

not truly elementary—the reader must bring to it a reasonable background in nuclear and particle physics in order to profit fully from the exposition—but the authors, both theoretical physicists, have suppressed theoretical exposition for the sake of pedagogic unity. They emphasize long-wavelength phenomena, using a model description based on the interactions of pions, nucleons, and delta resonances, treated as point particles, and invoking ρ mesons when needed. The nuclear physics is kept to a minimum; nuclear sizes, nucleon densities, and Fermi-gas excitation dynamics provide most of the information used.

The book is generally successful within its goals. A wide variety of phenomena are discussed and related to the general framework of ideas. The exposition is clear, informative, and well illustrated, connections among the various subjects are continually pointed out, and a good selection of experimental data is included. The depth of theoretical discussion varies considerably from topic to topic, reflecting the authors' particular interests. To make up for the informality of the treatment about 60 pages of formal material are included as appendixes. Although this material is useful for reference, many readers may find it hard to integrate with the text.

Providing a clear and coherent view of a considerable part of nuclear pion physics is no small achievement, given the inherent richness and complexity of the subject. From this book, a newcomer to this area can get a good introduction to many topics, although some will seem obscure. Its biggest lack is in conveying a sense of where the problems are. For example, the matter of "quenching" of the Gamow-Teller strength remains controversial, leaving some conclusions based on this mechanism open to question. However, the reader will find good bibliographies for further reference.

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Books Received

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Products & Materials

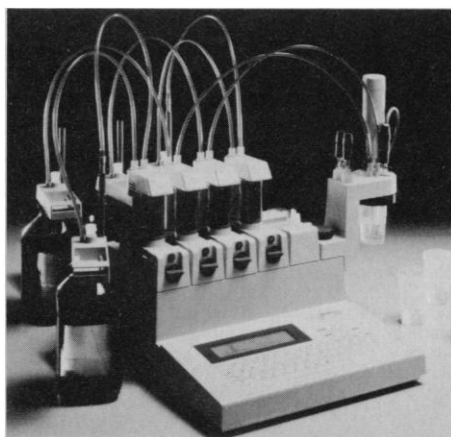
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Applications Literature Guide is a catalog of more than 100 data sheets, brochures, booklets, and bulletins about amino acid analysis, automated workstations, centrifugation, ultracentrifugation, centrifugal elutriation, electrophoresis, high-performance liquid chromatography, liquid scintillation, and spectrophotometry. Beckman Instruments. Circle 532.

Catalogue & Reference Guide contains 188 pages featuring cell culture media, sera, cell culture reagents, media and antibiotics for molecular genetics, plant tissue culture media, and labware. GIBCO Laboratories. Circle 543.

Model CYSY-1 is a brochure about a computer-controlled electroanalytical system. Cypress Systems. Circle 544.

Chromatography Instruments and Data Systems is a 24-page brochure that describes pumps, autosamplers, detectors, computing integrators, workstations, and systems for liquid chromatography. Spectra-Physics, Autolab Division. Circle 546.

Plasma-Grade Standards is a brochure about a line of standards for calibrating inductively coupled plasma emission spectrometers. Fisher Scientific. Circle 548.

CATS is a brochure that describes a software program for thin-layer chromatography and electrophoresis. CAMAG (Switzerland). Circle 549.

MONOSAN Monoclonal Antibodies describes a line of monoclonal antibodies to cell surface markers, cell structure antigens, serum proteins, intermediate filaments, and tumor-associated antigens. BIO/CAN America. Circle 550.

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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 x \$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

Biologist, Ph.D. (Molecular Biology). Interested in undergraduate teaching position, molecular biology, biology, space life sciences (could pinch-hit endocrinology, microbiology, botany), establish research involving students. Imaginative, sense of humor, good at science and pre-med student advisement. Also interested in interdisciplinary efforts, science/history, science/literature, math/biology, physics/biology etc. Have broad science training, medical technologist, undergraduate laboratory instructor, funding, publications, research involving steroid hormone action, willing to relocate. Box 127, **SCIENCE**.

Biostatistician/Computer Scientist, clinical trials, medical decision-making, mathematical models, experimental design, grant preparation/administration, 70+ publications. Prefers academic position Texas or Northwest. Box 129, **SCIENCE**.

POSITIONS WANTED

Biologist, M.S. Computer Scientist, M.S. Recent degree in biology, 8 years of professional experience in scientific programming. Background in artificial intelligence, programming language semantics, developmental genetics, and chromosome dynamics. Interest in biological and symbolic computation. Seeks position in research, or challenging applications. Scott Federhen, 392 Windsor Street, Cambridge, MA 02141.

Biopsychologist/Neurochemist, Ph.D.; 55 publications, numerous grants, extensive teaching experience. Research interests include animal models of human neurodegenerative diseases, neuropharmacology, nutrition, and neurotoxicology. Ten years of experience in aging and Alzheimer's disease research. Seeks academic position. Box 128, **SCIENCE**.

Cardiovascular Physiologist, Ph.D. seeks position in research and/or teaching at assistant professor level or equivalent. Will consider academia or industry. Interest and background in cardiac function during circulatory shock, myocardial ischemia. Seven years of postdoctoral experience. Also excellent background in computers. Excellent teacher and research scientist. Curriculum vitae available on request. Box 123, **SCIENCE**.

Entrepreneurial Scientist, Ph.D. Biochemist; MBA. Extensive high-level experience research and development management; technology transfer, facility planning and administration. Fields of expertise: biochemical pharmacology, clinical chemistry and toxicology (licensed and Board-certified). Venture capitalist, commercial licensing and acquisition or academic technology transfer opportunities of interest. Box 130, **SCIENCE**.

Free-Lance Computer Programmer for research laboratories. Reasonable rates. Prefer C on a PC in New York Metro area. Background in neuroscience and behavioral pharmacology. Pat O'Connor, 1649 Springfield Avenue, Maplewood, NJ 07040.

Regulatory Scientist, Ph.D. Black male Canadian. Ph.D. 1982 pharmacology, toxicology post-doc. NIEHS, USA. Risk analysis course, Harvard School of Public Health. Experience in evaluating toxicology data and writing criteria documents. Familiarity with concepts for risk assessment of chemical hazards. Strong analytical and report-writing skills. Seeks employment in environmental or occupational health and safety agencies. Box 131, **SCIENCE**.

Research Associate. Austrian, 5 years of experience in AIDS research and diagnostic, special merits in the fields of HIV 2, publications, successful in building up new laboratories (immunological techniques, enzyme assays, blots, HPLC, and more), fluent English, German, best references. Seeking interesting position in American AIDS research. P.O.B. 319, A-1171 Vienna, Austria.

POSITIONS OPEN

ASSISTANT PROFESSOR TULANE MEDICAL SCHOOL

The Department of Microbiology and Immunology invites applications from cellular and/or molecular immunologists for a tenure-track position at the assistant professor level. Minimum requirements for the position include a Ph.D. or M.D. and no less than 2 years of postdoctoral experience. Establishment of an independent research program funded by extramural support is expected, as is participation in the education of both medical and graduate students. All major disciplines are represented within the Department, and unique opportunities exist for collaborative and interdisciplinary research. *Applications from women and ethnic minorities are strongly encouraged.* To apply, send curriculum vitae, a brief overview of present and future research directions, and the names, addresses and telephone numbers of three references by 1 October 1989, to: **Dr. Judith Damer, Chairman, Search Committee, Department of Microbiology and Immunology, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.** Starting date is negotiable, but no later than July 1990. The search will remain open until a suitable candidate is found. *Tulane University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ACADEMIC POSITION BIOCHEMISTRY

ASSISTANT PROFESSOR OF CHEMISTRY. The Department of Chemistry of The University of Texas at Austin solicits applications for a tenure-track assistant professorship beginning September 1990, or possibly sooner. Candidates who have demonstrated exceptional ability in the area of biochemistry—molecular biology and promise in teaching should forward curriculum vitae, short descriptions of research plans, and three letters of reference by 15 October 1989, to: **Professor John C. Gilbert, Chairman, Department of Chemistry, The University of Texas at Austin, Austin, TX 78712.** *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR—BIOCHEMISTRY.

Seek tenure-leading faculty member starting August 1990. Requires Ph.D.; subsequent postdoctoral experience is preferred. Will be expected to establish a vigorous program of research relating to biochemistry. Expertise in the application of NMR to biochemical problems would be welcomed. Applications, including a complete résumé, a brief description of research plans, and three letters of recommendation should be sent by 15 October 1989 (or until suitable candidate applies thereafter) to: **Professor Naba K. Gupta, Department of Chemistry, University of Nebraska—Lincoln, Lincoln, NE 68588—0304.** Telephone: 402-472-2744. *Affirmative Action/Equal Opportunity Employer.*

HARVARD UNIVERSITY ASSISTANT PROFESSOR CELLULAR AND DEVELOPMENTAL BIOLOGY (CDB)

The Department of Cellular and Developmental Biology intends to make an appointment at the assistant professor level effective September 1991. Our department covers a broad range of topics in cellular biology, developmental biology, neurobiology, and molecular genetics. We are seeking outstanding candidates in any of these fields. We are particularly interested in making an appointment in the areas of:

- vertebrate development
- cell biology (especially protein sorting)
- plant molecular biology.

However, we will consider exceptional applicants in other fields as well. *We strongly encourage applications from women and minority groups.* Applications should include curriculum vitae, reprints of publications, and a statement of present and future research plans. Complete applications and three letters of recommendation, solicited by the applicant, should be received no later than 1 October 1989.

CDB Search Committee
Cellular and Developmental Biology
Harvard University
16 Divinity Avenue
Cambridge, MA 02138
Telephone: 617-495-2327

*Harvard University is an Affirmative Action/
Equal Opportunity Employer*

ASSISTANT PROFESSOR/ SLSTP PROGRAM DIRECTOR

An assistant professor position is open at Florida A&M University (FAMU) in the NASA-sponsored Space Life Sciences Training Program (SLSTP). Duties include serving as a Program Director in conducting the day-to-day operations of the program under the FAMU/SLSTP Principal Investigator and in consultation with the Kennedy Space Center. An applicant must possess a Ph.D. degree in life sciences or related areas and some experience in teaching and research at a college or university. Please submit a detailed curriculum vitae and three letters of recommendation before 30 September 1989 to:

Dr. Johnnie L. Early, II
Dean and Professor
College of Pharmacy and
Pharmaceutical Sciences
Florida A&M University
Tallahassee, FL 32307
Telephone: 904-599-3636

FAMU is an Equal Opportunity and Equal Access Institution. Women and minorities are encouraged to apply.

POSITIONS OPEN

ASSISTANT PROFESSOR in psychiatry department. Primary responsibility will be to collaborate in the conduct of a program of research in the area of stimulus effects of drugs. Qualifications include 2 to 4 years of postdoctoral experience, published research in human and animal behavior, interest in preclinical psychopharmacology, high level of expertise in computer programming for data reduction and laboratory process control, experience in laboratory development and management. Ph.D. in experimental psychology or pharmacology preferred. This is a nontenure-track position supported by research grant funds. Send résumés to: **Donald Overton, Psychiatry Department, 5-OPD, Temple Medical School, Philadelphia, PA 19140.**

Equal Opportunity Employer, M/F.

ASSISTANT PROFESSOR DEVELOPMENTAL OR EVOLUTIONARY PLANT BIOLOGY UNIVERSITY OF MINNESOTA

The Department of Plant Biology invites applications for a tenure-track assistant professor position beginning 16 September 1990. *We especially encourage applications from minorities.*

The successful candidate will be expected to develop a strong independent research program in evolutionary or developmental plant biology and to participate in undergraduate and graduate education. Minimum qualification for the candidate is a Ph.D. in plant biology or related field. Completion of 2 years of post-Ph.D. research experience by the starting date is strongly preferred.

Applicants should submit curriculum vitae, a two-page statement of research and teaching interests, one or two representative publication(s), and have three letters of reference sent by 16 October 1989 to:

Dr. Mark Brenner
Department of Plant Biology
220 BioScience Center
University of Minnesota
St. Paul, MN 55108
Telephone: 612-625-1234
FAX: 612-625-5754

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

ASSISTANT OR ASSOCIATE ADJUNCT PROFESSOR: The University of California, Davis School of Medicine, in the Department of Pediatrics has an opening for an assistant or associate adjunct professor who has a specific interest in the mechanism of action of growth factors with expertise in molecular/cell biology. The candidate should possess a Ph.D. degree and have independent research experience. Will be expected to establish a research program in this area. Start-up funding is available for 3 years. Submit curriculum vitae with five references to: **Dennis M. Styne, M.D., Chair, Department of Pediatrics, 4301 X Street, Sacramento, CA 95817.** *The University of California, Davis, is an Affirmative Action/Equal Opportunity Employer.* All applications must be received no later than 1 October 1989 to be considered.

DEPARTMENT OF ZOOLOGY UNIVERSITY OF HAWAII AT MANOA ASSISTANT/ASSOCIATE PROFESSOR IN MOLECULAR BIOLOGY

We seek an assistant/associate professor in molecular biology with research interests in the biology of nucleic acids, proteins, carbohydrates, or lipids. Applicants should have an active research program focused on basic biological questions at the molecular level such as gene action and regulation, molecular evolution, or adaptive metabolism and have an interest in teaching in the area of molecular biology. We are particularly interested in individuals who enjoy interacting with biologists of diverse research interests and whose research will thrive in the unique environment of the Hawaiian archipelago. Position will be available 1 January 1990 or 1 August 1990. Send curriculum vitae, summary of research and teaching experience and philosophy, selected reprints, and the names and addresses of three references to: **Dr. Fred I. Kamemoto, Chairman, Department of Zoology, 2538 The Mall, University of Hawaii at Manoa, Honolulu, HI 96822.** Deadline of application is 1 October 1989. *The University of Hawaii is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

HARVARD UNIVERSITY

Department of Earth and Planetary Sciences invites applications for **TWO ASSISTANT PROFESSOR POSITIONS** in seismology. We hope to build on our strength in the studies of earth structure, earthquake processes, and geodynamics. We expect that full benefit from the data recorded by the global, regional, and temporarily deployed digital seismograph networks will involve advanced methods of waveform analysis. Therefore, we are primarily interested in candidates with substantial theoretical abilities and experience in modeling wave propagation in laterally heterogeneous media.

Applicants should send a statement of research interests, résumé, and names of at least three references to: **Professor Adam M. Dziewonski, Chairman, Search Committee, Department of Earth and Planetary Sciences, Harvard University, 20 Oxford Street, Cambridge, MA 02138.**

ASSISTANT RESEARCH ONCOLOGIST: Ph.D. (biological chemistry/immunology/zoology) with 3 years of postdoctoral experience in biological chemistry and immunology and ability to perform independent research. Research experience must include biochemical analysis of gangliosides in human cancer, developing monoclonal antibodies to ganglioside epitopes, and immunochemistry. Research experience in the fields of histochemistry and lectin biochemistry is desirable. Send curriculum vitae and three letters of reference to: **Dr. Reiko F. Irie, Professor of Surgical Oncology, UCLA Medical Center, 9-267 Louis Factor Building, Los Angeles, CA 90024-1782.** *UCLA is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT RESEARCH SCHOLAR/SCIENTIST

Applications are being accepted by the Center for Complex Systems at Florida Atlantic University. The successful applicant will participate in a new research and training program whose aim is to blend emerging concepts in complex systems (e.g., a nonlinear dynamics and "chaos theory") with specific experimental model systems in the behavioral and brain sciences.

Excellent research and computer facilities are available for analysis and theoretical modeling. Theoretically oriented individuals in physics, neurobiology and psychology (including neural networks) are invited to apply (Ph.D. required). The position is guaranteed for a minimum of 2 years with an annual salary of \$25,000. Send a brief summary of interests, curriculum vitae and three letters of recommendation by 30 September 1989 to: **J. A. S. Kelso, Center for Complex Systems, Florida Atlantic University, Boca Raton, FL 33431.** *FAU is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT SCIENTIST to investigate methods of managing diseases of nursery-grown woody ornamental plants and diseases of turfgrass with minimum amounts of pesticides. Ph.D. with a strong background in microbiology, botany, and molecular methods of studying host-parasite interactions, and proven ability to measure and interpret biological phenomena in the field. Send curriculum vitae, undergraduate and graduate transcripts, statement of research goals, and the names of three references before 30 September 1989 to: **Dr. Donald E. Aylor, Chief, Plant Pathology and Ecology, The Connecticut Agricultural Experiment Station, Box 1106, New Haven, CT 06504.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT OR ASSOCIATE PROFESSOR tenure-track position available in the Department of Cell and Molecular Biology, Medical College of Georgia. Applicants should have a doctoral degree in molecular or cell biology, microbiology, or biochemistry with postdoctoral experience and a funded research program in molecular biology. In addition to developing a strong research program, the successful candidate will be expected to participate in the teaching of graduate, medical, and undergraduate students. Opportunity exists to collaborate with other faculty members. Interested applicants should send a current curriculum vitae and names, addresses, and telephone numbers of three references, to be received no later than 1 October 1989, to: **Dr. E. C. Abraham, Chairman of Search Committee, Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, GA 30912-2100.** *Equal Opportunity Employer/Affirmative Action Program. Minority and female candidates are encouraged to apply.*

POSITIONS OPEN

ASSISTANT AND/OR ASSOCIATE PROFESSORS OF PHARMACEUTICS STATE UNIVERSITY OF NEW YORK AT BUFFALO

Applications are invited for two tenure-track positions available 1 January 1990 for Ph.D.'s in drug metabolism, pharmacodynamics, pharmacokinetics, or drug analysis. Emphasis will be placed on research credentials (including postdoctoral experience) rather than formal background. Applicants should submit, by 30 October 1989, curriculum vitae, names of three references, and a summary of research interests to: **Ho-Leung Fung, Ph.D., Department of Pharmaceutics, School of Pharmacy, Cooke Hall, State University of New York, Buffalo, NY 14260.** *SUNY at Buffalo is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE RESEARCH SCIENTIST—To direct newly initiated research program. Will study muscular dystrophy, with emphasis on membrane alteration in muscle cells induced by abnormalities or deficiencies in dystrophin. Responsible for analyzing data and writing reports and papers, as well as training others in specific research areas. Candidates must have a Ph.D. plus 3 years of research experience beyond doctoral. Send résumé and references to: **Children's Hospital Oakland, Human Resources, 747 52nd Street, Oakland, CA 94609.** *Equal Opportunity Employer.*

NEW STATE-FUNDED BIOTECHNOLOGY PROGRAM

Associate to full professor, faculty positions available in molecular immunology and/or molecular genetics to join a rapidly expanding, dynamic biotechnology program. Positions provide a very generous support package for postdoctoral fellows, technologists, equipment and supplies. Extensive extramural-funded research prevails at a level of \$3 million per year. Individuals are expected to have established an extramural funded research program. Curriculum vitae to: **Samuel M. Cohen, M.D., Ph.D., Department of Pathology/Microbiology, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, NE 68105** or telephone: **402-559-6388.** *An Equal Opportunity/Affirmative Action Employer.*

BIOCHEMIST AND BIOCHEMICAL TOXICOLOGIST—UTAH. Postdoctoral fellows or research associates to conduct research in the isolation of UDP-glucuronosyltransferases or pulmonary cytochrome P-450s or in the mechanisms of bioactivation of pneumotoxins. Requires Ph.D. in biochemistry, toxicology, or related area. Experience in enzyme isolations or metabolism of xenobiotics is desired. Starting 1 September 1989 or after with salary \$20,000 to \$30,000. Send curriculum vitae and three letters of recommendation to: **Dr. Garold S. Yost, Department of Pharmacology and Toxicology, 112 Skaggs Hall, University of Utah, Salt Lake City, UT 84112.** *An Equal Opportunity/Affirmative Action Employer.*

CHAIR, DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY

The School of Medicine of the University of North Carolina at Chapel Hill seeks an individual committed to academic excellence to provide professional and administrative leadership for the research and teaching programs of the Department of Microbiology and Immunology. The department has an excellent faculty, strong research and graduate educational programs, and productive collaborative relationships with other departments, research centers, and institutes within the University. Other research-intensive institutions in the Research Triangle Park area enhance the scientific environment.

Preference will be given to candidates who reply before 10 October 1989. Reply with curriculum vitae and a list of at least three references to: **R. L. Juliano, Ph.D., Chair, Search Committee for Chair of Department of Microbiology and Immunology, Office of the Dean, The School of Medicine, CB# 7000, MacNider Building, The University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7000.** *Women and minorities are encouraged to apply and to identify themselves. UNC-CH is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

BIOLOGICAL SCIENCES: ENDOCRINOLOGIST—The Reproductive Physiology and Endocrinology Group in the Department of Biological Sciences at Kent State University is seeking applications for a tenure-track position at the assistant professor level to start 8 January 1990. Research training and experience should be in an area of mammalian endocrinology related to reproductive physiology. The appointee will be expected to develop a strong research program complementary to on-going research activities, to seek extramural funding, and to participate in recruiting and advising graduate students. Instructional responsibilities during a given academic year will include a graduate-level course in endocrinology and a beginning-level course in human physiology. Applicants must have the Ph.D. or equivalent with postdoctoral experience, publications, and the potential for extramural funding. Salary is dependent upon qualifications and experience. The deadline for receipt of applications is 30 September 1989 and must include a letter of application, a résumé, and three letters of recommendation. Copies of all academic transcripts must be forwarded by 31 October 1989. Submit applications to: **Dr. Walter C. Adams, Professor, Chair, Search Committee, Kent State University, Department of Biological Sciences, Box 22-CHH, Kent, OH 44242.**

An Equal Opportunity/Affirmative Action Employer.

CHAIRMAN OF BIOLOGICAL CHEMISTRY UNIVERSITY OF HEALTH SCIENCES/ THE CHICAGO MEDICAL SCHOOL (UHS/CMS)

Applications and nominations are invited for the Chair of the Department of Biological Chemistry. The Chairman reports to the Dean of the Medical School and is responsible for providing academic and administrative leadership in research as well as teaching of graduate, postgraduate, and medical students. The new Chairman will have a strong influence on the magnitude and direction of departmental growth, including the immediate filling of several faculty vacancies with the possibility of additional positions in the near future. The successful candidate will have: a national reputation for scientific contributions to biochemistry or closely related fields; a demonstrated interest and ability in effective teaching; and the capability of providing the administrative leadership necessary to extend the department's strengths in research, teaching, and service.

UHS/CMS is a 75-year-old private medical school located in modern new facilities in an elegant suburb north of Chicago. The location combines a suburban environment with the cultural advantages of proximity to a large metropolitan area. Individuals from all subdisciplines are welcome to respond. Applications should include: curriculum vitae, a summary of current research, copies of representative publications, a description of teaching and administrative experience, and the names of three or more referees. Mail applications to: **Professor Richard Hawkins, Chair of the Search Committee, Department of Physiology and Biophysics, UHS/CMS, 3333 Green Bay Road, North Chicago, IL 60064. Telephone: 312-578-3280.**

Affirmative Action/Equal Opportunity Employer.

CLINICAL/MOLECULAR MICROBIOLOGIST POSITION, Mayo Clinic in the Bacteriology Laboratory, Department of Laboratory Medicine and Pathology. Incumbent will direct a special tests area in the clinical laboratory and be expected to develop applications of molecular biology to clinical diagnostic testing. Applicants must have a doctorate (M.D. or Ph.D.), appropriate postgraduate experience, and interact well with clinicians. Please send curriculum vitae and names of three references to: **George G. Klee, M.D., Ph.D., Chairman, Clinical Microbiology Search Committee, Division of Laboratory Medicine, Mayo Clinic, Rochester, MN 55905. An Equal Opportunity/Affirmative Action Employer.**

CYTOGENETICS LABORATORY DIRECTOR—M.D. or Ph.D., ABMG BC/BE, to direct clinical cytogenetics laboratory in Department of Pathology, University of Missouri Hospital. Approximately 800 cases per year. Strong laboratory orientation in methods development and interest/experience in molecular genetics methods highly desirable. Tenure-track position. Clinical/basic research encouraged. Send curriculum vitae with reference letters to: **John Townsend, M.D., Pathology Department, University of Missouri School of Medicine, Columbia, MO 65212. Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

CHEMICAL OCEANOGRAPHER

The Atlantic Oceanographic and Meteorological Laboratory (AOML) of the National Oceanic and Atmospheric Administration (NOAA), Department of Commerce is seeking applicants for a position as a chemical oceanographer with a working knowledge of the biogeochemistry of carbon cycling in the ocean as it relates to atmosphere/ocean exchange of carbon dioxide. The incumbent will be based at AOML in Miami, Florida and conduct research within that laboratory as well as in various field programs, including cruises to remote ocean areas. The position is a career appointment, initially at the GS-12 level with a starting salary of \$34,580 per annum.

The incumbent will be responsible for developing a research component at AOML on the oceanic aspects of atmospheric/ocean carbon dioxide exchange. This research will be cooperative with other NOAA research units, as well as academic scientists, within NOAA's Climate and Global Change research effort. Qualifications include, but are not limited to, a strong chemical background with broad expertise in oceanography. Of particular importance is a demonstrated expertise in the biogeochemistry of carbon cycling in the ocean and the carbon dioxide/bicarbonate/carbonate system, especially as it relates to exchange of carbon between the atmosphere and the surface ocean and between the surface and deep ocean. The incumbent will be expected to publish research findings in the refereed literature. A graduate degree at the doctoral level, or equivalent experience in ocean science is desired.

For information as to how to apply, contact: **Andrew Hicks, Central Administrative Support Center, Personnel Division, Federal Building, Room 1747, 601 East 12th Street, Kansas City, MO 64106, telephone: 816-374-7468. Reference vacancy CASC/ERL 89-208.** For information about the research situation, contact: **Dr. Donald K. Atwood, NOAA/AOML, 4301 Rickenbacker Causeway, Miami, FL 33149. Telephone: 305-361-4374.**

DEAN COLLEGE OF PUBLIC HEALTH UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER

The University of Oklahoma Health Sciences Center invites applications and nominations for the position of Dean, College of Public Health. The position is available 1 July 1989.

The Dean should be an academic leader who can sustain effective working relationships and liaison with the central administration and academic deans within the university and with diverse professional and non-professional groups in the community, state, and nation. Current knowledge of issues and trends in public health and higher education is expected. Candidates should evidence distinction in the field of public health. An earned doctorate in an appropriate field is required. Individuals with demonstrated competence in teaching, research, and service in academic public health; public health practice; and administration will be given preferential evaluation.

Send nominations or a letter of application and résumé to: **Dr. Edward N. Brandt, Jr., Executive Dean, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190.** A review of applications will begin no later than 30 September 1989.

An Affirmative Action/Equal Opportunity Employer.

DOCTORAL TRAINING INHALATION TOXICOLOGY

Fellowships are available for students interested in obtaining a Ph.D. in inhalation toxicology. Research projects involve industrial chemicals, and animal models are used to evaluate the respiratory effects of such chemicals. Currently, studies are being conducted with polymers, cutting oils, and trimellitic anhydride.

For further information, write to:

**Dr. Michelle Schaper or Dr. Yves Alarie
University of Pittsburgh
Graduate School of Public Health
Industrial Environmental
Health Sciences Department
130 DeSoto Street
Pittsburgh, PA 15261
Telephone: 412-624-3038**

POSITIONS OPEN

DEPUTY DIRECTOR, NATIONAL VACCINE PROGRAM—The U.S. Department of Health and Human Services is seeking applicants for this Senior Executive Service position. The Deputy Director is responsible for the overall management of the National Vaccine Program and reports directly to the Assistant Secretary for Health, who is also the Director of the Program. The position will close on 15 September 1989. Contact: **Ms. Jennie Mason at 301-443-6900** for more information/instructions. *DHHS is an Equal Opportunity Employer.*

ELECTRON MICROSCOPY RESEARCH SPECIALIST

Full-time position available beginning August 1989 for an individual with a sound knowledge of transmission and scanning microscopy. Also required: experience in handling of biological samples, preparative procedures (conventional and cryomethodologies, fixation and embedding, ultra-thin sectioning, immunolabeling), and photographic techniques. The applicant must be able to teach EM techniques to graduate students and be willing to collaborate with a variety of laboratories and investigators. A master's degree in biology, biochemistry, or biophysics preferred. We offer an excellent salary and benefits package. *Women and minorities are particularly invited to apply.* Candidates should send résumé or call:

**Respiratory Biology Program
Harvard School of Public Health
Attention: Ms. Rebecca Stearns
Building 2, Room 204
665 Huntington Avenue
Boston, MA 02115
Telephone: 617-732-1667**

EMBRYOLOGIST/CELL BIOLOGIST: The Reproductive Endocrine Section, Department of Ob/Gyn invites applications for a Ph.D. to pursue independent research and direct an IVF laboratory. Candidates should have special interest in the reproductive sciences, especially the molecular biology of early development and embryo manipulation. Rank and salary are commensurate with qualifications. Forward curriculum vitae to: **Paul McDonough, Department of Ob/Gyn, Medical College of Georgia, Augusta, GA 30912. The Medical College of Georgia is an Affirmative Action/Equal Opportunity Employer.**

ENVIRONMENTAL SPECIALISTS

Limnologists, wetland and estuarine ecologists, environmental scientists. The St. Johns River Water Management District has current and projected openings in applied research and research management for surface water restoration and preservation programs. Starting salaries are commensurate with experience. Masters or Ph.D. preferred in limnology, ecology, biology, or related environmental science. Send résumé with source of ad to: **St. Johns River Water Management District, Office of Employee Relations, P. O. Box 1429, Palatka, FL 32178-1429.**

Equal Employment Opportunity/Affirmative Action Employer/Veterans Preference

EXERCISE PHYSIOLOGIST

Position: exercise physiologist. Rank: assistant professor. Description: This position invites applications for a tenure-track assistant professor in the Exercise Physiology Group. Candidates with a strong background in physiology and molecular biology are encouraged to apply. The candidate should have demonstrated expertise in the investigation of molecular mechanisms responsible for adaption of muscles to chronic changes in functional demands. In addition, the candidate should possess considerable experience in techniques for introducing genes into intact animals. Qualifications: Applicants should have a doctoral degree (Ph.D. or M.D.) and at least 2 years of postdoctoral training in molecular biology with clear potential to develop a productive research program and the ability to be an effective teacher. Salary: Commensurate with qualifications; Application: For full consideration, applications should be received by 1 November 1989. Interested persons should send a complete curriculum vitae, a statement of current and future research interests, and three letters of recommendation (postmarked by 1 November 1989) to: **Lawrence B. Oscai, Ph.D., Department of P.D., Box 4348, Chicago, IL 60680—M/C 194. The U of I at Chicago is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

FACULTY POSITION IN PHARMACOLOGY

A faculty position in pharmacology is available on or before 1 September 1989 at the research assistant-professor level. Applicants should have a strong background in biochemical and immunological techniques and experience in culturing mammalian cells. Experience in recombinant DNA techniques and protein purification is preferred. Demonstrable expertise and continuing interest in the study of cell surface receptors for hormones, neurotransmitters, and growth factors is required. Interested persons should send their curriculum vitae to: **Dr. John Perkins, Department of Pharmacology, The University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boulevard, Dallas, TX 75235.** An Equal Opportunity Employer.

FACULTY POSITION MOLECULAR AND CELLULAR IMMUNOLOGY UNIVERSITY OF CALIFORNIA, BERKELEY

The University of California at Berkeley is seeking an immunologist to join the Division of Immunology in the Department of Molecular and Cell Biology. The appointment may be at the level of assistant, associate, or full professor depending on the candidates' experience and achievements. Minimum qualifications include: a Ph.D. and postdoctoral training in immunology or related field; evidence of independent research in molecular and cellular immunology; and effective communication skills. Duties include participation in graduate and undergraduate instruction in immunology and maintenance of a strong research program to provide training for graduate students and postdoctoral fellows, and involvement in the administration of the newly formed Division of Immunology.

Applications/nominations along with curriculum vitae, statement of research interests and representative reprints, and the names of three references should be sent by 1 September 1989 to:

Dr. Marian E. Koshland
Chairperson, Search Committee
Life Sciences Annex, Box 439
University of California
Berkeley, CA 94720

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

FACULTY POSITION: ORGANIC CHEMISTRY. The Department of Chemistry at Penn State University has an opening for a tenure-track faculty position starting August 1990. Candidates must possess a doctorate; subsequent postdoctoral experience is preferred. The appointee must establish a vigorous program of research in any field of organic chemistry. Commitment to excellence in undergraduate and graduate teaching is essential. Apply with complete résumé, undergraduate and graduate transcripts, a description of research plans, plus three letters of recommendation. Deadline for receipt of applications is 17 October 1989, or until a suitable candidate is identified. Send applications to: **Chairman of the Search Committee, Department of Chemistry, 152 Davey Laboratory, Box 2, Penn State University, University Park, PA 16802.** An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

FACULTY POSITIONS IN NEUROBIOLOGY

The Department of Cell Biology and Anatomy of The University of Texas Southwestern Medical Center at Dallas seeks applications for tenure-track positions at the level of assistant, associate, or full professor. Applicants must have a relevant Ph.D. or M.D. degree and appropriate postdoctoral training, and show evidence of firm commitment to a career in independent research. We are particularly interested in considering individuals who wish to apply the techniques of biophysics, electrophysiology, biochemistry, or molecular biology to fundamental problems in cellular neurobiology. Responsibilities will also include teaching of medical and graduate students after the first year of employment. Send curriculum vitae, a brief description of proposed research, and three letters of reference to: **A. J. Hudspeth, Ph.D., M.D., Chairman, Department of Cell Biology and Anatomy, 5323 Harry Hines Boulevard, Dallas, TX 75235-9039.** An Equal Opportunity/Affirmative Action Employer.

Biology

Opportunities in BIOLOGICAL PROCESS SCIENCES

The Biological Process Sciences Department of Smith Kline and French Laboratories (a division of SmithKline Beecham), is expanding into a new Biopharmaceutical Pilot Plant and is seeking several highly qualified B.S., M.S., and Ph.D. level candidates to fill positions in our Cell Culture, Bioreactor Scale-up, Bioseparations and Microbial Fermentation groups. We offer both the opportunity and challenge to become an active member of a team of scientists and engineers whose research focuses on the development of state-of-the-art processes and technologies for production of Biopharmaceuticals.

Positions are available in the following areas:

The **Cell Culture** group concentrates on cell physiology, process development in small scale bioreactors, and the development of new cell culture technologies. Candidates with experience in mammalian cell culture, biochemical/analytical techniques, and with high mechanical and electronic aptitudes are encouraged to apply. (H#0108)

The **Bioreactor Scale-up** group is responsible for the development of large scale fermentation and cell culture processes, as well as, the implementation of novel process control strategies. We are seeking individuals with cell culture experience, preferably in bioreactors, with an understanding of process control. (#H0109)

The **Bioseparations** group focuses on development of large scale protein recovery processes and studies new purification technologies. Successful candidates must have a strong background in protein chemistry and experience in protein purification, and/or biochemical or chemical engineering. (#H0110)

The **Microbial Fermentation** group is seeking a postdoctoral fellow. This individual will be involved in the optimization of the production of HIV proteins in recombinant *E. coli*. This scientist will be a member of a multidisciplinary team involved in the structural and functional analysis of the proteins of HIV. The successful candidate must have a Ph.D. in Microbiology, Molecular Biology or a related field and less than three years of postdoctoral experience. Expertise in microbial genetics, physiology, and/or fermentation is highly desirable. (#H0111)

Our new, state-of-the-art research facility is located in suburban Philadelphia, near Valley Forge. Smith Kline and French provides a stimulating and challenging work environment with opportunity for professional growth. We offer an attractive compensation and benefits package. For confidential consideration, please forward your resume, indicating appropriate position number, to: **Nancy Hasson, 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

Medical

Sigma Diagnostics, a division of Sigma Chemical Company, is a world renowned manufacturer of diagnostic reagents.

Excellent opportunities exist for innovative researchers in our Clinical R&D Department. We are currently seeking highly knowledgeable and experienced professionals for the following key positions:

MANAGER: IMMUNODIAGNOSTIC REAGENTS

Requires Ph.D. in Biochemistry, Immunology Clinical Chemistry or related fields. One to three years Industrial experience in research and development of nonisotopic assay procedures for therapeutic drugs, hormones or antibodies is essential. Supervisory experience and prior experience with assay procedures for drugs of abuse would be helpful.

CHEMIST: IMMUNODIAGNOSTIC REAGENTS

Candidate should have M.S. degree in Biochemistry or related fields with one to two years experience with immunoassay procedures.

We provide a competitive salary and a full company-paid benefits package. Send your confidential resume and salary history to: **Diagnostic Positions (R&D), SIGMA CHEMICAL COMPANY, P.O. Box 14508, St. Louis, MO 63178.**

SIGMA DIAGNOSTICS

An Equal Opportunity Employer

POSITIONS OPEN

FACULTY POSITION IN MOLECULAR GENETICS

Assistant or associate professor in the Department of Genetics, Harvard Medical School, to form and direct a new Molecular Genetics Unit, situated in the Mailman Research Center (MRC) of McLean Hospital.

The appointee will be expected to establish an independent research program in the molecular biology of vertebrate or invertebrate systems with relevance to neuroscience and to have an interest in interacting with existing neurobiology research programs at the Center.

The MRC is a 45,000-square-foot facility entirely devoted to clinical and basic research in the neurosciences with laboratories for neuroanatomy, neurohistology, neurobiology, neuropathology, neurochemistry, molecular neurobiology, development neurobiology, neuropharmacology, neuroregeneration, molecular pharmacology and experimental psychology. The Center also has a federally funded Clinical Research Center and a brain bank.

Applicants should send their curriculum vitae, a statement of their research interests, and the names of three references by 1 October 1989, to: **Bruce M. Cohen, M.D., Ph.D., Chairman, Molecular Genetics Search Committee, McLean Hospital, Mailman Research Center, 115 Mill Street, Belmont, MA 02178.** *McLean Hospital and Harvard Medical School are Equal Opportunity Employers, and we are especially eager to identify qualified women and minority candidates.*

FARM ADVISOR—URBAN ENVIRONMENTAL TOXICOLOGY, San Diego County. The University of California, Division of Agriculture and Natural Resources, Cooperative Extension, is seeking a career track academic candidate responsible for designing and implementing a research-based education program and applied research in environmental toxicology and pollution, and integrated pest management in an urban setting, for agriculture and horticulture. Included are subjects of environmental residues of pesticides, pesticide alternatives, applications, handling, disposal, food safety and residues, and groundwater contamination. Assure affirmative action in development and delivery of programs. Minimum Master's degree or equivalent combination of education and experience in toxicology or other field related to pest management plant disease is required; undergraduate degree must be in field of entomology. Beginning salary Cooperative Extension Assistant Advisor rank, commensurate with experience and professional qualifications. For complete description and application, contact: **University of California, Division of Agriculture and Natural Resources Personnel, 6th Floor, 300 Lakeside Drive, Oakland, CA 94612-3560. Telephone: 415-987-0088.** Close 26 September 1989. Refer to #A-89-117. *Affirmative Action/Equal Opportunity Employer M/F/H.*

MANAGER OF NMR FACILITY COLUMBIA UNIVERSITY HEALTH SCIENCES

Applicants are invited for the position of Manager of the NMR Facility at Columbia University Health Sciences. The instrumentation includes multinuclear Bruker AM500 (5-cm bore), AM400 (9-cm bore) and AM300 (9-cm bore) spectrometers. The candidate should have a strong and broad background in NMR hardware and software and experience with multi-dimensional pulse sequences. The candidate will be encouraged to participate in collaborative research efforts in addition to responsibilities associated with instrument maintenance and guidance to the user community.

Résumé and salary history should be forwarded to: **Professor Dinshaw J. Patel, Department of Biochemistry and Molecular Biophysics, Columbia University, 630 West 168th Street, New York, NY 10032.**

Columbia University is an Equal Opportunity/Affirmative Action Employer.

NEUROBIOLOGIST, tenure-track research faculty position, assistant or associate level, to develop an independent research program in neurochemistry or molecular/cellular neurobiology. Applicants should have postdoctoral experience appropriate to the rank, provide evidence of independent research productivity and of potential to obtain extramural funding. Position available immediately. Send a résumé, statement of research interests, representative publications, and names of three references to: **Dr. I. Cooke, University of Hawaii, PBRC, 1993 East-West Road, Honolulu, HI 96822,** by 15 October 1989. Inquiries: 808-948-6776. *Equal Employment Opportunity/Affirmative Action Employer.*

DEAN

College of Natural and Agricultural Sciences University of California, Riverside

The Dean oversees the Land-Grant mandate in teaching, public service, and research in the College and normally serves as the Director of the Division of Agriculture and Natural Resources (DANR) on the Riverside campus, including the Agricultural Experiment Station. The College has 15 academic departments and research units containing 240 ladder-rank FTE, 30 other academic FTE, and 475 non-academic staff FTE. The annual College/DANR budget is over \$30 million. The campus is growing rapidly and is surrounded by a supportive and rapidly growing external citizenry.

Applicants must have a distinguished record of research, teaching and service appropriate to an academic appointment at the level of full professor in the College department of the candidate's discipline as well as a record of successful leadership and creative management. Salary will be commensurate with experience and qualifications. The negotiable target starting date is July 1, 1990.

A curriculum vitae and the names and addresses of six references are required from each applicant. The search will continue until the position is filled.

The University of California, Riverside is an equal opportunity/affirmative action employer. Women and minorities are encouraged to apply.

Nominations and applications will be reviewed starting October 1, 1989 and should be addressed to:



**Professor Irwin P. Ting, Chair
Search Committee for the Dean
Office of the Chancellor
University of California, Riverside
Riverside, CA 92521.**

Cell and Molecular Biology

Faculty Position University of Connecticut School of Medicine

The Department of Microbiology is seeking to fill a tenure-track position, preferably at the rank of assistant or associate professor. We are looking for persons interested in developing a high quality research program applying genetic, biochemical and molecular approaches to a fundamental area of modern biology. Additional responsibilities will include teaching graduate and medical students. The School of Medicine, located in a superb New England setting, offers an intellectually exciting environment and modern support facilities for cell and molecular biological research.

Applicants should have a doctoral degree and at least two years of postdoctoral experience. The application should include a description of future research plans, copies of the candidate's most significant publications, and the names of at least three individuals willing to write letters of recommendation. It should be addressed to: The Search Committee, Department of Microbiology L 2034, University of Connecticut School of Medicine, Farmington, CT. 06032. The review of applicants will begin in early October; application deadline is December 1, 1989.

AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY EMPLOYER M/W/H

RESEARCH & DEVELOPMENT

An Integrated Team at Baxter

Baxter Hyland Division's Research & Development group is located at a multi-million dollar facility equipped with state-of-the-art technologies. Here, professionals who bring expertise in biology, immunology, biochemistry, chemical engineering and other vital life science areas, are using applied and basic research techniques to develop biological products for the treatment of human disease.

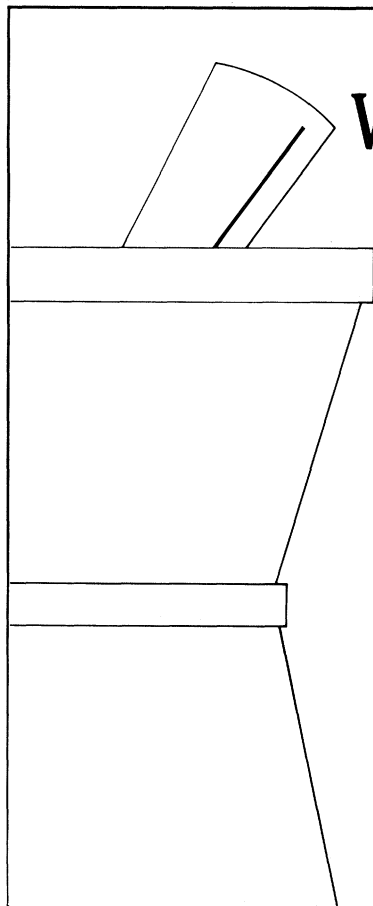
In addition to working on new products or new applications for existing products, these multi-disciplined teams are responsible for exploring the ways in which new products might be manufactured. They initiate pilot plant studies for integrating new product manufacturing processes with existing separation, filtration, and processing facilities.

We currently have openings in Cell Culture, Process Analysis and Product Formulation. Two new start-up operations in Molecular Biology and Immunology have also created several openings for scientists and lead scientists to join our team of professionals. Positions range from entry-level to managerial.

Our compensation plan reflects the strength and size of the worldwide Baxter Healthcare Corporation organization. To find out more, send your resume with salary history to: **Baxter Hyland Division, Human Resources (CG), 4501 W. Colorado Blvd., Los Angeles, CA 90039.** An Equal Opportunity Employer.

Hyland Division

Baxter



Clinical Research Associates Where Research Is The Driving Force, There's Never a Shortage Of Exciting New Discoveries.

IMODIUM®, NIZORAL®, SUFENTA®, HISMANAL®, ALFENTA® : These are just some of the important new drugs that have been developed here at Janssen Research Foundation. And we continue to make new discoveries at an extraordinary pace. In fact, we're the world's most prolific discoverer of new therapeutic agents.

We recognize that our success is based upon the vital contribution made by every member of our research team, including our **Clinical Research Associates**. From writing protocols to training investigators, the work you'll do here as a Janssen CRA is critical.

And you'll be rewarded accordingly.

Working for a member of the Johnson & Johnson Family of Companies, you'll enjoy a competitive salary and a comprehensive benefits package including our on-site total health facility, the Live For Life Wellness Center. And with the frequency with which new discoveries are made here, there's ample opportunity for career advancement.

Biostatisticians, Medical Writers, and professionals in **Regulatory Affairs** and **Professional Services** will find rewarding career opportunities here as well. If you're excited at the prospect of working where new discoveries are continually taking place, we invite you to send your resume and salary history to: Janssen Research Foundation, Employment Office, Box S889, 40 Kingsbridge Road, Piscataway, New Jersey 08854. An Equal Opportunity/Affirmative Action Employer M/F/H/V.

JANSSEN
RESEARCH
FOUNDATION

"Where Research Is The Driving Force"

A Johnson & Johnson Company

Senior Research Scientist

Fenwal, a division of Baxter Healthcare Corporation, is the market leader in the blood collection and separation industry. Fenwal, Santa Ana, is the Division of Fenwal responsible for automating this process. We are looking for a **Senior Research Scientist** to conduct both fundamental and applied research on blood. The candidate must have a Ph.D. in mechanical engineering, chemical engineering, chemistry or the life sciences. A formal background in hematology and general medical sciences is essential. Experience including a minimum of three years in post doctoral research or industrial research is also required.

Specific areas of research will be directed at understanding the mechanism of anticoagulation as it applies to blood collection and separation and understanding the effects of storage of blood components outside the body.

Applicant must be an individual prepared to make a strong personal commitment to this field. A high level of scientific curiosity uninhibited by convention is a prerequisite.

Qualified individuals should submit a C.V. to: **Human Resources, Baxter Healthcare Corporation, Fenwal Division, 2807 Catherine Way, Santa Ana, California 92705.** We are an equal opportunity employer m/f/h.

Fenwal Division

Baxter

UNIVERSITY OF COLORADO SCHOOL OF MEDICINE DEPARTMENT OF PHYSIOLOGY

FOUR TENURE TRACK POSITIONS

The Department of Physiology at the University of Colorado School of Medicine is undergoing a major expansion. Space and resources are available for four new tenure track faculty, three at the Assistant Professor level, one Associate Professor or Professor. Although applications may be submitted at any time, candidate selection will begin on or about 2 October, 1989.

The present Department has strong research interests in cellular neurobiology, epithelial function, and reproduction. The Department will consider applicants with interests in these or other areas of cellular and molecular physiology, such as endocrinology, developmental biology, muscle physiology and epithelial transport.

The University of Colorado School of Medicine is strongly research-based, with active interdisciplinary programs in molecular biology, cell biology, neurobiology, endocrinology, and immunology.

Successful candidates will be expected to conduct a vigorous independent research program and to participate in graduate and professional teaching. Applicants should send a *Curriculum Vitae* and the names of at least three referees to:

Dr. S.R. Levinson
Chair, Faculty Search Committee
Department of Physiology, C240
University of Colorado Medical School
Denver, CO 80262

The University of Colorado is an Equal Opportunity/Affirmative Action Employer. Minorities and women are especially encouraged to apply.

PROTEIN FOLDING

Post Doctoral Scientist

Smith Kline and French Laboratories (a division of SmithKline Beecham), a worldwide leader in Pharmaceutical Research, has an exciting opportunity for a postdoctoral scientist in its expanding Macromolecular Sciences Department.

The position involves engineering the gene(s) for protein folding factors for expression in *E.coli*. These systems will be used to investigate effects on correct folding of other gene products in vivo and in vitro.

The selected candidate will have:

- Ph.D. in Chemistry, Biochemistry or Microbiology.
- Experience in microbiology and molecular cloning.
- Additional experience in protein purification and characterization desirable.

Our new, state-of-the-art research facility is located in suburban Philadelphia, near Valley Forge. Smith Kline and French provides a stimulating and challenging work environment with opportunity for professional growth. We offer an attractive compensation and benefits package. For confidential consideration, please forward your resume to: Nancy Hasson, H0107, Smith Kline and French Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

SK&F

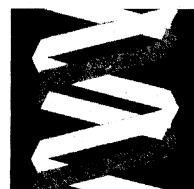
ANIMAL PRODUCTION PLANNING

THE JACKSON LABORATORY, located on the coast of Maine on the fringe of Acadia National Park, is a world renowned center and resource for mammalian biology and genetics. We distribute over two million mice yearly.

We have a position open for an Assistant Manager of Production Planning. Major duties include gathering, analysing and reporting mouse production related information for our breeding facility; making recommendations for new systems and programs in our facility which relate to animal rearing and inventory distribution.

BS in Biological Sciences and AALAS certification as a Technologist required along with an understanding of basic genetics, animal husbandry and various breeding systems.

This unique opportunity on the coast of Maine at our well known institution offers a competitive salary and excellent benefits. Please contact:



**The Jackson
Laboratory**

Attn: Harold R. Wheeler
Employment Manager
600 Main Street
Bar Harbor, ME 04609
207/288-3371

EOE/Affirmative Action Employer

TOXICOLOGY/ PHARMACOLOGY RESEARCH

Battelle, a world leader in contract research and technology development, is expanding in toxicology and pharmacology research, and additional professionals are needed. These positions will be filled by ambitious scientists who will work closely with a multidisciplinary group of talented peers in modern, well-equipped facilities. The specific positions are:

GENERAL TOXICOLOGISTS — Opportunities are available for a toxicologist who has just completed relevant academic training at the PhD level, and a second toxicologist with a PhD and 3-6 years of experience in general toxicology. The latter position requires pre-clinical toxicology experience related to drug safety and/or chemical registration. A thorough working knowledge of GLP and regulatory guidelines is essential.

INHALATION SCIENTIST — Requires a relevant advanced degree and a minimum of 5 years of inhalation laboratory experience in exposure chamber atmosphere generation and monitoring. Applied understanding of test atmosphere generation, delivery and monitoring is required.

INHALATION TOXICOLOGIST — Similar requirements to the Inhalation Scientist, but must have strong toxicological orientation as evidenced by education and experience. Position will emphasize study direction and management of inhalation safety programs.

IMMUNOTOXICOLOGIST — Requires a relevant PhD with 3-5 years experience with various *in-vivo* cellular immunology assays and cytokine assays. Must have demonstrated leadership skills and publications in immunotoxicology or immunopharmacology.

METABOLISM/PHARMACOKINETICS — Requires a relevant PhD and several years of experience conducting pharmacokinetic and metabolism studies in various species. Involves GLP study design, conduct, data interpretation, and supervision of technical staff.

Battelle offers competitive salaries, comprehensive benefits and significant opportunities for professional growth. If interested, send your resume or C.V. to: **Richard Shaw, Battelle, Dept. F-3, 505 King Ave., Columbus, OH 43201-2693.** An Equal Opportunity/Affirmative Action Employer M/F/H.



Battelle

... Putting Technology To Work

Key research appointment for Principal Scientist with Immunopharmacology Department of this new company within The Johnson & Johnson Family.

We're the R.W. Johnson Pharmaceutical Research Institute, a new member of The Johnson & Johnson Family of Companies. Our strategy is to maintain a fast-growing pharmaceutical business by providing a clear focus and direction to managing R&D resources so that we obtain optimum results and provide opportunities for our employees to grow.

The candidate we seek will have a PhD or equivalent in Immunopharmacology or Biochemistry with postdoctoral training and a research background in these fields. You must have experience in establishing novel models to evaluate the action of agents that interfere with the biosynthesis and action of inflammatory or allergic mediators (cytokines, eicosanoids). 2 or more years' experience in industrial pharmacology desired.

You will plan, direct and conduct research to study the biochemistry of cell activation including arachidonic acid metabolism, PLA and signal transduction following receptor-ligand interactions. Excellent written and verbal communication skills are required, as well as interpersonal skills to interact with other scientists and senior staff and effectively advance our drug discovery process. Attendance at scientific meetings and publishing in appropriate journals are encouraged.

We offer a competitive salary and the comprehensive benefits you would expect from a Johnson & Johnson Company including our on-site LIVE FOR LIFE WELLNESS program designed to make you a healthier, happier, and safer person. Please forward resume, including salary history, to: Mrs. Beatrice Allen, Dept. 46, R.W. Johnson Pharmaceutical Research Institute, P.O. Box 300, Raritan, New Jersey 08869-0602.

An Equal Opportunity Employer, M/F



R.W. JOHNSON

PHARMACEUTICAL RESEARCH INSTITUTE

POSITIONS OPEN

JUNIOR AND SENIOR FACULTY POSITIONS DEPARTMENT OF BIOCHEMISTRY NORTH CAROLINA STATE UNIVERSITY

Four tenure-track research/teaching positions are available in the continuing expansion of the Department of Biochemistry in the areas of biotechnology and biophysics. The Department recently added a macromolecular biophysicist and a plant molecular biologist to its junior faculty. The Department of Biochemistry is within the College of Agriculture and Life Sciences and is a member department within the College of Physical and Mathematical Sciences. We are particularly interested in applicants from the areas of: plant molecular biology (control of DNA replication, RNA transcription, and gene expression); modern biochemistry of protein structure and function, including hormones and membrane proteins (peptide synthesis and protein 2 and 3D structural analysis); computational chemistry with molecular genetics experimentation; lipid-protein and hormone-membrane interaction; and bioinorganic chemistry (plant or animal metalloprotein structure-function analyses). Attractive salaries commensurate with experience, generous laboratory space, support for equipment and supplies and departmental technical support are available. The Department is well-equipped and is continuing to acquire instrumentation for structure-function analyses of macromolecules. Biochemistry degrees offered by the Department include the B.S., M.S., and Ph.D. North Carolina State University is one of the three universities in the North Carolina Research Triangle. As such, it provides a rich environment for collaborative interactions with Duke University and the University of North Carolina at Chapel Hill, as well as corporations and institutions in the Research Triangle Park.

Applications should include a cover letter clearly stating in which of the areas (plant, protein, membrane, bioinorganic) the candidate is applying, a detailed curriculum vitae, and a brief description of research interests. The candidate should have letters from three references sent to us in order to complete the application. Applications will be accepted until 10 November 1989.

Dr. Paul F. Agris, Head
Dr. Elizabeth Theil
Chair, Search Committee
Department of Biochemistry
North Carolina State University
Box 7622
Raleigh, NC 27695-7622

*North Carolina State University
is an Affirmative Action/Equal Opportunity Employer.*

MOLECULAR GENETICIST

The Department of Pediatrics and the Laboratory of Medical Genetics seek assistant/associate professor to join a comprehensive medical genetics unit. Applicants should hold a Ph.D. and/or M.D. degree and have teaching and research interests in clinical applications. Salary and rank will be commensurate with experience. Please mail curriculum vitae and statement of research interests along with names and addresses of three references to: **Wayne H. Finley, Ph.D., M.D., Director, Laboratory of Medical Genetics, UAB Station, Birmingham, AL 35294.** Deadline for applications is 1 October 1989. *UAB is an Equal Opportunity/Affirmative Action Employer.*

MOLECULAR VIROLOGIST

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

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

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

Equal Opportunity Employer M/F

JPL/NASA VISITING SENIOR SCIENTIST

Microgravity Science and Applications Biological Sciences

The Jet Propulsion Laboratory is seeking a senior scientist to lead and coordinate the NASA Microgravity Science and Applications Biological Sciences Program. The position would allow the appointee to bring scientific expertise to bear on the planning, execution and coordination of broad-based programs in biological sciences for ground-based and space-based research. The responsibilities include the coordination of ongoing programs, evaluation of proposals for new efforts and the participation in the overall programmatic planning. Frequent travel and residence in the Washington, DC area will be required. A PhD or equivalent experience and training in biological sciences is required, with emphasis in mammalian cells or solution crystallography desirable. Tenured faculty members are the preferred choice although qualified individuals from nonprofit research institutions may also be considered. This position is open for immediate filling. Normal assignment in the Visiting Senior Scientist Program does not exceed two years. Appointees must be U.S. Citizens or Permanent Residents and are expected to return to their home institution following the NASA assignment. Please provide Curriculum Vitae, bibliography and names of four references to:

Dr. Harry Ashkenas 180-900
Department T-15
Jet Propulsion Laboratory
4800 Oak Grove Drive
Pasadena, CA 91109
(818) 354-8251

An Equal Opportunity Employer



University of Alberta
Edmonton

Henri M. Toupin Chair in Neurological Sciences

The Divisions of Geriatric Medicine and Neurology in the Department of Medicine invite applications for the newly established Henri M. Toupin endowed Chair in Neurological Sciences. Applicants will be MD scientists or PhDs with defined achievement in the neurological sciences related (but not confined) to the geriatric age group. The successful applicant will be expected to establish and develop research and educational programs to improve the care of patients with neurological problems. The appointment will be at the senior associate professor (\$40,810-\$50,954) or professor (\$52,150 upward) rank plus appropriate market supplement and research supplement along with the privileges and benefits of rank, and will be located at The General Hospital (Grey Nuns) of Edmonton.

Applications, complete with curriculum vitae and the names, addresses and telephone numbers of three referees, should be submitted by September 20, 1989 to:

Dr. E. Garner King, Professor and Chairman
Department of Medicine
University of Alberta
2F1 W.C. Mackenzie Centre
Edmonton, Alberta, Canada T6G 2R7

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

**Faculty Positions in Biochemistry
and Molecular Biology
Department of Biochemistry
University of Missouri-Columbia**

The Department of Biochemistry at the University of Missouri-Columbia invites applications for **four tenure track positions** at the level of Assistant Professor. The Department has excellent programs in the biochemistry and molecular biology of plant and animal cells and provides a stimulating environment for productive research and for training students. Extensive interactions with other departments in the School of Medicine, the College of Agriculture, and the College of Arts and Sciences support interdisciplinary research. Eminence Programs in Molecular Biology and Food for the 21st Century provide funds for research, for core facilities, and for graduate student and postdoctoral training.

Three positions will be appointments in the Medical School. Candidates should have a strong research background in **eukaryotic (preferably animal cell) molecular biology and biochemistry**. One of these positions will be a joint appointment with the Department of Ophthalmology in the Medical School.

One position will be in the College of Agriculture. Candidates should have a strong research background in **plant molecular biology or biochemistry**.

Applicants for any of these positions should provide a curriculum vitae, a description of research experience and interests, and have three letters of reference sent to **Dr. Tom J. Guilfoyle, 322A Chemistry Building, Department of Biochemistry, University of Missouri, Columbia, MO 65211**.

Deadline for receipt of applications is October 1, 1989.

The University of Missouri is an Affirmative Action/Equal Opportunity Employer and specifically invites and encourages applications from women and minorities.

**Clinical Molecular
Geneticist**

The Kettering Medical Center (KMC) and the Wright State University School of Medicine (WSUSOM) seek a faculty member who will work with academicians and clinicians to develop a clinical molecular genetics laboratory. The successful applicant will have a Ph.D. or post doctoral training in molecular genetics and clinical laboratory experience. A joint appointment will be offered in an appropriate Academic Department of the WSUSOM (e.g., Biochemistry, Pathology) and in the Pathology Department at the KMC. Faculty rank and salary will be commensurate with professional experience. Duties include setting up a diagnostic testing service, directing graduate research (Ph.D. and M.D.) in the WSUSOM and the KMC and establishing independently funded research program with emphasis in oncology. The appointee's activities will include the opportunities to collaborate with other faculty members and to participate in the educational program of the WSUSOM and KMC for medical students, graduate residents, residents and practicing physicians. Applicants should send their current curriculum vita and the names of three (3) references to:

**Emil W. Peterson, M.D., Chair,
Clinical Molecular Genetics
Search Committee
c/o Office of Faculty Affairs
Wright State University School of Medicine
P.O. Box 927
Dayton, Ohio 45401-0927**

Applications will be received until the position is filled: applications received prior to October 1, 1989 will be given full consideration. Kettering Medical Center and Wright State University are EEO/AA employers.

Schering

Associate Director

***If pioneering new developments in
Biotechnology/Biochemistry
is what you have in mind,
come to Schering-Plough Research.***

We're a growing \$3-billion pharmaceuticals innovator recognized worldwide for our dedication to discovery. We have a challenging opportunity to help direct our biotechnology/biochemistry unit at our sophisticated Bloomfield, NJ laboratories.

Reporting to the Director of Biotechnology/Biochemistry, you will lead a group of biochemists in the development of therapeutic second-generation agonists and antagonists. Includes the physico-chemical characterization of proteins and glycoproteins, managing existing projects, clarifying structure-function relations of recombinant proteins, glycoproteins and synthetic polypeptides. Work involves various recombinant cytokines and lymphokines such as interleukins, interferons and growth factors associated with atherosclerosis.

Requires a PhD in Biochemistry or related discipline, 8+ years' academic or industrial experience and a record of internationally recognized scientific achievement. Experience with protein purification and familiarity with molecular biology techniques also essential. Ideally you should be expert in one or more of the following: mass spectrometry, molecular modeling, 2-D NMR, circular dichroism, fluorescence and polypeptide sequencing and synthesis.

We provide a highly competitive salary, a generous benefits package and high growth potential in the area of X-ray crystallography of proteins. For prompt, confidential consideration, send your resume to: Mr. Louis DeMartino, Director of Personnel, Schering-Plough Research, 60 Orange Street, Bloomfield, NJ 07033. We are an equal opportunity employer.

What you have in mind, we put in action.



Schering-Plough

POSITIONS OPEN

CORNELL UNIVERSITY MICROBIOLOGISTS— TWO FACULTY POSITIONS

Applications are invited for two positions, one at the assistant professor level and one rank open, in the Department of Microbiology, College of Agriculture and Life Sciences, Cornell University. Both positions are tenure-track, 12-month appointments available 1 July 1990. *Women and minority candidates are encouraged to apply.* Applicants should possess a strong background in prokaryotic biology and interest in general microbiology. Areas of interest include but are not limited to: molecular approaches to environmental microbiology, bacterial photosynthesis, prokaryotic developmental systems, beneficial plant-bacterial interactions and other aspects of microbial diversity. Qualifications: (i) Ph.D. in microbiology or a related area; (ii) postdoctoral research experience; (iii) demonstrated research ability; (iv) interest in graduate and undergraduate education. Please submit letter of application, curriculum vitae, statements of current and future research interests and teaching goals, and arrange to have three letters of reference sent by 15 October 1989 to **Dr. Stephen H. Zinder, Chairman, Search Committee, Department of Microbiology, Stocking Hall, Cornell University, Ithaca, NY 14853.** *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

MOLECULAR IMMUNOLOGY POSTDOCTORAL FELLOWSHIPS

Three postdoctoral positions are available in The Division of Basic Immunology to study the molecular basis of the functions of MHC class I and class II molecules and of the recognition of hapten-MHC by hapten-specific cytotoxic T-lymphocytes. Individuals with backgrounds in immunochemistry/biochemistry, cellular immunology, and molecular biology are invited to apply. Candidates should send curriculum vitae and three letters of reference to: **Dr. Ralph Kubo, or Dr. John H. Freed, National Jewish Center for Immunology and Respiratory Medicine, 1400 Jackson Street, Denver, CO 80206.**

An Equal Opportunity/Affirmative Action Employer.

MOLECULAR PHARMACOLOGY. Mayo Medical School invites applications for a tenure-track **FACULTY POSITION** in the Department of Pharmacology, available 1 January 1990. Candidate should have primary interests in pharmacology and be pursuing these interests with the methods of molecular biology. Mayo will provide generous space and start-up funds in addition to an attractive package of salary and benefits. Academic rank will be determined by qualifications; established investigators are also encouraged to apply. Submit curriculum vitae with names and addresses of three or more referees to: **Stephen Brimijoin, Ph.D., Department of Pharmacology, Mayo Medical School, Rochester, MN 55905.** *An Equal Opportunity/Affirmative Action Employer.*

NEUROGENETICS. The Michigan State University Department of Zoology, in cooperation with the Genetics, Neuroscience, and Cell and Molecular Biology Graduate Programs, announces an **ASSISTANT PROFESSOR**, tenure-track position in Genetics of the Nervous System to begin 1 September 1990. Teaching responsibilities after the first year will be in introductory genetics and an advanced, specialty course. Development of an active, extramurally funded research program is expected. *The Department is particularly interested in women and minority applicants.*

Applicants should submit curriculum vitae, a statement of present and future research activities, all reprints, and should have four letters of reference sent to: **Neurogenetics Search Committee, Department of Zoology, 203 Natural Science Building, Michigan State University, East Lansing, MI 48824-1115.** Submit applications by 1 December 1989. *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL ENTOMOLOGIST

Postdoctoral position available immediately to conduct laboratory and field studies on biological control, management and ecology of ash whitefly. Experience in insect population biology or biological control desirable. Send curriculum vitae, transcripts, dissertation abstract and three letters of reference by 1 September 1989 to: **Dr. T. S. Bellows, Department of Entomology, University of California, Riverside, CA 92521.**

POSITIONS OPEN

Ph.D. POSITION IN FLOW CYTOMETRY

The pathology department is seeking an assistant/associate professor with demonstrated experience in flow cytometry. Responsibilities include the development of clinical applications of flow cytometry/sorting, and supervision of the cytometry facility equipped with a FacScan and an Epics V. Experience in DNA analysis is desirable but not essential. Development of an independent research program is expected. Send curriculum vitae and three letters of support to: **Arthur H. Tatum, M.D., Ph.D., Director of Immunopathology, Clinical Pathology, SUNY Health Science Center at Syracuse, 750 East Adams Street, Syracuse, NY 13210.** Applications will be accepted until the position is filled. *Equal Employment Opportunity/Affirmative Action Employer.*

PLANT MOLECULAR BIOLOGY/ BIOCHEMISTRY ASSISTANT PROFESSOR

The Department of Biology at the University of Michigan seeks applications for a position on the tenure track at the level of assistant professor. We seek applications from individuals who utilize the techniques of plant molecular biology/biochemistry in attacking significant problems related to growth, development, or metabolism in plants or algae. The department is now in a period of facilities renewal, and the new faculty member will be housed in modern laboratories. In addition, the Matthaei Botanical Gardens, a unit of Biology, provides excellent facilities for the growth of experimental material. Biology, in cooperation with the Department of Chemistry, has facilities for oligonucleotide synthesis and molecular graphics; peptide-sequencing facilities are close at hand in the Medical School. The successful candidate will be expected to conduct an active research program and participate in the graduate and undergraduate teaching programs of the department. Applicants should send a current curriculum vitae and brief statement of future research plans, and should also request letters of recommendation from at least three referees. Application materials should be addressed to:

**Chair, Plant Molecular Biology Search Committee
Department of Biology
The University of Michigan
Ann Arbor, MI 48109-1048**

Evaluation of applications will begin on 15 October 1989 and continue until this position is filled.

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

VERSAR, INC., ESM OPERATIONS POPULATION/ECOSYSTEM MODELER BIostatistician

Versar, Inc., a leading environmental consulting company, requires one or more individuals skilled in (i) mathematical representation of population and ecosystem dynamics, and (ii) application of statistical principles to the analysis of ecological data. These individuals will have a good understanding of the theoretical basis of systems ecology or statistics and the desire to implement these principles in aquatic, estuarine, and terrestrial environments. Successful applicants must have the ability to work well within a team of ecologists, toxicologists, and fisheries biologists, and must be able to convey ideas clearly and write well. Ph.D. degree is preferred. Please send résumé in confidence to:

**Ms. Glynda Squiggins
Versar, Inc., ESM Operations
9200 Rumsey Road
Columbia, MD 21045
Telephone: 301-964-9200
Equal Opportunity Employer.**

POSTDOCTORAL POSITION. Available to study molecular aspects of the role of polyamines in breast cancer. The candidate should have a Ph.D. in biochemistry, molecular biology, or a related area. Knowledge of cell culture and nucleic acid hybridization techniques as well as experience in HPLC will be considered as assets. Send curriculum vitae and three letters of reference to: **Theresa Thomas, Ph.D., Assistant Professor, Department of Environmental and Community Medicine, University of Medicine and Dentistry of New Jersey—Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854-5635.** *The UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer. M/F/H/V.*

POSITIONS OPEN

POSTDOCTORAL ASSOCIATE for epilepsy research at Department of Surgery, Yale University. Experience in LM and EM morphometry, LM and EM neurohistology, immunocytochemistry, darkroom and EM procedures is essential. Knowledge in basic LM and EM neuropathology is strongly desirable. Salary starting at \$19,000. Send curriculum vitae and references to: **Dr. D. Spencer, Chief, Section of Neurosurgery, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP—The University of Utah Pathology Department has a 2-year postdoctoral fellowship position available. This individual will have opportunity to rotate through the general chemistry, special chemistry, toxicology, RIA, and drug testing laboratories at ARUP, a national reference clinical laboratory. This individual will be able to select faculty members to work with on specific research projects. Please contact: **Dr. James T. Wu, University of Utah/ARUP, 500 Chipeta Way, Salt Lake City, UT 84108.** Telephone: 801-583-2787.

POSTDOCTORAL FELLOWSHIP available studying relationship between cardiac metabolism and physiology using in vivo NMR spectroscopy. Experience in cardiac physiology and/or metabolism preferred. Knowledge of NMR spectroscopy and imaging techniques desirable but not essential. Send curriculum vitae and two or more letters of recommendation to: **Dr. J. D. Glickson, Division of NMR Research, The Johns Hopkins Hospital, MRI Room 110, 600 North Wolfe Street, Baltimore, MD 21205.**

THE UNIVERSITY OF AUCKLAND NEW ZEALAND POSTDOCTORAL FELLOWSHIP IN CHEMICAL KINETICS-CANCER RESEARCH (TWO-YEAR TERM) DEPARTMENT OF CHEMISTRY AND CANCER RESEARCH LABORATORY

Applications are invited for a postdoctoral research fellowship, tenable for 2 years, associated with a study of the kinetics of nitro group reduction in a new class of nitro aromatics which have activity as radiosensitizers of hypoxic tumor cells and as hypoxia-selective cytotoxins.

A background in chemical kinetics and an awareness of the concepts of bio-organic chemistry would be preferred. The project will be carried out collaboratively within the Department of Chemistry, the Cancer Research Laboratory and the Section of Oncology, Auckland School of Medicine.

Remuneration is a stipend of N\$785,000 per annum, and an economy round-trip airfare will be paid for the appointee.

Applications in the form of curriculum vitae including names and addresses of two scientific referees should be sent to: **Professor C. J. O'Connor, Department of Chemistry, University of Auckland, Private Bag, Auckland, New Zealand (Fax 64 9 302 1795)** from whom further information is available.

Applications should be forwarded as soon as possible but not later than the closing date 30 September 1989.

*The University of Auckland
An Equal Employment Opportunity Employer*

POSTDOCTORAL FELLOWSHIPS AVAILABLE

Postdoctoral fellowships are available dealing with the molecular mechanism of gonadotropin-releasing hormone (GnRH) action. Projects currently underway deal with regulation of receptors and cell responses, receptor-effector coupling, the calcium-calmodulin and IP-PI-diacylglycerol-protein kinase C effector systems, and gene regulation. Competitive applications are welcome from individuals who have completed (or will complete, prior to starting) the M.D. or Ph.D. degree. Competitive salaries are offered. Applicants should provide curriculum vitae and the names of references.

Contact: **Dr. P. Michael Conn, Professor and Chairman, Department of Pharmacology, University of Iowa College of Medicine, Iowa City, IA 52242-1109.**

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

LABORATORY LIAISON COORDINATOR

TWO POSITIONS

Los Alamos National Laboratory, New Mexico
Lawrence Livermore National Laboratory, California

The Office of the President of the University of California is expanding its Office of Laboratory Affairs in order to improve the effectiveness of University management of its Department of Energy National Laboratories. The Liaison Coordinator will be the focus of the enhanced liaison activities between the Office of the President and the Laboratory.

The Liaison Coordinator will maintain a thorough familiarity with the operation and management of the Laboratory and will recommend ways in which information exchange can best occur among the laboratories, the Office of the President, and the University campuses. The Coordinator will work with University and Laboratory senior management to advance the University's goals of sound, objective research, free inquiry, effective dissemination of information, protection of dissent, and public service. The Coordinator will analyze and advise on all issues at the Laboratory that are relevant to sound management by the University. He/She will coordinate with and assist University oversight committees reporting to the President of the University and the Board of Regents. The Coordinator will promote collaborative research between Laboratory staff and campus faculty and students, and develop new opportunities for increased interactions.

The University requests applications from individuals interested in creating and formulating this unique and challenging new position.

REQUIREMENTS: Individuals should possess a combination of technical experience, extraordinary interpersonal skills, good managerial judgment, and an aptitude for independent and innovative thought. Technical background and experience must be sufficient to understand the broad range of Laboratory research. The applicant selected will possess the ability to interact successfully with high-level administrators, managers, faculty members and technical personnel, and the capacity for innovative, consultative and collaborative work. A Department of Energy "Q" Clearance will be required. Although the Liaison Coordinator will be stationed at the Laboratory a major fraction of the time, frequent travel to Oakland, California, will be required.

SALARY RANGE: Commensurate with qualifications and experience. The University of California offers excellent benefits, which include a relocation package.

APPLICATIONS: Please direct an introductory letter, resume, and salary history, before September 15, 1989, to the following address (for Los Alamos location, send to the attention of Screening Committee A; for Livermore location, send to the attention of Screening Committee B): **Director of Personnel, University of California, Office of the President, 300 Lakeside Drive, 9th Floor, Oakland, California, 94612-3550. EOE/AA**



UNIVERSITY OF CALIFORNIA

Office of the President

Manager, Agricultural Toxicology



Experience
the rewards
of
involvement.

Hoechst-Roussel Agri-Vet Co., a joint venture of the multi-national concerns, Hoechst AG and Roussel UCLAF, and a division of Fortune 100 Hoechst Celanese Corporation, currently has a position available in Somerville, NJ for a Manager of Agricultural Toxicology.

The successful candidate will develop toxicological/health effects protocols, contract and monitor studies, as well as summarize and submit data packages to the EPA. This individual will also interact and respond to EPA questions regarding toxicological data packages. In addition, the position is responsible for preparing label statements on safe use and emergency treatments of our pesticide products.

Applicants must have a Ph.D. in Toxicology or a related discipline and minimum of 3-5 years' toxicology experience, preferably pesticide field. Knowledge of toxicology and human risk assessment required. Excellent verbal and written communication skills are required to participate with multi-disciplinary teams in pesticide registrations.

We offer a competitive salary, excellent company benefits including dental, 401(k) Savings Plan and Performance Sharing Plan. For prompt confidential consideration, please direct your resume with salary history/requirements to: Manager, Human Resources, Hoechst-Roussel Agri-Vet Co., Inc., Route 202-206, Somerville, NJ 08876-1258. An affirmative action employer M/F/H/V.

Hoechst Celanese

Hoechst

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POSITIONS OPEN

POSTDOCTORAL FELLOWSHIPS: Applications are invited for postdoctoral fellowship positions to study excitation-contraction coupling in cardiac and vascular smooth muscle. Techniques include muscle mechanics, laser-activated photolysis of caged compounds, and the analysis of inositol-containing lipids using HPLC. Applicants should have a background in either physiology or biochemistry. Send curriculum vitae to: **Edward F. LaBelle, Ph.D., Bockus Research Institute, The Graduate Hospital, 415 South 19th Street, Philadelphia, PA 19146.**

POSTDOCTORAL POSITION available immediately in a team, led by **Dr. Stuart Smith**, studying the structure, mechanism of action, and regulation of expression of lipogenic enzymes [see *Proc. Natl. Acad. Sci. U.S.A.* **86**, 3114 (1989)]. Experience in one or more of the following areas is desirable: enzymology (purification and characterization, protein and peptide chemistry), molecular biology (mutagenesis, transcriptional regulation) or crystallography. Salary commensurate with experience. Send résumé and names of at least two references to: **Children's Hospital Oakland, Human Resources, 747 52nd Street, Oakland, CA 94609. Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately for a recent Ph.D. in biochemistry with experience in receptors and phospholipid metabolism. Projects involve studies on biochemical and functional interactions between the cAMP and Ca signaling systems in smooth muscle. Salary is negotiable. Please send curriculum vitae and names and addresses of three references to: **Dr. Ata Abdel-Latif, Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, GA 30912-2100. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION: Available immediately for the study of structure-function relationships in protein kinases. Experimental approaches include both molecular biology and protein chemistry. Send curriculum vitae and names of three references to: **Erwin Reimann, Department of Biochemistry, Medical College of Ohio, Toledo, OH 43699. An Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITION. A position is available immediately for up to 3 years to study the neurochemistry of an endogenous modulator of presynaptic receptor mechanisms regulating neurotransmission. Both the nature and mechanism of action of this modulator will be investigated. Successful candidates must have the Ph.D. and experience consistent with the goals of this research. Send curriculum vitae and three letters of recommendation to: **L. Bruce Pearce, Ph.D., Department of Pharmacology, Boston University Medical School, 80 East Concord Street, Boston, MA 02118.**

POSTDOCTORAL POSITION in eukaryotic transcriptional regulation. This position is available 1 March 1990, to study regulatory factors involved in the transcription of genes encoding the small nuclear RNAs. Candidates should have a strong background in molecular biology and experience in recombinant DNA technology and protein purification. Send curriculum vitae, a summary of research experience, and the names and addresses of three references, by 1 November 1989, to: **William Stumph, Ph.D., Department of Chemistry and Molecular Biology Institute, San Diego State University, San Diego, CA 92182-0328.**

Equal Employment Opportunity/Affirmative Action Title IX Employer.

POSTDOCTORAL POSITION

Postdoctoral position available immediately to study gene expression in mouse embryos. We are using in situ hybridization and RT/PCR technology to characterize the expression of particular genes in preimplantation and postimplantation embryos. Background in molecular biology or developmental biology is preferred. Please send curriculum vitae and the names of three references to: **Dr. William R. Crain, Jr., c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

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

POSITIONS OPEN

POSTDOCTORAL POSITION. To study cellular and molecular biology of ethanol dependence in model cell culture systems and cells from alcoholics. Send curriculum vitae and three letters of reference to: **Dr. Ivan Diamond or Dr. Adrienne Gordon, University of California, Department of Neurology/Gallo Center, Building 1, Room 101, San Francisco General Hospital, San Francisco, CA 94110.**

POSTDOCTORAL POSITION available to participate in studies of the membrane targeting and antifolding activities of *E. coli* SecB protein. Research will utilize molecular genetic and biochemical approaches to determine the role of these activities in secretion of envelope proteins. Please send curriculum vitae and the names of three references to: **Dr. Carol Kumamoto, Department of Physiology, Tufts University School of Medicine, 136 Harrison Avenue, Boston, MA 02111.**

POSTDOCTORAL POSITION available immediately to study the underlying neurophysiological and pharmacological mechanisms controlling oral-motor activity. Knowledge of intra/extracellular recording as well as iontophoretic/micropressure drug application techniques are required. Salary is \$20,000 to \$24,000 for up to 3 years. Send curriculum vitae to: **Scott H. Chandler, Department of Kinesiology and the Brain Research Institute, UCLA, Los Angeles, CA 90024.**

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

POSTDOCTORAL POSITON-ION CHANNELS. Available immediately to study substrate behavior of voltage-dependent Na⁺ and K⁺ channels induced by divalent cations or peptide neurotoxins. Ongoing studies include analysis of single channels inserted into planar bilayers, isolation of peptide toxins, and channel biochemistry. Recent Ph.D.'s with experience in biophysics or biochemistry are invited to send curriculum vitae and references to: **Dr. Edward Moczydlowski, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510. An Equal Opportunity Employer.**

DEAN COLLEGE OF LETTERS AND SCIENCE UNIVERSITY OF CALIFORNIA, DAVIS

The University of California, Davis invites applications and nominations for the position of Dean of the College of Letters and Science. The College, with more than 500 faculty, currently enrolls approximately 11,000 students in 47 undergraduate and 36 graduate programs leading to BA, BS, and advanced degrees through the PhD in the arts, humanities, social sciences, and natural sciences.

The Dean is responsible for academic leadership of the College, coordination of instruction and research, management of resources, administration of the College's affirmative action program, and coordination of the College's outreach and development efforts.

We seek candidates committed to academic excellence who can lead the College during a sustained period of growth and development. Qualifications include a distinguished record of research, teaching, and service in a research university or equivalent setting; demonstrated capability for academic administration and leadership; and ability to foster an environment in which creativity can occur. Commitment to undergraduate education of the highest quality and to expanded outreach and development efforts to provide additional resources for the College are also among the qualifications we seek.

Salary will be commensurate with experience and qualifications. The starting date will be 1 July 1990, or as negotiated.

Nominations and applications consisting of a current curriculum vitae and the names, addresses, and telephone numbers of five references are desired by 1 October and should be sent to Chancellor Theodore L. Hullar, Office of the Chancellor, University of California, Davis, CA 95616.

The position will remain open until filled. An equal opportunity, affirmative action employer.

DRUG METABOLISM

ASSOCIATE SCIENTIST

The Drug Metabolism Department of Hoffmann-La Roche is expanding, and is seeking a degreed Associate Scientist to assist in the isolation, characterization and quantification of novel peptide/protein drugs in clinical samples.

To qualify, you must have a BS or a MS in Chemistry, Biochemistry, Immunology or a related field, along with 3-5 years of relevant experience. In return, we offer a generous salary and benefits package, along with the professional advantages of joining a world-renowned, state-of-the-art industry leader. For consideration, please send your resume to: **Frances Newman, Department DMS, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.** We are an equal opportunity employer.



Hoffmann-La Roche

Working Today For A Healthier Tomorrow.

Cardiovascular Research Scientist

The Research Institute at The Hospital for Sick Children is offering a staff position in its Division of Cardiovascular Research with the opportunity for a cross-appointment to a Basic Science Department at the University of Toronto. We are seeking a scientist (Ph.D. or M.D.) with post-doctoral training and expertise in molecular biology who is capable of establishing a vigorous independent research programme within the context of a team of five investigators. The programme's focus is the developmental biology of the myocardium and blood vessels and their adaptation to stress. Excellent facilities and space are available.

Please send curriculum vitae, including three referees and **quoting file number D073**, to: Marlene Rabinovitch, M.D. Director of Cardiovascular Research, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario, Canada M5G 1X8



THE HOSPITAL
FOR SICK CHILDREN

DIRECTOR

Science and Policy Programs

**American Association for the
Advancement of Science (AAAS)**

Nation's leading general science and engineering association, based in Washington, D.C., seeks Director for its new Directorate of Science and Policy Programs. Directorate encompasses programs on national science policy issues, including internationally recognized analysis of research and development spending; science, engineering and human rights; interaction between law and science (in cooperation with the American Bar Association); professional ethics; and other areas at the interface of science, technology and society. Directorate's budget currently on order of a million dollars per year.

Candidates should have a doctorate in an appropriate field of science or engineering, extensive experience in areas relating science and technology to policy, proven leadership and administrative qualities, and experience in working with foundations, government agencies and other grant-making organizations. Salary and benefits competitive for such a high-level position. Please send letter expressing interest together with current resume to . . .

Debra Wright
AAAS
1333 H Street, N.W.
Office of Human Resources
Suite 854
Washington, DC 20005

AAAS is an Equal Opportunity Employer

The closing date for receipt of application is 8 September 1989

Research Associate

Nova Pharmaceutical Corporation, a leading research and development company in Baltimore, MD, has two postdoctoral opportunities available in its Pain and Inflammation Division.

Responsibilities will be to perform pharmacological studies of the molecular aspects of inflammation at either the cellular or enzyme level.

Recent PhD in Pharmacology, Immunology or Biochemistry is required.

Nova Pharmaceutical Corporation offers a competitive salary and benefits package, including relocation. Baltimore offers a wide array of cultural and recreational opportunities. For immediate consideration send CV with cover letter to: **Nova Pharmaceutical Corp., Personnel-PD/RB, 6200 Freeport Centre, Baltimore, MD 21224-2788. EOE.**



Research Coordinator Oncology Department

American International Hospital, located near the Illinois-Wisconsin border, is internationally known for dedication to excellence in patient care and progressiveness in oncology treatment. We now have a position available for a professional interested in oncology research.

You will coordinate oncology research projects with experts in the field, manage data bases, integrate research data with other programs/systems and prepare data and scientific papers.

We require a degree in a medical or biochemical discipline, proven ability to manage data bases (especially "C" and Advanced Basic), demonstrated success in authoring scientific papers and experience managing scientific projects.

Our new salary rates allow us to offer a very competitive salary and benefits package. To apply, send your resume and salary requirements to our Human Resources Department at: **American International Hospital, 1616 23rd Street, Zion, IL 60099 or call us at (312) 746-4257. An Equal Opportunity Employer.**



**American
International
Hospital**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for candidates with a background in molecular biology and/or virology to study molecular biology of bovine respiratory syncytial virus. Deadline: 15 October 1989. Send curriculum vitae and names of three references to: **Dr. Siba K. Samal, Regional College of Veterinary Medicine, University of Maryland, College Park, MD 20742-2025.**

POSTDOCTORAL POSITION available for 2 years to study population genetics of spiny lobster and finfish. Population biology background and experience with mtDNA methods are assets. Send curriculum vitae and names of references to: **Dr. Patrick J. Walsh, Division of Biology and Living Resources, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, FL 33149.**

POSTDOCTORAL POSITION. Available in the fall of 1989 to study the crystallization kinetics of peptides and proteins and the segregation of additives. Background in biophysics, physical biochemistry and familiarity with the characterization of crystal properties is desirable. Position available for 2 to 3 years. Please send curriculum vitae and three letters of reference to: **Dr. Nair Rodriguez, College of Pharmacy, The University of Michigan, Ann Arbor, MI 48109-1065.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION IN DEVELOPMENTAL NEUROSCIENCE available to study pharmacological and electrical properties of mammalian spinal motoneurons during development and after injury. Send curriculum vitae and the names of three references to: **Dr. Lea Ziskind-Conhaim, Department of Physiology and Center for Neuroscience, 1300 University Avenue, University of Wisconsin, Madison, WI 53706.** Telephone: 608-263-3382.

POSTDOCTORAL POSITION IN MOLECULAR BIOLOGY available immediately to study the expression of genes controlling mevalonate metabolism in rat liver. Experience in standard molecular biology techniques required. Send curriculum vitae and names of three references by 14 September 1989 to: **Dr. R. Kennedy Keller, University of South Florida College of Medicine, Department of Biochemistry and Molecular Biology, 12901 Bruce B. Downs Boulevard, MDC Box 7, Tampa, FL 33612-4799.** The University of South Florida is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION IN MOLECULAR/CELLULAR IMMUNOLOGY: To study mechanisms of receptor-mediated initiation of macrophage activation for tumor cytotoxicity and the relationship of autocrine modulation of effector and tumor target cells by complement subcomponents. Applicants should have background and interest in cellular immunology, immunochemistry, and molecular biology. Send curriculum vitae to: **Richard W. Leu, Ph.D., Head, Immunology Section, Biomedical Division, The Samuel Roberts Noble Foundation, Inc., P.O. Box 2180, Ardmore, OK 73402.**

POSTDOCTORAL POSITION IN MOLECULAR GENETICS OF HYPERTENSION is available for the identification and characterization of genes controlling blood pressure in genetically hypertensive rats. Techniques include library construction, cloning, gene regulation, RFLP analysis, and transgenic animals. Applicants must have Ph.D., M.D., D.V.M., or equivalent degrees and be citizens or permanent residents of the United States. Experience in molecular biology is not required, but experience in biochemistry is desirable. Send curriculum vitae to: **Dr. John Rapp, Department of Medicine, Medical College of Ohio, P.O. Box 10008, Toledo, OH 43699.** An Equal Opportunity Employer.

POSTDOCTORAL POSITIONS are available at the Guthrie Research Institute. Position A: Macrophage biology and regulation of cytokine secretion (**Dr. D. Beezhold**). Position B: Surface antigens (biochemistry/molecular biology) and mechanisms of NK and macrophage-mediated cytotoxicity (**Dr. R. Hall**). Position C: Molecular cloning of macrophage-derived cytotoxic factor(s) (**Dr. N. Chang**). Send curriculum vitae and names of three references to: **Guthrie Research Institute, Guthrie Square, Sayre, PA 18840.**



The **INTERNATIONAL ATOMIC ENERGY AGENCY**

seeks for

the **INTERNATIONAL LABORATORY OF MARINE RADIOACTIVITY**
in Monaco

a
MARINE BIO GEOCHEMIST

with 1-2 years experience

to perform laboratory and field research on biogeochemical cycles of radionuclides and trace elements in marine particles and food chains.

Knowledge of multi-element and radionuclide analytical techniques is particularly desirable. University degree in marine biology, marine chemistry or oceanography essential.

Initial contract for three years, tax free emoluments approximately US\$ 30,700, - p.a. Additional allowances if married. Travel and removal expenses paid. Six weeks annual leave.

Interested persons should send their C.V. quoting Vacancy Notice No. 89/039 to the Division of Personnel, **INTERNATIONAL ATOMIC ENERGY AGENCY, P.O. Box 100, Wagramerstrasse 5, A-1400 Vienna, Austria.**

NEUROSCIENCE POSITIONS

THE UNIVERSITY OF KANSAS MEDICAL CENTER

MOLECULAR, CELLULAR, OR INTEGRATIVE

The University of Kansas Medical Center is seeking applications for two tenure track faculty positions in the areas of developmental neuroscience, neural plasticity or mental retardation. Appointment will be at the assistant or associate professor level, depending on qualifications and experience. Recruitment for these positions is through academic departments and the Smith Mental Retardation Research Center. Departmental affiliation will be based on the candidate's interests. The Smith Research Center emphasizes multidisciplinary approaches to basic research relevant to the broad areas of mental retardation and developmental disabilities. Minimum requirements include the Ph.D., M.D. or equivalent degree and two years of postdoctoral experience. Initial review of applications will be on September 29, 1989 but the search will remain open until the positions are filled. Candidates should send curriculum vitae, description of research activities, representative reprints and names of three references to:

Paul D. Cheney, Ph.D.
Neuroscience Search Committee
Smith Research Center
University of Kansas Medical Center
Kansas City, KS 66103

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

JPL/NASA VISITING SENIOR SCIENTIST

Microgravity Science and Applications Materials Science

The Jet Propulsion Laboratory is seeking a senior scientist to lead and coordinate the NASA Microgravity Science and Applications Materials Sciences Program. The position would allow the appointee to bring scientific expertise to bear on the planning, execution and coordination of broad-based programs in materials sciences. The responsibilities include the coordination of ongoing programs, evaluation of proposals for new efforts and participation in overall programmatic planning. Frequent travel and residence in the Washington, DC area will be required. A PhD or equivalent experience and training in materials sciences is required with emphasis in electronic materials desirable. Tenured faculty members are the preferred choice although qualified individuals from non-profit research institutions may also be considered. This position is open for immediate filling. Normal assignment in the Visiting Senior Scientist Program does not exceed two years. Appointees must be U.S. Citizens or Permanent Residents and are expected to return to their home institution following the NASA assignment. Please provide Curriculum Vitae, bibliography and names of four references to:

Dr. Harry Ashkenas 180-900
Jet Propulsion Laboratory
Department T09
4800 Oak Grove Drive
Pasadena, California 91109
(818) 354-8251

An Equal Opportunity Employer



**ADDIS ABABA ETHIOPIA
INTERNATIONAL LIVESTOCK
CENTRE FOR AFRICA**

**DEPUTY DIRECTOR GENERAL
(RESEARCH)
VACANCY INT/007/89**

POSITION

Applications are invited from outstanding scientists of proven leadership capacity for the post of Deputy Director General (Research). This is the most senior position in ILCA after the Director General. It is a post with the potential for making a considerable impact on livestock research and development in Africa.

The Deputy Director General (Research) reports directly to the Director General and is responsible for the management of a total of 80 professional research staff and 450 other staff at ILCA Headquarters and regional research sites. The annual budget of the Research Department is currently about \$13 million. The position requires the incumbent to act for the Director General in his absence.

The Deputy Director General (Research) is responsible for the direction and coordination of ILCA's research programs with particular reference to:

- providing intellectual and management leadership to ILCA research scientists;
- ensuring that goals, objectives and ideals of the centre are properly communicated and understood;
- advising the Director General on policies and actions that will increase research efficiency and maintain an environment encouraging professional vitality and high staff morale;
- coordinating the planning and implementation of research programs together with coordinators of ILCA's Research Thrusts;
- coordinating the expansion of ILCA's collaborative research programs.

QUALIFICATIONS

- A PhD or equivalent in livestock related research with a demonstrated ability in research management.
- A proven record of research achievements and publications.
- Fluency in English or French; good understanding of the other language highly desirable.
- Ability to lead a team of scientists from different disciplines and nationalities.
- Sensitivity to the national and regional priorities in livestock related research in sub-Saharan Africa.

GENERAL

The International Livestock Centre for Africa (ILCA), with headquarters in Addis Ababa, Ethiopia is one of the 13 international agricultural research organizations which are supported by the Consultative Group on International Agricultural Research (CGIAR). The Centre has research activities throughout sub-Saharan Africa and regional offices in Kenya, Nigeria, Niger and Mali.

ILCA's goal is to achieve measurable and sustainable increases in livestock output in sub-Saharan Africa, and its major activities are research, training and information.

With purpose-built offices and research facilities on a large landscaped site close to Addis Ababa's international airport, the Centre's headquarters provide a secure and pleasant working environment, and sports and leisure facilities. The city, which enjoys pleasant weather throughout the year, has a large, diverse expatriate community and diplomatic missions from more than 75 nations. It is also the seat of the Organization of African Unity (OAU) and the United Nations Economic Commission for Africa (UNECA). There are several international schools covering American, British, French, German and Italian systems, among others.

Salary and related benefits of international staff are paid in US\$, and will be in line with comparable international organizations. Initial salary will be determined by qualifications and experience.

Applicants should send current Curriculum Vitae, recent salary history, names and addresses of three professional referees and photocopies of supporting documents (not returnable) before 10 September 1989 in confidence to the Personnel Manager, ILCA, P.O. Box 5689, Addis Ababa, Ethiopia.



**INTERNATIONAL LIVESTOCK
CENTRE FOR AFRICA**

**ZWAI SITE COORDINATOR
VACANCY INT/008/89**

GENERAL

The International Livestock Centre for Africa (ILCA), with headquarters in Addis Ababa, Ethiopia is one of the 13 international agricultural research organizations which are supported by the Consultative Group on International Agricultural Research (CGIAR). The Centre has research activities throughout sub-Saharan Africa and regional offices in Kenya, Nigeria, Niger and Mali.

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POSITION

Stationed at Zwai, 178 km from Addis Ababa, the main duties of the position are to take charge of the day-to-day management of the Zwai seed production site and coordinate seed multiplication activities for the Forage Genetic Resources Unit including:

- supervision of seed production activities at Zwai, Soddo, and Melka Werer, including planting, harvesting and seed processing.
- supervision of agronomic observations both on seed production plots on site and off-site trials.
- general management and new site development.
- supervision of staff.
- assisting the Genebank Manager in seed production/seed processing research activities.
- liaison with the Seed Unit on joint activities.

QUALIFICATIONS

- PhD or MSc with 2 years experience or BSc with 10 years experience.
- Experience in seed multiplication activities required.
- Some experience in international work and management ability preferred.

Salary and related benefits of international staff are paid in US\$, and will be in line with comparable international organizations. Initial salary will be determined by qualifications and experience.

Applicants should send current Curriculum Vitae, recent salary history, names and addresses of three professional referees and photocopies of supporting documents (not returnable) before 8 September 1989 in confidence to the Personnel Manager, ILCA, P.O. Box 5689, Addis Ababa, Ethiopia.

GROUP LEADER-

CARDIOVASCULAR PHARMACOLOGY

Committed
To
Scientific
Excellence



The Sterling Research Group, the worldwide pharmaceutical research and development organization of Sterling Drug Inc., announces an opening in the Department of Pharmacology for a Group Leader, Cardiovascular Pharmacology.

The successful candidate will have a Ph.D. with a minimum of 3-5 years experience in Cardiovascular research. Expertise in either cardiac electrophysiology and antiarrhythmic drug evaluation or experience in free radical damage and reperfusion injury is required. Pharmaceutical experience with a strong background in subcellular function preferred. Supervisory and leadership skills essential to lead group of scientists in either antiarrhythmic or free radical disciplines.

The Rensselaer facility is located near Albany, New York which is a center for winter and summer recreation. We offer attractive salary and benefit programs and an exciting work environment based on a team approach to research and development.

Please send your resume in confidence to:

Mr. John P. Harvey
Employment Manager

STERLING RESEARCH GROUP

81 Columbia Turnpike
Rensselaer, New York 12144

A Subsidiary of
EASTMAN KODAK COMPANY

An Equal Opportunity Employer M/F/H/V

FIRST CALL FOR PAPERS

First International Symposium on the Biological Processing of Coal

May 1-3, 1990
Orlando Hyatt
Orlando, Florida U.S.A.

Cosponsored by
Electric Power Research Institute
U.S. Department of Energy

Due to the importance of securing clean fuels for the future and the potential that biotechnology has for yielding cost-effective alternatives in material processing, the Electric Power Research Institute and the U.S. Department of Energy are cosponsoring a symposium on biological processing of coal. This symposium is intended to foster increased activity in this area, identify pertinent new biotechnologies, and promote technology development and implementation.

Topics to be addressed include: coal structure and bioreactivity; coal analysis; coal biosolubilization, biogasification, and biobeneficiation—including biodeashing, biodesulfurization, biodenitrification and bio-assisted flotation; bioconversion of syngas and coal combustion gases; bioleaching of ash, and bioprocessing of coke, tars, and sludges.

Persons wishing to have their papers considered for presentation are requested to submit a 200-400 word mat-ready abstract in Courier typeface by October 18, 1989.

Please address abstracts and other inquiries to: Dr. Kee Rhee, U.S. Department of Energy, Pittsburgh Energy Technology Center, P.O. Box 10940 MS 141/L, Pittsburgh, PA 15236 U.S.A., (412) 892-5913.

Pittsburgh Cancer Institute and Carnegie Mellon University

Claude W. Benedum Foundation Research Fellows in Tumor Pathophysiology

Investigators with M.D. and/or Ph.D. degrees are needed to study the in situ pathophysiology of tumors. Recent research indicates that a tumor's microcirculation has profound implications for radioimmunotherapy as well as conventional and other novel therapeutic approaches. These 1-3 year fellowships are envisioned to be joint appointments between the Department of Radiation Oncology at the University of Pittsburgh and the Tumor Microcirculation Laboratory at Carnegie Mellon University. Competitive salaries depend on qualifications. The University of Pittsburgh and Carnegie Mellon University are equal opportunity/affirmative action employers.

Interested applicants should respond to either:

William D. Bloomer, M.D.	Rakesh K. Jain, Ph.D.
Dept. of Radiation Oncology	Tumor Microcirculation Lab.
University of Pittsburgh	Dept. of Chem. Engineering
230 Lothrop Street	Carnegie Mellon University
Pittsburgh, PA 15213	Pittsburgh, PA 15213-3890

POSTDOCTORAL ASSOCIATE POSITIONS THE UNIVERSITY OF IOWA

Please contact the appropriate department to express your specific interest:

ANATOMY — Dr. Joe Dan Coulter, Professor and Head, Bowen Science Building.

ANESTHESIA — John H. Tinker, M.D., Professor and Head.

BIOCHEMISTRY — Alan G. Goodridge, Professor and Head, Bowen Science Building.

DERMATOLOGY — John S. Strauss, M.D., Professor and Head; or Kenzo Sato, M.D., Professor; 2 Boyd Tower, General Hospital. A postdoctoral research associate for the study of electrophysiology of cultured cells.

INTERNAL MEDICINE — Openings available in all disciplines in the Internal Medicine Department, College of Medicine, University of Iowa. Contact Francois M. Abboud, M.D., Professor and Head; or Darris Goerdt, Administrator. Phone 319/356-2850.

MICROBIOLOGY — Dr. Irving P. Crawford, Professor and Head, Bowen Science Building.

NEUROLOGY — Postdoctoral associate positions are available in Cognitive Neuroscience, Neurophysiology, Neurobiology, Cerebrovascular Disease, Epilepsy, Sleep, and Neuromuscular Disease. Antonio R. Damasio, M.D., Professor and Head, 2151 Roy Carver Pavilion.

PATHOLOGY — Dr. Richard G. Lynch, Professor and Chairman, 144 Medical Laboratories, Research activity in all areas of pathology.

PEDIATRICS — Dr. Frank H. Morriss, M.D., Professor and Head.

PHARMACOLOGY — Dr. P. Michael Conn, Chairman and Head, Bowen Science Building. Openings available in all areas of pharmacology and toxicology.

PHYSIOLOGY & BIOPHYSICS — Positions available for cellular and molecular research in endocrinology, neurophysiology and membrane biology. Contact Robert E. Fellows, M.D., Ph.D., Professor and Head, 5-660 Bowen Science Building.

UROLOGY — Dr. Richard D. Williams, Professor and Chairman, Carver Pavilion. A postdoctoral position is available for physicians interested in the study of immune modulation of genitourinary cancer cells *in vitro* and in animal models.

A Ph.D. or equivalent is required. Desirable qualifications are based on Project Investigator's interest for research. Women and minorities are encouraged to apply. The University of Iowa, College of Medicine, Iowa City, Iowa, 52242, is an Equal Opportunity/Affirmative Action Employer.

Genetics Institute, a recognized leader in the discovery and development of recombinant pharmaceuticals, is seeking scientists with expertise in macromolecular structure/function, pharmaceutical development and protein purification to undertake projects involving studies of blood cell differentiation factors, thrombolytic agents, coagulation factors, etc.

Opportunities currently exist for motivated and talented individuals with the following expertise:

Protein Stability/Pharmaceutical Development

Genetics Institute's Pharmaceutical Development Department is undergoing expansion that includes the formation of a new **Stability Group**. This group will be responsible for designing, performing, and maintaining bulk and final product stability protocols in support of preformulation research, formulation development, INDs, PLAs, and marketed products. To develop the core of this new and vital group, we need to fill the following positions:

MANAGER — Ph.D. + 2 yrs., MS + 2-4 yrs., BS + 4-6 yrs. The ideal candidate for this position will be experienced in the design and execution of stability protocols used to support development of new protein pharmaceuticals. This includes short and long term studies of protein stability that become integral parts of INDs and PLAs, as well as studies that support preformulation groups and clinical trials. In addition to being skilled as a manager, the candidate must possess excellent organizational abilities and be able to rapidly integrate into the company. He or she will be an analyst who understands protein functional assays and can assess their usefulness as indicators of stability. Writing stability sections of the regulatory documents will be required. Experience with statistical analysis and/or computerized organization of protocols, sample tracking, and data collation is desirable.

ANALYSTS (3) — BS/MS in Analytical Biochemistry, Analytical Chemistry, Physical Biochemistry, Biochemistry, Chemistry, or Pharmacy + 2-4 yrs. These individuals will be responsible for generating extremely reliable analyses of new protein pharmaceuticals being assessed for stability. They must be very good bench scientists who understand the significance or insignificance of variations in the analytical methods they will perform for proteins such as electrophoresis, chromatography, enzyme assays, and spectroscopy. They will also be responsible for instrument upkeep. Being familiar with how the nature of stability protocols change as a product moves through the development pathway toward the marketplace is beneficial.

Protein Purification Group Leader

Suitable applicants will have a Ph.D. degree, a strong background in protein biochemistry and extensive experience and interest in protein purification. The position carries direct responsibility for developing procedures for purification of both bacterial and mammalian expressed proteins, up to the point at which clinical production commences. Beyond this point there will be ongoing responsibility for biochemical aspects of the large scale production process. It will be essential that applicants for this key position have an understanding of purification scale up and the ability to interact with personnel in other disciplines, especially engineering and production. There will also be considerable opportunity to interact with peptide and carbohydrate chemists, as well as cell biologists in exploring structure/function relationships of proteins of interest.

Structural Protein Chemistry

Two Research Associates (B.S./M.S.) ideally with laboratory experience in structural protein chemistry (e.g. protein sequencing, amino acid composition analysis, peptide mapping, chemical modification of proteins, SDS-PAGE). The successful candidates will be responsible for the design, execution and interpretation of experiments and maintaining laboratory equipment. In addition to excellent interpersonal and communication skills, candidates should have at least one year of relevant laboratory experience and the ability to work both independently and as a member of a team.

A Scientist (Ph.D.) with expertise in macromolecular structural analysis, preferably with a background in exploring functionally important domains of mammalian and bacterially expressed proteins. The successful candidate will be expected to assume responsibility for the design and execution of scientific projects. Since this position involves substantial interaction with scientists from other disciplines (e.g. carbohydrate chemistry, protein purification, cell biology), applicants must have excellent interpersonal skills as well as excellent oral and written communication skills. The ideal candidate will have at least 1-2 years of Postdoctoral or industrial experience in macromolecular structural analysis although other qualified candidates will be considered.

Carbohydrate Chemistry

Two research associates (B.S./M.S.) to take part in the analysis of protein-linked oligosaccharides utilizing LC, GC, and GC/MS. Successful candidates will be responsible for participating in the design, execution, and interpretation of experiments. The ideal candidate should have a minimum of one year of laboratory experience, preferably in analytical carbohydrate chemistry, although other candidates with experience in the techniques described above are encouraged to apply. All candidates should possess excellent written and verbal communication skills.

A scientist at the Ph.D. level with experience in the structural analysis of glycoconjugates and an interest in pursuing structure/function studies of glycans in recombinant proteins. Candidates with additional experience in any of the following are especially encouraged to apply: spectroscopic analysis of glycoconjugates, glycan biosynthesis and processing, enzymology of glycosyltransferases, or chromatographic separations of glycoconjugates. A minimum of two years of postdoctoral experience is desirable, but other outstanding candidates will be considered.

The Macromolecular Structure Group utilizes state-of-the-art technology and instrumentation for the structural characterization of recombinant glycoproteins including high mass, four-sector mass spectrometry and high field nuclear magnetic resonance spectroscopy. These and associated laboratories are housed in our new suburban Boston facility located in Andover, Massachusetts. Genetics Institute offers an attractive compensation and benefits package including equity participation and an excellent opportunity for personal and professional growth. **Qualified applicants should forward their resumes, in confidence, to Peter Lasky, Genetics Institute, One Burt Road, Andover, MA 01810-5901.**

Genetics Institute

Genetics Institute is an equal
opportunity employer, M/F/H/V

POSITIONS OPEN

POSTDOCTORAL POSITION IN NEUROBIOLOGY

Position available to study the biochemistry and physiology of Alzheimer amyloid precursor proteins. Laboratory focuses on the biological activity of the amyloid precursor(s) and their effects on neurite outgrowth, cell adhesion, and cell-cell interactions. Candidates should be familiar with the biology of the neurite extension and have experience with cell cultures, immunofluorescence, transfection, and expression vector construction. Please send résumé and references to: **Nikolaos Robakis, Ph.D., The Mount Sinai Medical Center, Departments of Psychiatry and Neurobiology, Box 1229, One Gustave L. Levy Place, New York, NY 10029-6574. An Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS

Postdoctoral positions are available to work in the following areas: Regulation of autoreactive T cells, early lymphoproliferative events in a murine AIDS model and regulation of pulmonary immune function. Experience in cellular and/or molecular immunology or retrovirology highly desirable. Send curriculum vitae and names of three references to:

Alan M. Kaplan, Ph.D.
Department of Microbiology and Immunology
University of Kentucky College of Medicine
Lexington, KY 40536-0084

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

POSTDOCTORAL POSITIONS AVAILABLE.

(i) M.D./Ph.D. to study carbohydrate metabolism using NMR and mass spectroscopic stable isotope tracer techniques. (ii) M.D./Ph.D. to work on projects involving antibody-targeted cell killing using photodynamic dyes. Requires a chemistry or biochemistry background with experience in immunochemistry and analytical techniques. Additional position requires a chemist, physicist, or engineer with experience using biochemical applications of lasers. (iii) Immunologist/biochemist/molecular biologist to work on molecular events in cytokine generation. Salary consistent with NIH guidelines. Send curriculum vitae to: **Drs. John Burke or Ronald Tompkins, ACC 3A-Suite 364, Massachusetts General Hospital, Boston, MA 02114.**

POSTDOCTORAL POSITIONS are available immediately to study adrenergic receptors and related proteins involved in signal transduction, using protein chemistry and molecular biology techniques. Projects include protein isolation and characterization; structure-function studies using site-directed mutagenesis; and evaluation of tissue and developmental regulation of gene expression. A strong background in protein chemistry/biochemistry or in molecular biology is required. Send curriculum vitae and references to: **Dr. Robert M. Graham, Chairman, Department of Heart and Hypertension Research, The Cleveland Clinic Foundation, One Clinic Center, 9500 Euclid Avenue, Cleveland, OH 44195-5071.**

POSTDOCTORAL POSITIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY available immediately to participate in the investigation of (i) the polymeric structure of mucins; (ii) the characterization of malignancy-associated glycoproteins; and (iii) the interaction of pathogens with glycoconjugates in cystic fibrosis. Background in protein chemistry and/or recombinant DNA technology is highly desirable. Send curriculum vitae and letters of recommendation to: **Dr. V. P. Bhavanandan, Department of Biological Chemistry, The Milton S. Hershey Medical Center, Hershey, PA 17033. An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.**

POSTDOCTORAL RESEARCH ASSOCIATE

The Liposome Company, a pharmaceutical company specializing in lipid-based drug delivery systems, is seeking a recent Ph.D. in immunology with background knowledge in lipid biochemistry to join a small team involved in the research of liposome-based vaccines. Study will focus on the mechanism of liposome action, humoral and cellular responses, and formulation. Salary: \$27,000 to \$29,000 per year. Submit curriculum vitae, description of prior research, and names of three references to: **Debra Pascale, The Liposome Company, Inc., One Research Way, Princeton, NJ 08540.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE

A position is immediately available for an individual with a Ph.D. and/or M.D. and background in molecular biology to follow up an exciting lead in the diagnosis and pathophysiology of inflammatory bowel disease. The position, under the direction of **Nathan Fischel-Ghodsian, M.D.**, is in the Department of Pediatrics and the Medical Genetics Birth Defects Center at Cedars-Sinai Medical Center, both of which are UCLA-affiliated teaching programs. Starting salary: \$27,000 to \$33,000 commensurate with experience, plus benefits.

All interested individuals should send application to:

Mark W. Schmitz
Cedars-Sinai Medical Center
Employee Relations Department
8700 Beverly Boulevard
Brown Building, 1st Floor
Los Angeles, CA 90048

POSTDOCTORAL RESEARCH POSITION

available for Ph.D., synthetic inorganic or organic chemist to develop new Tc-99m and I-123 agents for diagnostic nuclear medicine applications. Experience in synthesis essential; familiarity with radioisotopes helpful, but not necessary. Salary negotiable. Send résumé and references to: **Hank F. Kung, Ph.D., Department of Radiology, Room 110, Donner Building, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104-4283. University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITION TRANSGENIC SCIENCES USDA LABS, BELTSVILLE, MARYLAND

Successful candidate will be responsible for working on projects related to transgenic animals at the USDA laboratories in Beltsville. To qualify, the candidate must have a Ph.D. in biological sciences and have a basic knowledge in cellular and developmental biology. Please submit curriculum vitae and references to: **Transgenic Sciences, Personnel Department SDA 1, 365 Plantation Street, Worcester, MA 01605. Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITIONS DEPARTMENT OF ANIMAL SCIENCE UNIVERSITY OF MINNESOTA

The Department of Animal Science, University of Minnesota, receives and evaluates applications from candidates for temporary postdoctoral research positions on a continuous basis. These temporary research positions (postdoctoral associate and research associate) are available to persons holding an earned doctorate degree in animal science or a closely related field and applicable research training or experience.

The Department of Animal Science maintains a file of applicants for postdoctoral research positions for the current fiscal year (through 30 June 1990). All applications are reviewed when such positions are established. Applicants must resubmit their applications each fiscal year (1 July through 30 June).

In applying, submit letter of application including your area(s) of interest, résumé, transcripts, and the names and addresses of three people who can be contacted for reference.

Submit application to:

Dr. Richard Goodrich
Professor and Head
Department of Animal Science
120 Peters Hall
1404 Gortner Avenue
St. Paul, MN 55108

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

POSTGRADUATE POSITION at Pittsburgh Energy Technology Center—Activities in project management, control, and planning, which include monitoring of project deliverables, recommending technical direction for contract research, and suggesting activities in the bioprocessing/biosulfurization of coal. A background in microbiology and/or chemistry would be helpful. A graduate degree within last 3 years is required as is U.S. citizenship or PRA status. Contact: **Fossil Energy Postgraduate Program, Science/Engineering Education Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3456 or 412-892-4638.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE IN ELECTRON MICROSCOPY to work on image reconstruction from negatively stained and frozen hydrated samples of protein toxins and other structures, as part of the Vanderbilt structural biology group, which includes **Drs. Gerald Stubbs, John Robinson, and Paula Flicker.** Send curriculum vitae and names of three references to: **Dr. John P. Robinson, Department of Microbiology, Vanderbilt University, Nashville, TN 37232-2363.**

POSTDOCTORAL RESEARCH ASSOCIATE MOLECULAR BIOLOGY

A position is available immediately for the design and expression of recombinant proteins with *de novo* catalytic activity. Experience in DNA cloning/sequencing and expression systems required. Background in protein structure/function desirable. Send curriculum vitae and three letters of recommendation to: **A. Tramontano, Department of Molecular Biology, GA1, Research Institute of Scripps Clinic, La Jolla, CA 92037.**

POSTDOCTORAL RESEARCH ASSOCIATE IN MOLECULAR BIOLOGY/PATHOLOGY. Position opened for a postdoctoral candidate experienced in molecular biology to carry out in situ hybridizations for mRNA expressions of metastatic and anti-metastatic genes. This is a joint project of the Departments of Biochemistry, Pathology, and Urology of the Loyola University School of Medicine which seeks to determine in situ gene expressions that correlate with the metastatic phenotype. Salary competitive. Send curriculum vitae and names of three references to: **Dr. Chester Herman, Chairman, Department of Pathology, Loyola University Stritch School of Medicine, Maywood, IL 60153.**

Loyola University of Chicago is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH POSITION available 1 January 1990 to study the biochemistry and cell biology of prelysosomal membrane movement and sorting in the endocytic pathway of the amoeba, *Dictyostelium discoideum*. Please send your credentials and the names of the scientists who best know your work to: **Theodore L. Steck, M.D., Department of Biochemistry and Molecular Biology, The University of Chicago, 920 East 58th Street, Chicago, IL 60637. The University of Chicago is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL TRAINING PROGRAM IN CLINICAL CHEMISTRY HEALTH SCIENCES CENTRE/ST. BONIFACE GENERAL HOSPITAL UNIVERSITY OF MANITOBA WINNIPEG, MANITOBA

Applications are now being accepted for a position in a 3-year postdoctoral training program in clinical chemistry (approved by the Canadian Academy of Clinical Biochemists and the American Association for Clinical Chemistry) to start 1 July 1990.

Candidates must have a Ph.D. with a good background in either chemistry, biochemistry, pharmacology, immunology, or a related discipline, or an M.D. degree. The Departments of Clinical Chemistry provide service, research, and teaching for two University Hospitals with a total of 1,900 beds, and a School of Medicine. Starting salary will be approximately \$30,000. Applications including curriculum vitae and three letters of reference should be sent by 1 November 1989 to: **Dr. R. Yatscoff, Department of Clinical Chemistry, Health Sciences Centre, 820 Sherbrook Street, Winnipeg, Manitoba, Canada, R3A 1R9. Telephone: 204-787-2843; fax: 204-787-3846.**

RESEARCH ASSOCIATE: Ph.D. sought to participate in ophthalmological research (oncogenes, human pigment epithelium and differentiation). Must have experience in tissue culture and molecular biology (Northern, Southern, Western blots, cloning, etc.). Opportunity for research at Morehouse School of Medicine and The Centers for Disease Control.

Send curriculum vitae and references to:

Kamla Dutt, Ph.D.
Morehouse School of Medicine
Department of Pathology
720 Westview Drive, S.W.
Atlanta, GA 30310-1495
Telephone: 404-752-1769

Molecular Biologist

Somatix Corporation is seeking a molecular biologist for a position as staff scientist. The individual selected will be involved in the development of retrovirus vectors optimized for expression in a variety of cell types. The successful candidate will have a Ph.D. with 1 to 3 years of postdoctoral or industrial experience. Research experience should include design of new vectors, cell culture and high level expression in mammalian cells.

Cell Biologist

The successful candidate will be expected to contribute to the development of somatic-cell based delivery systems. Candidate should possess a Ph.D. and have extensive experience in cell biology, biomatrix materials or angiogenesis. Experience in artificial organs and cell implantation systems also desirable.

We offer a competitive salary and benefits package including stock options. **Somatix** combines a stimulating research environment with the opportunities found in a start-up company. **Somatix** provides excellent career potential for its employees. Qualified individuals should apply to: **Somatix Corporation.**

Somatix

One Kendall Square • Building 650 • Cambridge, MA 02139

BROOKHAVEN NATIONAL LABORATORY

Protein Data Bank

The Protein Data Bank (PDB) has an opening available in Fall 1989 for a staff scientist. The PDB has excellent dedicated computer facilities, including three micro-VAX IIs and a Silicon Graphics IRIS workstation. The principal duties of the successful candidate will be to prepare atomic coordinate entries for newly deposited structures. This work will involve the analysis of atomic coordinate data to identify ambiguities and potential errors in the structures. Applicants should hold a Ph.D. or equivalent degree in biology, chemistry or a related field. Experience in crystallography is highly desirable.

Applicants should submit a curriculum vitae and names of three references by September 15, 1989 to: Dr. T.F. Koetzle, Chemistry Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, L.I., NY 11973. Equal Opportunity Employer m/f.

 **BROOKHAVEN
NATIONAL LABORATORY**
ASSOCIATED UNIVERSITIES INC.

DIRECTOR International Programs American Association for the Advancement of Science (AAAS)

Nation's leading general science and engineering association, based in Washington, D.C., seeks Director for its new Directorate of International Programs. Directorate encompasses programs on global environmental change; coordination of international activities of U.S. scientific and engineering societies; strengthening science and engineering in developing countries; science, arms control and national security; interaction between science, engineering and foreign policy; and a variety of international professional activities involving scientific and engineering societies in many parts of the world.

The International Science Directorate's budget of several million dollars per year is composed of AAAS and grant funds from private foundations and government and international agencies. An immediate priority is the development of a major program in the global environmental change field, an area in which the new Director should have a distinguished record of accomplishment.

Candidates should have a doctorate in an appropriate field of science or engineering, extensive experience in international affairs and in global environmental issues, proven leadership and administrative qualities, and experience in working with foundations, government agencies and other grant-making organizations. Salary and benefits competitive for such a high-level position. Please send letter expressing interest together with current resume to . . .

Debra Wright
AAAS
1333 H Street, N.W.
Office of Human Resources
Suite 854
Washington, DC 20005

AAAS is an Equal Opportunity Employer

The closing date for receipt of application is 8 September 1989

PROTEIN ENGINEERING ASSOCIATE SCIENTISTS/ SCIENTISTS

Smith Kline and French, a worldwide leader in Pharmaceutical Research has exciting opportunities for Scientists to join a protein engineering effort in its expanding Macromolecular Sciences Department.

The selected individual(s) will design, conduct and interpret experiments to elucidate protein structure-function relationships and to develop improved protein analogs.

The successful candidate(s) will have:

- BS or MS in Chemistry or Biochemistry, with 2-5 years current laboratory experience required.
- Experience in DNA mutagenesis and sequence analysis required.
- Experience in protein purification and characterization highly desirable.
- Good mathematical and communication skills required.
- Experience in chemical modification of proteins desirable.
- Experience with computer data management and analysis desirable.

Our beautiful, new, state-of-the-art research facility is located in suburban Philadelphia, near Valley Forge. Smith Kline and French provides a stimulating and challenging work environment with opportunity for professional growth. We offer an attractive compensation and benefits package. For confidential consideration, please forward your resume to: Nancy Hasson, H0112, Smith Kline and French Research & Development, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer. M/F/H/V.

SK&F

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE—Seek Ph.D. holder in virology, cell culture, or molecular and cell biology to develop transgenic chickens. Mouse genes are to be transferred using retroviral vectors. This is a non-tenure, full-time, 2-year position. Send letter of application briefly describing research interests, curriculum vitae, and have three letters of reference forwarded and postmarked by 15 September 1989 to: **Dr. John Brumbaugh, School of Biological Sciences, 348 Manter Hall, University of Nebraska-Lincoln, Lincoln, NE 68588-0118.** *Affirmative Action/Equal Opportunity Employer.*

PRE- AND POSTDOCTORAL FELLOWS

The National Institutes of Mental Health (Neurosciences Research Branch) and the Center for Complex Systems at Florida Atlantic University announce a new, nationwide training program in Complex Systems and the Brain Sciences. The aim is to blend emerging concepts in complex systems (e.g., in nonlinear dynamics and so-called "chaos theory") with specific experimental model systems in the behavioral and brain sciences. Graduate training consists of a core curriculum in the mathematics of nonlinear dynamical systems, neuroscience (including neural networks and cognitive science) and computational science leading initially to a Ph.D. degree in a cognate area and eventually to a fully interdisciplinary degree. Ample opportunities are available for winter workshops, for short-term training, and collaborative visits with other nodes in the network (University of California, Berkeley, Medical College of Pennsylvania, University of California, San Diego, and Cornell University) and ancillary activities.

Fellowships are for an initial period of 3 years with possible extension to five. Level of support is determined by current NIH guidelines. Prospective graduate fellows with an undergraduate degree in any of the behavioral and natural sciences and postdoctoral candidates should send a letter of application, GRE scores (predoctoral only), curriculum vitae and four letters of recommendation to: **Dr. J. A. S. Kelso, Director, Program in Complex Systems and Brain Sciences, Center for Complex Systems, Florida Atlantic University, Boca Raton, FL 33431.** *FAU is an Affirmative Action/Equal Opportunity Employer.*

RESEARCH SCIENTIST to grow and genetically manipulate bacteria to produce large quantities of specific isotopically labelled protein—dihydrofolate reductase; purify protein from bacteria using column chromatography techniques; synthesis of specific isotopically labeled drugs and bioactive chemicals; perform and analyse solid- and liquid-state nuclear magnetic resonance (NMR), experiments to study drug-protein interactions; computer modeling of drug-protein interactions. Require Ph.D. in chemistry or physics. Demonstrated ability to perform stated duties by prior research or publication. Salary: \$21,500 per year. Apply with résumé to: **Georgia Department of Labor, 2811 Lakewood Avenue, S.W., Atlanta, GA 30315,** or to the nearest Georgia Job Service Center. Control #GA 5373047.

STAFF MOLECULAR BIOLOGIST desired by a pharmaceutical company in Texas. Research and development of novel human pharmaceutical using recombinant DNA technology. Cloning and characterization of novel genes having commercial interest. Construction of DNA library. Screening of recombinants, DNA sequencing, expression of recombinant products using microorganisms (*E. coli* and yeast). Cloning of new hypothalamic hormone genes from porcine brain extracts. Develop means of producing these hormones in usable and practical quantities so their potential can be evaluated in human clinical trials. Maintain scientific contacts with collaborators in China so that the work being done there stays on schedule and meets our standards for quality. Initiate additional contracts to further advance the possibility of having significant business with China.

Requires a Ph.D. in molecular biology. Must have at least 1 year of experience in the job offered or 3 years of experience as recombinant DNA research scientist. Must also have at least 6 months of experience with *E. coli* and yeast expression systems in producing recombinant DNA products.

Salary is \$45,000 per annum for a 40-hour week.

Apply at: **The Texas Employment Commission, Dallas, Texas,** or send résumé to: **The Texas Employment Commission, TEC Building, Austin, TX 78778, J.O. Order #5515392.**

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POSITIONS OPEN

Fixed-term position (**RESEARCH ASSOCIATE**) with the Pacific Northwest Tree Improvement Research Cooperative available 1 December 1989, as principal assistant to the Cooperative Leader in conducting genetics research in support of applied breeding programs. Ph.D. in forest genetics with strong background in quantitative genetics and experience in writing scientific articles. Initial appointment for 24 months, with salary range of \$28,000 to \$30,000 per year. Possible reclassification to assistant professor, senior research. Application closing date 15 October 1989. Send résumé, three letters of reference, up to three examples of scientific publications, and transcripts to: **Dr. Logan Norris, Head, Department of Forest Science, College of Forestry, Oregon State University, Corvallis, OR 97331-5705.** *An Equal Employment Opportunity/Affirmative Action Employer. Complies Section 504 Rehabilitation Act of 1973. OSU has a policy of being responsive to the needs of dual-career couples.*

RESEARCH CHEMIST VACANCY ZP-1320-III (\$28,852 to \$43,000)

The Reactor Radiation Division, National Institute of Standards and Technology has a vacancy for a research chemist performing research in the area of chemical materials using neutron scattering and complementary techniques of chemical spectroscopy and processing. Candidates must demonstrate a knowledge of elastic and inelastic neutron scattering methods as applied to chemical systems of chemical materials including metallic and inorganic catalysts, nonlinear optic materials and molecules in solids; infrared spectroscopic methods and high-vacuum gas loading and analysis systems for processing and molecular insertion in catalytic and microporous materials; properties of hazardous inorganic and organic chemicals; and have the ability to organize a chemical preparation laboratory. In addition, applicants must have a Ph.D. in chemistry or equivalent work experience and education to meet minimum requirements.

Starting salary is in the range of \$28,852 to \$43,000 and will depend on the qualifications of the applicant. Please send Personal Qualifications statement (SF-171) and transcripts or OPM 1170/17 to: **Rosemary Hornmuth (NIST-DH-89-2275/RH), Room A-123 Administration Building, National Institute of Standards and Technology, Department of Commerce, Gaithersburg, MD 20899.**

NIST is an Equal Employment/Affirmative Action Employer located in Gaithersburg, Maryland. U.S. citizenship is required.

RESEARCH POSITIONS IN MOLECULAR/IMMUNOLOGY

Three positions open in Transplantation Immunobiology laboratory at Wayne State University headed by **Dr. Lawrence Lum.** Study the molecular immunology of T and B cells after human BMT. Areas of emphasis include immune reconstitution, adoptive immunotherapy, graft vs. host disease, and manipulation of specific immunity. Positions include: Postdoctoral Fellowship (Ph.D. or M.D.), Research Associate/Assistant to supervise laboratory (Ph.D., M.S., or B.S.), Research Assistant (B.S. or M.S.). Strong background in biochemistry, immunology, or molecular biology required. Send curriculum vitae and references to: **Personnel, Division of Hematology and Oncology, 3800 Woodward, Suite 218, Detroit, MI 48201** or call: 313-745-8149.

TENURE-TRACK POSITION—BIOCHEMISTRY: The Department of Chemistry and Biochemistry at Southern Illinois University at Carbondale is seeking applicants for a continuing, tenure-track assistant professor position to begin 16 August 1990. Applicants should hold the Ph.D. degree and have postdoctoral experience. The individual will hold a cross appointment in the School of Medicine carrying with it an additional three months' summer salary and will teach biochemistry in both the Department and the School of Medicine. Preference will be given to individuals who apply organic or inorganic chemical approaches and physical principles to the investigation of biologically important problems. A letter of application, résumé, statement of research plans, and at least three letters of recommendation should be sent to: **Dr. James Tyrrell, Department Chair, Department of Chemistry and Biochemistry, Southern Illinois University at Carbondale, Carbondale, IL 62901-4409,** before 16 October 1989. *Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RESEARCH ASSISTANT PROFESSOR to join research group investigating ECM turnover by retinal pigment epithelium and trabecular meshwork. Interim support available immediately for Ph.D. with funding potential; medical genetics, ECM protein chemistry, molecular biology experience preferred. Curriculum vitae, names of three references, and summary of research achievements to: **Dr. Ted Acott, Department of Ophthalmology (L105), Oregon Health Science University, Portland, OR 97201.** *An Equal Opportunity/Affirmative Action Employer.*

SMALL NUCLEAR RNA'S

A postdoctoral position is available to join studies of the transcription, 3' processing, RNP assembly and intracellular trafficking of the U-small nuclear RNA's. Send curriculum vitae and the names of two references (with telephone numbers) to: **Personnel Office, Attention: Thoru Pederson, Ph.D., Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

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For information, contact: **George M. Wyman, Department of Chemistry, CB #3290, University of North Carolina, Chapel Hill, NC 27599.**

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TRAINING PROGRAM

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

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HUMAN GENOME I

An International Conference On The Human Genome

1st Annual Meeting – October 2-4, 1989

Town & Country Hotel

San Diego, CA

Co-Chairman:

Daniel E. Koshland, Jr., Ph.D.

Editor of Science

Co-Chairman:

Charles R. Cantor, Ph.D.

Director of Human Genome Center

Lawrence Berkeley Laboratory

PROGRAM

KEYNOTE ADDRESSES

Opening Welcome:

Richard Atkinson, President, American Association for the Advancement of Science.

Role of the Meeting:

Charles Cantor, Director, Human Genome Center, Lawrence Berkeley Laboratory.

CURRENT STATUS OF THE GENOME PROJECT

THE GENETIC MAP: Raymond White, Howard Hughes Medical Institute, University of Utah.

RESTRICTION MAPS: Cassandra Smith, University of California, Berkeley.

CLONING: Ronald Davis, Stanford University School of Medicine.

ORDERED LIBRARIES: Sydney Brenner, MRC Molecular Genetics Unit, Cambridge, England.

APPLICATIONS: Thomas Caskey, Howard Hughes Medical Institute, Baylor College of Medicine.

SOCIETAL IMPLICATIONS: Daniel Koshland, University of California, Berkeley.

TECHNIQUE INNOVATIONS

PCR OF SINGLE SPERM: Norman Arnheim, Ahmanson Center for Biological Research, University of Southern California.

SEQUENCING METHODS: George Church, Harvard Medical School.

DNA CLEAVAGE: Peter Dervan, California Institute of Technology.

RADIATION HYBRIDS: David Cox, University of California, San Francisco.

IN SITU HYBRIDIZATION: Jeanne Lawrence, University of Massachusetts Medical Center.

RAPID MAPPING: Glen Evans, Salk Institute.

INTERESTING REGIONS

CYSTIC FIBROSIS: Francis Collins, Howard Hughes Medical Institute, University of Michigan Medical Center.

TELOMERES: Robert Moyzis, Los Alamos National Laboratory.

IMMUNOGLOBULINS: Tasuku Honjo, Kyoto University Faculty of Medicine.

IMMUNOGLOBULINS: Hans Zachau, Institute for Physiological Chemistry, University of Munich.

T-CELL RECEPTORS: Leroy Hood, NSF Science and Technology Center for Biotechnology, California Institute of Technology.

FRAGILE X: Jean-Louis Mandel, Institut de Chimie Biologique, Strasbourg.

APPLICATIONS

HUMAN EVOLUTION: Allen Wilson, University of California, Berkeley.

MULTIGENE DISEASES: Eric Lander, Whitehead Institute for Biomedical Research, Cambridge, Massachusetts.

HUMAN DIVERSITY: Jean Dausset, Human Polymorphism Study Center (CEPH).

SEX DETERMINATION: David Page, Whitehead Institute for Biomedical Research.

UNSTABLE SEQUENCES: Michio Oishi, University of Tokyo.

INTERPRETING SEQUENCE: Russell Doolittle, University of California, San Diego.

ORGANIZATION – DIFFERENT VIEWS OF CURRENT AND FUTURE SCIENCE AND PROCEDURES

HUGO: Victor McKusick, Johns Hopkins University School of Medicine; President, The Human Genome Organisation (HUGO).

NIH: James Watson, Cold Spring Harbor Laboratory; NIH Human Genome Project.

DOE: Charles Cantor, Human Genome Center, Lawrence Berkeley Laboratory.

EEC: Peter Pearson, Johns Hopkins University School of Medicine.

JAPAN: Nobuyoshi Shimizu, Keio University School of Medicine.

INFOMATICS: David Lipman, National Library of Medicine.

OVERVIEW: Renato Dulbecco, Salk Institute.

POSTER SESSIONS AND EXHIBITS

Registrants of the meeting may submit abstracts for poster sessions by requesting abstract forms on the registration tear off below. Exhibits will be open to all attendees and interested researchers Monday, Tuesday and Wednesday.

REGISTRATION FEES: Make checks payable to: **Scherago Assoc., Inc./Human Genome**

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\$ 75 STUDENT REGISTRATION – Student status must be confirmed in writing by department chairman.

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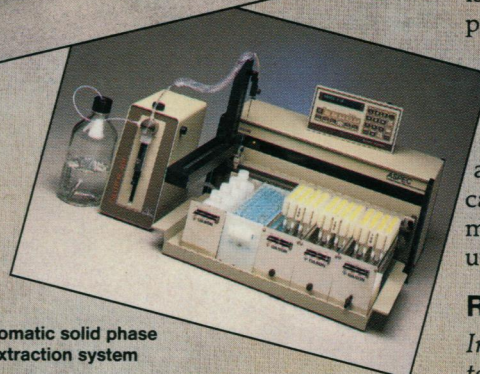
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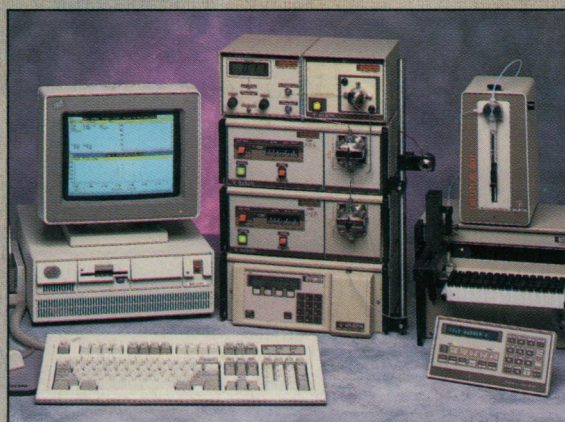
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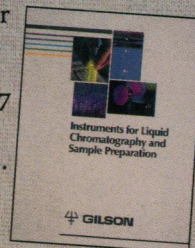
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