESSOR. To participate in teaching medical and graduate students and to study cellular immunology of human and murine intestine, particularly intestinal immunoregulation by cytokines. Requires experience in cellular immunology, cell isolation, cell cloning, T cell hybridoma technology, cytokine assays, in situ hybridization, and general immunochemical techniques, particularly as these apply to the study of intestinal lymphoid cell populations. Will be expected to interact on studies of human inflammatory bowel disease and to initiate independent studies on the regulatory effects of cytokines at mucosal sites. Position available immediately. Ph.D. in Immunology and at least 2 years of postdoctoral experience required. Salary range \$25,000 to \$30,000 per year. Reply with curriculum vitae including three references by 15 November 1989 to: **Charles O. Elson, M.D., Director, Division of Gastroenterology, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294.** Equal Employment Opportunity/M/F.

The Division of Cell and Development Biology of the Department of Molecular and Cell Biology of the University of California, Berkeley, invites application for an **ASSISTANT PROFESSOR** to be effective July 1990 (pending budgetary approval). Persons with interests in cellular interactions, intercellular messengers, cell-matrix interactions and/or molecular bases of cell excitation are approximate for the position. The new faculty member is expected to contribute to teaching in cell biology and carry out excellent research. Interested persons should apply by submitting curriculum vitae, names of three references, and a statement of research and teaching interests prior to 9 December 1989. Please send materials to: **299 LSA, University of California, Berkeley, CA 94710.** The University of California is an Equal Opportunity and Affirmative Action Employer.

ASSISTANT PROFESSOR DEPARTMENT OF PHARMACOLOGY UNIVERSITY OF NEBRASKA MEDICAL CENTER

Applications are invited for a faculty position in the Department of Pharmacology at the Assistant Professor level. Of particular interest are individuals working at the cellular or molecular level with research interests which complement current departmental programs in biochemical and molecular pharmacology and biotechnology. Outstanding applicants in all areas will be considered. Candidates should have a Ph.D. and/or M.D. degree and postdoctoral experience. Successful candidates will be expected to develop an independent externally funded research program and to teach graduate, medical and pharmacy students. Applications will be reviewed starting 1 December 1989. Applicants should submit curriculum vitae, a detailed description of research goals and names of three references to: **Dr. David B. Bylund, Chairman, Department of Pharmacology, University of Nebraska Medical Center, 42nd Street and Dewey Avenue, Omaha, NE 68103-1065.** The University of Nebraska Medical Center is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR BIOCHEMISTRY AND MOLECULAR BIOLOGY SUNY HEALTH SCIENCE CENTER AT SYRACUSE

We invite applications for a tenure-track assistant professor position. Outstanding candidates in all areas of biochemistry and molecular biology, including macromolecular structure and function, will be considered. Applicants must have a Ph.D. in biochemistry or related field, postdoctoral experience, demonstrated research productivity, and a commitment to excellence in teaching medical and graduate students. Send letter of application (with curriculum vitae and summary of research plans) and have three letters of reference forwarded to: **Dr. Harvey S. Penefsky, Chair, Search Committee, Department of Biochemistry and Molecular Biology, State University of New York Health Science Center at Syracuse, 750 East Adams Street, Syracuse, NY 13210.** Deadline for receipt of résumés: 5 January 1990. An Affirmative Action/Equal Employment Opportunity Employer.

POSITIONS OPEN

The Division of Cell and Development Biology of the Department of Molecular and Cell Biology of the University of California, Berkeley, invites application for an **ASSISTANT PROFESSOR** to be effective July 1990 (pending budgetary approval). Persons with interests in cellular interactions, intercellular messengers, cell-matrix interactions, and/or molecular bases of cell excitation are appropriate for the position. The new faculty member is expected to contribute to teaching in cell biology and carry out excellent research. Interested persons should apply by submitting curriculum vitae, names of three references, and a statement of research and teaching interests prior to 9 December 1989. Please send materials to: **299 LSA, University of California, Berkeley, CA 94710.** The University of California is an Equal Opportunity and Affirmative Action Employer.

ASSISTANT PROFESSOR—BIOCHEMISTRY/BIOPHYSICAL CHEMISTRY. Seek one tenure-track assistant professor starting August 1990. Must possess doctorate; subsequent postdoctoral experience preferred. Will be expected to establish a vigorous program of research relating to biological systems. Expertise in the application of NMR to biochemical problems required. Apply with a complete résumé, brief description of research plans, and three letters of recommendation postmarked by 15 November 1989 (or until suitable candidate applies thereafter) to: **Professor Thomas M. Apple, Department of Chemistry, University of Nebraska—Lincoln, Lincoln, NE 68588-0304.** Telephone: 402-472-3302, FAX: 402-472-2044. Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR MOLECULAR PHARMACOLOGY

Tenure-track position with a 12-month state-funded salary, common departmental facilities for molecular biology, generous laboratory space, and start-up funds, is available in an established Biochemical Pharmacology Department which is expanding in the area of molecular pharmacology. Applicants should have strong research experience in the development and application of molecular biological approaches to research problems in pharmacology.

Send curriculum vitae, statement of research interests and at least three letters of reference before 31 January 1990 to: **Dr. Linda M. Hall, Chair, Department of Biochemical Pharmacology, School of Pharmacy, 317 Hochstetter, SUNY at Buffalo, Buffalo, NY 14260.**

SUNY is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR OF PEDIATRICS. The Department of Pediatrics at The University of Texas Southwestern Medical Center at Dallas invites applications for a tenure-track position for a molecular geneticist with documented experience with RFLPs. The applicant must have Ph.D. or M.D. degree with 2 years or more of postdoctoral experience. The successful candidate will be expected to establish an independent research program and to contribute to the teaching of medical students, pediatric house officers, and fellows and graduate students. Submit applications by 31 October 1989 to: **Charles M. Ginsburg, M.D., Department of Pediatrics, UT Southwestern, 5323 Harry Hines Boulevard, Dallas, TX 75235-9063.** An Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR. Applications are invited for a tenure-track position in the Department of Physiology and Cell Biology, University of Kansas, Lawrence. Candidates with research interests in neuroscience, preferably with expertise in molecular biology, are encouraged to apply. Applicants should have the Ph.D. degree and postdoctoral experience. Responsibilities will include participation in teaching at both undergraduate and graduate levels and the establishment of an extramurally funded research program. Salary will be \$32,000 to \$40,000 for 9 months, depending on experience. Send résumé, a detailed description of research interests and goals, and the names of three references to: **Dr. Jang-Yen Wu, Chairman, Department of Physiology and Cell Biology, University of Kansas, 3038 Haworth Hall, Lawrence, KS 66045-2106.** The University of Kansas is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR IN BEHAVIORAL NEUROSCIENCE: Search reopened. The Neuroscience Program and the Psychology Department at Princeton University anticipate a position for the fall of 1990. The position involves teaching and research and is open to any area of neuroscience with an emphasis on behavior or function. Send curriculum vitae and three letters of recommendation to: **Chair, Neuroscience Search Committee, Code B, Department of Psychology, Princeton University, Princeton, NJ 08544-1010.** Deadline 1 December 1989. Princeton University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT/ASSOCIATE PROFESSOR MEDICAL COLLEGE OF OHIO

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

ASSISTANT OR ASSOCIATE PROFESSOR BACTERIOLOGY/RHIZOSPHERE BIOLOGY. The University of Arizona invites applicants for a tenure-track assistant or associate professor position with research (75%) and teaching (25%) responsibilities. The appointee is expected to develop a creative research program on the influence of soil-inhabiting bacteria on plant health; the specific area of research is unrestricted. This position is one of several devoted to building a strong research group focusing on elucidating the basic mechanisms of how microorganisms influence plant growth and development through their direct or indirect effects on plant roots and/or other organisms in the rhizosphere. Deadline is 31 January 1990 or until suitable candidate is found. Submit a letter of application stating career goals, reprints, résumé, and have four letters of recommendation sent to: **H. D. VanEtten (602-621-9355), Department of Plant Pathology, Forbes 104, University of Arizona, Tucson, AZ 85721.** An Affirmative Action/Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR OF BIOMEDICINAL CHEMISTRY

The Biomedical Chemistry Department of the School of Pharmacy at the University of Maryland at Baltimore announces the availability of a tenure-track position in the area of drug metabolism/chemical toxicology/drug design. Candidates will be qualified to carry out molecular-level studies on the interactions of small molecules with macromolecules. Special areas of interest include mechanisms of drug biotransformation reactions and bioactivation of xenobiotics. Relevant postdoctoral training required. Participation in group efforts in molecular modeling and drug design and teaching of biochemistry or medicinal chemistry at the undergraduate and graduate levels is anticipated. Candidates are expected to attract external funding and establish an independent research program. Applications should include a complete curriculum vitae, a summary of research plans, and three letters of reference, and should be sent to: **Dr. Patrick Callery, Department of Biomedical Chemistry, University of Maryland at Baltimore, 20 North Pine Street, Baltimore, MD 21201.**

An Equal Opportunity/Affirmative Action Employer.

The University of California, San Diego, Department of Chemistry, is interested in recruiting outstanding faculty at the **ASSOCIATE OR FULL PROFESSOR** level in Biochemistry or Physical Chemistry. All applications received through 3 November 1989 will be given thorough consideration. Candidates must have a Ph.D. and demonstrated ability to teach at the undergraduate and graduate levels. Salary and rank will be commensurate with qualifications and based on the University of California pay scale. Candidates should send curriculum vitae, a list of publications, reprints of up to five representative papers, a summary of research plans and names and addresses of three references to: **Chairman, Search Committee, Department of Chemistry, B-032, University of California, San Diego, La Jolla, CA 92093-0332.** The University of California is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

BIOCHEMISTRY—Recent Ph.D. in biochemistry for tenure-track position at assistant professor level starting September 1990. Teaching responsibilities include the development of a new undergraduate biochemistry program plus a selection of other courses. Candidates must have a strong interest in undergraduate teaching in a liberal arts context. Establishment of a research program and involvement of students in that program is expected. Initial screening will be concluded by 4 December 1989. Send résumé, transcripts, and three letters of recommendation to: **Dr. Nelson Sartoris, Department of Chemistry, Wittenberg University, Springfield, OH 45501.** Wittenberg is a 4-year, undergraduate, liberal arts college and an Affirmative Action/Equal Opportunity Employer.

BIOCHEMISTRY AND PHYSICAL CHEMISTRY/INORGANIC CHEMISTRY—The Chemistry Department of Williams College anticipates authorization, and invites applications, for two tenure-track positions at the **ASSISTANT PROFESSOR** level for fall 1990. 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 initial teaching assignments for the biochemist will largely be courses in biochemistry and for the physical/inorganic chemist will include basic physical chemistry and quantum chemistry. 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 laboratory sections, and supervision of student research projects. Appointment at a senior level is possible under special circumstances. Williams College is a highly selective, coeducational liberal arts institution of approximately 236 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 1989. Equal Opportunity/Affirmative Action Employer. We are especially interested in identifying minority and women candidates.

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 that utilize modern techniques in molecular genetics. A Ph.D. in biochemistry or a 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 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.**

Review of applications will begin 30 November 1989. An Equal Opportunity/Affirmative Action Employer.

BIOLOGICAL SCIENCES: ECOLOGIST. Tenure-track position at the assistant professor level. Responsibilities include teaching ecology in the core curriculum and at an advanced undergraduate level. Excellence in teaching and development of an active research program involving undergraduate participation are essential. Experience in plant biology preferred.

Mount Holyoke College, a liberal arts college for women, seeks to foster multicultural awareness in the entire community and is an Affirmative Action/Equal Opportunity Employer. Applications from women and minorities are especially welcome. Send statement of interests, curriculum vitae, recent reprints, and lists of relevant courses, and arrange to have three letters of recommendation sent by 21 November 1989 to: **Dr. Marilyn Pryor, Department of Biological Sciences, Mount Holyoke College, South Hadley, MA 01075.**

POSITIONS OPEN

BIOLOGY: Cornell College, a private liberal arts college located in Mount Vernon, Iowa, plans to make a full-time tenure-track faculty appointment in its Department of Biology at the **ASSISTANT PROFESSOR** level beginning in the fall of 1990. Teaching responsibilities include genetics, developmental biology, introductory biology, and supervision of student research. The candidate should be broadly trained in biology and have a specialization in molecular biology. Ph.D. required; postdoctoral experience preferred. Send curriculum vitae and three letters of reference to:

Dr. Paul Christiansen, Chair
Department of Biology
Cornell College
Mount Vernon, IA 52314

Formal consideration of applications will begin 1 December 1989.

Cornell College is an Affirmative Action/Equal Opportunity Employer and actively seeks applications from women and minority candidates.

BIOLOGY FACULTY POSITIONS

Indiana University-Purdue University at Indianapolis invites applications for two tenure-track positions in the Department of Biology. Applicants for the positions should have a Ph.D. and postdoctoral training. A history of grant support is highly desirable. Each successful candidate must develop an active, externally funded research program; contribute to the continued development of graduate programs; and participate in undergraduate and graduate teaching. The Department of Biology is scheduled to occupy modern research facilities in a newly constructed building within two years.

MOLECULAR BIOLOGIST: The successful candidate will have expertise in recombinant DNA technology with application to mammalian systems.

PROTEIN BIOCHEMIST: The successful candidate will apply biophysical techniques to the study of protein structure and function.

Applicants should submit their curriculum vitae, a statement of their research interests, reprints of recent publications, and four letters of recommendation to: **Dr. Charles Schauf, Professor and Chairman, Department of Biology, Purdue University School of Science, 1125 East 38th Street, Indianapolis, IN 46205.** Review of candidates will continue until the positions are filled. *Indiana University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are particularly encouraged to apply.*

BIOTECHNOLOGISTS

Pel-Freez, a rapidly expanding biotechnology firm, has immediate openings at our Rogers, Arkansas, facility. We are an established producer of biological, clinical, and molecular biology reagents, marketing to U.S. and international medical researchers and Fortune 500 medical diagnostic customers. Quality products with outstanding service are our goals.

MANAGER, Q.C.

Includes final Q.C. Supervision Assay methods development, product application and troubleshooting. Requires Masters or equivalent in immunochemistry or related area, plus 3 years of industrial laboratory experience.

TECHNICAL MANAGER

Includes molecular biological and immunological products, new products/process development in protein purification and processing. Requires Masters or higher in biochemistry related field, plus 3 years of industrial laboratory experience.

PRODUCTION MANAGER

Coordinates industrial biological manufacturing lab activities. Requires B.S. in chemistry, biochemistry, microbiology or related field. Must have 3 years of supervisory experience.

Each position requires strong organizational documentation and communication skills. We are looking for team players who want to participate in an exciting and challenging work environment. Pel-Freez, located in the beautiful Ozarks of Northwest Arkansas, offers competitive salary and benefits.

Send résumé and salary requirements by 15 November 1989 to:

Pel-Freez
Human Resources Department
P.O. Box 68
Rogers, AR 72757-0068
Equal Opportunity Employer.

POSITIONS OPEN

BIOLOGIST RHODES COLLEGE

The Biology Department of Rhodes College invites applications for a tenure-track position to be filled at the assistant professor level beginning in August 1990. Teaching responsibilities will include animal physiology, a course in the area of interest, and involvement in the introductory biology series. Candidates must have the Ph.D. degree, a strong interest in teaching at the undergraduate level, and a commitment to continuing research. Applicants whose research interests are in the area of neuroscience are especially encouraged; however, all qualified applicants will be considered.

Applicants should submit transcripts, curriculum vitae, a statement of research interests, and have three letters of recommendation sent by 8 December 1989.

Dr. John Olsen, Chairman
Department of Biology
Rhodes College
Memphis, TN 38112

Rhodes College is a College of Liberal Arts and Sciences with 1350 students and a student:faculty ratio of 12:1. Located in midtown Memphis, Rhodes College and the Biology Department enjoy close ties with Memphis State University, U.T. Memphis Medical School, and St. Jude Children's Research Hospital.

Rhodes College is an Equal Opportunity Employer and encourages applications from qualified minority and women candidates.

BOTANIST LYN AND DAVID SILFEN CHAIR IN BOTANY

Connecticut College has an active program of teaching and research in tidal marsh, estuarine, and marine biology. Applications and nominations are being sought for a new appointment, preferably in phycology, that will complement these strengths. An additional important responsibility will be participation in the interdisciplinary human ecology major, which addresses environmental issues from the perspective of both the natural and social sciences. It is expected that this chair will be filled at the associate or full professor level. The position includes two summers of supplemental research support and carries early consideration for tenure followed by a semester's leave at full salary. Candidates should have distinguished teaching and research experience and must be committed to undergraduate liberal arts education. Teaching and research are mutually supportive activities at Connecticut College, and faculty are expected to sustain an active research program involving students. Connecticut College is a selective, coeducational, private liberal arts college. It is located on the Thames River estuary in New London, Connecticut, with easy access to Long Island Sound. Applicants should send a letter describing teaching interests and research plans, a current curriculum vitae, and names of at least three references. Applications and nominations should be sent prior to 1 December 1989 to: **Scott Warren, Chair, Department of Botany, Box 5362 Connecticut College, 260 Mohegan Avenue, New London, CT 06320.** *Connecticut College is an Affirmative Action/Equal Opportunity Employer.*

CELL BIOLOGY/NEUROBIOLOGY

A tenure-track position, at the assistant professor level, is available in the Biology Department at Wesleyan University for a person who is incorporating modern structural and molecular techniques into research addressing fundamental questions in neurobiology at the cellular level. The position is made possible through a grant from the Howard Hughes Medical Institute. Applicants should have postdoctoral experience and a demonstrated ability to develop an active research program. Other responsibilities include directing the research of Ph.D. students and participating in education at the graduate and undergraduate level. Please send curriculum vitae, a statement describing a future research program, and arrange that three letters of recommendation be sent by 15 December 1989 to: **Chair, Search Committee for Cell Biology/Neurobiology, Department of Biology, Wesleyan University, Middletown, CT 06457.** *Wesleyan is an Equal Opportunity/Affirmative Action Institution. We encourage applications from minority candidates and women.*

POSITIONS OPEN

BIOCHEMISTRY, Ph.D. Either a postdoctoral position for a recent graduate or a research scientist position for a more experienced candidate is immediately available. Expertise desired in purification and characterization of specific glycoproteins for which a sensitive assay is available. Ability to obtain antibodies for blot and other immunochemical analysis and for quantitation purposes with evolution toward application of molecular biological techniques. Salary negotiable depending upon background. Send curriculum vitae and three references to: **R. Thomas Holzbach, G. I. Research Unit, Research Institute, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195-5218.** *An Equal Opportunity/Affirmative Action Employer.*

CANCER CYTOGENETICIST

The University of Maryland Cancer Center Program of Oncology and the Division of Human Genetics is seeking a clinical cytogeneticist to provide cytogenetic support for a large oncology service with a major program in adult leukemia treatment and research. The applicant should be at the doctoral level (M.D. and/or Ph.D.) as well as having undergone an appropriate postdoctoral training program. In addition, certification by the American Board of Medical Genetics in clinical cytogenetics is a prerequisite. In addition to providing clinical cytogenetic services, the candidate will be expected to develop independent research interests. Research and teaching opportunities will be coordinated with the Division of Human Genetics, an ADMG-recognized training program for all human genetics subspecialties. Collaboration with investigators from multiple departments is possible and encouraged.

Salary and rank commensurate with training and experience. *The University of Maryland is an Equal Opportunity Employer.* Respondents are asked to submit a current curriculum vitae as well as three letters of recommendation and a one-page prospectus of a research program. Applications should be submitted to: **Joseph Aisner, M.D., Director, University of Maryland Cancer Center, 22 South Greene Street, Baltimore, MD 21201.**

NEW CANCER RESEARCH GROUP SASKATOON CANCER CENTRE AND THE UNIVERSITY OF SASKATCHEWAN

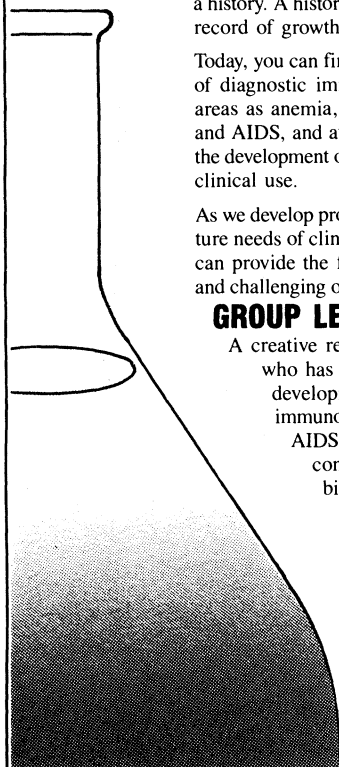
The Saskatoon Cancer Centre is seeking three individuals with experience in such areas as tumor biology, oncogenes, growth factors, molecular biology or related areas to join an existing group of researchers in a new cancer research group. The group will be housed in the Saskatoon Cancer Centre which contains over 1000 m² of new laboratory space. Initial operating funds as well as funds for major equipment and support services are available. Appointments are of a permanent nature with the initial funding from a Terry Fox Regional Development Grant from the National Cancer Institute of Canada. Successful candidates will also receive appointments at the University of Saskatchewan commensurate with their level of experience. Candidates with a Ph.D. or M.D. degree and at last 2 years of postdoctoral training are encouraged to apply by submitting curriculum vitae and names of three references to: **Dr. D. White, Director, Saskatoon Cancer Centre, Saskatoon, Saskatchewan, Canada S7N 0X0.** *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.*

CELL BIOLOGIST-BIOCHEMIST ASSISTANT PROFESSOR

Cell or molecular biologist with background in biochemistry to teach courses in cell biology and biochemistry. Ph.D. required. Some postdoctoral experience desirable. Faculty are expected to conduct active research programs in which qualified undergraduates may be involved, and to take an active interest in introductory courses for majors and non-majors. Start-up funds for research are provided. Position available 1 July 1990. Please send curriculum vitae, statement of research/teaching interests, and three letters of reference by 15 November 1989 to: **Search Committee, Department of Biology, Williams College, Williamstown, MA 01267.**

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

A Heritage Of Discovery...



In the world of biotechnology, we have a history. A history with a proven track record of growth and stability.

Today, you can find us at the forefront of diagnostic immunoassays in such areas as anemia, diabetes, glaucoma and AIDS, and at the leading edge of the development of HPLC methods for clinical use.

As we develop products to meet the future needs of clinical laboratories, we can provide the following interesting and challenging opportunities for you!

GROUP LEADER, AIDS

A creative researcher and leader who has played a part in the development of commercial immunoassays for AIDS and AIDS related diseases from concept, through feasibility and development, to market release. Requires Ph.D. in life science, with 4+ years commercial experience

and a full understanding of the various diagnostic techniques available. Dept. 286/229.

SENIOR SCIENTISTS/ GROUP LEADERS

PRODUCT DEVELOPMENT

Talented researchers and leaders with 4+ years of experience in commercial development of non-isotopic immunoassays and diagnostic systems for infectious agents and serum analyses. Requires a Ph.D. or equivalent in life science, experience with multiple detection techniques, and demonstrated success in bringing products to market. Dept. 292/159.

GROUP LEADER, HPLC METHODS

An expert chromatographer with 5+ years experience developing HPLC methods, including experience analyzing biological samples. Requires an advanced degree or equivalent in analytical or clinical chemistry. Experience in product development and clinical chemistry. Dept. 294/370.

Q.C. SUPERVISOR

Manager and maintain the high standards of the quality control function

for chromatography products in the Clinical Division of Bio-Rad Laboratories. Requires B.S. in life science, 5+ years in medical diagnostic or pharmaceutical industry experience and a M.S. degree are pluses. Dept. 230/42.

TECHNICAL SERVICE REPRESENTATIVE

For those interested in making a career change with growth potential. Challenges will involve problem-solving of technical issues of Bio-Rad's immunoassay and/or HPLC products, market analysis, bench work certification. Requires BSMT or ASMT certification and 3+ years of relevant experience. Dept. 267/398.

If being part of our team sounds interesting to you, apply today by sending your resume, indicating appropriate department to: **Bio-Rad Laboratories, Human Resources-SC10/20, 1000 Alfred Nobel Drive, Hercules, CA 94547.** EOE M/F.



Bio-Rad Laboratories

Drug Metabolism



CENTRAL RESEARCH

The continued expansion of our Central Research facilities at Groton, CT has created a need for qualified PhD and BS/MS research scientists in our Drug Metabolism Department.

RESEARCH SCIENTISTS (PhD) - Will be responsible for design and conduct of investigations into the metabolism and disposition of experimental drugs in animals and humans. Will interact in a project area with a multidisciplinary team including chemists, biologists and clinicians where drug metabolism input is essential to the discovery and development of new drugs. Will work with some of the most advanced equipment and support systems available. Publication of original research encouraged.

Requires a PhD in Pharmacology, Biochemistry or Pharmaceutical Chemistry, preferably with postdoctoral training or employment. Practical experience with bioanalytical methods is essential. Working knowledge of pharmacokinetics and drug biotransformation is recommended. Must be creative and possess superior interpersonal and communication skills.

RESEARCH ASSISTANTS (BS/MS) - Responsibilities for this position include: the development and utilization of analytical chromatographic methods for monitoring drugs and metabolites in biological samples; isolation and identification of metabolites and utilizing instrumental methods; collection of biological samples, and use of *in vivo* and *in vitro* techniques; utilization of electronic data systems for acquiring and processing data. Applicants should possess a BS or MS degree in Chemistry, Biochemistry, or the biological sciences and have an interest in the analysis, disposition, and metabolism of drugs.

These positions offer a superb professional environment in an attractive southeastern Connecticut shore area, complemented by a competitive salary/benefit/relocation package. Please send a resume and description of research interests to: Dr. David G. Burnett, Employee Resources, Pfizer Central Research, Eastern Point Road, Groton, CT 06340. An equal opportunity employer.

POSITIONS OPEN

CHAIR MOLECULAR AND HUMAN GENETICS EMORY UNIVERSITY

The School of Medicine seeks a Professor and Chairperson for a new Department of Molecular and Human Genetics. Emory has an established genetics research group, and an interdepartmental Graduate Program in Genetics and Molecular Biology. The School of Medicine is now forming a new basic medical science department, with several additional positions and significant new laboratory space. Nominations or curriculum vitae will be considered until 1 December 1989 or until the position is filled. Please submit them to: **Dr. Robert B. Gunn, Chairman of Search Committee, 302 WHSCAB, Emory University School of Medicine, Atlanta, GA 30322.** Emory University is an Equal Opportunity Employer.

CHAIRPERSON, DEPARTMENT OF PHARMACOLOGY. The College of Medicine, Albert B. Chandler Medical Center, of the University of Kentucky, is searching for an individual strongly committed to academic preeminence to provide professional and academic leadership for the educational and research programs of the Department of Pharmacology. The Department has a long tradition of excellence in research and education, with particular emphasis in neuropharmacology. The University is committed to excellence and has developed Commonwealth Centers of Excellence in related areas of science that enhance the academic environment. Please reply before the receipt deadline of 30 November 1989 with a curriculum vitae and a list of at least three references to: **John T. Slevin, M.D., Chair, Search Committee for Chair of Pharmacology, Department of Neurology, University of Kentucky College of Medicine, Lexington, KY 40536-0084.** The University of Kentucky is an Affirmative Action/Equal Opportunity Employer.

CHAIRPERSON, NUCLEAR ENGINEERING. The Department of Nuclear Engineering at the University of Michigan invites applications and nominations for the position of Department Chairperson. The candidate should hold a Ph.D. degree or equivalent in nuclear engineering, nuclear science or a related field and be nationally recognized in his or her field.

Submit applications, résumés and the names of three references to: **Dr. Ronald Fleming, Chairman, College of Engineering, Nuclear Engineering Chair Search Committee, The University of Michigan, 3034 Phoenix, Ann Arbor, MI 48109-2100.**

A Non-discriminatory/Affirmative Action Employer.

COOPERATIVE EXTENSION SPECIALIST POSITION— PLANT BIOTECHNOLOGY THE UNIVERSITY OF CALIFORNIA AT BERKELEY

The Department of Plant Biology invites applications for a Cooperative Extension Specialist position in the area of plant biotechnology. The appointee will be expected to develop a research program which deals with applied aspects of plant biotechnology and will be expected to serve as the liaison between the department and organizations, such as industry, governmental, and public interest groups, who have an involvement with the area of plant biotechnology. Other responsibilities include the development of educational programs, identifying issues and research needs in biotechnology and the preparation of reports for government and public interest groups with an ongoing interest in plant biotechnology.

Applicants should have a Ph.D. degree in an appropriate field, such as molecular biology, plant molecular biology, plant pathology, or plant physiology and an understanding of the practical aspects of plant biotechnology. A demonstrated ability to carry out an appropriate applied research project which is relevant to the department is required. Applicants should send curriculum vitae, a two-page statement describing their proposed research program as well as a description of their broader role in the plant biotechnology field, and names and addresses of three references to: **Dr. Richard Malkin, Chair, Department of Plant Biology, 345 Mulford Hall, University of California, Berkeley, CA 94720.** Closing date for applications is 31 December 1989, and it is anticipated the position will be filled by 30 June 1990. The University of California is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

CHEMIST: Tenure-track, Bennington College, September 1990. Scientist with broad interests, commitment to liberal arts, creative approach to curriculum, to develop teaching program including general, organic, more advanced chemistry. Ph.D. required. Computer experience desirable. Responsibility for two courses/term and possible tutorials (about 30 students total), educational counseling, supervision student research. Letter, résumé, three letters of reference to: **Dr. Kerry Woods, Bennington College, Bennington, VT 05201** by 1 December 1989.

COMMUNITY ECOLOGIST MANAGED AREAS BIOLOGIST

The Florida Natural Areas Inventory, a Natural Heritage Program of The Nature Conservancy, is a statewide database on the occurrence and management of rare and endangered species and high quality natural communities. The **ECOLOGIST** is responsible for the continued development and maintenance of the natural community component of the inventory. Ph.D. preferred with emphasis on terrestrial community ecology, vegetation classification, sampling, and conservation biology. The **MANAGED AREAS BIOLOGIST** is responsible for gathering and providing information on protected lands. Both: Graduate degree in biological sciences; broad Florida experience preferred. Send cover letter, curriculum vitae, and names of three references to: **James W. Muller, Florida Natural Areas Inventory, 254 East 6th Avenue, Tallahassee, FL 32303** by 6 November 1989. Equal Opportunity Employer.

DAIRY SCIENCE: POSTDOCTORAL ASSISTANT. The Dairy Science Department of Mississippi State University (M.S. Agriculture and Forestry Experiment Station) invites applications for a non-tenure-track research position. Primary responsibilities—full-time research in area of basic food protein peptide chemistry and standardized functionality (computer assisted) e.g., surface activity. Opportunity to acquire new techniques, e.g., HPLC, affinity chromatography, monoclonal antibodies. Minimum qualifications—Doctorate in biochemistry or food science (acquired in last 4 years) with strength in physical chemistry. Applications accepted until suitable candidate is found. Submit application and three letters of recommendation to: **Dr. Zahurul Haque, Associate Professor, Mississippi State University, Drawer DD, Mississippi State, MS 39762.** Mississippi State University is an Affirmative Action/Equal Employment Opportunity Employer.

DEPARTMENT HEAD—BIOLOGY AND CHEMISTRY: Lake Superior State University is seeking an energetic individual to provide leadership for and facilitate interactions and professional growth among 15 faculty members with diverse backgrounds and interests. Appointment will be on a 10-month basis. The successful candidate will have some teaching duties and the opportunity to develop modest research programs. Applicants should have an earned doctorate in biology or chemistry, college teaching experience, and a commitment to excellence in undergraduate education. Preference will be shown to applicants who have demonstrable administrative skills and experience in research, grant writing, curriculum development, and the use of modern scientific instruments and techniques.

Submit a letter of application, curriculum vitae, and three letters of reference by 8 January 1990 to: **Office of Employee Relations, Lake Superior State University, Administration Building, Sault Ste. Marie, MI 49783.**

An Equal Employment Opportunity/Affirmative Action Employer

ENVIRONMENTAL PROGRAM ADMINISTRATOR

Salary: \$3515 to \$5790 per month (D.O.Q.)

Newly created position will plan and direct the enforcement and administration of regulated environmental programs involving ozone-depleting compounds. Requires Bachelor's degree in related field and 5 years of administrative/management experience involving administering environmentally related or similar programs. Submit City of Irvine application and résumé to: **City of Irvine, City Hall Receptionist, One Civic Center Plaza, P.O. Box 19575, Irvine, CA 92713-9575.** Telephone: 714-724-6000 by 22 November 1989. Equal Opportunity Employer.

POSITIONS OPEN

DEVELOPMENTAL BIOLOGIST

The Department of Biology at the College of St. Catherine seeks a developmental biologist to fill a tenure-track position at the level of assistant or associate professor beginning in the fall of 1990. A Ph.D. is required and postdoctoral experience preferred. The successful candidate will be a broadly trained biologist who demonstrates excellence in teaching and will be expected to develop a research program in which undergraduates can participate. Courses to be taught include developmental biology, histology, general biology for majors, and a course in his or her area of expertise. Send curriculum vitae, transcripts, three letters of recommendation, and a statement of teaching and research interests to: **Dr. Deborah Mascioli, Chair, Department of Biology, The College of St. Catherine, 2004 Randolph Avenue, St. Paul, MN 55105.** Equal Opportunity Employer. Application deadline is 15 November 1989.

DIRECTOR OFFICE OF HEALTH AND SAFETY (FORMERLY OFFICE OF BIOSAFETY) CENTERS FOR DISEASE CONTROL (CDC) ATLANTA, GEORGIA (\$50,000 to \$75,000)

The Director plays a lead role in shaping and implementing CDC's health and safety policies. He/she is responsible for developing and implementing a comprehensive occupational health and safety program for CDC. This program emphasizes prevention of occupational illnesses or injuries; promotes healthy, safe work practices. Applicants are sought from such fields as biosafety, health sciences, industrial hygiene, medicine, microbiology, occupational safety, public health, and veterinary medicine. All applicants must have a minimum of 3 years of experience in the administration of programs relating to occupational health and safety, with a background of education/experience demonstrating a comprehensive knowledge of occupational safety and health standards in a biomedical, research, or other scientific setting.

Interested applicants should send résumé by 15 December 1989 to:

**Joseph McDade
Chair, Search Committee
Building 1, Room 6108
1600 Clifton Rd., N.E.
Atlanta, GA 30333
Telephone: 404-639-3967**

*CDC is an Equal Opportunity Employer.
CDC maintains a smoke-free work environment.*

DIRECTOR OF SCIENTIFIC DATA CENTER

The University of Colorado seeks candidates for a position to direct the Scientific Data Center at the Joint Institute for Laboratory Astrophysics (JILA). The candidate must be a Ph.D. scientist who will initiate and plan projects and actively solicit experts and acquire additional funding to critically review and evaluate data in broad-based, diverse fields related to the institute's research programs, including atomic and molecular processes, lasers, nonlinear optics, gravitation, and metrology. Responsibilities will include: supervision of a staff of two or three people; supervision of the compilation, evaluation, and publication of data projects and reviews; development of computer-based data compilations for wide dissemination; submission of proposals for specific projects; and interaction with outside scientific user groups and the fellows, scientists, and visitors at JILA. Minimum qualifications include a Ph.D. in physics, chemistry, or astronomy; minimum of 5 years of experience related to one or more of the specialty areas of JILA specified above; and a broad range of interests and knowledge of the scientific literature. The successful candidate will be encouraged to have an involvement in ongoing research. Salary range is \$40,000 to \$60,000. Screening of applicants will begin on 1 January 1990. Send résumé, three references, and proposed Data Center projects to: **Chairman, Joint Institute for Laboratory Astrophysics, Campus Box 440, University of Colorado, Boulder, CO 80309.**

The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity. 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.

POSITIONS OPEN

Departments of Pediatrics and Human Genetics, University of Michigan, are seeking a **DIRECTOR** of the Division of Pediatric Genetics and **CHIEF** of the Genetics Service at Mott Children's Hospital. We are seeking individuals with medical genetics experience, with a strong research program, certification in Pediatrics and in Medical Genetics, and experience in training postdoctoral and predoctoral students. Send curriculum vitae, statement of research interests, and names of three references to: **Thomas D. Gelehrter, M.D., Department of Human Genetics, University of Michigan Medical School, Ann Arbor, MI 48109-0618. An Equal Opportunity/Affirmative Action Employer.**

ENVIRONMENTAL CHEMIST

Exxon Biomedical Sciences, Inc., has an immediate opening for a qualified individual specializing in environmental chemistry. The successful candidate will have a Ph.D. in environmental chemistry or a related field, and 1 to 3 years of practical experience in analytical method and protocol development for analysis of environmental samples in water, soil/sediment, and fish tissues. In addition, the applicant should have a knowledge of EPA methodologies for conducting effluent toxicity identification and reduction evaluations and standard methods for contaminant analysis.

The successful candidate will act as a consultant to our ecotoxicologists and to our affiliates on matters pertaining to the assessment of environmental hazards associated with products, effluents, hazardous wastes, etc. by providing analytical expertise to the design and interpretation of these programs. Client interactions are an important aspect of our work, and thus, we are seeking an individual who has excellent communication skills. Please forward résumé to: **Christine Ramos, Human Resources.**

Exxon Biomedical Sciences, Inc.
Mettlers Road, CN 2350
East Millstone, NJ 08875-2350
Equal Opportunity Employer M/F/V/H.

FACULTY POSITION IN DEVELOPMENTAL BIOLOGY

The Department of Biology at the University of Virginia invites applications from developmental biologists who use cellular and/or molecular genetic approaches to study fundamental problems in developmental biology. We anticipate appointment at the associate or full professor level, although candidates at the assistant professor level will be considered. Send résumé and description of research program to: **Developmental Biology Search Committee, Department of Biology, University of Virginia, Charlottesville, VA 22901.** Applications will be reviewed beginning 1 November 1989. *Equal Opportunity/Affirmative Action Employment.*

THE FELS INSTITUTE FOR CANCER RESEARCH AND MOLECULAR BIOLOGY POSITIONS AVAILABLE FACULTY-POSTDOCTORAL

MOLECULAR BIOLOGISTS—Tenure-track positions. All areas of molecular biology and genetics are of interest. Some preference will be given to developmental molecular biology and research on transgenic animals. Send curriculum vitae, a brief statement of research plans, and request that three letters of recommendation be sent to the address below.

PROTEIN CHEMISTS—Tenure-track positions. Send curriculum vitae, a brief statement of research plans, and request that three letters of recommendation be sent to the address below.

POSTDOCTORAL POSITIONS—Postdoctoral positions are available in the areas of molecular biology and genetics, gene mapping, cell biology, biochemistry, and carcinogenesis. Active programs include oncogenes, genetic alterations in cancer formation, gene mapping, genes in growth control, DNA repair mechanisms, receptors, and cellular transduction systems. Send curriculum vitae, a short statement on training interests, if known, and request that three letters of recommendation be sent to the address below.

Send information requested above to: **Dr. Gerald Litwack, Deputy Director, The Fels Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, PA 19140. An Equal Opportunity Employer.**



Biochemical Research

Senior Scientist

CIBA-GEIGY Pharmaceuticals Division invests more than a million dollars a day to support innovative research and development of new products that help enhance the quality of life.

Your challenging projects at our 100-acre headquarters complex in Summit, New Jersey will involve developing new assays in exploratory areas of inflammation and cardiovascular research, specifically a second messenger assay program to interface with ongoing receptor and immunoassay studies in the Biochemical Profiling group in the Research Department. You will supervise two non-PhD Scientists. Credentials should include a PhD in Pharmacology or Biochemistry, 2-3 years postdoctoral experience with extensive knowledge of PI turnover and cyclic nucleotide assays and excellent oral and written communication skills. Some experience with receptor binding assays and tissue culture is an asset.

We offer competitive salaries, excellent benefits, and opportunities for advancement. Please send resume with salary history and requirements to: **Al Aronson, Staffing Center, CIBA-GEIGY Corporation, Pharmaceuticals Division, Dept. 310, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

Science Serving Mankind

CIBA-GEIGY

UNIVERSITY OF TENNESSEE, KNOXVILLE TWO ASSISTANT PROFESSOR POSITIONS IN MOLECULAR BIOLOGY / GENETICS

MOLECULAR BIOLOGIST - MICROBIOLOGY DEPARTMENT

QUALIFICATIONS: Doctoral degree and at least two years postdoctoral experience in Microbiology or closely allied biological science; demonstrated research productivity in molecular biology and potential excellence in teaching.

RESPONSIBILITIES: Graduate and undergraduate teaching in Microbiology/Molecular biology, establishment of a productive independent research program, and academic responsibilities normally associated with a tenure-track faculty position.

STARTING DATE: August 1, 1990.

Applicants should submit a letter of interest accompanied by a *curriculum vitae*, a description of the applicant's research program and career objectives, and arrange for letters of reference to be sent by three individuals who can evaluate the applicant's qualifications for the position. Applications from women and minorities are especially invited. All material should be sent to: **Dr. Stuart Riggsby, Chairman, Search Committee, Department of Microbiology, University of Tennessee, Knoxville, TN 37996-0845.** Nominations should be made as soon as possible; evaluation of applications will begin in December, 1989.

MOLECULAR GENETICIST - ZOOLOGY DEPARTMENT

QUALIFICATIONS: Doctoral degree and at least two years postdoctoral experience; training and research focus in genetics and molecular biology; demonstrated research productivity; potential excellence in teaching; research interests in molecular genetics of *Drosophila* or *Mus* preferred, but not required, to complement existing programs.

RESPONSIBILITIES: Graduate and undergraduate teaching in basic and advanced genetics and molecular biology, maintenance of a productive externally supported research program, and other academic responsibilities normally associated with a tenure-track faculty position.

STARTING DATE: August 1, 1990.

Applicants should submit a letter of interest and *curriculum vitae*, a description of the applicant's research program and objectives, and arrange for letters of reference to be sent by three individuals who can evaluate the applicant's qualifications for the position. Applications from women and minorities are especially invited. All material should be sent to: **Dr. Mary Ann Handel, Chairman, Search Committee, Department of Zoology, University of Tennessee, Knoxville, TN 37996-0810.** Applications should be made as soon as possible; evaluation of applications will begin in December, 1989.

The University of Tennessee is an EEO/AA/Title IX/Section 504 employer.

POSITIONS OPEN

FACULTY POSITON IN NEUROSCIENCE.

Mercer University School of Medicine invites applications for a tenure-track position as assistant or associate professor. The applicant must possess a doctoral degree, training and/or teaching experience in the medical neurosciences, and postdoctoral experience. The successful candidate will be expected to develop a research program and to participate in problem-based teaching. Send vitae, a description of research, and the names and addresses of three references to: **Robert J. Moon, Chairman, Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA 31204.** Applications will be considered until position is filled. *The University is an Affirmative Action/Equal Opportunity Employer.*

RICE UNIVERSITY DEPARTMENT OF BIOCHEMISTRY AND CELL BIOLOGY FACULTY POSITIONS

Four tenure-track faculty positions (all levels) in cell, developmental, and molecular biology and cellular neurobiology beginning between January 1991 and September 1991. Clear evidence of excellence in research is essential. Review begins January 1990, and positions will remain open until filled. Send curriculum vitae, past/future research plans, and three letters of reference to: **K. S. Matthews, Chair, Department of Biochemistry and Cell Biology, Rice University, Houston, TX 77251.** *Rice University is an Equal Opportunity/Affirmative Action Employer; women and minority candidates are encouraged to apply.*

FACULTY POSITIONS ASSISTANT/ASSOCIATE PROFESSOR DEPARTMENT OF BIOCHEMISTRY UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE AT CHICAGO

Applications and nominations are invited for tenure-track faculty positions to be filled in the 1990 academic year. We are seeking candidates who are using modern molecular biological approaches to investigate problems in the general area of bioregulation including signal transduction/membrane interaction, growth control, and cell differentiation. Exceptional applicants in other areas will also be considered. Applicants should have a Ph.D., postdoctoral experience, a strong record of research accomplishments, and demonstrable potential for the development of an independent research program. At the tenured level, applicants must have a strong record of research accomplishment. The Department of Biochemistry consists of 20 full-time faculty and has hired several new faculty in the areas of gene expression and membrane biology in recent years. The department and college have research support facilities that include nucleic acid and protein synthesis and sequencing. Applications should include curriculum vitae, a summary of current and future research plans, and the names of at least three individuals for references. Application deadline is 31 December 1989. Send applications or nominations to: **Robert V. Storti, Department of Biochemistry (M/C 536), University of Illinois College of Medicine at Chicago, 1853 West Polk Street, Chicago, IL 60612.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology at the University of Texas Southwestern Medical Center at Dallas seeks applicants for tenure-track positions at the level of assistant or associate professor. Applicants must have a relevant Ph.D. or M.D. degree and postdoctoral training and must show evidence of a firm commitment to a career in independent research. We are particularly interested in applicants who plan to apply techniques of cellular or molecular biology or biochemistry to fundamental problems of pharmacological interest. Responsibilities include teaching graduate and/or medical students after the first year of employment. Send curriculum vitae, list of three referees, and a brief description of proposed research to: **Alfred G. Gilman, Chairman, Department of Pharmacology, University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235-9041.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION IN CELL BIOLOGY CARNEGIE MELLON UNIVERSITY

Applications are invited for a tenure-track position in the Department of Biological Sciences at Carnegie Mellon University. Applicants must be strongly motivated toward carrying out research in cell biology. Candidates who are just completing their postdoctoral research training will be considered for a position of starting assistant professor; exceptionally well-qualified individuals may be considered for appointment at a higher level. To apply, send curriculum vitae and a concise description of research interests (no more than three pages), and, in addition, have three letters of recommendation sent to:

**Dr. John Woolford
Chair, Cell Biology Search Committee
Department of Biological Sciences
Carnegie Mellon University
4400 Fifth Avenue
Pittsburgh, PA 15213**

Deadline for applications: 15 December 1989. *Carnegie Mellon University is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS IN PHYSIOLOGY—TULANE

Applications are invited for tenure-track appointments at all ranks. Candidates should hold the Ph.D. or M.D. degree, have a record of excellence in research, and be committed to teaching of medical and graduate students. Research areas marked for expansion include, but are not limited to, cardiovascular-renal, cellular/molecular, and membrane transport physiology. Previous applicants need only send updated material and a letter indicating continued interest. Send a résumé, description of research program, reprints, and four letters of recommendation to: **Dr. L. Gabriel Navar, Chairman, Department of Physiology, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.** *Tulane University is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS DEVELOPMENTAL BIOLOGY/GENETICS PRINCETON UNIVERSITY

The Department of Biology at Princeton University invites applications for tenure-track positions in the areas of developmental biology and developmental genetics. Candidates should have a Ph.D. degree and research experience in the development of eukaryotes. Appointments at either the junior or senior level will be considered. Applicants should send curriculum vitae, the names of at least three referees, and a summary of research interests to:

**Developmental Biology Search Committees
Department of Biology
Princeton University
Princeton, NJ 08544**

Princeton University is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS

The newly-formed Basic Science Department of Microbiology at The University of Texas Medical School, at Houston, invites applications for both tenure-track and tenured faculty positions at the level of assistant, associate, or full professor. The initial areas of recruitment interest are in: prokaryotic microbial physiology, microbial genetics and molecular microbiology. Candidates must have the Ph.D. and/or the M.D. degree. Postdoctoral research experience is essential for consideration of a prospective assistant professor. Applicants for associate or full professorships must have demonstrated high quality research performance. Successful applicants will be expected to teach medical students, graduate students, and develop and/or maintain a high level, high visibility research program, competitive at the national level. Please send curriculum vitae and a statement of teaching and research interests as well as the names of four referees to:

**Dr. Samuel Kaplan
Department of Microbiology
The University of Texas Medical School, at Houston
P.O. Box 20708
Houston, TX 77225**

The University of Texas Health Science Center is an Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

FACULTY POSITION MOLECULAR GENETICS

The Department of Genetics is seeking candidates for a faculty position in the area of mammalian molecular biology and genetics. The position, starting on or after 1 January 1991, will be at the level of tenure-track assistant professor (or higher depending on the candidate's qualifications). Candidates must have an M.D. or Ph.D. or its equivalent plus research experience in mammalian molecular genetics or related areas. Emphasis will be placed on research related to molecular genetics of human disease and to gene therapy. Significant research accomplishments and/or evidence of outstanding research potential will be key considerations. Applicants should provide curriculum vitae, names and addresses of four references, and a brief statement of research interests and plans. Send applications to:

**Dr. Richard L. Davidson
Head, Department of Genetics
University of Illinois College of Medicine
808 South Wood Street
Chicago, IL 60612**

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

FACULTY POSITION PLANT MOLECULAR BIOLOGY

The Department of Botany, Iowa State University, invites applications for a tenure-track position of assistant professor. Development of a strong research program in plant molecular biology supported by extramural funds is expected. Teaching responsibilities will include a graduate course in plant molecular biology and participation in undergraduate teaching. Candidates must have a Ph.D. or equivalent. Generous start-up support possible. Successful candidate will join an active program in molecular biology.

Applications must include curriculum vitae, statements of research interests and teaching philosophy, and reprints of selected publications. Applications and at least three letters of reference should be sent to: **Dr. David C. Glenn-Lewin, Chair, Department of Botany, Iowa State University, Ames, IA 50011** by 15 December 1989.

Women, minorities and members of all underrepresented groups are strongly encouraged to apply.

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

FACULTY POSITION. Applications are invited for a tenure-track position at the assistant professor level beginning fall 1990 in the Department of Chemistry at Connecticut College. The department offers an ACS-certified major in chemistry and also awards the B.A. degree in biochemistry. Excellent teaching and research equipment is available, including high-field NMR. The primary teaching expectations are the development of an outstanding general chemistry program and instruction in either inorganic or biochemistry. The successful candidate will be expected to develop an active research program in which undergraduates can participate. Applicants must have a Ph.D. degree. Postdoctoral experience is preferred, but not required. Connecticut College is a selective, coeducational, private liberal arts college in New London, Connecticut. Faculty normally teach five courses a year. Laboratory sections are equivalent to courses. Untenured faculty on full-time appointments receive funding for a summer of research and other forms of research support. Tenured faculty receive 80 percent of salary during a sabbatical year. *Connecticut College is an Affirmative Action/Equal Opportunity Employer and encourages applications from minorities and women.* Interested individuals should send curriculum vitae, graduate transcripts, brief statement of research plans, and three letters of recommendation by 15 December 1989 to: **Professor Bruce R. Branchini, Connecticut College, Department of Chemistry, New London, CT 06320.**

GENERAL OPHTHALMOLOGIST—University of Michigan. Full-time faculty position, assistant, associate, or full professor. Training in ophthalmology. Opportunity for clinical and laboratory research, resident and student teaching, clinical practice. Call: **Paul R. Lichter, M.D., Chairman, Department of Ophthalmology, University of Michigan, W. K. Kellogg Eye Center, 1000 Wall Street, Ann Arbor, MI 48105.** *An Affirmative Action Employer.*

Director, Clinical Pathology

Parke-Davis Pharmaceutical Research, a division of Warner Lambert Company and a worldwide leader in the development, manufacturing and marketing of pharmaceutical, consumer and health care products, is currently seeking to fill a key position in the Pathology and Experimental Toxicology Unit in Ann Arbor, Michigan.

Reporting to the Vice President, PET, this senior position is directly responsible for the management of the Clinical Pathology section which includes Clinical Chemistry, Hematology, Immunotoxicology, Biochemical Toxicology and Flow Cytometry laboratories.

The preferred candidate will have a D.V.M., M.D. or Ph.D. degree; postgraduate training in Clinical Pathology, Pathology, Biochemistry or a related discipline; Board Certification in the specialty (i.e., ACVP, ASCP); and eight or more years of experience in a toxicology/pathology environment within the pharmaceutical industry. In addition to a substantial scientific background, the candidate will desire long-term growth potential, and possess excellent communication and management skills, as well as a strong drive to succeed. A significant research and publication record is also desirable.

Our modern, growing facilities are located adjacent to the University of Michigan in the midst of an outstanding living and working environment, and our compensation and benefits packages are highly competitive.

Interested individuals should forward their resume and salary requirements in confidence to: **Human Resources Department, Box JDM - 10189, Parke-Davis Pharmaceutical Research, 2800 Plymouth Road, Ann Arbor, Michigan 48106-1047.** "A Smoke-Free Work Environment"



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Bio-Méga Inc., located in suburban Montreal, is a wholly owned subsidiary of Boehringer Ingelheim Canada. The company is dedicated to applied and basic research in various fields of drug discovery.

RESEARCH SCIENTISTS AND RESEARCH ASSOCIATES

A number of positions are available for highly motivated candidates to join the department of **PHARMACOLOGY** as part of a team of scientists dedicated to basic research and to the assessment of effects of biologically active molecules.

Qualifications:

Applicants for the position of Research Scientist should possess a Ph.D., in Pharmacology, preferably two years of post-doctoral training and familiarity with drug assessment protocols in laboratory animals. For the position of Research Associate, the applicant should possess a M.Sc. and a strong background in general pharmacology.

COMPUTATIONAL CHEMIST FOR COMPUTER-ASSISTED DRUG DESIGN

Candidate to join a team of dedicated scientists utilizing state-of-the-art techniques in the design of biologically active molecules in a multidisciplinary atmosphere.

Qualifications:

Ph.D. or M.Sc. in Chemistry with broad based experience in molecular modelling and computational chemistry is required. Understanding of medicinal chemistry is an asset. The individual should have a high degree of creativity and motivation to analyze and solve complex problems and be able to interact with the existing staff of chemists.

If interested, please submit your curriculum vitae with an introduction letter in confidence to: **Mr. Jacques Roux, Director, Human Resources, Bio-Méga, Inc., 2100 Cunard Street, Laval (Québec) H7S 2G5 CANADA**

Search Announced Associate Provost and Associate Director for Academic Affairs Carter Center of Emory University

The Carter Center of Emory University, an international, interdisciplinary, non-partisan institute combining study and analysis with the practical applications of scholarship, focuses its program activity on such fundamental issues as conflict resolution, human rights, agriculture, health, and governance within specific world regions (Africa, Latin America, the Middle East, the Soviet Union and the United States). The Center is a division of Emory University, equal in standing to the professional schools of the University. At its core are distinguished fellows and research associates who collaborate with one another and with President Jimmy Carter.

The position of Associate Provost and Associate Director for Academic Affairs is a newly established senior position at the Center, a dual appointment between the Carter Center and the University. The incumbent will provide academic leadership within the Center, will coordinate Center with University programs, and will contribute to the University's growing emphasis on international programs.

Candidates should have an earned doctorate, a distinguished scholarly record appropriate to a senior faculty rank at Emory University, and significant administrative experience within a university or other non-profit setting.

Nominations and applications should be sent to the Carter Center Search Committee, Office of the Provost, Emory University, Atlanta, Georgia 30322. Letters of application will be held in strict confidence and should include a statement of interest, a curriculum vitae, and a list of three referees. The Committee will begin screening applications on November 1, 1989, and continue until the position is filled. References will be contacted directly by the Committee after November 1, upon notification of applicants.

Emory University is an equal opportunity employer.

FLOW CYTOMETRY SPECIALIST

Smith Kline and French Laboratories, a division of SmithKline Beecham, a worldwide leader in pharmaceutical research, is seeking a Flow Cytometry Specialist to join its cell sorter facility. This facility is involved with various stages of the drug discovery process. The facility is equipped with the latest state-of-the-art technology including a three laser Coulter Epics 753, a dual laser Coulter Epics 752, ACAS 470 interactive laser cytometer for adherent cells, up-to-date computers and other support equipment. The position requires a person with experience in flow or imaging systems and familiarity with computers.

The selected candidate will have:

- B.S. degree in the Biological or Biophysical Sciences or equivalent experience.
- Experience with flow cytometry or imaging systems and strong knowledge of computers.
- Tissue culture experience desirable.

Our new, state-of-the-art research facility is located in suburban Philadelphia, near Valley Forge, PA. Smith Kline & French Laboratories provides a stimulating and challenging work environment with opportunities for professional and personal growth. We offer an attractive compensation and benefits package. For confidential consideration, please submit your C.V. to: Nancy Hasson, H0119, Smith Kline & French Laboratories, Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

SK&F

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ABBOTT LABORATORIES

Abbott Laboratories, a successful provider of quality healthcare products and services worldwide, continues its commitment to top-quality management. Currently we have an opportunity for an experienced Toxicologist for our Division of Drug Safety Evaluation.

TOXICOLOGIST

Duties will include study design, management and reporting of both in-house and contracted studies. In addition, the successful candidate will be involved as liaison between Toxicology and other groups within the Corporation.

A PhD in Pharmacology or Toxicology and a minimum of 2 years experience are required. Good interpersonal skills as well as excellent abilities in communication via both oral and written presentations are a must. Knowledge of the drug development process and appropriate GLP's are essential; board certification is desirable.

In addition to excellent salaries and a benefits package that includes profit sharing and a stock retirement plan, we offer a beautiful suburban location approximately 30 miles north of Chicago. For consideration, please send your resume with salary history to: **Patricia Handy, Corporate Placement, Job #7560, Abbott Laboratories, 1 Abbott Park Rd., Abbott Park, IL 60064.** (To facilitate handling your resume, please indicate Job Number on your cover letter or resume.) Abbott is an Affirmative Action Employer.

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A temporary Research Investigator, Research Associate, or Postdoctoral position is immediately available for studying novel methods for targeting liposomes for drug delivery and vaccine development.

Salary is highly competitive (\$30-35,000). Individuals with training in pharmaceutical, pharmacological, physiological, or biochemical disciplines are encouraged to apply. Prior research or training in liposome or drug carrier technology is not a necessary prerequisite.

The position will be funded by NOVA and the work will be carried out by WRAIR under a cooperative R & D agreement.

Applicants should submit a curriculum vitae to:

Dr. Carl R. Alving
Department of Membrane Biochemistry
Walter Reed Army Institute of Research
Washington, DC 20307-5100

DEPARTMENT CHAIR OF BIOLOGICAL SCIENCES

STATE UNIVERSITY OF NEW YORK AT BUFFALO

The Department of Biological Sciences at the State University of New York at Buffalo is searching for a Full Professor to build an outstanding research program and assume the position of Department Chair within one year of arrival. The starting date is negotiable and the successful candidate could begin as soon as September 1990. The Department presently consists of 27 full-time tenure-track faculty with research strengths in the areas of Cell and Molecular Biology, Genetics and Developmental Biology, Cellular Physiology and Ecology. We are committed to excellence in very active undergraduate and graduate programs. Our graduate program currently consists of approximately 50 full-time students. In addition to those who are supported by external grants, many of our graduate students are supported by state funds.

Superb core facilities are available to the Department for DNA and peptide synthesis and sequencing, computer structure modeling, monoclonal antibody production, animal facilities and state-of-the-art microscopy. In addition the Department has in place a well trained staff who operate and maintain the electron microscopy lab, greenhouse, electronics shop, machine shop and scientific illustration and photography lab.

We seek an outstanding scientist with demonstrated excellence in research and a genuine interest in quality graduate and undergraduate education. It is expected that the candidate will vigorously pursue an active research program, promote Departmental and interdepartmental interactions among the faculty, provide scientific, educational and administrative leadership and continue the development of the Department towards its goal of becoming one of the leading departments in the country. The University has committed considerable resources to this goal and will provide superb setup and operating funds. The opportunity to hire a considerable number of new tenure-track faculty will be available to the new chair.

Submit nominations and applications including curriculum vitae, summary of research interests and names, addresses and telephone numbers of four references to: **Dr. Ronald Berezney, Department Chair Search Committee, Department of Biological Sciences, State University of New York at Buffalo, Buffalo, New York 14260.** Deadline for receipt of completed applications is December 1, 1989, or until a suitable candidate is identified. *SUNYAB is an Affirmative Action/Equal Opportunity Employer.*

DIRECTOR SOLID STATE DIVISION OAK RIDGE NATIONAL LABORATORY

The Oak Ridge National Laboratory (ORNL) invites nominations and applications for the position of Director of the Solid State Division. This division is engaged primarily in fundamental research sponsored by the Division of Materials Sciences of the Office of Basic Energy Sciences, Office of Energy Research, U.S. Department of Energy, but small amounts of both fundamental and applied research are undertaken for other organizations. The present program of the division involves excellent research in a wide variety of areas, which include neutron scattering, x-ray and synchrotron radiation scattering, ion beam implantation and scattering, electron microscopy, surface physics and chemistry, ceramics, semiconductor physics, synthesis and characterization of novel materials, and solid state theory. The Solid State Division also has several user or collaborative research centers that interface on a regular basis with outside collaborators from university, industry, and government laboratories. The Division Director is responsible for initiation and coordination of the research and for the development of important interdisciplinary research programs with other divisions of ORNL. Candidates should be U.S. citizens, should have strong records of fundamental research in the solid state sciences, and should have demonstrated management and leadership abilities. A Solid State Division Search Committee has been appointed and will begin its review of applicants on December 1, 1989, but applications will be accepted until the position is filled. Applicants should send a complete resume with names and contact information on three references to Dr. Michael K. Wilkinson, Chairman, Solid State Division Search Committee, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, TN 37831-6024.

ORNL, which is operated by Martin Marietta Energy Systems, Inc., for the U.S. Department of Energy, is an equal opportunity employer.

HUMAN GENOME INFORMATICS

Section Leader

Los Alamos National Laboratory has a broad research and development effort in the Human Genome Program, including development of new DNA sequencing technologies, generation of physical (ordered-clone) maps of human chromosomes and development of a Human Genome Information Resource to facilitate management and analysis of data generated by the Program.

The section leader will supervise a multidisciplinary team to develop systems for image analysis of electrophoresis gels; design and develop a database of physical mapping information for Laboratory and national use; develop software that provides access to the above as well as links to genetic map, sequence and other related databases; determine project hardware needs and oversee procurement; collaborate with corporate partners to facilitate transfer of technology to the private sector; and interact productively with other database projects at Los Alamos. The successful candidate is expected to conduct research on topics such as image analysis, database management systems, knowledge representation in molecular biology or algorithms for physical map construction. Will have opportunities to assist in planning the national Human Genome Program.

It is expected that the successful candidate will have research experience in computational science as applied to molecular biology as well as experience in software and systems design, for example communication networks, complex databases or user interfaces. Experience with graphics and database management systems desirable. Record of innovation and project completion required. Excellent leadership and oral/written communication skills are essential. A PhD in computer science or molecular biology/genetics or the equivalent combination of education and experience is required.

As a leading R&D institution, we provide an attractive salary/benefits package and a challenging work environment. Interested candidates should forward a resume to Ray Archuleta (MS P280), Personnel Services Division 90716-EG, Los Alamos National Laboratory, Los Alamos, NM 87545, with a copy to George Bell (MS K710), Theoretical Division, from whom additional technical information can be obtained at 505-667-7510.

Affirmative Action/Equal Opportunity Employer.

University of California

Los Alamos

POSITIONS OPEN

GENETICISTS

We invite applications for two tenure-track, assistant professor positions with starting dates to be between August 1990 and August 1991. We seek interactive individuals who can demonstrate teaching excellence in general genetics and secure extramural funding to develop strong independent research programs in genetics. Preference will be given to those who will complement and strengthen existing research programs within biology. Doctoral training in genetics required; postdoctoral training desirable.

MOLECULAR GENETICIST. Desirable areas of research: eukaryotic genome structure, genetic mechanisms of development, gene expression, molecular mechanisms affecting patterns of inheritance. Teaching responsibilities: general and molecular genetics.

EVOLUTIONARY GENETICIST. Desirable areas of research: molecular and genome evolution, experimental and theoretical population genetics, quantitative genetics, mechanisms of speciation. Teaching responsibilities: general and population genetics.

Application deadline is 10 November 1989. Send curriculum vitae, statement of research goals, and three letters of reference to: **Genetics Search Committee, Department of Biology, University of New Mexico, Albuquerque, NM 87131.** We encourage women and underrepresented minorities to apply. The University of New Mexico is an Affirmative Action/Equal Opportunity Employer committed to cultural pluralism in its people and programs.

HUGHES VISITING ASSISTANT PROFESSORSHIP. Vassar College seeks a scientist with broad training in biology with emphasis on molecular neuropharmacology, neurological effects of toxic chemicals, or environmental toxicology (i.e., environmental chemistry of pollutants, biological effects of pollutants). Successful candidate will teach three courses per academic year to undergraduates. Two courses will be part of the regular curriculum in biology, chemistry, or physiological psychology; the other in the applicant's specialty. Ph.D. or near completion required. This is a 3-year appointment beginning August 1990 funded by the Howard Hughes Medical Institute.

Submit curriculum vitae, statement of interests, and three letters of recommendation by 1 December 1989 to: **Dr. N. Jay Bean, Chair, Hughes Appointment Search Committee, Box 65, Vassar College, Poughkeepsie, NY 12601.** Vassar College is an Equal Opportunity/Affirmative Action Employer.

INVERTEBRATE BIOLOGIST EARLHAM COLLEGE

Tenure-track assistant professorship begins fall 1990. Area of specialty (including entomology) is open. Ability to teach a survey course is expected. Opportunities exist to conduct research involving motivated undergraduates, for leadership of off-campus marine or tropical biology programs, or for supervision of college museum's collections. Department known for quality teaching, curricular innovation, and high proportion of majors going on to Ph.D.'s. As a Quaker liberal arts college, Earlham continues to build a vigorous academic community that reflects the gender and racial diversity of the society at large. To that end we specifically invite and encourage applications from women and minorities. Send curriculum vitae, teaching/research philosophy statements, transcripts, and three recommendations to: **Dr. William Buskirk, 85A Biology, Earlham College, Richmond, IN 47374.** Review begins 1 January 1990. Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGISTS

The Department of Biological Sciences is strengthening a group in molecular biology and is expanding its faculty at the **ASSISTANT/ASSOCIATE PROFESSOR** level. Applications from individuals in all areas of molecular biology are encouraged, but the department has particular interests in cell-cell interaction, signal transduction, growth regulation, gene expression, and microbial genetics. There is ample opportunity for interaction with existing faculty in molecular and developmental genetics of both eukaryotic and prokaryotic organisms. Generous start-up funds and competitive salaries are offered. Send curriculum vitae, selected reprints, and names and addresses of three referees by 1 December 1989 to: **Dr. M. R. Felder, Molecular Biology, Search Committee, Department of Biological Sciences, University of South Carolina, Columbia, SC 29208.**

Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

HEAD DEPARTMENT OF ENTOMOLOGY

The Purdue University School of Agriculture invites applications for the position of Head, Department of Entomology. The department mission includes research, graduate (M.S., Ph.D.), and undergraduate (B.S.) education, and serving the public through extension. The head will have administrative and fiscal responsibilities for departmental programs; actively seek new sources of funding; and work with clientele groups. Candidates must have a Ph.D. in an area related to departmental programs, experience in grantsmanship, and commitment to scholarly achievement. They should possess leadership and administrative skills, and support the philosophy of the land grant university.

Applicants should submit curriculum vitae with a list of publications and names of five references to: **Robert L. Thompson, Dean of Agriculture, Attn: Entomology Head Search Committee, Agricultural Administration Building, Purdue University, West Lafayette, IN 47907.** Applications accepted until 5 January 1990, or until a suitable candidate is identified. Purdue University is an Equal Opportunity/Affirmative Action Employer.

The Department of Medicine, University of Toronto, has an opening for a **LECTURER.** The candidate should have a Ph.D. (M.D./Ph.D.) in the field of renal physiology or pathophysiology and be able to carry out multiple indicator dilution experiments and micropuncture techniques. A minimum of 3 years of postdoctoral experience is required. The candidate will be expected to develop an independent research program in association with a basic research membrane biology group. Salary offered will be commensurate with qualifications and experience. The appointment is to be effective 1 July 1990 or sooner, with a closing date for receipt of applications being 1 December 1989. The University of Toronto encourages applications from qualified women and men, members of visible minorities, aboriginal peoples and persons with disabilities. In accordance with Canadian Immigration requirements this advertisement is directed firstly to Canadian citizens and permanent residents. Enquiries should be directed to:

**Dr. M. Silverman, Director
M.R.C. Group in Membrane Biology
Medical Sciences Building, Room 7226
1 King's College Circle
University of Toronto
Toronto, Ontario, M5S 1A8**

MOLECULAR BIOLOGIST EMORY UNIVERSITY SCHOOL OF MEDICINE

The Winship Cancer Center of Emory University School of Medicine is recruiting a scientist of international reputation to develop a significant cancer-related research program. Individuals involved in transgenic studies and/or molecular analysis of oncogenes are particularly encouraged to apply. It is expected that the appointment will be at the rank of associate professor or above. Newly constructed laboratories, including a \$2-million animal barrier facility, are available. Cross appointments with other university departments are encouraged. Generous salary and start-up funds are available.

Applicants should submit curriculum vitae, statement of research interests, and have three letters of recommendation sent to:

**Kenneth W. Sell, M.D., Ph.D.
Director, Winship Cancer Center
Emory University School of Medicine
1327 Clifton Road, NE
Atlanta, GA 30322**

Review of applications will begin immediately and continue until the position is filled. Emory University is an Equal Opportunity/Affirmative Action Employer.

NEUROANATOMIST/EXPERIMENTAL NEUROPATHOLOGIST; independent research faculty position in the Neuroscience Program at the Maryland Psychiatric Research Center. Experience with modern neuroanatomical techniques required. Interest in psychiatric disorders desirable. New EM facility and generous start-up funds provided. Please send curriculum vitae, a brief outline of research plans, and names of at least three references to: **Robert Schwarcz, Ph.D., Maryland Psychiatric Research Center, P.O. Box 21247, Baltimore, MD 21228.**

POSITIONS OPEN

Colorado State University seeks two **MOLECULAR BIOLOGISTS** for tenure-track **ASSISTANT PROFESSOR** positions in the Department of Biochemistry. The department occupies a new building containing modern laboratories and a full complement of core facilities for biochemistry, molecular biology, and cell biology. Candidates must have a Ph.D. degree, postdoctoral experience, and a demonstrated ability to develop an independent and productive research program. The successful applicant must effectively participate in undergraduate and graduate teaching of biochemistry or molecular biology. Individuals with research interests in all areas of molecular biology including plant gene expression or molecular neurobiology are encouraged to apply. Deadline for applications is 1 November 1989. Send curriculum vitae, a statement of research interests and the names of three references to: **Dr. N. P. Curthoys, Department of Biochemistry, Colorado State University, Fort Collins, CO 80523.** CSU is an Equal Employment Opportunity/Affirmative Action Employer. E.O. office, 314 Student Services Building.

MOLECULAR BIOLOGIST/ MICROBIOLOGIST

The Department of Agriculture, Agricultural Research Service is seeking a molecular biologist/microbiologist to conduct research on calicivirus. The position is located at the National Animal Disease Center, Ames, Iowa, and is a permanent, full-time appointment. Primary responsibilities are to characterize the viral genome in regard to coding sequences for immunogenic proteins and host predilection. A Ph.D. degree is desirable. U.S. citizenship is required. Salary is commensurate with experience (\$28,852 to \$44,957). For information on the research program and/or position, contact **Dr. W. L. Mengeling at 515-239-8254.** For information on application procedures/forms, contact **Janie Carr at 301-344-2756.** Applications in response to this ad should be marked "9N042." Applications must be received no later than 13 November 1989. Send applications to: **Janie Carr, USDA-ARS, Personnel Division, Personnel Operations Branch, Building 419, BARC-East, Beltsville, MD 20705.** Equal Opportunity Employer.

MOLECULAR GENETICISTS DEPARTMENT OF GENETICS UNIVERSITY OF GEORGIA

The Department of Genetics at the University of Georgia is seeking molecular geneticists for tenure-track positions available July 1990. The research areas and the academic rank are open. Individuals interested in the following areas are especially encouraged to apply: developmental genetics; nucleic acid/protein interactions; and prokaryotic molecular genetics. The successful candidates will be expected to pursue active research programs and to teach at the graduate and undergraduate level. The Department of Genetics has 15 faculty members with strong research programs in molecular and population genetics. The department will soon occupy a new state-of-the-art research facility. Applicants should arrange to have three letters of recommendation sent on their behalf. The letters, curriculum vitae, reprints of representative publications, and a statement of research interests should be mailed to: **Dr. Sidney R. Kushner, Head, Department of Genetics, University of Georgia, Athens, GA 30602.** The closing date for applications is 2 January 1990. The University of Georgia is an Equal Opportunity/Affirmative Action Institution.

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

RESEARCH SCIENTISTS AND ASSOCIATES

PHARMACOLOGY

Amgen is an innovative leader in the application of biotechnology for the discovery and development of human therapeutic products. Our continued progress in a number of research programs has resulted in a need for creative scientists at the Ph.D. and BS/MS levels in our Pharmacology Group.

RESEARCH SCIENTISTS

Dept. #410

Candidates for Research Scientists positions must have a Ph.D. in Pharmacology or Biopharmaceutics and a minimum of two years' post-doctoral experience in the absorption, distribution, metabolism and excretion of drugs (preferably polypeptides and proteins). Previous experience in computerized pharmacokinetics modeling programs and knowledge of protein and peptide separation techniques are essential. Previous industrial experience is highly desirable.

RESEARCH ASSOCIATES

Dept. #411

Candidates for Research Associates positions should have a BS or MS in Pharmacology or a related discipline and *in vivo* research experience including small animal surgery and blood and tissue sampling. Experience in radiotracer and immunoassay techniques, statistical analysis of data and familiarity with the use of computers in recording and analyzing data are desirable.

Amgen offers an excellent compensation and benefits package as well as the unique opportunity to contribute to stimulating and challenging research programs on the leading edge of biotechnology. If you have the necessary qualifications and would like to be a part of a company that places a high priority on its human resources, please send a C.V., in confidence, to:

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MOLECULAR BIOLOGIST

Sphinx Biotechnologies is a young and rapidly growing company whose mission is to help sick people through discovery, development, manufacturing and marketing of pharmaceuticals targeted towards signal transduction systems involving lipid second messengers.

Molecular Biologist We are seeking a molecular biologist to integrate with our discovery and development programs. The successful candidate will have a Ph.D. in molecular biology, biochemistry or related scientific field, at least three years of postdoctoral experience, expertise in the use of recombinant DNA techniques for the expression of proteins, and demonstrated ability to interact with a multidisciplinary research team.

Sphinx Biotechnologies offers excellent compensation and benefits as well as an attractive relocation policy. We are located in the Research Triangle area of North Carolina which offers excellent living conditions and outstanding schools. For confidential consideration, please forward your curriculum vitae, list of publications and names of three references to:

Sphinx Biotechnologies Corporation
Position 107
Post Office Box 727
Durham, NC 27702-0727

POSITIONS OPEN

WASHINGTON AND JEFFERSON COLLEGE MOLECULAR BIOLOGIST

Washington and Jefferson College, a 1200-student liberal arts college in southwestern Pennsylvania, with approximately 200 biology majors, is adding a staff position in molecular biology for fall 1990. Departmental duties will include developing and teaching courses in molecular biology and experimental biology, participation in the beginning course, supervising independent studies, and advising. Experimental biology should be molecular in orientation and might include more in-depth work in areas such as recombinant DNA techniques, monoclonal antibody procedures, molecular separations, sequencing, etc. Applicants should send résumés to: **The Executive Assistant to the President, Washington and Jefferson College, Washington, PA 15301.** No references unless requested. *Affirmative Action/Equal Opportunity Employer.*

The Anatomy Department of the Medical College of Ohio has openings for **NEUROBIOLOGISTS** who are studying neural organization and/or development at cellular or molecular levels. Positions may be either tenured or tenure-track with teaching in either gross anatomy, microanatomy, or neurobiology. Applicants for assistant professorship should have the ability to establish an independent and funded research program. Applicants for more senior positions should have ongoing and funded programs. The Medical College of Ohio offers an excellent research environment and very competitive salaries and start-up funds. Faculty hired in the upcoming year will join a growing neuroscience group that will be expanded by subsequent recruitment. Forward your curriculum vitae and the names of three references to: **Faculty Search Committee, Department of Anatomy, Medical College of Ohio, P.O. Box 10008, Toledo, OH 43699.** Applications should be submitted by 1 December 1989. *Equal Opportunity Employer.*

NEUROBIOLOGY/CELL BIOLOGY

Position at assistant/associate professor level available immediately in the Biology Department at Tuskegee University. Candidates should have a Ph.D. degree, evidence of excellence in teaching, and an active research program that will involve undergraduates and graduates. Teaching will be in the areas of neurobiology, cell biology, and introductory biology. A research laboratory, seed funds, and released time to prepare a grant will be provided. Applicants should submit curriculum vitae, transcripts, a description of teaching and research interests, and three letters of references with telephone numbers sent to: **Dr. J. E. Thomas, Department of Biology, Tuskegee University, Tuskegee, AL 36088.** Tuskegee University is an Equal Opportunity/Affirmative Action Employer.

ORGANIC CHEMISTRY—The Chemistry Department of Williams College invites applications for a tenure-track position at the **ASSISTANT PROFESSOR** level for fall 1990. 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 initial teaching assignments will largely be courses in organic chemistry, but additional assignments 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 laboratory sections, and supervision of student research projects. Appointment at a senior level is possible under special circumstances. Williams College is a highly selective, coeducational liberal arts institution of approximately 236 faculty and 1950 undergraduates, located in northwestern Massachusetts. The Chemistry Department, with nine faculty members and 25-35 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 1 December 1989. *Equal Opportunity/Affirmative Action Employer. We are especially interested in identifying minority and women candidates.*

POSITIONS OPEN

NEUROSCIENCE FACULTY POSITION—Search extended. The College of Staten Island of the City University of New York invites applications for a full-time tenure-track position (beginning 1 September 1990) in developmental neurobiology. Candidates must be qualified to participate in the City University Ph.D. program in biology or biochemistry. A strong record of research, publication, and grant support is required. Rank and salary commensurate with experience and record of scholarship. Salary range \$40,000 to \$66,000. Excellent fringe benefits. Ample research space and start-up funds are available. The successful candidate is expected to participate in the programs of the CSI/IBR Center for Developmental Neuroscience. Send curriculum vitae and names of three references by 15 January 1990 to: **Dr. Barry Bressler, Vice-President for Academic Affairs, The College of Staten Island/CUNY, 715 Ocean Terrace, Staten Island, NY 10301.** *Equal Opportunity/Affirmative Action Employer.*

PEDIATRIC GENETICIST—Unique research opportunity at prestigious Children's Hospital of Philadelphia for individual interested in molecular biology of cutaneous diseases. Prior postdoctoral experience in molecular biology necessary. Excellent chance to develop research program and expertise in dermatology with substantial support from the Departments of Pediatrics and Dermatology. Candidate will have the opportunity to join a growing research community emphasizing studies in molecular genetics; developmental, molecular, and cell biology; and human gene mapping. The setting features a consolidated campus which includes The Children's Hospital of Philadelphia, University of Pennsylvania School of Medicine, School of Veterinary Medicine, School of Dentistry, Wistar Institute, and Graduate School of Arts and Sciences. Individual should be eligible for junior faculty appointment at the University of Pennsylvania. The possibility exists to obtain Board certification in dermatology while actually involved in research programs. Forward curriculum vitae to: **Michael Zasloff, M.D., Ph.D., and Paul J. Honig, M.D., The Children's Hospital of Philadelphia, 34th and Civic Center Boulevard, Philadelphia, PA 19104.** *An Equal Opportunity Employer M/F.*

Ph.D. POSTDOCTORAL POSITION in the Division of Endocrinology, Department of Pediatrics, Children's Hospital of Pittsburgh. Project involves isolation, purification, and cloning of peptide hormone receptor(s). Experience/extensive training in molecular biology and biochemistry essential. Position offers opportunity for career advancement and subsequent independent research in related field of developmental endocrinology and physiology. Apply with curriculum vitae and four references to: **Mark A. Sperling, M.D., Chairman, Department of Pediatrics, Children's Hospital of Pittsburgh, 3705 Fifth Avenue, Pittsburgh, PA 15213.** *An Equal Opportunity Employer.*

POSITIONS IN IMMUNOLOGY, MICROBIOLOGY

The Department of Microbiology at the Medical College of Ohio invites applications for two tenure-track faculty positions at the assistant/associate professor level.

• **IMMUNOLOGY:** Preference will be given to applicants using molecular approaches for the study of humoral or cellular immunity. Those with a major interest in the interaction of bacteria or viruses with the immune system are encouraged to apply.

• **BACTERIAL PATHOGENESIS:** We are interested in candidates whose research focuses on contemporary approaches to the study of bacterial pathogenesis.

The new faculty members will be provided with generous financial assistance and expected to develop independent, competitively funded research programs. Applicants will find that the laboratory and support facilities at the Medical College of Ohio are outstanding. Salaries are competitive and will be commensurate with experience. Demonstration of a strong commitment to teaching of medical and graduate students also is important in candidate evaluation. Applicants must have postdoctoral experience and should submit curriculum vitae, a statement addressing specific research goals and plans, copies of three representative publications, and names of three references. Send applications to: **Earl H. Freimer, M.D., Chairman, Department of Microbiology, Medical College of Ohio, P.O. Box 10,008, Toledo, OH 43699.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

Dairy Science Department, Mississippi State University (MSU) (M.S. Agriculture and Forestry Experimental Station), invites applications for a non-tenure-track full-time **POSTDOCTORAL ASSISTANT** for research in food protein/peptide chemistry/functionality. Minimum qualifications: recent Ph.D. in biochemistry or food science with strength in physical chemistry. Applications accepted until suitable candidate found. Applications and three references to: **Dr. Zahurul Haque, Associate Professor, MSU, Drawer DD, MS State, MS 39762.** Mississippi State University is an Affirmative Action/Equal Employment Opportunity Employer.

POSTDOCTORAL ASSOCIATE to pursue mucin biochemistry at the University of Michigan. Ph.D. in biochemistry and experience with the isolation and analysis of oligosaccharides preferred. Plan to work with an established program and develop new directions including cellular and molecular biology. Interested candidates should send curriculum vitae to: **C. Richard Boland, M.D., Chief, GI Unit (111D), VA Medical Center, 2215 Fuller Road, Ann Arbor, MI 48105.**

POSTDOCTORAL ASSOCIATE with background and experience in the field of membrane proteins, particularly isolation and reconstitution. Research will involve functional and structural studies of the interaction of drugs, anesthetics, and alcohol with membrane proteins and investigation of the role of lipids. Experience in some relevant aspects of membrane biochemistry is required. Position is available immediately or as soon as possible. Send curriculum vitae and the names of references to: **Dr. C. D. Stubbs, Room 271, Jefferson Alumni Hall, Thomas Jefferson University, Philadelphia, PA 19107.** *Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATE POSITION. Immediate opening for research on the biochemical and physiological mechanisms of a therapeutically important antithrombotic protein. Position requires degree in biochemistry, molecular or cell biology and experience in enzymology (purification and structure-function studies), protein and peptide chemistry, molecular biology (regulation of gene expression) or cellular immunology (cytokines). Starting salary to \$30,000. Medical insurance provided. Submit résumé with three references to: **Carolyn Orthner, Ph.D., American Red Cross, Plasma Derivatives Laboratory, 15601 Crabbs Branch Way, Rockville, MD 20855.** *Equal Opportunity Employer/M/F/V/M.*

POSTDOCTORAL POSITION—EGF ACTION: to participate in studies aimed at elucidating the mechanism(s) of signaling between the EGF receptor and other proteins involved in cellular responses. A current emphasis is the reconstitution of these proteins into lipid bilayers and mechanism(s) of phosphorylation in signal transduction. Experience with protein purification, enzymology and some experience in recombinant DNA methodologies is desirable. Position available immediately. Applicants with Ph.D. in biochemistry and molecular biology should send curriculum vitae and names of three references no later than 15 December 1989 to: **Dr. Tzipora Goldkorn, Co-Head Receptor Biology, Sloan-Kettering Institute, 1275 York Avenue, New York, NY 10021.**

POSTDOCTORAL POSITION

Molecular Genetic Analysis of Circadian Rhythms. We use the tools of classical and molecular genetics to elucidate the molecular mechanism of the circadian clock [*Nature* 339, 558-562 (15 June 1989 cover article)], and to identify cis and trans acting elements through which clocks control gene activity [*Science* 243, 385-388 (1989)]. Experience with genetics, biochemistry, and/or recombinant DNA is essential. Please send curriculum vitae and the names of three references to: **Professor Jay C. Dunlap, Department of Biochemistry, Dartmouth Medical School, Hanover, NH 03756.**

Research Opportunities in Plant Biotechnology

Garst Seed Company, a member of ICI SEEDS, is looking for individuals with a BS/MS in plant science to work in the following areas:

1. Corn Cell Biology/Transformation.
Applicants should have strong interest either in the molecular and biochemical characterization of transformed plants, or, the use of plant tissue culture techniques in crop improvement.
2. Molecular Screening.
Applicants should have strong interest in current DNA and RFLP techniques.

The positions are in our new research facility as Slater, Iowa (10 miles south of Ames). Salary and benefits will be competitive.

Please submit resume in confidence to Sue Schulz, Garst Seed Company, P.O. Box 500, Slater, Iowa 50244



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We Don't Believe In Barriers, Only Challenges.

It's the mindset of pioneers. A conviction that produces action against a wall of difficulty. It's the spirit at Nova Pharmaceutical Corporation.

Founded to apply the most recent advances in neuroscience to the discovery and development of a new generation of highly effective pharmaceutical products, Nova has singlehandedly opened up a whole new means to control pain. And with our patented NovaScreen process, vast chemical libraries for the first time become readily accessible to quick, reliable biological screening at the molecular level.

Barriers were meant to be broken. And with your help, our scientific team and prominent consulting scientists, including three Nobel Laureates in Medicine and Chemistry, will continue rising to the challenge. Come join us.

Toxicologist

Nova has an immediate need for a Senior Toxicologist. You will be responsible for conducting in-house preliminary dose range studies as well as the toxicological studies at selected contract laboratories. You will oversee projects from protocol design to final data interpretation and summarization for FDA submission.

A PhD in toxicology or pharmaceutical science plus 2 or more years' experience conducting toxicological studies are required. Familiarity with in vitro toxicology is also essential.

Nova offers an excellent compensation and benefits package. And all the challenges you can handle. Qualified candidates should send their CV with salary history to: **Personnel-ST/MG, Nova Pharmaceutical Corporation, 6200 Freeport Centre, Baltimore, MD 21224-2788. AN EQUAL OPPORTUNITY EMPLOYER**



Medical and Senior Staff Fellow

The Laboratory of Clinical Studies, National Institute on Alcohol Abuse and Alcoholism, Public Health Service, invites applications for one Fellowship position to study the pathophysiology, psychobiology, and molecular biology of alcoholism and its complications. Unique opportunity to become an active member of a multidisciplinary research team working with a 10 bed unit and outpatient clinic. State-of-the-art equipment and experienced technical support available. The position is that of a Medical or Senior Staff Fellow with a salary range of \$37,000 to \$52,000 per annum commensurate with qualifications and is located on the National Institutes of Health campus in Bethesda, Maryland. Interested candidates must be board certified or eligible internists, who are U.S. citizens or permanent residents. Position information and qualification requirements may be obtained by contacting Dr. George; Submit Curriculum Vitae and names of three references to:

Ted George, M.D.
NIH/NIAAA
9000 Rockville Pike
Building 10, Room 3B-19
Bethesda, Maryland 20892
Phone: (301) 496-9705



The position is now available.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

PhDs • Pharmacology • Physiology

Your scientific expertise is the foundation for a strong future

Hoechst-Roussel Pharmaceuticals Inc., fast-growing subsidiary of Hoechst Celanese Corporation, a \$4.6 billion division of one of the world's leading producers of chemicals and pharmaceuticals, has several opportunities for published Pharmacologists or Physiologists. Primary responsibilities will entail developing contacts within medical institutions, universities, teaching hospitals and government research groups. In addition, you will prepare auxiliary technical materials and deliver technical updates/training to field sales personnel.

Ideal candidates will possess a BS in Pharmacy, a PhD in Physiology or Pharmacology, and 2-3 years teaching experience at the university level and/or experience in clinical pharmacy.

These highly visible positions will provide direct contact with prominent figures in the medical field and pharmaceutical industry.

We offer a superb compensation package, including an excellent salary plus expense account, a company car and outstanding company benefits. Positions are available in the middle and upper Midwest.

Send curriculum vitae with current earnings to: Manager Human Resources, Room B214, Hoechst-Roussel Pharmaceuticals Inc., Route 202-206, P.O. Box 2500, Somerville, NJ 08876. An affirmative action employer.

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POSITIONS OPEN

POSTDOCTORAL POSITION (BIOCHEM-IST): research fellowship available immediately to join a biochemical/biophysical group or study human cholesterol, lipid, and lipoprotein metabolism. Send curriculum vitae, statement of research interest, and names of three references to: **Dr. Richard Deckelbaum, Department of Pediatrics, Columbia University, 630 West 168th Street, New York, NY 10032.** *Columbia University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION ATHEROSCLEROSIS RESEARCH

Is available in 1989. This is a comprehensive interdisciplinary program with possibilities for diverse projects in cell biology, protein chemistry and molecular biology. A Ph.D. in biomedical areas or an M.D. with laboratory experience may apply. Applicants with significant experience in cell biology and/or protein chemistry and/or molecular biology preferred. Salary according to NIH guidelines. Interested applicants should submit curriculum vitae, a detailed outline of his/her research background and names, addresses, and telephone numbers of three references to:

Dr. Nils U. Bang
Indiana University School of Medicine
Wishard Memorial Hospital Room B721
1001 West 10th Street
Indianapolis, IN 46202

POSTDOCTORAL POSITION—MARINE INVERTEBRATE MOLECULAR EVOLUTION at the Smithsonian Tropical Research Institute in the Republic of Panama. Two-year position available immediately for candidate with extensive experience in protein gel electrophoresis to carry out study of population genetics and systematics of bryozoans from the tropical Americas. Ph.D. in evolutionary biology, genetics, or systematics required. Experience with mtDNA analysis and SCUBA diving desirable. Salary \$23,000. Curriculum vitae and three confidential letters of recommendation should be received by 30 November 1989. Send to: **Dr. Jeremy B. C. Jackson, Smithsonian Tropical Research Institute, APO Miami FL 34002-0011.** *Equal Opportunity Employer; employment not limited by nationality.*

POSTDOCTORAL POSITION—MICROBIOLOGY: Available immediately to study microbial desulfurization of coal. Emphasis is on genetic and pathway engineering. Requires experience in genetic engineering and conventional genetic techniques. Experience with *Thiobacillus* and/or *Pseudomonas* is desirable. Three-year program with annual renewal. Send résumé to: **Mr. Richard Shaw, Battelle, 505 King Avenue, Department X-4, Columbus, OH 43201-2693.** *An Equal Employment/Affirmative Action Employer.*

UNIVERSITY OF PENNSYLVANIA POSTDOCTORAL POSITION RESEARCH SCIENTIST

The Department of Dermatology is offering an outstanding opportunity to investigate the immunomodulatory effects of extracorporeal photochemotherapy. The University of Pennsylvania is a leading center in the use of this exciting new immunotherapy in the treatment of autoimmune disease and cancer. Collaboration with other major university centers is currently ongoing. Studies would focus on the correction of abnormal immunoregulation and the induction of heightened antitumor immunity produced by this therapy. Previous experience in cellular immunology, immunochemistry, and Northern blotting necessary. Substantial interaction with senior scientists in molecular biology, immunodermatology and photobiology possible.

Salary negotiable and duration of appointment flexible.

Reply to:

Alain H. Rook, M.D.
Department of Dermatology
Hospital of the University of Pennsylvania
2 Maloney Building
36th and Spruce Streets
Philadelphia, PA 19104

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

POSITIONS OPEN

POSTDOCTORAL POSITION available for Ph.D. in lipoprotein metabolism and atherosclerosis in nonhuman primates under the supervision of **Dr. Rampratap S. Kushwaha**, associate scientist. Applicant should be experienced with methods in protein biochemistry and metabolism. Annual salary ranges upward from \$21,070, with consideration for prior relevant postdoctoral experience. Position is available for 2 years with opportunities for further extension or conversion to a staff position. Please send curriculum vitae, a description of research interests, and names and telephone numbers of three references, including major professor, to: **Personnel Director (6), Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, TX 78284.** *Equal Opportunity Employer M/F.*

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION available to participate in a multidisciplinary study of neuropeptide actions within autonomic ganglia and on cardiac muscle. Ongoing work involves whole cell and patch clamp analysis of membrane ion currents, biochemical analysis of second messenger generation, and immunocytochemical and RIA identification of neuropeptides. Future experiments entail receptor isolation and expression. Appointment initially for two years with the possibility of a longer term commitment. Salary levels consistent with NIH guidelines, but are negotiable depending on prior experience. Preference given to individuals with demonstrated experience with electrophysiological and computer techniques. To apply, send curriculum vitae and names of two references to: **Dr. Rodney L. Parsons, Department of Anatomy and Neurobiology, College of Medicine, University of Vermont, Burlington, VT 05405.** *An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

POSTDOCTORAL RESEARCH ASSOCIATE: Position is available immediately for a candidate with experience in protein and peptide purification. Study involves microbial iron transport and the isolation and purification of membrane receptor proteins [*FEBS Lett.* 243, 366 (1989)], binding studies of the proteins with siderophores, crystallization of the protein, and transport studies. Experience in chromatography is required while additional experience in NMR, MS, molecular biology, or protein crystallization will be considered. Salary \$21,000. Send curriculum vitae and names and addresses of three references to: **Dr. D. van der Helm, Department of Chemistry and Biochemistry, The University of Oklahoma, 620 Parrington Oval, Norman, OK 73071-0370.** Telephone: 405-325-5831.

POSTDOCTORAL RESEARCH POSITION

Participate in ongoing research into (i) the biochemical mechanisms of transformation by DNA tumor viruses and (ii) the function of cellular proto-oncogenes (c-src and c-fyn) and their activated counterparts. Studies will examine the action of these proteins in signal transduction and cell proliferation (*Cell* 49, 75; *Mol. Cell. Biol.* 8, 1736; *EMBO J.* 7, 3845). Applications are invited from highly motivated individuals with training in molecular and cellular biology. Duration of appointment is expected to be 2 years. Please send curriculum vitae, a short summary of research interests, and names of three references to:

Dr. Alan E. Smith
Department SC1020
Genzyme Corporation
One Mountain Road
Framingham, MA 01701
An Equal Opportunity Employer.

POSTDOCTORAL IN RESERVOIR SCIENCE/AQUATIC ECOLOGY

The Center for Reservoir Research at Murray State University has several openings for 2-year appointments as research associates. The work is centered at the Hancock Biological Station and the Mid-America Remote Sensing Center and focused on long-term research on Kentucky Lake. Experienced associates in areas of physical modeling (lakes, reservoirs, estuaries), database management and analysis, and algal physiology, algal systematics, or algal ecology are being sought. Inquire or apply (include résumé plus names, addresses, and telephone numbers of three references) to: **G. R. Marzolf, Hancock Biological Station, Murray State University, Murray, KY 42071.**

POSITIONS OPEN

POSTDOCTORAL POSITION. Immediate opening for a recent Ph.D. in cell biology to study mechanisms of cellular adhesion involving integrins. Background in one or more of the following areas is desirable: cytoskeleton-membrane interaction, molecular biology, extracellular matrix biology, immunofluorescent microscopy, and affinity chromatography. Send curriculum vitae and three letters of reference to: **W. Scott Argraves, Ph.D., American Red Cross, Biochemistry Department, 15601 Crabbs Branch Way, Rockville, MD 20855.** *Equal Opportunity Employer M/F/V/H.*

POSTGRADUATE POSITION IN CHEMISTRY AT EPA LABORATORY—Risk Reduction Research Laboratory in Cincinnati has a position available involving research on the solidification/stabilization of hazardous wastes. Research will focus on complexation of heavy metals to resist leaching by organic binders, sorption/bonding of organic waste to polymers, and impact of concrete raw material variables on leaching. Recent graduate degree with background in cement, solution, or silicate chemistry preferred. *U.S. citizenship or PRA status required.* For applications contact: **Postgraduate Research/EPA Science/Engineering Education Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117.** Telephone: 615-576-3190.

POSTDOCTORAL POSITIONS are available immediately to work in the field of Hematopoiesis, Neutrophil Function and Aging. Recent Ph.D. in cellular and molecular biology or biochemistry required. Experience in in vitro marrow culture or cellular signal transduction is desirable. Submit curriculum vitae and three references to: **Dr. K. B. Udupa, Ph.D., GRECC, VA Medical Center, 4300 West 7th Street, Little Rock, AR 72205.**

A POSTDOCTORAL RESEARCH POSITION IN NEUROANATOMY is available immediately to investigate the magnetic properties of the human brain. Qualifications include a Ph.D. with research in anatomy, physiology, or cell biology. The techniques used are similar to those involved in studies of rock magnetism, and a willingness is required to learn and apply these techniques to the problem of characterizing ferromagnetic particles in the brain. Please send curriculum vitae and names of three references to: **Dr. Joseph L. Kirschvink, Caltech 170-25, Pasadena, CA 91125.** *The California Institute of Technology is an Equal Opportunity/Affirmative Action Employer. Applications are encouraged from qualified women and minority candidates.*

PROTEIN CHEMISTRY/ MOLECULAR MODELING/DRUG DESIGN

The Department of Biomedical Chemistry, School of Pharmacy, University of Maryland at Baltimore, and the Medical Biotechnology Center of the Maryland Biotechnology Institute invite applications for a tenure-track faculty position, preferably at the associate professor level. The position is jointly supported by the two units with a primary appointment in the School of Pharmacy. Candidates should have research interests in protein chemistry, particularly in the relationship of protein structure and function. The research interests of the Biomedical Chemistry Department are focused on the interaction of small and macromolecules, especially related to drug design, and candidates who can contribute to this area will be given preference. Expertise in molecular modeling, NMR, and/or other tools used to image proteins is especially desirable. Candidates must have demonstrated potential to attract external funding. Teaching responsibilities will include participation in an undergraduate biochemistry course and in the graduate program. Applications should include a complete curriculum vitae, a summary of research plans, and three letters of reference, and should be sent to: **Dr. Marilyn K. Speedie, Department of Biomedical Chemistry, University of Maryland at Baltimore, 20 North Pine Street, Baltimore, MD 21201.**

An Equal Opportunity/Affirmative Action Employer.

RESEARCH SCIENTIST (Ph.D.) to study effects of light on nucleic acids at state affiliated institute in Buffalo, NY, area. Salary: \$14,000. Send résumé to: **Box 220, SCIENCE.**

Sr. Scientist

Sandoz Crop Protection, a company known for excellence in agricultural research, is seeking a Senior Scientist for its Plant Biotechnology Group. The applicant should have a Ph.D. in Molecular Biology, Biochemistry or Chemistry & postdoctoral exper. in the area of protein structure/function relationships. A background in phytopathology is highly desirable.

Our new research facility is located in Palo Alto near Stanford University. Sandoz provides a challenging work environment with opportunity for professional growth. For consideration send resume to:

**Sandoz Crop
Protection Corporation**
Human Resources Department
975 California Avenue
Palo Alto, CA 94304
AA/EOE



Protein Folding and Stability

Smith Kline and French Laboratories, a division of SmithKline Beecham, a worldwide leader in Pharmaceutical Research, has exciting opportunities for an Associate Senior Investigator and a Postdoctoral Scientist, in its expanding Macromolecular Sciences Department. The position responsibilities and qualifications are:

Associate Senior Investigator

The selected candidate will conduct collaborative research within a laboratory utilizing recombinant DNA methods for protein structure/function analysis and protein design. The candidate should have a Ph.D. in Chemistry, Biochemistry or Biophysics and have experience in the experimental determination of protein thermodynamic stability and/or folding kinetics, and some familiarity with computer graphics analysis of protein structure. Experience in protein purification and protein refolding are highly desirable. (#H0120)

Postdoctoral Scientist

This position involves the characterization of proteins implicated in facilitating protein folding *in vivo* and exploration of their utility in promoting proper folding of heterologous gene products *in vivo* and *in vitro*. The candidate should have a Ph.D. in Chemistry, Biochemistry or Microbiology, and experience in molecular cloning techniques. Additional experience in protein purification and characterization is desirable. (#H0107)

Our new, state-of-the-art research facility is located in suburban Philadelphia, near Valley Forge, PA. Smith Kline and French Laboratories provides a stimulating and challenging work environment with opportunity for professional growth. We offer an attractive compensation and benefits package. For confidential consideration, please submit your C.V., including the names and addresses of three references, to: Nancy Hasson, (Job Reference #), Smith Kline and French Laboratories, Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

SK&F

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MANAGER OF VETERINARY SERVICES

The Salk Institute for Biological Studies, located in southern California, seeks a qualified veterinarian to manage its research animal facility. The successful candidate will be responsible for supervising an animal facility carrying out a diverse basic research program; developing and implementing a program to monitor and improve animal health; providing acute care and preventative medicine for all animals on a daily basis; developing an in-house diagnostic capability; training and supervising animal care technicians and technical personnel; consulting with and advising faculty members on procedures involving animal use and care; and reviewing animal research protocols for compliance with federal and state regulations. This position requires a D.V.M. or equivalent degree, and postdoctoral training or board certification or eligibility by The American College of Laboratory Animal Medicine.

A competitive salary and comprehensive benefits package is offered dependent on qualifications and experience. Please send your resume, in confidence, to:

Dept. DVM
The Salk Institute for Biological Studies
P.O. Box 85800
San Diego, CA 92138-9216



Inflammation/Osteoarthritis Research Scientist

CIBA-GEIGY's Pharmaceuticals Division is a world leader in the scientific research and development of health-protecting and life-enhancing products. Our work in the area of anti-rheumatic compounds is an outstanding example of this commitment.

We have a challenging opportunity for a scientist with proficiency in Lymphocyte Biology to join our drug discovery team effort. You will apply your experience with cell lines, ELISA techniques, B cell, *in vitro* assays and flow cytometry in the study of immunoglobulin expression and secretion, cell activation and cell cycling.

A degree in Cell Biology, Immunology or related discipline (BS or BA) is required; an MS degree is desirable. Your 4+ years laboratory experience (2+ years for MS candidates), will have familiarized you with the required techniques. The ability to interact as a member of a development team is essential.

CIBA-GEIGY offers an excellent salary, comprehensive benefits and the opportunity for professional growth. Please send your resume with salary history and requirements to: **Al Aronson, Staffing Center, CIBA-GEIGY Corporation, Pharmaceuticals Division, Dept. 304, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

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CIBA—GEIGY

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE:

To study the role of polyamines in cellular functions of *E. coli*. Studies will include detailed genetic, physiological, and molecular biological experiments to determine what functions are sensitive to the deficiency of polyamines in the cell. Must have Ph.D. in microbiology or molecular biology. Requires research experience of mutant isolation, genetic mapping, molecular genetics, molecular cloning, identification of gene products, and regulation of gene expression, as evidenced by publications or independent doctoral research. Requires strong background in prokaryotic genetics, physiology, and physical chemistry. Flexible hours; 40 hours, \$22,000 per annum. Send résumé to: **Job Service Technical Unit, Connecticut Department of Labor, 200 Folly Brook Boulevard, Wethersfield, CT 06109; Job Order # 3058486.**

POSTDOCTORAL/RESEARCH ASSOCIATE

Postdoctoral positions are available immediately to study at the molecular level (i) viral-cellular gene interaction, (ii) the pathogenesis of herpesviruses, and (iii) hormone receptor-ligand interaction in gene activation. Studies entail protein-DNA and protein-protein binding, cDNA cloning and sequencing, protein chemistry and tissue culture. Applicants should have a Ph.D. or a DVM or equivalent. Experience in molecular biology is desirable, but not required. Applicant should send curriculum vitae, statement of research interest and objectives, and name and addresses of three references to: **Dr. Meihan Nonoyama or Dr. Patrick K. Lai, Laboratory of Virology, Tampa Bay Research Institute, 10900 Roosevelt Boulevard, St. Petersburg, FL 33716.**

The Tampa Bay Research Institute is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

A postdoctoral position is immediately available to study: (i) the regulation of membrane lipid metabolism in lymphocytes undergoing growth and differentiation; or (ii) the role of membrane lipids in lymphocyte function. Requirements are a recent Ph.D. in immunology or biochemistry, and previous experience in cellular immunology or molecular biology. Nationally competitive salary plus fringe benefits. Send curriculum vitae and names and addresses of three references to: **Dr. Thomas M. Buttke, Department of Microbiology and Immunology, East Carolina University School of Medicine, Greenville, NC 27858-4354.** *East Carolina University is an Affirmative Action/Equal Employment Opportunity Employer. Federal law requires proper documentation of identity and employability at the time of employment. It is requested that this documentation be included with your application.*

RESEARCH AND DEVELOPMENT CHEMIST

Conduct research projects aimed at developing novel, advanced dyes, products, and new specialty chemicals for highly specialized application in textile industry. Design and conduct synthesis, purification, analysis, characterization, evaluation, modification and formulation of a wide range of organic materials. Report work to, and critically review results with, director of advanced dyes research. Requires Ph.D. degree in organic chemistry and 1 year of experience in position offered or related occupation of postdoctoral researcher. Also requires research experience in multi-step organic synthesis of complex systems involving nitrogen heterocyclic compounds, substituted aromatic compounds and polar organic molecules. Requires experience in structure elucidation by modern spectroscopic methods (particularly ultraviolet/visible). Salary: \$40,800 per year; 40+ hours per week; 8:00 a.m. to 5:00 p.m. Apply to: **Job Service, 500 West Trade Street, Charlotte, NC 28202 or nearest Job Service office. Reference Job Order #2691677.**

POSTDOCTORAL RESEARCH ASSOCIATE.

Vertebrate physiologist/ecologist to collaborate in ongoing studies on muscle atrophy in birds and on marine mammal energetics. This is a 12- to 24-month position, starting salary \$26,000. Send curriculum vitae and list of three references to: **Joseph R. Jehl, Jr., Director of Research, Sea World Research Institute, 1700 South Shores Road, San Diego, CA 92109.**

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA, IRVINE POSTDOCTORAL RESEARCH IN PSYCHOBIOLOGY

The Department of Psychobiology, University of California, Irvine (UCI), anticipates filling several postdoctoral research positions in the laboratories of the faculty with starting dates between 1 December 1989 and 30 April 1990. The current faculty and their research interests are: **D. Aswad** (neurochemistry); **C. Cotman** (synaptic growth and plasticity); **R. Josephson** (comparative physiology of muscles); **M.-L. Kean** (linguistics and neural mechanisms of language processing); **H. Kil-lackey** (developmental neuroanatomy); **M. Leon** (neurobiology of early learning); **G. Lynch** (physiology, neurochemistry); **J. Marshall** (neural plasticity of catecholamines); **J. McGaugh** (memory, storage processes); **R. Miledi** (synaptic physiology and molecular neurobiology); **R. Neve** (molecular neurobiology of Alzheimer's disease); **I. Parker** (synaptic physiology); **A. Starr** (cognition, sensation and evoked potentials); **K. Sumikawa** (molecular neurobiology); **N. Weinberger** (neural mechanisms of learning); and **P. Yahr** (neuroendocrinology and behavior).

Candidates should address inquiries to: **Postdoctoral Research Advisor, Department of Psychobiology, University of California, Irvine, CA 92717.**

An Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE: Use and maintain a picosecond laser system at ultraviolet and tunable infrared wavelengths. Study ultrafast energy transfer, photodissociation, and reaction kinetics in liquids by transient infrared spectroscopy. Experiments require non-linear optics, molecular spectroscopy, chemical handling, and computer experience. Collaboration with theoreticians on quantum chemistry, energy transfer, and molecular dynamics calculations. Require (i) a Ph.D. in physical chemistry, (ii) a Ph.D. thesis or postdoctoral research involved with inelastic collision phenomena, microscopic reaction mechanisms, and quantum chemistry, (iii) one graduate course in quantum electronics (including non-linear optics and laser spectroscopic techniques), and (iv) any working knowledge of Fortran computer language. Salary: \$24,000 per year; 40 hours per week; 8:30 to 5:00. Send résumé and verification of requirements to: **Illinois Department of Employment Security, 401 South State Street, 3 South, Chicago, IL 60605, Attention: Robert S. Felton, Ref. #V-IL-9495-F.** *An employer-paid ad.*

SCIENTIFIC DIRECTOR

THE STATION BIOLOGIQUE DE LA TOUR DU VALAT is an ecological research station belonging to a foundation and located in the Camargue, on the Mediterranean coast of France. It has a research staff of about 12 senior scientists and 20 assistants. It is owner of a nature reserve of 1700 ha. The research program investigates ecological parameters and processes of importance for the diversity of wildlife in wetlands. It includes habitat use of birds (8 species of heron, flamingo, and various other water birds), fish and grazing mammals, as well as water plants and their response to various regimes of water, salinity, and grazing. Geochemistry and nutrients are also studied. This research has been mainly conducted in the Camargue but has increasingly included other Mediterranean wetlands. Acquired knowledge has been used for management of wetlands in the Camargue. The research program should continue and address increasingly problems of Mediterranean-wide scope, and acquired knowledge should be increasingly used to support conservation and management of Mediterranean wetlands.

A scientific director is sought to design a program according to these guidelines and to direct the research team of the station for implementing this program. Candidates should have considerable experience in ecological research in wetlands, as well as in wetland conservation and management. They should be able to enhance teamwork and to direct researchers towards accomplishment of agreed goals. They should be fluent in English and French. The preferred age bracket is 35 to 45 years. Remuneration will depend on qualification of the candidate.

Applications and requests should be addressed to:

**Dr. L. Hoffmann, President
Fondation Tour du Valat Le Sambuc,
F-13200 Arles France**

POSITIONS OPEN

RESEARCH ASSOCIATE—Conduct research on factors and transcriptional elements involved in control and regulation of tissue-specific expression of proteoglycan genes. Requirements include Ph.D. in biology, strong background in physiology and biochemistry, 3 years of research experience, and thorough knowledge and experience in molecular and cellular biology of mast cells. Salary range: \$30,000 to \$35,000 per year. Contact: **Professor K. F. Austen, Chairman, Department of Rheumatology/Immunology, Brigham and Women's Hospital, 250 Longwood Avenue, Boston, MA 02115.**

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE

RESEARCH SCIENTIST POSITION, Poultry Research Laboratory, Georgetown, Delaware.

ARS is seeking a permanent physiologist/biochemist (poultry) to be part of a research team investigating biochemical and physiological mechanisms affecting growth and body composition. The research involves investigation of gene products and application of molecular biology techniques. Skills in molecular biology are required. Also, applicants should have skills in electrophoresis, and purification of nucleic acid and protein, and knowledge of biochemistry and physiology. Knowledge of avian biology and skill in statistical analysis are desired. Must be U.S. citizen. Salary range \$28,852 to \$44,957 per annum. For information on the research program and position contact: **Dr. Lee Cartwright at 302-856-0046.** For information on application procedures/forms contact: **Beverly Webert at 301-344-2756.** Applications in response to this advertisement must be marked 0N001 and received by 15 December 1989.

USDA/ARS is an Equal Opportunity Employer.

Women and minorities are encouraged to apply.

SENIOR RESEARCH PHYSICIST responsible for optoelectronics and fiber optics product development including: leading and supervising small team of scientists, engineers and/or technicians in development and commercialization of optoelectronic devices and systems; planning, scheduling, and conducting research, design and development of laser-based and fiber-optic-based devices and systems from conceptualization through design, development, and commercialization; developing and commercializing optoelectronic devices and/or systems for military, aerospace, and/or industrial customers; constructing optoelectronic devices and systems based on laser diodes and/or fiber optics, Ph.D. in physics or optical fiber sensors required as well as 1 year and 6 months of experience in job offered or 1 year and 6 months of experience as research engineer. Required experience must have included design and development of optoelectronic devices and systems based on laser diodes and/or fiber optics and supervision of a professional staff in the research, development, and commercialization of optoelectronic devices and systems. Forty hours, 9:00 a.m. to 5:00 p.m.; \$53,000 per year. Send résumé to: **Illinois Department of Employment Security, 401 South State Street- 3 South Chicago, IL 60605, Attention: Robert S. Felton, Ref. #9704-F.** *Employer-paid ad.*

WRITER-EDITOR (PRINTED MEDIA) NATIONAL MUSEUM OF NATURAL HISTORY SMITHSONIAN INSTITUTION

The National Museum of Natural History seeks a highly qualified candidate to serve as Managing Editor for a science bulletin to be developed and published by the Museum. Applicants should show evidence of well-developed science writing skills and extensive experience in presenting advanced subject-matter theories and concepts to a varied audience. Background knowledge in science required; knowledge and experience in desk-top publishing highly desirable. Duties will include developing and issuing the bulletin, soliciting and editing material prepared by scientific staff, defining an editorial policy, and supervising one or more assistants. Salary range: GM-13 (\$41,121 to \$53,460, depending on qualifications).

To apply: send Form SF-171 (Personal Qualifications Statement) together with examples of publications to: **Smithsonian Institution**, to be received by 30 November 1989, in **The Office of Personnel Administration, Branch 1 (MPA-9-1213), P.O. Box 23762, Washington, DC 20026-3762.**

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This experienced scientist will have primary responsibility to direct our immunology group in the development of immunotherapies for AIDS infection and will also be a key contributor to our extensive HIV vaccine program. The successful candidate will possess an exceptional record of achievement utilizing a range of immunological methodologies including the use of monoclonal antibodies and immunoconjugates as therapeutics, and must have proven management skills.

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The selected candidate will investigate the structure/function relationships of hematopoietic growth factors and their receptors using recombinant DNA techniques, including restriction analysis, gene cloning, DNA hybridization, etc. You will work with our Protein Modeling Group to conduct rational design of altered protein molecules and interface extensively with other research groups at our campus-like facility located near Princeton and convenient to both New York City and Philadelphia.

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Develop purification schemes for the isolation and scale-up of recombinant proteins. Also develop and perform assays directed at qualifying these proteins as clinical grade therapeutic or diagnostic agents. Requires a Ph.D. in Biochemistry with 2-5 yrs.' postdoctoral experience in protein purification and characterization.

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RESEARCH ASSOCIATE POSITION in beef cattle reproduction-endocrinology. M.S. degree in physiology, endocrinology, or related area with training and experience in computer analyses/statistics. Opportunity for concurrent enrollment in Ph.D. program. Starting salary: \$24,528 plus fringe. Curriculum vitae, copy of transcripts, and names/telephone numbers of three references to: **Dr. G. L. Williams, Beef Cattle Reproduction Laboratory, Texas A&M University Agriculture Research Station, HCR-2, Box 43-C, Beeville, TX 78102.**

RESEARCH BIOCHEMIST/ASSOCIATE to carry out physiological and molecular biological studies of cellular lipid and lipoprotein metabolism. Research includes studies of receptors, gene expression, and enzymology. The applicant must have a Ph.D. or equivalent degree with relevant postdoctoral experience. Apply with curriculum vitae and three references to: **Fredric B. Kraemer, M.D., Division of Endocrinology, S-005, Stanford University Medical Center, Stanford, CA 94305. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH SCIENTIST/ RESEARCH ASSISTANT PROFESSOR

Position available in group characterizing DNA repair enzymes in mammalian cells. The successful candidate should have extensive experience in RN isolation and molecular biology techniques. Skill in cDNA and genomic DNA library screening, Southern and Northern analyses and DNA sequencing is also essential. Send curriculum vitae and names of three references to: **Craig W. Beattie, Ph.D., Specialized Center for Cancer Research and Education, University of Illinois College of Medicine at Chicago, 840 South Wood Street (M/C 820), Chicago, IL 60612.**

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SENIOR RESEARCH ASSOCIATE: Will conduct research in the development of fluidic oscillators for gas-flow metering. Will conduct experiments with gases at various temperatures to determine the effects on flow metering. Will use laser anemometers, aerodynamic and hydrodynamic flow visualization techniques, spectral analysis and digital data acquisition techniques using VMS and UNIX operating systems to analyze various theoretical models in the building of industrial prototypes for various applications. Will use thermal and laser velocimetry, shadowgraph, schlieren, and interferometric techniques. May teach courses in related areas as required. Requires Ph.D. degree in mechanical engineering. Education to include completion of Ph.D. thesis in heat and mass transfer. Must have used the following techniques for 2 years during graduate studies: thermal anemometry, signal processing, digital data acquisition, flow visualization: aerodynamic and hydrodynamic, laser velocimetry, shadowgraph, schlieren, and interferometric techniques. Education to include one semester graduate course in: Fluid Mechanics; Viscous Flows; Stability of Viscous Flows; Heat Transfer; and, Numerical Methods. Hours: 9:00 a.m. to 5:00 p.m., 40 hours per week at \$28,000 per year. This is a University position. Please send résumé to: **Illinois Department of Employment Security, 401 South State Street - 3 South, Chicago, IL 60605, Attention: Mary Millea, Reference #9720-M. An employer-paid ad.**

STUDY DIRECTOR—FOOD AND NUTRITION BOARD. The Food and Nutrition board of the Institute of Medicine/National Academy of Sciences is seeking a Study Director to coordinate and direct the Food Chemicals Codex project (a compendium of purity criteria for food additives), develop safety criteria, evaluate specifications, allocate limits for toxic or objectionable impurities, write analytical text methods; work with industry and the Food and Drug Administration in obtaining proposed food-grade specifications, prepare material for toxicological review based on impurities data and estimated consumer exposure to the additive, organize workshops and symposia on special topics, and prepare quarterly newsletter. Requires a Ph.D. degree or equivalent, preferably related to analytical chemistry, 5 years of experience in food chemical purity specifications development, knowledge of food additives, regulatory requirements, and excellent written and oral communications skills. We offer a salary commensurate with experience and an exceptional benefits package. Please send résumé in confidence to: **IOM 2137-310 (FP), Institute of Medicine, 2101 Constitution Avenue, NW Washington, D.C. 20418. Equal Opportunity Employer.**

POSITIONS OPEN

Technology Unlimited is seeking creative **SCIENTISTS** interested in drug delivery for both senior research and postdoctoral positions in its new Wooster, Ohio, laboratory.

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SENIOR RESEARCH ASSOCIATE, Department of Diagnostic Radiology and Nuclear Medicine at Stanford University. Assist M.D. and Ph.D. faculty in development of vascular research laboratory and serve as a co-investigator in related research projects. In addition, will be responsible for assisting in the development of MR spectroscopy program, particularly with respect to experimental cardiac preparations. The applicant should have a Ph.D. in physiology or pharmacology with postdoctoral emphasis on cardiovascular research. Apply to: **Gary M. Glazer, M.D., Chairman, Department of Diagnostic Radiology and Nuclear Medicine, Stanford University Medical Center, Stanford, CA 94305. An Equal Opportunity Employer through Affirmative Action.**

SENIOR RESEARCH BIOCHEMIST. The position is available beginning 1 January 1990 for an outstanding scientist with Ph.D. in biochemistry or molecular biology and appropriate postdoctoral training. Major thrust of research will be on the regulation of carcinogen-metabolizing enzymes and mechanism of carcinogenesis. Previous experience in these areas is highly desirable. Deadline for receipt of application is 1 December 1989. Please send application to: **Dr. Chung S. Yang, Department of Chemical Biology and Pharmacognosy, College of Pharmacy, Rutgers University, Piscataway, NJ 08855-0789. Affirmative Action/Equal Opportunity Employer.**

LECTURESHIPS

ASTON UNIVERSITY DEPARTMENT OF PHARMACEUTICAL SCIENCES LECTURESHIPS IN ORGANIC CHEMISTRY

Applications are invited from candidates with a Ph.D. in organic or pharmaceutical chemistry. Applicants should preferably have postdoctoral experience, although this is not essential. The successful applicant will teach organic and medicinal chemistry and engage in medicinal chemistry research.

Informal enquiries can be made to **Professor Malcolm Stevens (extension 4167) or Dr. Sally Freeman (extension 4197).**

Terms of appointment:
Salaries within and up to the maximum of the range: £10,458 to £15,372 per annum (Lecturer Grade A) or £16,014 to £20,469 per annum (Lecturer Grade B). The appointment will be for a period of 3 years initially, with the possibility of renewal or subsequent transfer to a continuing appointment.

Application forms and further particulars may be obtained from: **The Personnel Officer (Academic Staff), quoting Ref: 8931/313, Aston University, Aston Triangle, Birmingham B4 7ET, England. Telephone 021-359-0870 (24 hour answer-phone). Closing date for the receipt of applications is 24 November 1989.**

SYMPOSIUM

INTERNATIONAL SYMPOSIUM TOBACCO SMOKING AND ATHEROSCLEROSIS: PATHOGENESIS AND CELLULAR MECHANISMS

Presented by the University of Kentucky's Tobacco and Health Research Institute, 10-13 December 1989, at the Hyatt Regency Hotel in Lexington, Kentucky. The program includes presentations by notable international authorities in the field. Topics include (i) epidemiology, (ii) endothelial cells, (iii) vascular smooth muscle cells, (iv) platelets, (v) cholesterol/lipoproteins, (vi) hemodynamics and hemorheology, and (vii) coronary artery disease. **Dr. John Diana is Chairman. Inquiries: Special Programs, 204 Frazee Hall, University of Kentucky, Lexington, KY 40546-0031. Telephone: 606-257-5151.**

SYMPOSIUM

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Major scientific sessions are: mechanism of growth factor action, growth factors and gonadal function, regulation of normal and neoplastic mammary growth, regulatory peptides in reproductive tract development and function, and embryomaterial signalling. Offers sixteen CME credit hours. Abstract forms and registration information may be obtained by contacting: **L. Lisa Kern, Ph.D., Sero Symposia, USA, 100 Longwater Circle, Norwell, MA 02061. Telephone: 800-283-8088; 617-982-9000.**

AWARDS

1991 GERARD PIEL AWARD FOR SERVICE TO SCIENCE IN THE CAUSE OF MAN

Nominations are requested for the fourth Gerald Piel Award for Service to Science in the Cause of Man, to be presented by the International Council of Scientific Unions (ICSU) at its 23rd General Assembly in Sofia, Bulgaria, in October 1990. The Award, established by the Board of Directors of Scientific American, Inc., was first bestowed on Gerald Piel, creator of the magazine *Scientific American*, upon his retirement as Chairman. The award recognizes contributions to the wise use of science for the benefit of human welfare and fulfillment. It may recognize a lifelong or an episodic contribution to this cause. The prize will comprise a sum of \$10,000 and a medal. Individuals and organizations are eligible. The award is administered by a different scientific organization each year.

All nominations should include the following information, submitted in a typed letter: nominee's name, address, institutional affiliation, and title; a brief biographical resumé, and a statement of justification for the nomination. Nominations of organizations should include information about the nature, form, and work of the organization. All nominations must include the name, address, telephone number, and signature of the person making the nomination.

Nominations, as well as questions about the award, should be addressed to: **The Executive Secretary, International Council of Scientific Unions, 51 Boulevard de Montmorency, Paris 75016, France. Telephone: (33-1) 4525-0329; Telex: ICSU 630553 F; Telefax: (33-1) 4288-9431.**

Deadline for receipt of nominations is 15 March 1990.

COURSE

THE 1990 JAMES S. McDONNELL FOUNDATION SUMMER INSTITUTE IN COGNITIVE NEUROSCIENCE. The third annual Summer Institute will be held at Dartmouth College, 2 July through 13 July 1990. The 2-week **COURSE** will examine how information about the brain bears on issues in cognitive science, and how approaches in cognitive science apply to neuroscience research. A distinguished international faculty will lecture on current topics in perception and language; laboratories and demonstrations will offer practical experience with cognitive neuropsychology experiments, connectionist/computational modeling, and neuroanatomy. At every stage, the relationship between cognitive issues and underlying neural circuits will be explored.

The Institute directors will be **Michael Gazzaniga, George A. Miller, Wolf Singer, and Gordon Shepherd.** The foundation is providing limited support for travel expenses and room/board. Applications are invited from beginning and established researchers and must be postmarked by 12 January 1990. For further information please write to:

McDonnell Institute in Cognitive Neuroscience
Michael S. Gazzaniga
HB 7915-A
Dartmouth Medical School
Hanover, NH 03756

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MOLECULAR ENDOCRINOLOGY AND TECHNIQUES FOR HORMONE ACTION 19 to 23 February 1990

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

Co-directors: M. R. Hughes and B. W. O'Malley
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For further information contact:

Bonnie Cuthbert
Department of Cell Biology
Baylor College of Medicine
Telephone: 713-798-6200
Deadline: 2 February 1990

TOOLS FOR A NEW BIOLOGY—A 1-week course focusing on an integrated, multidisciplinary approach to the development of procedures for the separation, detection, and microcharacterization of complex mixtures of proteins and nucleic acids. Includes the role of novel computer hardware/software in the analysis of biological data. Sponsored by the NSP Center for Biotechnology. Director: Leroy Hood. For information contact: Sue Lewis, Caltech, Division of Biology, 147-75, Pasadena, CA 91125. Telephone: 818-356-8390 or Fax: 818-793-4627.

TRAINING PROGRAMS

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POSTDOCTORAL positions available funded from an NIEHS training grant or from research grants.
Adnan Elfarrar—Metabolic basis of conjugated dienes toxicity

Colin Jefcoate—Gene expression of P-450s

William Karasov—Effects of xenobiotics on digestion and nutrient transport

Charles Kasper—Regulation of enzymes responsible for carcinogen activation

Gerald Odell—Glucuronosyl transferases

Michael Pariza—Anticarcinogenic activity of dietary linoleic acid derivatives

Richard Peterson—Testicular toxicity of perfluorinated acids

Henry Pitot—Mechanisms of chemically induced liver cancer

Alan Poland—Cloning and structure-function relationship of the Ah receptor

Catherine Reznikoff—Non-random genetic losses in bladder carcinogenesis

Frank Siegel—Regulation of glutathione S-transferases

James Tracy—Prodrug activation in parasites

GRADUATE TRAINING is also available in these laboratories and others representing neuro-, genetic-, and immunotoxicology.

Applicants should submit curriculum vitae and a letter identifying the laboratory of interest to:

Professor Colin R. Jefcoate, Director
Environmental Toxicology Center
309 Infirmary, 1300 University Avenue
University of Wisconsin
Madison, WI 53706
Telephone: 608-263-4580

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PRE- AND POSTDOCTORAL TRAINING IN PULMONARY DISEASE. Positions are available at the Johns Hopkins Medical Institutions for multidisciplinary research training in lung diseases. Areas of interest include the immunology, physiology, cell biology, biochemistry, and toxicology of the lung. Available stipends are limited to U.S. citizens or individuals with permanent immigrant visa status. For further information please contact: J. T. Sylvester, M.D., Division of Pulmonary and Critical Care Medicine, 600 North Wolfe Street, Baltimore, MD 21205. Minority candidates are encouraged to apply.

TRAINING PROGRAM

The Department of Rheumatology and Immunology of the Brigham and Women's Hospital, a Department of Medicine of the Harvard Medical School, seeks minority applicants for the **POSTDOCTORAL TRAINING PROGRAM**. The trainees may have a Ph.D. or M.D. degree. For the latter group, the clinical subspecialty program can either be Rheumatology or Allergy. Please correspond with: Ms. Mary Collier, Room 604, The Seeley G. Mudd Building, 250 Longwood Avenue, Boston, MA 02115.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS AT THE SCRIPPS INSTITUTION OF OCEANOGRAPHY

Applications are invited for postdoctoral awards from new or recent Ph.D. students in all major areas of research conducted at the Scripps Institution of Oceanography (SIO). Interest areas include physical, chemical and biological oceanography; marine geology, geochemistry and geophysics; marine chemistry; marine biology; and ocean engineering. Specific areas of interest might include continental margins and coastal sciences; marine meteorology and air/sea interaction; global climate change; atmospheric chemistry; large scale ocean circulation; marine microbiology; isotope geochemistry; and satellite oceanography. Awards will be made on a competitive basis with major emphasis on the recipient's potential for independent and creative research.

Fellowships will be awarded for 1 year with stipends commensurate with experience, plus benefits and a small budget for publications, travel, etc. Renewals for a second year, depending upon performance, are possible.

Applications should include complete transcripts of graduate records, a curriculum vitae, addresses and telephone numbers of at least three references, and a concise synopsis of the applicant's (a) doctoral research, and (b) research interests to be pursued at SIO.

All application materials must be received by 15 January 1990. Awards will be announced by early April, 1990. Application and questions should be addressed to: The Chairman, Graduate Department, Scripps Institution of Oceanography, University of California, San Diego, A-008, La Jolla, CA 92093.

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

POSTDOCTORAL FELLOWSHIP involving instrumentation and methods development related to increasing sensitivity of protein microsequencing. Background in biochemistry or protein chemistry preferred. Experience in protein sequencing, HPLC, and electrophoresis desirable. Send curriculum vitae and three letters of reference to: Dr. Leroy Hood, California Institute of Technology, Division of Biology 147-75, Pasadena, CA 91125.

POSTDOCTORAL FELLOWSHIP position open immediately, in the Division of Oral Biology, University of California School of Dentistry, to study Epstein-Barr Virus gene expression in epithelial tissues. Experience in molecular biology, cell culture and transformation desirable. Stipend commensurate with experience. Please send inquiries, curriculum vitae, and three letters of recommendation to: Dr. John S. Greenspan, Chairman of Stomatology, Box 0512, University of California, San Francisco, CA 94143-0512. Equal Opportunity/Affirmative Action Employer.

University of Southern California and Childrens Hospital of Los Angeles —2 NIH-Funded **POSTDOCTORAL FELLOWSHIPS** available in a dynamic young research group. Emphasis is on transgenic mice to study retina cell differentiation and receptor-mediated nerve cell differentiation. Send curriculum vitae and three letters of references to: Dr. E. Bogenmann, Division of Hematology/Oncology, Childrens Hospital of Los Angeles, 4650 Sunset Boulevard, Los Angeles, CA 90027. Childrens Hospital and USC are Equal Opportunity/Affirmative Action Employers.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS IN ENVIRONMENTAL TOXICOLOGY AND PATHOLOGY

Postdoctoral fellowship positions funded by an NIH training grant are available effective immediately at Northwestern University Medical School in Chicago. The preceptors and their research areas are: Toshio Narahashi, Mechanisms of action of insecticides and heavy metals on nerve membrane ion channels by voltage clamp and patch clamp; Philip M. Iannaccone, Effects of carcinogens on mammalian embryo; Michael J. Morin, Antineoplastic agents: Signal transduction and therapeutic application; Ryoichi Oyasu, Mechanisms of urinary bladder cancer; M. Sambasiva Rao, Pancreatic carcinoma; Janardan K. Reddy, Pancreatic carcinoma and liver peroxisome proliferators; Dante G. Scarpelli, Mechanisms of pancreatic carcinoma; Dennis B. Solt, Carcinogen modification of epithelial cells; and Chau H. Wu, Mode of action of environmental toxins on nerve membranes by voltage clamp and patch clamp. These studies are being carried out on an extensive scale in the Departments of Pharmacology and Pathology. The applicants must be U.S. citizens or permanent residents, and must hold a Ph.D., M.D., or equivalent degree, or be expected to receive the degree. Send a letter stating a specific area of interest, curriculum vitae, and three reference letters to: Dr. Toshio Narahashi, Program Director, Department of Pharmacology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611. Telephone: 312-908-8284. Applications from minority groups are strongly encouraged. An Affirmative Action/Equal Opportunity Employer.

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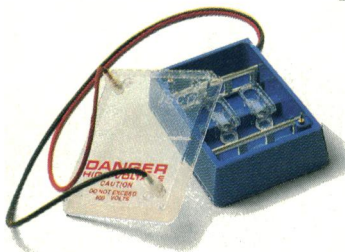
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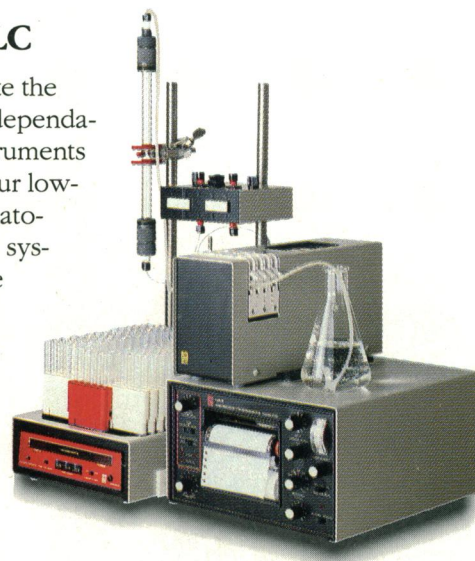


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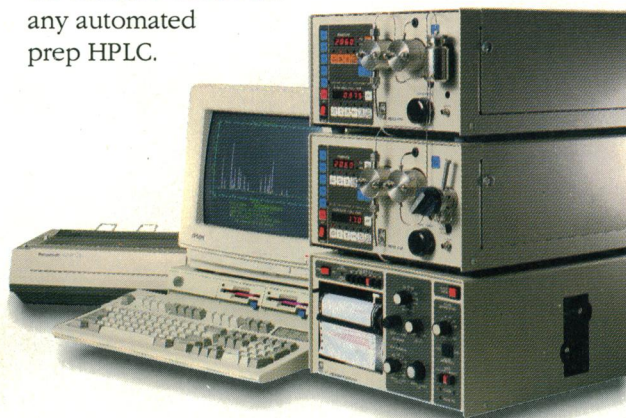
Classical LC

You'll appreciate the versatility and dependability these instruments will bring to your low-pressure chromatography. Isco LC systems fractionate your proteins by time, drop count, or peak shape. Solve difficult separation problems with optional gradient programming. Scale up easily to liter/min flow rates. And now you can finally eliminate worries about lost samples and coldroom reliability.



HPLC

Isco HPLC systems are robust, easy to maintain, and adapt readily to your changing applications. Unique pump and detector features give you added convenience with reduced maintenance and operating costs. ChemResearch software adds PC-based data management and gradient control. And our Foxy programmable fraction collector is the smartest choice for any automated prep HPLC.



All Isco instruments carry a three-year parts and labor warranty. To find out how affordable Isco quality can be, call toll-free now.

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Isco, Inc.
P.O. Box 5347
Lincoln, Nebraska 68505



Save hours of time and improve results by automating solid phase extraction with the new ASPEC system

Automate all conditioning, sample application, washing and elution steps

Solid phase extraction is a time-consuming, manually intensive job. Depending on the protocol, it can take several hours a day. By automating the procedure, ASPEC (Automatic Sample Preparation with Extraction Columns) frees you for more productive work. Ideal for most GC and HPLC applications, ASPEC automates sample preparation for GC and both sample preparation and injection for HPLC.

Extraction steps automated by ASPEC

Pre-stored software for...

- three column conditioning steps
- sample application to 108 columns
- washing with up to three solvents
- application of up to three elution solvents
- on-line HPLC injection

Programmable steps for...

- addition of internal standards
- extra column conditioning, washing or elution
- variable drying time
- sample derivatization or dilution

ASPEC treats every column identically to assure reproducible results

Automation with ASPEC also assures better results. ASPEC treats every column identically—and with accuracy—by eliminating errors that could

occur in manual liquid handling. The ASPEC pipettor/dilutor picks up and delivers sample or solvent with up to 99.5% accuracy and a 0.05% CV.

Built-in software turns programming into an easy step-by-step process

Automation sometimes means complication. But not with ASPEC. Three built-in files prompt you for basic parameters such as column size and liquid volumes. Once the parameters are entered, you can store them for future use. And when you need to change parameters, ASPEC makes that easy, too. You go right to the parameter you need to change without re-entering every one.

Pipettor/dilutor assures accurate liquid volumes

Unmatched value: no costly add-ons or consumables; multiple uses

ASPEC is compatible with all standard syringe barrel disposable extraction columns. So there's no need to pay a premium for special columns. And ASPEC comes complete. So there's no need for special supplies such as vacuum pumps or extra modules. What's more, when you're not performing solid phase extractions, ASPEC works as an auto sampler/injector to perform dilutions, add internal standards, mix reagents and inject samples.

To learn more, write for our free brochure

You can learn more about ASPEC by requesting a free copy of our new brochure. And then, if you'd like, we'll arrange for a no-obligation demonstration.

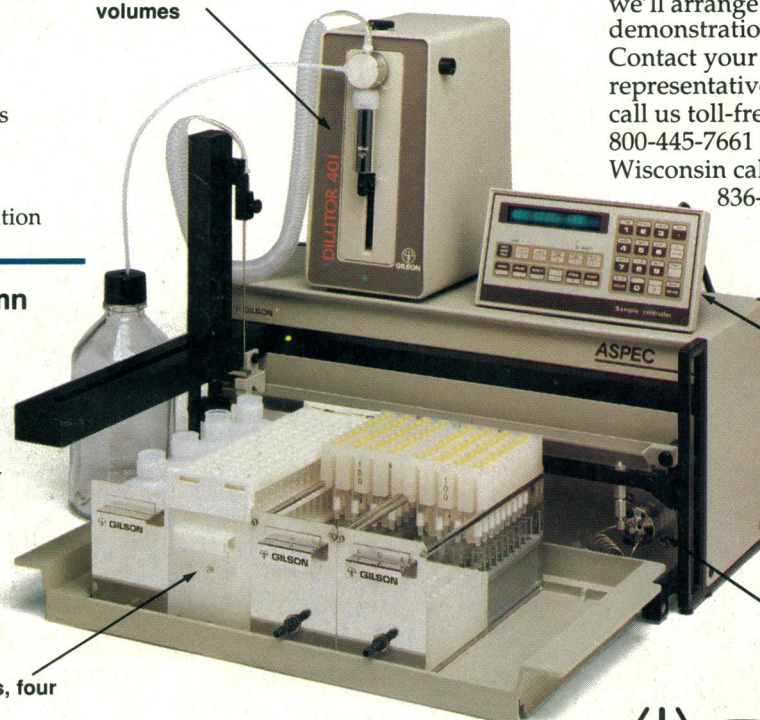
Contact your Gilson representative. Or call us toll-free at 800-445-7661 (In Wisconsin call 608-836-1551).



Keypad and pre-stored software simplify programming

Injection valve provides for automatic on-line HPLC injection

Racks hold up to 108 samples, four solvents and 108 columns



GILSON®