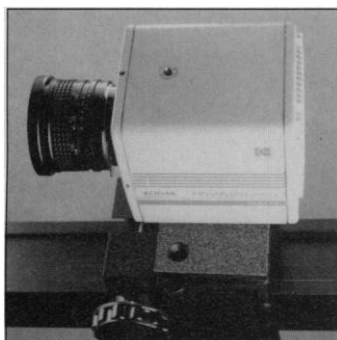


Subtractive Hybridization

Dynabeads Oligo(dT)₂₅ allows production of reusable subtracted cDNA probes for simplified screening of differentially expressed genes and for isolation of rare messages. Poly(A)⁺ RNA from one cell type is isolated with Dynabeads Oligo(dT)₂₅ in 15 min. Direct cDNA synthesis of the mRNA template extends from the oligo(dT) primer present on the magnetic beads. Following elution of the mRNA template, the cDNA probes bound to the magnetic beads are then hybridized to mRNA of a second cell type. These common sequences are removed by magnetic separation. Unique mRNA sequences are then captured with a second aliquot of Dynabeads Oligo(dT)₂₅ and cDNA synthesis results in subtracted cDNA probes. Dynal. Circle 91.

Camera Acquires Fluorescent Gel Images

The Bio Image Low Light CCD Camera allows investigators to acquire high-resolution images (1024 by 1024 pixels, noninterlaced) of double-stranded DNA patterns stained with fluorescence prior to computer-assisted analysis. Traditionally, images of



nonradioactive double-stranded DNA have been acquired for image analysis by photographing the gel and scanning the photograph. This process substantially decreases resolution and, ultimately, results in less accurate image analysis. The Bio Image Low Light Camera directly captures fluorescent

images using the Kodak Megapixel imaging chip. The images are sharp and crisp. The camera can also be used to acquire images of samples such as stained gels and autoradiograms by simply removing a filter. Millipore. Circle 92.

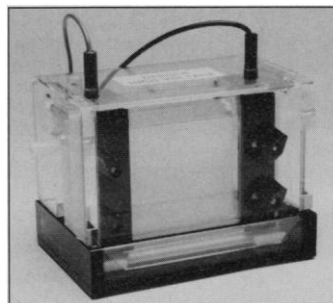
Assay Validation Software

Parallel Pro software for the Macintosh for the validation of assays performs an analysis of variance with F tests for significance of regression, linearity, and parallelism. Dose-response curves can be displayed together or separately using a linear or logarithmic scaled dose axis. Potency ratios and their confidence limits are calculated for assays that are demonstrated to be parallel. Ten different assays can be compared with a maximum of 48 dose levels for each assay and 48 replicates at each dose level. BioMetallics Inc. Circle 93.

ART Pipette Tips

Internal pipette nose cones are often contaminated by aerosols during suction of samples into pipette tips. Such contamination can carry over and cause false positives in polymerase chain reaction (PCR) work. Neither bonded cellulose nor cotton plugs provide an effective aerosol barrier. ART aerosol-resistant tips offer the convenient alternative of a precisely molded interactive sealing barrier between the sample-air interface and the pipette nose cone. Thus ART tips eliminate aerosol contamination and are ideal for such applications as PCR, nucleic acid or protein sample loading, serological or forensic assays, and pipetting radioactive or infectious materials. Bio-Rad Laboratories. Circle 94.

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



Protein Electrophoresis System

The new Penguin Double-Sided Water-Cooled Electrophoresis apparatus (model P8DS) features a heat distribution and transfer system that allows fast runs with flat, even banding patterns. The upper buffer chamber extends the length of the gels to uniformly distribute heat across gel surfaces. The central cooling chamber is constructed of thermally conductive alumina ceramic that efficiently transfers the heat away from the coils. Heat is transferred to cold tap water channeled through the alumina chamber, permitting the use of higher voltages for quicker results. A third electrode reduces run times and improves field uniformity. Owl Scientific Plastics. Circle 95.

L-Glutamine-Stable Cell Culture Media

While L-glutamine is an essential component of most cell culture media, it is also the most unstable of the common media components because it breaks down spontaneously in aqueous solution. GlutaMAX Media are standard cell culture media that contain L-glutamine in its stabilized form of a dipeptide. They are available in the most popular liquid media formulations and are so stable they can be autoclaved. The addition of the dipeptide means L-glutamine does not de-

grade in storage or during incubation, ammonia build-up is avoided, glutamine delivery is controlled, monoclonal antibody production in murine hybridomas is increased, and L-glutamine does not have to be added at the time of use. GIBCO BRL. Circle 96.

One-Step Isolation of Lymphocytes

Lymphoprep can be used for the preparation of pure lymphocyte suspensions for tissue typing, anti-lymphocyte sera production, and immunological research. It is an endotoxin-tested, sterile solution made of 9.6% sodium metrizoate and 5.6% polysaccharide. GIBCO BRL. Circle 97.

Literature

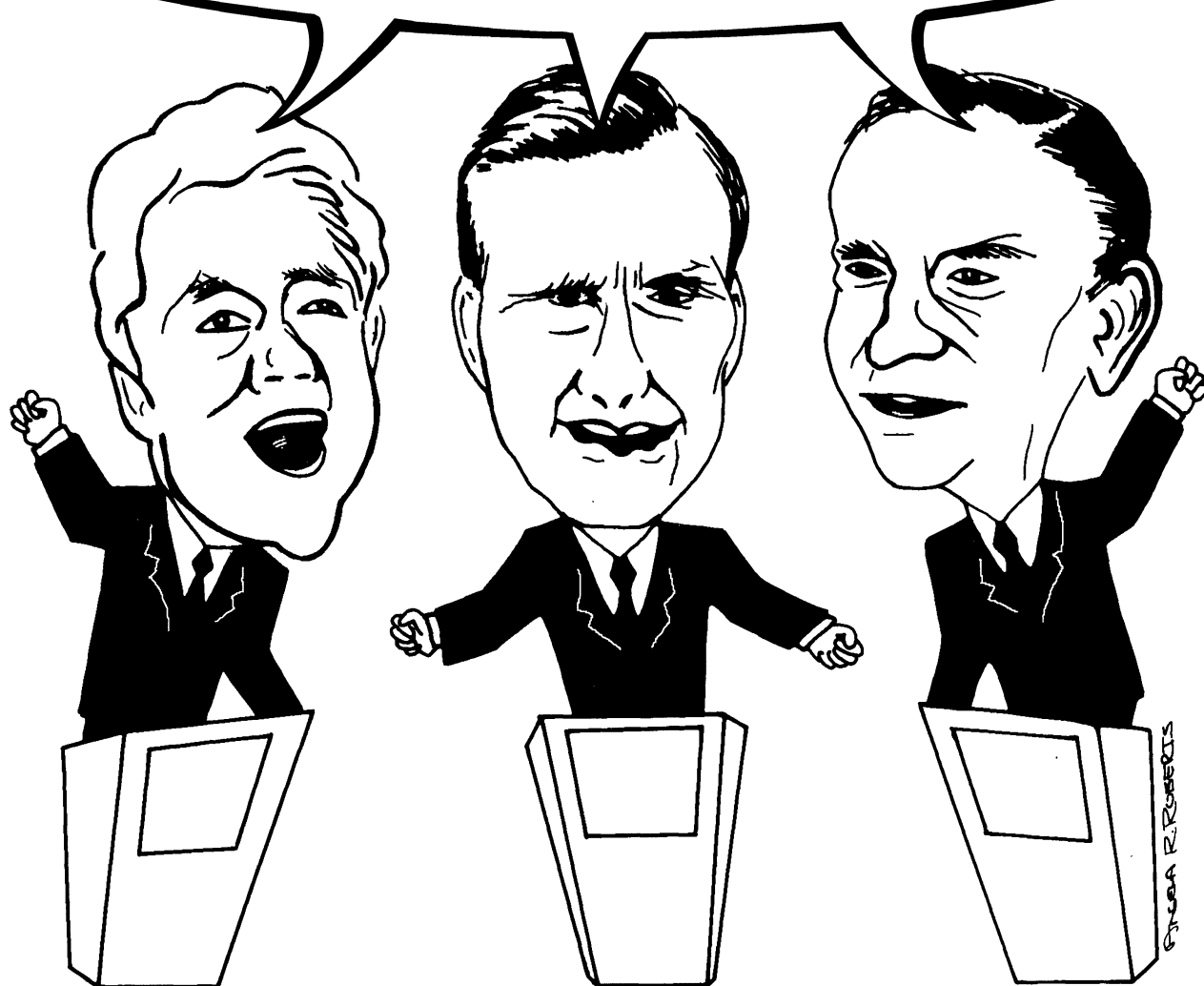
Biotechnology for the 21st Century: A Report by the FCCSET Committee on Life Sciences and Health, February 1992, FY 1993 discusses the integrated research strategy and budgets for federally funded biotechnology research. It defines the baseline of programmatic activity and federal funding in biotechnology research, highlights ongoing agency programs and new objectives, and outlines national strategic objectives for biotechnology research. U.S. Government Printing Office. Circle 98.

Explore the ECM is a catalog featuring many new products for extracellular matrix research, including proteins such as fibronectins, laminins, vitronectins, collagens, tenascin, thrombospondin, and fibronectin fragments. Polyclonal and monoclonal antibodies to these proteins are also available, including an extensive line of anti-integrins. Telios Pharmaceuticals. Circle 99.

Time-of-Flight Mass Spectroscopy with LeCroy Digital Oscilloscopes is an application note that provides insight into how to use LeCroy digital oscilloscopes to achieve improved resolution and extended drift times in time-of-flight applications. LeCroy Corp. Circle 100.

ONE THING THEY ALL AGREED ON ...

JOBS!! JOBS!! JOBS!!



AAAS EMPLOYMENT EXCHANGE HAS JOBS FOR SCIENTISTS

If you are presently in the job market, a student anticipating graduation in 1993, or if you are an employer with positions to be filled, and wish to take advantage of our efforts on your behalf, contact: Jacquelyn Roberts, AAAS Employment Exchange, 1333 H Street, NW, Washington, DC 20005. Phone: 202-326-6737. Fax: 202-842-1065.

Science

PERSONNEL PLACEMENT

LINE CLASSIFIED ADVERTISEMENTS

- **Deadlines:** Ads are due by Thursday, 10 a.m., 2 weeks prior to the issue date. *Science* is published each Friday, except the last Friday of the year. Call for holiday deadlines. Advertisements must be submitted in writing.
- **How to Submit a Classified Ad:** Prepare double-spaced typewritten copy. Do not include any abbreviations. *Science* will edit and typeset ads according to *Science* guidelines. Include billing information, and desired publication date. Available categories: Positions Open, Meetings, Announcements, Courses and Training.
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 Washington, DC 20005
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- **Credit Cards:** *Science* accepts MasterCard and VISA. Discount does not apply to credit cards.
- **Cancellations:** Deadline for cancellation is 10 a.m., Tuesday, 10 days prior to issue date.

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For rates and info. about fractional display ads (all ads 1/2 page and larger), contact:

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POSITIONS OPEN

ECOLOGIST. The Department of Biology at New Mexico State University (NMSU) anticipates appointing a tenure-track **ASSISTANT PROFESSOR** for Fall 1993. Applicants should apply modern methods (quantitative, experimental, and/or molecular) to research problems in animal ecology. The successful candidate will join an interactive group of ecologists and is expected to develop a vigorous research program and to teach at the undergraduate and graduate levels. The department offers bachelor's degrees in biology and microbiology, and the M.S. and Ph.D. in biology. Submit curriculum vitae, concise statement of teaching and research interests, and names, addresses, and telephone numbers of at least three references to: **Dr. William J. Boecklen, Search Committee, Department of Biology, Box 30001, NMSU, Las Cruces, NM 88003.** Closing date for applications is November 30, 1992. *NMSU is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF BIOLOGY, tenure-track. Applicant must have doctorate in zoology or related field. Responsibilities include teaching anatomy, physiology, and basic biology. It would be helpful if the applicant could teach a basic parasitology course. Send curriculum vitae and three letters of reference to: **Personnel Office, Southwestern Oklahoma State University, Weatherford, OK 73096.** Review begins February 1, 1993 and continues until position filled. *Affirmative Action/Equal Opportunity Position. Women and minorities encouraged to apply.*

EUKARYOTIC CELL BIOLOGIST. The Department of Biology at New Mexico State University (NMSU) anticipates appointing a tenure-track **ASSISTANT PROFESSOR** for Fall 1993. Applicants should have postdoctoral experience and should apply modern molecular methods to research problems in plant or animal cell biology. The successful candidate will develop a vigorous research program and will teach at the undergraduate and graduate levels. He or she may participate in the Molecular Biology M.S./Ph.D. Program and the NIH-sponsored Minority Access to Research Careers and Minority Biomedical Research Support programs. *Women and minority candidates are strongly encouraged to apply.* The department offers bachelor's degrees in biology and microbiology and the M.S. and Ph.D. in biology. Submit curriculum vitae, statement of research and teaching interests, and the names, addresses, and telephone numbers of at least three references to: **Dr. Ceil A. Herman, Search Committee, Department of Biology, Box 30001, NMSU, Las Cruces, NM 88003.** Closing date is November 30, 1992. *NMSU is an Affirmative Action/Equal Employment Opportunity Employer.*

EXERCISE SCIENTIST (Biochemist/Endocrinologist Preferred)

Teaching/research position at **ASSISTANT PROFESSOR** level, but will consider exceptional candidates at any rank. Ph.D. required. Postdoctoral experience desired. Candidate expected to develop independent research program. Starting date: August 1993. Submit curriculum vitae, research plan, reprints and three letters of recommendation to: **Carl V. Gisolfi, Ph.D., Exercise Science Department, N420 Field House, The University of Iowa, Iowa City, IA 52242.** Screening begins 18 January 1993. *The University of Iowa is an Equal Opportunity/Affirmative Action Employer. Women and underrepresented minorities are especially encouraged to apply.*

State University of New York (SUNY) at Binghamton—ASSISTANT PROFESSOR (Tenure-track). We are seeking individuals who are studying significant problems in **CELLULAR IMMUNOLOGY** or **PLANT BIOLOGY** through the application of molecular biology techniques. The successful applicant, pending State funding, is expected to develop a vigorous externally funded research program, and to teach undergraduate and graduate students in areas of expertise. Submit curriculum vitae, statement of research and teaching interests, and have three letters of recommendation sent to: **Dr. S. D. Michael, Department of Biological Sciences, State University of New York, Binghamton, NY 13902-6000** by December 1, 1992. Binghamton University is one of the four doctoral-granting campuses of the SUNY system and is dedicated to growth in research and graduate education. *Strongly committed to Affirmative Action. Recruitment conducted without regard to race, color, sex, religion, age, disability, marital status, sexual orientation or national origin.*

POSITIONS OPEN

ASSISTANT PROFESSORSHIP GLADSTONE INSTITUTE OF VIROLOGY AND IMMUNOLOGY UNIVERSITY OF CALIFORNIA SAN FRANCISCO

The Gladstone Institute of Virology and Immunology at San Francisco General Hospital (SFGH) and the University of California, San Francisco (UCSF) invite applications for a new faculty research position in the AIDS research center. We seek outstanding investigators trained in the disciplines of virology, immunology, or molecular biology of eukaryotic cells who are particularly interested in the study of HIV. Successful candidates will receive appointment in the appropriate basic science department at UCSF, the Program in Biological Sciences graduate program, and in the Gladstone Institute. Minority candidates and women are encouraged to apply. Applicants should send curriculum vitae, a short description of their future research plans and the names of at least three references to: **Warner C. Greene, M.D., Ph.D., Director, c/o Human Resources, The Gladstone Institute of Virology and Immunology, The University of California, San Francisco, P.O. Box 419100, San Francisco, CA 94141-9100.**

ASSISTANT PROFESSOR IN PHYSICAL OCEANOGRAPHY/RUTGERS UNIVERSITY. The Institute of Marine and Coastal Sciences of Rutgers University invites applications for a tenure-track position at the assistant professor level in the area of Physical Oceanography.

Applicants must have a Ph.D., and an established record of published research and grant support. The successful candidate will be expected to teach courses primarily at the senior and graduate student level, as well as to establish an innovative, forward-looking research program in dynamical or observational oceanography. Preference will be given to candidates with demonstrated expertise in studying the coastal and/or large-scale ocean circulation. Curriculum vitae and a statement of research interests should be sent prior to 15 December 1992 to: **Dr. Frederick Grassle, Director, Rutgers University, Institute of Marine and Coastal Sciences, P.O. Box 231, New Brunswick, NJ 08903-0231.**

Rutgers University is an Equal Opportunity/Affirmative Action Employer.

CELL BIOLOGIST—HHMI-funded ASSISTANT PROFESSORSHIP, tenure-track, available Fall 1993 for cell biologist to teach Cell Biology, Biochemistry and participate in Introductory Biology. Ph.D. required. Broad biological background desirable. Applicants must demonstrate excellent undergraduate teaching record and research program involving undergraduates in all aspects, including publication. Experience in small college setting desirable. Ursinus is northwest of Philadelphia in a suburban setting and is a highly selective, residential, coeducational, liberal arts college of 1100 students with a long tradition of strength in sciences. Send letter of application and curriculum vitae to: **Dr. Peter F. Small, Department of Biology, Ursinus College, Box 1000, Collegeville, PA 19426-1000,** by January 31, 1993. *Ursinus is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF PHYSIOLOGY

The Department of Physiology, Chicago College of Osteopathic Medicine (CCOM) invites applications for two new, tenure-track faculty positions at the level of assistant professor to start after July 1, 1993. Candidates must have an earned doctoral degree, a minimum of two years of postdoctoral experience, and demonstrate the potential to develop an active, independent research program capable of attracting extramural funding. We are seeking individuals whose research will complement existing strengths in the Department in the areas of cardiovascular, diabetes and vascular smooth muscle research. In addition, candidates must demonstrate the potential to contribute effectively to departmental teaching in the medical, pharmacy and allied health programs. Interested individuals should send curriculum vitae along with a synopsis of research interests and plans, the names of three (3) references, and reprints of representative publications to: **Chair, Faculty Search Committee, Department of Physiology, Chicago College of Osteopathic Medicine, 555 31st Street, Downers Grove, IL 60515.** *CCOM is an Affirmative Action/Equal Opportunity Employer.*

STANFORD UNIVERSITY

COMBINED ADMISSIONS MODE IN BIOLOGICAL AND BIOMEDICAL SCIENCES

In addition to entering a given program directly, students may now opt to enter graduate study in the biological and biomedical sciences through the Combined Admissions Mode or CAM.

This program enables a small number of select students to begin graduate study at Stanford University without first committing to a given department or program. During the first year, following a series of "rotations" in different departments, CAM students select a thesis adviser and program in which to complete the Ph.D. The flexibility and breadth offered by CAM should appeal to those who view two or more departments or programs as equally attractive. Participating programs are:

DEPARTMENTAL:	INTERDEPARTMENTAL:
Biochemistry	Biophysics
Biological Sciences	Cancer Biology
Cell Biology	Immunology
Chemistry	Medical Information
Developmental Biology	Sciences
Genetics	Neurosciences
Microbiology and	
Immunology	
Pharmacology	
Molecular and Cellular Physiology	

More information and application forms for CAM can be obtained from: Office of Graduate Admissions, Building 590, Room 208, Stanford University, Stanford, CA 94305-3052. Deadline for receipt of completed applications is Dec. 15, 1992.

Stanford University is committed to the principles of Affirmative Action and welcomes applications from students of either sex and any race, color, religion, sexual orientation or national and ethnic origin.

FACULTY POSITION DEPARTMENT OF ENVIRONMENTAL HEALTH COLORADO STATE UNIVERSITY FORT COLLINS, COLORADO

Position: Molecular Toxicologist/Molecular Epidemiologist

The Department of Environmental Health invites applications for a tenure-track position in the area of molecular toxicology and epidemiology at the Assistant Professor level. Preference will be given to candidates with demonstrated expertise and interest in the development and application of biomarkers of exposure, susceptibility or effect to human populations. The successful candidate will be expected to develop a vigorous research program in collaboration with toxicologists, epidemiologists and others in the department. He/she will also supervise graduate students and participate in classroom teaching. The candidate will be a member of the Center for Environmental Toxicology at Colorado State University. Candidates must possess a doctoral degree (Ph.D., M.D., D.V.M., or equivalent) and have had post-doctoral experience with research training in a field relevant to molecular toxicology. Salary is negotiable. Candidates should send their curriculum vitae, statement of research interests, and the names, addresses and phone numbers of at least three references by December 31, 1992 to:

Dr. John S. Reif
Department of Environmental Health
College of Veterinary Medicine
and Biomedical Sciences
Colorado State University
Fort Collins, CO 80523

Colorado State University is an Equal Employment Opportunity/Affirmative Action employer. Equal Employment Opportunity Office 314 Student Services Building

NRC-CNRC

THE ORGANIZATION

NRC - Canada's principal science and engineering organization - helps its industry partners become stronger global competitors. Currently, NRC's Biotechnology Research Institute is looking for an energetic executive who will provide the leadership required to further enhance its record of excellence and achievement.

The Institute's mission is to promote, assist, and perform R&D in biochemical and molecular engineering closely linked to the market objectives of industry.

Director General (Montreal, Quebec)

RESEARCH AREAS

The main areas of research include:

- Fermentation, biochemical and process engineering
- Genetic Engineering
- Enzyme technology and protein engineering

A major pilot plant facility allows scale-up experimentation and economic evaluation. The R&D focuses on the pharmaceutical and environmental sectors.

THE POSITION

Reporting to the sector Vice-President, the Director General provides leadership and direction with respect to the Institute's mandated activities. He or she is responsible for managing, planning, organizing, implementing, evaluating and controlling the Institute's research and development programs and advises senior management on long-term research goals. The Director General is also responsible for establishing close ties with industry and universities and undertaking research projects on a cooperative basis and fostering the development of industrial biotechnology in Canada.

THE CANDIDATE

The successful candidate will have an established reputation for outstanding R&D leadership. Applicants must have a Ph.D. and several years of research experience in a biotechnology-related discipline in industry, university or government. The candidate will also have demonstrated ability to manage major research organizations. Fluency in both French and English is essential. A security screening will be required.

THE INSTITUTE

The Biotechnology Research Institute is located in downtown Montreal in a \$60 million, 18,000m² complex. It employs 235 scientists, engineers and administrative personnel and hosts 150 guest researchers from industries, universities and other research organizations. Its annual budget is \$21 million.

SALARY RANGE: From \$84,254 to \$104,442 per annum.

Please send a detailed résumé in confidence by November 30, 1992 to: Manager, Recruitment and Staffing, National Research Council of Canada, Ottawa, Ontario, K1A 0R6. Please quote the reference number: RB-92-40.SCI



National Research
Council Canada

Conseil national
de recherches Canada

Canada

POSITIONS OPEN

FACULTY POSITION IN GENETICS UNIVERSITY OF UTAH

The Biology Department at the University of Utah seeks applications for a tenure-track position in the area of genetics. While the position is nominally at the **ASSISTANT PROFESSOR** level, more senior applicants will also be considered. Interested individuals should submit curriculum vitae, three letters of reference, and a statement of research interests. Review of applications will begin on December 15, 1992.

GENETICS SEARCH COMMITTEE
Biology Department
201 Biology Building
University of Utah
Salt Lake City, UT 84112

The University is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities, and provides reasonable accommodation to the known disabilities of applicants and employees.

ASSISTANT PROFESSOR NEMATOLOGIST

A tenure-track position in nematology with 90% research and 10% teaching with academic advising required. Appointee to develop a program on plant-parasitic nematodes and their genetic variation in populations, parasitic fitness, evolutionary relationships/systematics, behavior, or development. Available July 1, 1993. Applications until December 15, 1992. Forward complete résumé, including transcripts, publication list, research interests and goals, and names of three references to: **Dr. O. W. Barnett, Head, Department of Plant Pathology, North Carolina State University, Box 7616, Raleigh, NC 27695-7616. NCSU IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.**

ASSISTANT PROFESSOR: DEPARTMENT OF MOLECULAR BIOPHYSICS AND BIOCHEMISTRY YALE UNIVERSITY

The Department of Molecular Biophysics and Biochemistry seeks applicants for a position at the level of Assistant Professor in the general areas of biophysics, biochemistry, and molecular biology. Individuals whose interests bridge two or more of these areas are especially encouraged to apply. The person appointed would be expected to develop an independent research program and to participate in departmental teaching.

Candidates should submit curriculum vitae with a summary of present and future research interests, and request that three letters of recommendation be sent no later than January 22, 1993 to: **Peter Lengyel, Search Chair, Department of Molecular Biophysics and Biochemistry 0734, Yale University, P.O. Box 6666, 260 Whitney Avenue, New Haven, CT 06511.**

Yale University is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

ASSISTANT PROFESSOR MOLECULAR BIOLOGISTS

The Department of Physiology at the University of Kentucky College of Medicine invites applications for two tenure-track positions at the Assistant Professor level. We seek candidates who will establish strong research programs using molecular biological approaches to the study of neurobiology, endocrinology or aging and participate in teaching. Applicants must have a Ph.D. or M.D. and at least two years of postdoctoral experience. Interactions with other faculty within the College of Medicine, School of Biological Sciences, College of Agriculture, the Markey Cancer Center, the Sanders Brown Center on Aging, and Tobacco and Health Research Institute provide a stimulating research environment and ample opportunity to collaborate with other researchers.

Applicants should send curriculum vitae, a detailed statement of past experience, future research plans and have letters from three references sent to: **Dr. Phyllis M. Wise, Chair, Department of Physiology, College of Medicine, University of Kentucky, Lexington, KY 40536-0084.** Review of applications will begin on January 15, 1993.

Women and minority candidates are encouraged to apply. The University of Kentucky is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

NEUROBIOLOGIST

The Biology Department of Wesleyan University invites applications for a tenure-track **ASSISTANT PROFESSORSHIP** in the area of neurobiology. Applicants should have strong backgrounds in biology and neuroscience, at least two years of postdoctoral experience, and be prepared to develop an independent research program. Neuroscience faculty in the Biology Department participate in the departmental Ph.D. program and in an interdepartmental Neuroscience and Behavior Program. The classroom teaching commitment is one undergraduate or graduate course per semester, including undergraduate teaching in general or comparative physiology. Send curriculum vitae, statement of research plans and three letters of recommendation to: **Neurobiology Search Committee, Department of Biology, Wesleyan University, Middletown, CT 06459-0170** by December 1, 1992. *Wesleyan is proud of its record of commitment to diversity in the student body, the faculty and the staff, and encourages applications from women and persons of color. Wesleyan University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, CELL/MOLECULAR BIOLOGY.

Tenure-track Assistant Professor in the area of cell and molecular biology. Earliest starting date: Spring 1993. Specific teaching responsibilities include undergraduate course in cell biology and genetics (lab) and participation in the M.S. and Ph.D. programs. The successful candidate will also develop an independent research program in the area of cell/molecular biology, preferably in a eukaryotic system. Please send résumé and a description of proposed research, and have three letters of reference sent by December 31, 1992 to: **Dr. Robert Roth, Chairman, Department of Biology, Illinois Institute of Technology, IIT Center, Chicago, IL 60616. IIT is an Equal Opportunity Employer.**

RESEARCH/EDUCATION ASSISTANT PROFESSOR UNIVERSITY OF DELAWARE

The Department of Animal Science and Agricultural Biochemistry invites applications for a tenure-track faculty position in molecular immunology. The position is approximately 70% research and 30% teaching and advising. Applicants must have a Ph.D. with postdoctoral experience in cellular and molecular immunology. The successful applicant must be determined to develop a vigorous and innovative research program in molecular and/or cellular immunology with emphasis on the chicken and must be able to communicate effectively with academic, government and industry colleagues. Applicants with interests in growth factors, cytokines, and their receptors; development, function, and regulation of immune responses; cellular and molecular mechanism of pathogenesis; and virus/host cell interactions are encouraged to apply. Duties also include developing an advanced undergraduate/graduate-level course consistent with applicant's background and department's needs. Send letter of application with curriculum vitae; the names, addresses, and telephone numbers of three to five references; and a brief description of research interests to: **Dr. Robin W. Morgan, Chair, Search Committee, Department of Animal Science and Agricultural Biochemistry, 040 Townsend Hall, College of Agricultural Sciences, University of Delaware, Newark, DE 19717-1303.** Review of applications will begin January 15, 1993 and continue until a suitable candidate is identified.

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

IMMUNOCYTOGENETICIST

Temple University School of Medicine, is recruiting for a faculty position, a Ph.D. or M.D. at the **ASSISTANT, ASSOCIATE or FULL PROFESSORIAL** level, to direct an HLA laboratory in a 500-bed university hospital, and active bone marrow, heart and kidney programs. Must be certified or eligible for certification as a laboratory director by ASHI. Apply to: **H. Simpkins, M.D., Ph.D., Professor and Chairman, Department of Pathology, TEMPLE UNIVERSITY, School of Medicine, 3400 North Broad Street, Philadelphia, PA 19140.** Temple University, School of Medicine is an Equal Opportunity/Affirmative Action Employer and strongly encourages applications from women and minorities.

POSITIONS OPEN

FACULTY POSITION IN X-RAY CRYSTALLOGRAPHY/ STRUCTURAL BIOLOGY WASHINGTON UNIVERSITY SCHOOL OF MEDICINE

Applications are invited for a tenure-track faculty position in the Department of Biochemistry and Molecular Biophysics at the level of **ASSISTANT PROFESSOR**, although highly qualified individuals at the levels of **ASSOCIATE** or **FULL PROFESSOR** will also be considered. Applicants must have a Ph.D. or equivalent degree and postdoctoral experience. We will consider individuals with demonstrated creativity and productivity in macromolecular structural analysis by x-ray crystallographic methods. We are especially interested in candidates whose work exemplifies the combination of structural data with other approaches for the elucidation of molecular mechanisms. In addition to departmental affiliation, the position includes membership in the Division of Biology and Biomedical Sciences, which oversees a number of excellent multidisciplinary graduate programs. The Department of Biochemistry and Molecular Biophysics has recently added several faculty in the area of Molecular Biophysics with interests in the structures and functional energetics of proteins, nucleic acids, and protein-lipid systems. Interested candidates should send curriculum vitae, a summary of research interests and future research plans and have three letters of reference sent by **December 1, 1992** to: **Dr. Gary K. Ackers, Department of Biochemistry and Molecular Biophysics, 660 South Euclid Avenue, Box 8231, St. Louis, MO 63110.** *Washington University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN MOLECULAR BIOLOGY

The Department of Physiology in the School of Medicine, Southern Illinois University at Carbondale, invites applications for a tenure-track faculty position in the general area of eukaryotic molecular biology, beginning summer of 1993. An earned doctorate is required; postdoctoral experience preferred. All qualified candidates will be considered but preference will be given to individuals using approaches of molecular biology to solve problems of organismal or cell physiology. Starting salary, research facilities, and start-up funds are competitive. The successful candidate will conduct externally funded independent research and participate in departmental teaching. The Department of Physiology has an established graduate program and active research in the areas of reproductive biology, neuroendocrinology, cell and membrane biology and biological rhythms.

Applications will be reviewed beginning December 15, 1992; position open until filled. Applicants should send curriculum vitae, selected reprints, a brief statement of research plans, and three letters of reference to: **Dr. Andrzej Bartke, Molecular Biology Search Committee, Department of Physiology, School of Medicine, Southern Illinois University School of Medicine, Carbondale, IL 62901-6512.**

Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action Employer.

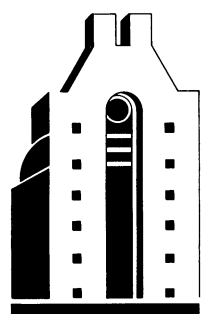
ENVIRONMENTAL TOXICOLOGIST

The Department of Biological Sciences, Wichita State University (WSU), invites applications for a tenure-track position with the rank of **ASSISTANT** or **ASSOCIATE PROFESSOR**. We seek an individual with broad training in toxicology and biology/ecology who uses a cell or molecular approach to perform research in environmental toxicology. Abundant opportunities exist in the region for groundwater and aquatic studies. The applicant must possess significant postdoctoral training, a record of productive research, and the ability to interact collegially. Appointment at the Associate level requires a record of funded research activity. Expectations also include teaching at both the undergraduate and graduate levels and participation in training in multidisciplinary environmental sciences at the graduate level. Deadline for applications is November 30, 1992 or the first of the month until the position is filled. Send curriculum vitae, statement of research and teaching goals, and three names of references to: **Chairperson, Environmental Toxicologist Search Committee, Department of Biological Sciences, Wichita State University, Wichita, KS 67208.** *WSU is an Affirmative Action/Equal Opportunity Employer.*

DEPARTMENT OF MICROBIOLOGY AND THE COMPREHENSIVE CANCER CENTER

Applications are invited at the Assistant, Associate or Professor levels for a vacant faculty position in **Molecular Immunology** jointly supported by the Department of Microbiology and the Ohio State University Comprehensive Cancer Center. Research areas of special interest include molecular biology of macrophage activation, regulation of cytokine gene expression, signal transduction mechanisms and processing/presentation of antigens. The successful applicant is expected to develop and maintain an internationally recognized, molecular-oriented research program in cancer immunology and to participate in graduate and undergraduate teaching. An attractive package for set-up is available. This position is one of several new cancer-related positions that will be filled to expand the research program of the O.S.U. Comprehensive Cancer Center coincident with the establishment of the Arthur G. James Cancer Hospital and Research Institute.

Applicants should submit a curriculum vitae, statement of current research interests and future plans and the names of three references to Bruce S. Zwilling; Chair, Immunology Search Committee, Department of Microbiology, The Ohio State University, Columbus, OH 43210; Tel. 614-292-3310 or FAX 614-292-1538. Review of applications will begin immediately and continue until the position is filled. Women and minority candidates are very strongly encouraged to apply. The University is an Affirmative Action/Equal Opportunity Employer.



THE
ARTHUR G. JAMES
CANCER HOSPITAL
AND
RESEARCH INSTITUTE

THE JAMES... THE NEXT GENERATION OF HOPE

Designated by the National Cancer Institute as a Comprehensive Cancer Center



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IMMUNOLOGIST Department of Pathology

The Department of Pathology at the University of Chicago seeks to recruit an outstanding experimental immunologist. We are committed to developing a strong program in molecular immunology. We are seeking an outstanding individual to join seven full-time basic immunologists whose expertise encompasses both cellular and molecular immunology. Existing related programs in the Department of Pathology include: molecular and cell biological aspects of antigen presentation; tumor immunology; T lymphocyte activation and regulation; and transplantation. The level of appointment, which is on the tenure track, will depend on the experience and qualifications of the applicant who is expected to demonstrate both significant accomplishments and outstanding promise. The start date for the proposed appointment will not be earlier than July 1, 1993. Please send current curriculum vitae, bibliography and a brief statement indicating research interests and the names of three referees to:

Jeffrey Bluestone, Ph.D.
Professor, Department of Pathology
MC 1089
THE UNIVERSITY OF CHICAGO
5841 S. Maryland Avenue
Chicago, IL 60637



**THE UNIVERSITY
OF CHICAGO**

*The University of Chicago is an
Affirmative Action Equal Opportunity Employer*

National Heart, Lung, and Blood Institute
National Institutes of Health

SCIENCE ADMINISTRATOR/BIOLOGIST CHEMIST/MEDICAL OFFICER

The Thrombosis and Hemostasis Branch in the Division of Blood Diseases and Resource, is recruiting two Health Science Administrators, Medical Officers, Chemists or Biologists. The incumbents of these positions will be responsible for management of research grants and generation of reports and science initiatives on thrombosis, blood coagulation, platelets, endothelial cells, thrombolysis, etc. A Ph.D. in biological sciences/chemistry or M.D. (equivalent experience may be substituted for education) is essential. Excellent interpersonal communication skills in interacting with colleagues and the scientific community is highly desirable; knowledge of the thrombosis/hemostasis area, the NIH grant process as a PI or member of a review group, programs and national policies in health research, and data processing is preferred. Appointments may be made at GS-12 to GS-14 grades (\$38,861 - \$80,087). Candidates may be eligible for a physician's comparability allowance. Also, these positions are open to qualified members of the Commissioned Corps, USPHS. For additional info, call Dr. Pan Ganguly, Chief, Thrombosis and Hemostasis Branch, (301)402-2237. Candidates should submit a SF-171 and responses to selection criteria to Dr. Ganguly, Federal Building, Room 5C14, 7550 Wisconsin Avenue, Bethesda, Maryland 20892. Review of applications will begin immediately but positions will remain open until filled.

*U.S. Citizenship Required
NIH is an Equal Opportunity Employer*

POSITIONS OPEN

ASSISTANT PROFESSOR, MARINE BIOLOGY. The Department of Biology at Occidental College invites applications for a tenure-track position beginning September 1993. The successful candidate will be expected to participate in introductory biology, teach comparative anatomy of vertebrates and courses in area of specialty, and develop an active research program involving undergraduates and the marine environment. Excellent teaching and research facilities, including the 85' research vessel the Vantuna, will be provided. Send curriculum vitae, statement of teaching and research interests and three letters of recommendation to: **Dr. Gary Martin, Department of Biology, Occidental College, Los Angeles, CA 90041** by December 31, 1992. *Occidental College is an Equal Opportunity/Affirmative Action Employer.*

CELL/MOLECULAR BIOLOGIST. Birmingham-Southern College is accepting applications for a tenure-track **ASSISTANT PROFESSOR**. Ph.D. required. Duties include teaching introductory and advanced cell/molecular biology, non-majors biology, and advanced course in area of expertise. Commitment to undergraduate research desirable. Send curriculum vitae, statement on teaching/research interests, transcripts, and three letters of recommendation to: **Dr. Jeannette Runquist, Birmingham-Southern College, BSC A-22, Birmingham, AL 35254.** Closing date: 1 January 1993. *Equal Opportunity Employer.*

RESEARCH ASSISTANT PROFESSOR. Protein Biochemist to join our ongoing study of a novel activator of phospholipase A2. Ph.D. in biochemistry and extensive experience in protein purification required. Additional experience in molecular biology techniques preferred. Non-tenure-track position; no teaching duties. Salary commensurate with experience. Starting date January 1, 1993; application deadline November 30, 1992. Submit curriculum vitae, copies of representative publications and names of three references to: **Dr. Allen Goldman, The Craniofacial Center, Department of Pediatrics (m/c 856), University of Illinois at Chicago, PO Box 6998, Chicago, IL 60680.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

EMORY UNIVERSITY, ANALYTICAL CHEMISTRY FACULTY POSITION. The Department of Chemistry at Emory University invites applications and nominations for a tenure-track position in Analytical Chemistry at the **ASSISTANT PROFESSOR** level. An appointment at a higher level will be considered for an established investigator. A Ph.D. in chemistry is required. Applicants should send curriculum vitae and an outline of research plans, and arrange for three letters of recommendation to be sent to: **Professor Joseph B. Justice, Analytical Search Committee Chair, Department of Chemistry, Emory University, Atlanta, GA 30322.** Completed applications will be considered beginning November 15, 1992. *Emory University is an Equal Opportunity/Affirmative Action Employer.*

TENURE-TRACK FACULTY POSITIONS VISUAL SCIENCES DEPARTMENT OF ANATOMY AND CELL BIOLOGY

The Department of Anatomy and Cell Biology, Texas College of Osteopathic Medicine (TCOM), has openings for two (2) tenure-track faculty positions at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. Applicants must have a Ph.D. or equivalent degree, postdoctoral experience, and the potential to develop an extramurally funded research program complementary to a growing multidisciplinary program in the visual sciences. Preference will be given to individuals with expertise in electrophysiology, molecular biology, cellular immunology, or developmental biology of ocular tissues. Teaching responsibilities will be at the medical and graduate school level with teaching interests in embryology and/or gross anatomy desirable, but not a prerequisite. A competitive salary, generous start-up funds, modern laboratory space, and outstanding research support facilities are available.

Qualified applicants should send curriculum vitae, list of publications, description of current and future research directions, and the names, addresses and telephone numbers of three references to: **Dr. Edward L. Orr, Department of Anatomy and Cell Biology, TCOM, 3500 Camp Bowie Boulevard, Fort Worth, TX 76107-2699.** Applications must be received by February 1, 1993. *TCOM is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR NEUROBIOLOGY

Stetson University. Tenure-track position in neurobiology beginning September 1993. Responsibilities include courses and labs in neurobiology and general biology, and possibly behavior, developmental biology, endocrinology, or molecular biology if desired. Ph.D. and commitment to teaching in a liberal arts context required. Application letter, curriculum vitae, statement of teaching philosophy, research plans, copies of all transcripts, and three letters of reference to: **Dr. Derek Barkalow, Chair, Biology Department, Stetson University, DeLand, FL 32720.** Deadline: November 16. Preliminary interviews can be arranged at the Society for Neuroscience Annual Meeting, Anaheim. *Stetson University is an Equal Opportunity Employer. Women and minorities are particularly encouraged to apply.*

TENURE-TRACK ASSISTANT PROFESSOR OF BIOCHEMISTRY UNIVERSITY OF WASHINGTON

Demonstrated ability to develop a strong and creative research program in any area of modern biochemistry, including but not limited to biophysical and molecular approaches to biological regulatory processes and macromolecular function. Ph.D. degree or its equivalent and appropriate postdoctoral research experience will be considered. Send curriculum vitae, copies of representative papers, a succinct statement of research interests, and three letters of recommendation by November 30, 1992 to: **Search Committee, Department of Biochemistry, SJ-70, University of Washington, Seattle, WA 98195.** FAX: 206-685-1792. *The University of Washington is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION IN MEDICINAL CHEMISTRY. The Department of Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago, invites applications and nominations for a full-time, tenure-track position at the **ASSISTANT** or **ASSOCIATE PROFESSOR** level. A Ph.D. degree in medicinal or organic chemistry with an interest in biologically related research is required. Postdoctoral experience is highly desirable. The successful candidate will be required to develop a strong, extramurally funded, independent research program, and foster collaborative interactions with other faculty. Teaching in the professional and graduate programs of the College of Pharmacy is required. Candidates should send curriculum vitae, a brief research plan, and provide three reference letters by 1 December 1992 to: **Professor Duane L. Venton, Chair—Search Committee, Department of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, M/C 781, University of Illinois at Chicago, P.O. Box 6998, Chicago, IL 60680-6998, [Telephone: (312) 996-5233], [FAX: (312) 996-7107].** *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR OF PHARMACOLOGY Cardiovascular/Renal Pharmacology

The Department of Pharmacology at the University of Tennessee, Memphis, invites applications for a tenure-track position at the Assistant or Associate Professor level, available July 1, 1993. Candidates should possess the Ph.D. or M.D. degree, with postdoctoral training in biochemical and molecular approaches to problems in cardiovascular/renal pharmacology. Faculty are expected to develop strong, extramurally funded research programs and to participate in the teaching activities of the Department, especially in the area of cardiovascular and renal pharmacology. Candidates for Associate Professor should have an established funded research program. The Department of Pharmacology has active research programs in lipid metabolism, molecular biology, neuroendocrinology, and autonomic, cancer, cardiovascular, endocrine and neuropharmacology. *Applications from minority candidates and women are strongly encouraged.* Please submit curriculum vitae, a description of research interests and future plans and the names of three references to: **Dr. K.U. Malik, Chairman, Cardiovascular and Renal Pharmacology Search Committee, Department of Pharmacology, The University of Tennessee, Memphis, College of Medicine, 874 Union Avenue, Memphis, TN 38163.** The search will continue until the position has been filled. *The University of Tennessee, Memphis is an Equal Employment Opportunity/Title IX/Section 504/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY UNIVERSITY OF MASSACHUSETTS AT AMHERST

We seek an energetic colleague who will maintain a strong independent research program focused in the area of signal transduction. Investigators using molecular genetic techniques are particularly encouraged to apply. Our department has well funded groups in the areas of signal-transduction, regulation of gene expression, protein-nucleic acid interactions, and protein engineering. Organisms and systems include prokaryotes, yeast, plants and mammalian cell lines. We have a tradition of collaboration among colleagues, and participate in the interdepartmental Graduate Program in Molecular and Cellular Biology.

The position is to be filled September 1, 1993. Salary will be commensurate with experience. Send a résumé, a brief statement about present and planned research, and three letters of recommendation to: **The Search Committee, Department of Biochemistry and Molecular Biology, Lederle Graduate Research Tower, University of Massachusetts, Amherst, MA 01003.** Applications will be accepted until December 21, 1992, or until a suitable candidate is identified.

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

ASSISTANT PROFESSOR OF NEUROBIOLOGY

A position exists at the Assistant Professor level in the Department of Physiology at the University of Texas Health Science Center at San Antonio. This individual must project a strong interest in the central control of the cardiovascular system. Candidates must have a Ph.D. or equivalent degree and are expected to develop a research program related to the neurobiology of the cardiovascular system using modern molecular and electrophysiological techniques. Successful candidates will be supplied with the resources to develop an independent research program. Please send detailed curriculum vitae and three letters of recommendation to: **Vernon S. Bishop, Ph.D., Professor and Chairman, Department of Physiology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-7756.** *The University of Texas Health Science Center at San Antonio is an Equal Opportunity/Affirmative Action Employer.*

The Department of Medicine, Baylor College of Medicine invites applications for two positions at the rank of **INSTRUCTOR** or **ASSISTANT PROFESSOR**. These appointments will emphasize innovative research and opportunities for patient care and teaching of students, residents, and fellows. Applicants should have training in the techniques of molecular biology and be interested in conducting basic research in diabetes and participating in a multi-departmental diabetes research center. A flexible, competitive compensation package will be offered commensurate with background and accomplishments of the successful applicants. For additional information please contact: **Glenn R. Cunningham, M.D., Acting Chief, Division of Endocrinology and Metabolism, One Baylor Plaza, Room 537E, Houston, TX 77030.**

VERTEBRATE PHYSIOLOGIST

The Department of Biology of the University of Massachusetts at Amherst invites applications for a tenure-track **ASSISTANT** or **ASSOCIATE PROFESSOR**. The successful applicant is expected to develop a vigorous research program using modern approaches to basic physiological questions. Postdoctoral experience required. Teaching responsibilities include upper level animal physiology and graduate courses in area of specialty. Competitive salary commensurate with experience; generous start-up funds available. Candidate may elect to participate in strong interdisciplinary programs in Organismal and Evolutionary Biology, Neuroscience and Behavior, and/or Molecular and Cellular Biology. Send curriculum vitae, statement of current and future research and teaching interests, and reprints, and arrange to have three letters of reference sent by December 15, 1992, to: **Dr. Eric L. Bittman, Department of Biology, University of Massachusetts, Amherst, MA 01003.** *The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer.*

THE UNIVERSITY OF MASSACHUSETTS AT AMHERST ANNOUNCES THE FOLLOWING FACULTY OPENINGS

DIRECTOR OF THE INTERDEPARTMENTAL GRADUATE PROGRAM IN MOLECULAR AND CELLULAR BIOLOGY

We seek a distinguished scientist who will maintain a strong research program while providing intellectual and administrative leadership to a program of 60 faculty members and an equal number of Ph.D. students. Applications accepted until December 15, 1992 or until position is filled. Please send curriculum vitae and names of 3 references.

BIOCHEMISTRY AND MOLECULAR BIOLOGY DEPARTMENT

Assistant/Associate Professor, tenure-track. Preference will be given to investigators studying *signal transduction* using a molecular genetic approach. Applications accepted until December 21, 1992 or until the position is filled. Please send curriculum vitae, personal statement and 3 letters of recommendation.

BIOLOGY DEPARTMENT

Assistant/Associate Professor, tenure-track. *Vertebrate physiologist* using modern approaches to basic physiological questions. Teaching responsibilities will include upper level animal physiology and graduate courses in area of speciality. Submit application by December 15, 1992, including curriculum vitae, reprints and 3 letters of reference.

Assistant Professor, non-tenure track. *Neuroendocrinologist* with interest in circadian rhythms and/or seasonal influences on reproduction. Teaching responsibility is one course per year in experimental vertebrate endocrinology. This position is funded for a five-year period. Submit application by December 15, 1992, including curriculum vitae, reprints and 3 letters of reference.

CHEMISTRY DEPARTMENT

Assistant Professor, tenure-track. *Organic chemistry*. Preference will be given to applicants in areas of synthetic or bioorganic chemistry. Deadline November 15, 1992.

Send replies to Search Coordinator, Room 913L LGRT, University of Massachusetts, Amherst, MA 01003. An Affirmative Action/Equal Opportunity Employer.

SANDOZ RESEARCH INSTITUTE EXPANDING OUR COMMITMENT TO INNOVATIVE RESEARCH POSTDOCTORAL ASSOCIATES - ONCOLOGY RESEARCH

Innovative research at Sandoz has been enhancing medicine around the world for over a century. Pioneering drugs have extended and improved the quality of life for countless individuals and revolutionized basic scientific concepts within the transplantation and mental health fields. As a result of a major expansion into oncology research, the Sandoz Research Institute seeks highly-motivated and creative scientists to be part of multidisciplinary research teams using state-of-the-art technologies in our modern newly-opened research facilities. Successful applicants will possess a recent Ph.D. and have a strong graduate record of accomplishments, publications, and communication skills. Research efforts will be allied to ongoing drug discovery efforts in Oncology where publication and presentation will be strongly encouraged. All positions include a competitive stipend, attractive benefits, and relocation package. Research areas include (1) mechanisms of drug resistance, (2) mechanisms of cell growth regulation by TGF and extracellular matrix proteins, (3) programmed cell death, (4) protein/protein interactions involved in signal transduction and growth control, (5) small molecule/DNA interactions, (6) tumor growth and membrane/nuclear receptors, and (7) identification of nuclear proteins involved in tumor progression.

For consideration, please forward your curriculum vitae, a statement of research interests, and the names and addresses of three references to position #317/#375 to:

SANDOZ PHARMACEUTICALS CORP

SRI Staffing Department

Building 403/100

East Hanover, New Jersey 07936

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SANDOZ

bringing research to life

POSITIONS OPEN

MUCOSAL IMMUNOLOGIST HARVARD MEDICAL SCHOOL

The Gastrointestinal Unit and the Center for the Study of Inflammatory Bowel Disease at the Massachusetts General Hospital invite applications for a faculty position at the **INSTRUCTOR, ASSISTANT PROFESSOR** or **ASSOCIATE PROFESSOR** level. We are seeking an individual with a major research interest in the following areas: *cytokines and stem-cell growth factors* of the gastrointestinal tract and *mucosal immunology* with particular emphasis on basic molecular or cell biology. In this position, the appointee will pursue his/her own independent research and promote collaborative research with existing/future programs. A Ph.D. and/or M.D. with postdoctoral training and relevant experience are required. *Women and minorities are encouraged to apply.* Send curriculum vitae including publications, summary of research interests and three names of recommendation or inquiries to: **Daniel K. Podolsky, M.D., Director, Center for the Study of Inflammatory Bowel Disease, Massachusetts General Hospital, Jackson 7—Fruit Street, Boston, MA 02114.**

VASCULAR NEUROBIOLOGIST The Bowman Gray School of Medicine Wake Forest University

The Department of Neurosurgery invites applications for a tenure-track position to lead departmental research efforts and train our outstanding residents and fellows. Appointment can be at the **ASSISTANT, ASSOCIATE** or **FULL PROFESSOR** level. The successful candidate should have a nationally funded research program, with interests in the areas of normal cerebral vascular science, vascular responsiveness, and/or pathophysiology of cerebral vasculature. Investigative approaches can be at the systems, cellular, or molecular levels. This position offers outstanding opportunities for collaboration with both basic and clinical scientists, and cross appointment in another department of our expanding neuroscience program is expected for the appropriate candidate. Salary and benefits are highly competitive, and substantial departmental resources will be provided. Send curriculum vitae and three letters of reference to: **Dr. David L. Kelly, Chair, Department of Neurosurgery, The Bowman Gray School of Medicine, Medical Center Boulevard, Winston-Salem, NC 27157.**

BIOCHEMIST. The University of Nevada, Las Vegas (UNLV) has a tenure-track position at the **ASSISTANT** (preferred) or **ASSOCIATE** level. Ph.D. in Biochemistry (or closely related field), a strong undergraduate chemistry background and postdoctoral experience required. Duties include participation in biochemistry courses and assisting in other offerings. Establishment of an active research program (including undergraduates) is expected. We offer both a B.A. and an ACS approved B.S. as well as an M.S. in Chemistry and are currently awaiting ACS approval of a B.S. in Biochemistry. Collaboration possible with faculty in Biological Sciences, which offers the Ph.D. degree. Send application letter, résumé, undergraduate/graduate transcripts, statement of teaching and research goals and three letters of reference to: **Dr. S. W. Carper, Search Committee, Department of Chemistry, University of Nevada, Las Vegas, 4505 Maryland Parkway, Las Vegas, NV 89154-4003.** To receive full consideration, complete applications should be received by December 11, 1992. *Women and minorities are urged to apply. UNLV employs only U.S. citizens and aliens authorized to work in the United States. An Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS

in GRADUATE INSTITUTE OF MICROBIOLOGY & IMMUNOLOGY National Yang-Ming Medical College

This institute plans to fill two faculty positions in the field of **CELLULAR IMMUNOLOGY—ASSOCIATE** or **FULL PROFESSOR**. The applicants should have Ph.D., at least one year of postdoctoral experience, and full command of CHINESE language. Send curriculum vitae, bibliography, statement of research interests and plan, and three letters of reference by December 15, 1992 to: **Dr. Ling-Pai Ting, Director, Graduate Institute of Microbiology and Immunology, National Yang-Ming Medical College, Shih-Pai, Taipei, Taiwan, ROC; telephone: 886-2-8216165, FAX: 886-2-8212880.**

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR OF PHARMACOLOGY NEUROPHARMACOLOGY/NEUROBIOLOGY

The Department of Pharmacology at the University of Tennessee, Memphis invites applications for a tenure-track position at the Assistant or Associate Professor level, available July 1, 1993. Candidates should possess the Ph.D. or M.D. degree, with postdoctoral training in biochemical and molecular approaches to problems in neuropharmacology and/or neurobiology. Faculty are expected to develop strong, extramurally funded research programs and to participate in the teaching activities of the Department, especially in the area of autonomic and neuropharmacology. Candidates for Associate Professor should have an established funded research program. The Department of Pharmacology has active research programs in lipid metabolism, molecular biology, neuroendocrinology, and autonomic, cancer, cardiovascular, endocrine and neuropharmacology. *Applications from minority candidates and women are strongly encouraged.* Please submit curriculum vitae, a description of research interests and future plans and the names of three references to: **Dr. William R. Crowley, Chairman, Neuropharmacology Search Committee, Department of Pharmacology, The University of Tennessee, Memphis, College of Medicine, 874 Union Avenue, Memphis, TN 38163.** The search will continue until the position has been filled. *The University of Tennessee, Memphis is an Equal Employment Opportunity/Title IX/Section 504/Affirmative Action Employer.*

ENVIRONMENTAL BIOLOGY

Harvey Mudd College (HMC) seeks candidates for a tenure-track position, preferably at the rank of entry-level **ASSISTANT PROFESSOR**, to join a new program in biology. Applicants must have expertise in some area of environmental biology relevant to current environmental issues, such as environmental change, conservation biology or ecosystems energetics. Strong quantitative approaches are particularly desirable. Breadth of knowledge for excellent undergraduate teaching in a small department is required, as is a research program appropriate for participation by advanced undergraduates. HMC is a small private college of science and engineering (member of the Claremont Colleges) with a select undergraduate student body. Send curriculum vitae, research statement, and three letters of reference to: **Dr. Catherine McFadden, Department of Biology, Harvey Mudd College, Claremont, CA 91711.** To assure consideration, all materials should be received by December 15, 1992. *An Equal Opportunity/Affirmative Action Institution. Women and minorities are encouraged to apply.*

HARVARD MEDICAL SCHOOL PROFESSOR OF GENETICS

Harvard Medical School invites applications for a tenured faculty position in the Department of Genetics. We seek a molecular biologist who is a leader in the field of vertebrate central nervous system development. The person to be appointed will be expected to lead an outstanding research program and participate in the teaching of genetics to both medical and graduate students. Applicants should submit curriculum vitae and a brief statement of current research to:

**Elio Raviola, M.D., Ph.D.
Chairman, Search Committee
Department of Neurobiology
220 Longwood Avenue
Boston, MA 02115**

Women and minority candidates are encouraged to apply. Harvard Medical School is an Affirmative Action/Equal Opportunity Employer.

ENDOWED CHAIR DIABETES RESEARCH.

The Department of Medicine, Baylor College of Medicine invites applications for the Rutherford Chair Professorship for Diabetes Research. The applicant must have established a nationally recognized program in diabetes-related research. Applications of M.D. investigators who have active basic research programs and who currently are associate professors or professors are sought for this prestigious position. A letter of interest, curriculum vitae, and the names of at least three references should be sent to: **Glenn R. Cunningham, M.D., Acting Chief, Division of Endocrinology and Metabolism, Baylor College of Medicine, One Baylor Plaza, Room 537E, Houston, TX 77030.**

POSITIONS OPEN

HARVARD MEDICAL SCHOOL PROFESSOR OF MICROBIOLOGY AND MOLECULAR GENETICS

Harvard Medical School is seeking to fill a tenured Professorship in its Department of Microbiology and Molecular Genetics. The successful candidate will be expected to conduct an outstanding research program in the areas of oncogenes and signal transduction, and the regulation of gene expression with a demonstrated interest in the nervous system. Required teaching responsibilities include participation in the teaching of medical and graduate students in the areas of eukaryotic signal transduction and cellular differentiation. In addition, participation is required in one or more of the professional training programs conducted by the Division of Medical Sciences. Administrative responsibilities will include serving on appropriate committees of the Department of Microbiology and Molecular Genetics and Harvard Medical School. Interested individuals should send a letter and curriculum vitae to:

**Dr. Richard D. Kolodner
Division of Cellular and Molecular Biology
Dana-Farber Cancer Institute
44 Binney Street
Boston, MA 02115**

Harvard Medical School is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are encouraged to apply.

PRODUCT MANAGER PHYSIOLOGICAL MONITORING

Exceptional opportunity for marketing-oriented individual with strong biomedical/physiology background. Duties include: full marketing and sales responsibilities, and new product development. Strong writing skills and computer literacy required. Some travel. Chicago area. Please submit curriculum vitae with salary requirements to: **Autogenic Systems, 620 Wheat Lane, Wood Dale, IL 60191.**

HEAD DEPARTMENT OF CROP SCIENCE

The College of Agriculture and Life Sciences of North Carolina State University is searching for an outstanding individual to administer the teaching, research and extension programs of the Department of Crop Science. Applicants must have earned the Ph.D. degree in Agronomy or a closely related discipline, have a record of professional achievement and leadership in the field with an intimate knowledge of current developments. Administrative experience or demonstrated leadership potential in teaching, research and extension is preferred. Applications should include a résumé with publication list, names and addresses of at least three references and a statement concerning goals of a Crop Science Department Head. Screening of applications will begin January 15, 1993 and continue until a suitable candidate is found. Address applications to: **Dr. Daniel L. Solomon, Chair, Search Committee; Department of Statistics, Box 8203; North Carolina State University, Raleigh, NC 27695-8203. NORTH CAROLINA STATE UNIVERSITY IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.**



**Agricultural
Research
Service** **United States
Department of
Agriculture**

NATIONAL PROGRAM LEADER for Plant Germplasm, USDA, ARS, National Program Staff, Genetic Resources, Beltsville, Maryland is seeking Biological Scientist, GM-15 (salary \$64,233 to \$83,502). Incumbent provides national leadership in program planning, coordinating, implementing, maintaining, and reporting on the Nation's plant germplasm research programs. Requires B.S. degree or higher or equivalency with major in biological sciences or agriculture. Candidates must have one year of professional experience at least equivalent to the GM-14 level in an appropriate field and directly related to the duties of the position. *Must be a U.S. citizen.* For information on application procedures/forms, contact: **Leesa H. Meyers, USDA, ARS Personnel Division at 301-344-4578.** Applications must be received or postmarked by November 30, 1992. Mailing address: **USDA, ARS Personnel Division, Personnel Operations Branch, Room 106, 6305 Ivy Lane, Greenbelt, MD 20770-1435.**

An Affirmative Action/Equal Opportunity Employer.



I N C Y T E

PHARMACEUTICALS, INC.

Incyte Pharmaceuticals is a privately held biotechnology company focused on the research and development of protein biotherapeutics for inflammatory and degenerative diseases. Incyte's discovery programs, based on large-scale sequencing of cDNAs and proteins from inflammatory cells, have identified several new products which are now in preclinical development. Incyte's lead product, BPI for endotoxic shock, is being co-developed with Genentech, Inc. Incyte has immediate openings for skilled scientists (B.S., M.S., and Ph.D.) in the following departments:

Immunobiology

- Candidates with experience in macrophage and neutrophil biology or immunoassay and bioassay development

Molecular Immunology

- Candidates with experience in autoimmunity, T-cell biology and cell adhesion to head an expanding project on immunosuppression
- Candidates with strong basic molecular biology skills in cDNA cloning and expression

Protein Discovery

- Candidates with strong protein chemistry background: protein isolation and microcharacterization, microsequencing, amino acid analysis, and capillary electrophoresis

Protein Engineering

- Candidates with experience in recombinant protein purification and characterization. Additional background in enzymology and protease biology helpful

Process Development

- Candidates with 3–5 years experience in developing large-scale protein purification processes for both mammalian and bacterial derived proteins. GMP experience helpful
- Candidates with strong background in mammalian cell culture. Experience in DNA transfections, cell cloning, large scale cell culture and media development helpful

Bioinformatics

- Candidates with a strong background in computer and data processing to head up a major program on bio-sequence information processing

Product Development

- Director/Vice President level candidates to head preclinical development of two new proprietary biotherapeutic molecules moving toward clinical trials

Incyte Pharmaceutical's R&D facility has a premier location in the foothills of Palo Alto, California, situated in the Stanford Research Park close to the Stanford Campus as well as bicycling and running trails. Incyte offers competitive salaries, outstanding benefits, significant equity participation and an opportunity for professional growth. Please fax or mail your resume to our Human Resources Department at the above address.

POSITIONS OPEN



DIRECTOR OF PRODUCT SAFETY TESTING. One of America's leading life science laboratories is seeking a Ph.D. with a minimum of five years of industry experience in dermatotoxicology and immunology. Responsibilities include the technical direction of pre-clinical and clinical safety testing and research programs for pharmaceutical, personal care and industrial products. Additional duties include staff training, method and protocol development, data interpretation, risk assessment, and client consultation and development.

Reply to: **JAS/S • The Hilltop Co., P.O. Box 429501 • Cincinnati, OH 45242.** *Equal Opportunity Employer.*

DIRECTOR FOR INSTITUTE OF ECOLOGY

The University of Georgia is seeking a Director for its internationally recognized program in ecology. This program has had two parts consisting of an education component within the College of Arts & Sciences and a Research Component within the Institute of Ecology. Discussions are currently underway to combine the educational and research components into one coordinated program which would provide an academic home for ecologists on campus. The director would be responsible for the management of major research facilities, overseeing the faculty of both groups, and representing them within the university and in a number of national groups.

The position requires an individual with strong leadership abilities, excellent publication record in the environmental sciences, and managerial experience. Major duties of the position include facilitating the development of interdisciplinary programs and grants, representing the research interest of the faculty both within and outside of the university, managing the educational aspects of the program, and conducting an active personal research program.

The academic rank and salary associated with the position are negotiable. Applicants should submit curriculum vitae, names and addresses of three references, and a statement of their vision of Ecology during the next two decades by January 8, 1993. Send materials to: **Dr. Michael Smith, Chairman of Search Committee, Institute of Ecology, The University of Georgia, Athens, GA 30602.** *An Equal Employment Opportunity/Affirmative Action Institution.*

PROFESSOR AND CHAIR. The Department of Microbiology and Immunology of the Texas College of Osteopathic Medicine (TCOM) invites applications and nominations for a chairperson. Candidates must have a Ph.D., M.D., D.O. or equivalent degree, an active research program with an outstanding record of research achievement in the areas of Immunology or Virology. The Chairperson will be responsible for providing academic and administrative leadership to promote the research and teaching excellence of a vital young faculty.

TCOM is a state-supported medical school housed in new, well equipped facilities, is affiliated with the University of North Texas, and is in the process of being established as a Health Science Center to include Schools of Allied Health and Public Health. Send curriculum vitae, statement of teaching and administrative experience, a summary of research interests and goals, a list of grant funding and three letters of recommendation by December 31, 1992, to: **Dr. Paul F. Cook, Search Committee Chairman, Department of Microbiology and Immunology, Texas College of Osteopathic Medicine, 3500 Camp Bowie Boulevard, Fort Worth, TX 76107-2699.**

TCOM is an Equal Opportunity/Affirmative Action Employer and Educator.

SCIENCE, TECHNOLOGY AND PUBLIC POLICY tenure-track teaching/research position. Life sciences, chemistry, information/communications technologies backgrounds of particular interest. Send curriculum vitae, three reference letters and samples of writings bringing tools of natural science/engineering to bear on public policy problems to: **Dean Henry Bienen, Woodrow Wilson School, Princeton University, Princeton, NJ 08544** by December 1. *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

Virginia Commonwealth University (VCU)'s Department of Pharmacology and Toxicology and the Massey Cancer Center are seeking a **DIRECTOR** of the Center's **PHARMACOLOGY PROGRAM**. Position is tenure-track (professor), with a primary academic appointment in the Department of Pharmacology and Toxicology. Candidates must have an M.D., Ph.D. or equivalent and an international reputation of excellence, as indicated by an established record of peer-reviewed publications and grants, participation in study sections, other review committees, symposia, etc. Applicants must have specific expertise in the area of anti-metabolites, in particular antifolate compounds. There must be a strong record of collaborative research activities, with the ability to lead an interdisciplinary research effort that encompasses cellular, biochemical, molecular and structural molecular aspects of these agents and their targets. The Director will participate in graduate education and must have a strong record of accomplishments in training graduate students and postdoctoral fellows. Applicants should send curriculum vitae, statement of research interests, and list of references, by November 30, 1992, to: **Dr. Richard J. Freer, Acting Chairman, Department of Pharmacology and Toxicology, Box 613, MCV Station, Richmond, VA 23298-0613.** Position description available upon request. *VCU is an Equal Employment Opportunity/Affirmative Action Employer and encourages women, minorities and persons with disabilities to apply.*

PATHOPHYSIOLOGY. Tenure-track **FACULTY POSITION.** Teach undergraduate and graduate courses in pathophysiology and pathology for students in the allied health sciences. Conduct research in area of interest. Doctorate required in physiology, pathology, or related discipline with expertise in pathophysiology. Position currently available. Starting date negotiable. Send letter of application, curriculum vitae, and a list of three references by November 5, 1992 to: **Dr. Owen Elder, School of Health Related Professions, University of Mississippi Medical Center, 2400 North State Street, Jackson, MS 39216-4505.** *Equal Opportunity Employer, M/F/D/V.*

FACULTY POSITIONS IN BIOLOGY. Kennesaw State College announces four tenure-track positions for Fall 1993: vertebrate physiologist, Ph.D. required; plant physiologist/molecular biologist, Ph.D. required; two instructor positions, all areas of biology considered, M.S. required. Candidates should have a strong commitment to teach undergraduate courses, to conduct applied research, and to participate in college service activities. Send a letter of application, résumé, and three references (names, addresses, telephone numbers) to: **Dr. Jerald Hendrix, Department of Biological and Physical Sciences, Kennesaw State College, P.O. Box 444, Marietta, GA 30061.** *Kennesaw State College is an Affirmative Action/Equal Opportunity Employer. Positions open until filled. To assure consideration applications must be received by January 15, 1993.*

POLICY-FOCUSED TECHNICAL FACULTY are sought for tenure-track positions in the Department of Engineering and Public Policy to teach and do research on: (1) managing technological innovation; or (2) technical issues in defense policy; or (3) environmental problems in chemical engineering. Require technical Ph.D. Send résumé and letter outlining policy interests to: **Granger Morgan, Head, EPP, Carnegie Mellon, Pittsburgh, PA 15213.**

MUSCLE PHYSIOLOGIST

The Bowman Gray School of Medicine of Wake Forest University invites applications for a full-time, joint **FACULTY POSITION** in the Department of Physiology and Pharmacology and Department of Internal Medicine. We are seeking an individual who has demonstrated competence in the use of molecular biological approaches to conduct research in muscle function and aging. This is an excellent opportunity to interact with a multidisciplinary research group in the study of physical performance and aging. Candidates with a Ph.D. and a strong record of independent research are encouraged to apply. Academic rank will be commensurate with the experience of the candidate. Interested candidates should submit curriculum vitae to: **Walter Ettinger, M.D., Medical Center Boulevard, Winston-Salem, NC 27157.** *Women and minority candidates are encouraged to apply. Wake Forest University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

PLANT PHYLOGENIST

The Rancho Santa Ana Botanic Garden Graduate Program in Botany invites applications for a **FACULTY POSITION** to begin September 1993. The position will be in plant phylogeny, and candidates with expertise in phylogenetic inference, especially using structural data and/or with strong quantitative skills are encouraged to apply. Although applications will be accepted at any academic level (Ph.D. required), preference will be given to applicants with at least five years of postgraduate experience. The successful candidate will be expected to establish and maintain a vigorous research program and to play an active role in the graduate education program, possibly including administrative responsibilities. Candidates will have the opportunity to shape the future of the research and graduate program and to influence subsequent academic appointments.

For full consideration, applicants should send curriculum vitae, a statement of research interests, and names and phone numbers of three referees (or three reference letters) to: **Dr. Thomas S. Elias, Director, Rancho Santa Ana Botanic Garden, 1500 North College Avenue, Claremont, CA 91711,** by December 15, 1992. *The Rancho Santa Ana Botanic Garden is an Equal Opportunity/Affirmative Action Employer and encourages qualified women and minority applicants.*

MOLECULAR BIOLOGIST

The Division of Cardiovascular Disease of the University of Alabama at Birmingham invites applications for a **FACULTY MEMBER** to work with hypertension research group. Must be expert in cardiovascular gene regulation and transgenic animal models of cardiovascular disease. Apply to: **Hypertension Program of the Division of Cardiovascular Disease, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294, Attention: Donna Cline.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS

The Department of Pharmacology and Molecular Biology at The Chicago Medical School is initiating the third phase of faculty recruitment for tenure-track positions at all levels. Only those candidates with an ongoing funded research program and experience in the molecular aspects of cancer, cardiovascular or other diseases, toxicology or endocrinology need apply. Selected candidates are expected to contribute to teaching Medical Pharmacology and Molecular Biology courses. Attractive benefits and start-up funds available. The school is located in a modern facility adjacent to the very pleasant North Shore community of Lake Bluff, 38 miles from downtown Chicago with proximity to forest preserves and Lake Michigan. The department under new leadership has already recruited several faculty of high caliber. Excellent core facilities and strong graduate program (Ph.D. and M.D./Ph.D.) are available. Please send curriculum vitae, research plans and three names for reference to: **Dr. Samson T. Jacob, Chairman, Department of Pharmacology and Molecular Biology, The Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064.** *The Chicago Medical School is an Equal Opportunity/Affirmative Action Employer.*

The Medical College of Wisconsin, Department of Neurosurgery. Tenure-track **FACULTY POSITION** in Biomechanics. This is at the Ph.D. level in the area of impact biomechanics. Research experience in head injury, finite element analysis and mechanics is desired. Salary is commensurate with education, work experience and publication record. Position involves collaboration with neurosurgeons, biomedical and biomechanical engineers in impact biomechanics studies and impact sled research. The Department of Neurosurgery is a leading biomechanics research center funded by federal agencies and private organizations and dedicated to determining the injury biomechanics of the central nervous and musculoskeletal systems involving clinical applications and vehicular safety. The Department has 14 faculty with M.D. and/or Ph.D. degrees involved in research. Please send complete curriculum vitae, a list of three references including address and telephone numbers and sample publications to: **Dr. Anthony Sances, Jr., Professor and Chairman of Biomechanics, Department of Neurosurgery, Medical College of Wisconsin, 9200 West Wisconsin Avenue, Milwaukee, WI 53226.**

The Medical College of Wisconsin is an Equal Opportunity/Affirmative Action Employer M/F/D.

Imagine The Possibilities

At Berlex, we've been building an impressive team with some of the finest talent in the pharmaceutical industry. To meet the challenges before us, we're seeking several key members to help advance our scientific mission and arrive at new possibilities in oncology and cardiovascular research. If you've been looking for the chance to join forces with an internationally recognized pharmaceutical team, imagine building your career at Berlex.

CARDIOVASCULAR RESEARCH SENIOR SCIENTISTS

Working under the direction of one of the world's most accomplished scientists in cardiovascular research, the following Senior Scientist positions will investigate novel concepts related to the molecular basis of vascular diseases. Candidates responding to these opportunities must possess 10+ years' professional experience and a proven record of independent and innovative research.

PHYSIOLOGY/PATHOPHYSIOLOGY

You'll be responsible for developing pathological experimental models and testing vascular/endothelial functions and structures in vivo. This will require expertise in animal models of cardiovascular diseases. Knowledge of endocrinology, steroid pharmacology and/or molecular biology would be a plus.

IN VITRO VASCULAR PHARMACOLOGY

Your special expertise in vascular/endothelial pharmacology will be crucial to developing in vitro (isolated tissue, organs) models and assays to test endothelial function/dysfunction in both large and micro vessels. You'll also need a strong understanding of signal transduction mechanisms, endothelium derived factors and nitric oxide synthesis.

ENDOTHELIAL CELL BIOLOGY

You'll develop techniques and models to study endothelial cells in culture. This will require a thorough understanding in the molecular basis of endothelial cell activation/regeneration during vascular injury and inflammatory/immune reactions. A working knowledge of cell characterization, cell-to-cell interaction, and/or steroid pharmacology would be highly beneficial.

VASCULAR MOLECULAR BIOLOGY

You'll use your experience in molecular biology and genetic engineering techniques to study vascular diseases. Specifically, this will involve investigating genetic modifications of endothelial cell functions. Prior experience with steroid hormone receptors would be a plus.

DISCOVERY RESEARCH MEDICINAL CHEMISTRY

You'll help spearhead our innovative drug design and synthesis programs aimed at key pharmaceutical targets. Candidates responding to our Scientist positions will be expected to contribute to multidisciplinary project teams. A fundamental understanding of molecular modeling, enzymology, receptor biochemistry and pharmacology would be considered definite assets.

SCIENTIST—DRUG DESIGN & SYNTHESIS

You'll lead a laboratory involved in compound design and synthesis. This will demand significant expertise in preparative and mechanistic organic chemistry. A PhD in synthetic chemistry with 6–8 years' related experience in medicinal chemistry is also required. Familiarity with state of the art asymmetric synthesis highly preferred.

SCIENTIST—PEPTIDE SYNTHESIS

Your PhD in chemistry/biochemistry along with 6–8 years of postdoctoral experience in peptide synthesis and purification has prepared you for this laboratory supervisor role. Guiding a small staff of lab assistants, you'll apply your extensive background to the design and synthesis of therapeutically important peptides. Your organic chemistry skills will also be applied to asymmetric synthesis of unnatural amino acids and peptidomimetic templates.

SCIENTIST/ASSOCIATE SCIENTIST— COMPOUND SYNTHESIS

You must be committed to preparative synthetic chemistry to assume this Associate Scientist role, responsible for conducting multistep synthetic sequences leading to new drug targets. An MS/PhD in synthetic chemistry and 3–5 years' experience in medicinal or synthetic chemistry is required.

As a U.S. subsidiary of an international Fortune 500 company, Berlex offers competitive salaries and benefits, which include relocation assistance. To join our preeminent team, please send your resume today, indicating position of interest to: BERLEX BIOSCIENCES, HUMAN RESOURCES, 213 E. GRAND AVENUE, SOUTH SAN FRANCISCO, CA 94080. We are an equal opportunity employer.

BERLEX

THE BEST IS YET TO COME

POSITIONS OPEN

JUNIOR OR SENIOR FACULTY POSITIONS. Department of Anatomy & Cell Biology, Columbia University, College of Physicians and Surgeons. The Department of Anatomy and Cell Biology invites applications for its Junior and Senior faculty positions. The search is focused on cellular and developmental biology. Successful candidates should have demonstrated ability to carry out an independent research program. One position (Junior or Senior) will have teaching responsibility in gross anatomy; the other (Junior) in cell, developmental or neurobiology. Candidates should submit curriculum vitae, the names of three references, and a short description of goals and research interests to: **Michael D. Gershon, M.D., Department of Anatomy and Cell Biology, 630 West 168th Street, New York, NY 10032.**

FACULTY POSITION IN BIOORGANIC CHEMISTRY. The Division of Bioorganic Chemistry and Molecular Pharmacology in the Department of Molecular Biology and Pharmacology at the Washington University School of Medicine invites applications for a tenure-track faculty position. Candidates with records of creativity in bioorganic chemistry who wish to participate in an interdisciplinary program in bioorganic chemistry should forward curriculum vitae, a short summary of current and future research plans and the names and addresses of three references to: **Search Committee; Division of Bioorganic Chemistry and Molecular Pharmacology; Washington University School of Medicine; 660 South Euclid Avenue, Box 8020; St. Louis, MO 63110.** Washington University School of Medicine is an Affirmative Action/Equal Opportunity Employer committed to increasing the representation of women and minority groups on its faculty.

The University of Alabama at Birmingham, *An Equal Opportunity/Affirmative Action Employer*, invites applications for **FACULTY APPOINTMENTS** in the Department of Pathology. An applicant should have an M.D., M.D.-Ph.D., or Ph.D. degree in one of the basic sciences such as biochemistry, cell biology, etc., and desire to focus his/her efforts on graduate education and research. Applicants will be considered who either have an existing independently funded research program or have a plan to develop such a program.

Academic rank and tenure are dependent upon the qualifications of the applicant.

Current curriculum vitae of interested persons should be forwarded to: **Jay M. McDonald, M.D., Professor and Chairman, Department of Pathology, The University of Alabama at Birmingham, University Station, Birmingham, AL 35294.**

ANATOMIST/PHYSIOLOGIST

Openings in gross anatomy and physiology are available January 1, 1993. These are full time teaching positions in each discipline, with limited research opportunities. Individuals with both advanced degrees and relevant postsecondary teaching experience are invited to submit a letter of interest and a current complete résumé to: **Director of Basic Sciences, Cleveland Chiropractic College, 6401 Rockhill Road, Kansas City, MO 64131.**

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POSTDOCTORAL POSITIONS (2). Available to study the function of new extracellular matrix proteins. The projects will involve the cloning and expression of the gene, and analysis of function in transgenic mice. A strong background in either molecular biology, cell biology or protein chemistry is required. Send curriculum vitae and names of three references to: **Dr. Mon-Li Chu, Department of Biochemistry and Molecular Biology, Thomas Jefferson University, 233 South 10th Street, Philadelphia, PA 19107.** We are committed to a smoke-free environment. *Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN MOLECULAR AND CELLULAR BIOLOGY. A postdoctoral position is available to study the role of serine/threonine-specific protein phosphatases in growth control and neoplastic transformation by DNA tumor viruses. Applicants should have experience in cell and molecular biology. Please send curriculum vitae, a brief description of research experience, and the names and addresses of three references to: **Dr. Gernot Walter, Department of Pathology, 0612, University of California, San Diego, 9500 Gilman Drive, La Jolla, CA 92093-0612.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS IN CELLULAR AND SYSTEMS NEUROBIOLOGY. The newly established Department of Neurobiology has postdoctoral positions for Cellular and Systems Neurophysiologists interested in studying problems related to the analysis of reentrant pathways in the brain, studies of diffusible signals such as nitric oxide in brain development and control of molecular processes by signalling events. Other ongoing studies include: analysis of morphogenetic pathways during neural development; identification of signal transduction pathways motivated by adhesion molecule binding; control of expression of adhesion molecules, particularly by pattern-forming genes such as *hox* and *pax*; and studies of overexpression or deletion of adhesion molecules in transgenic mice. Send curriculum vitae and three letters of reference to: **Dr. Gerald M. Edelman, Department of Neurobiology, SBR14, The Scripps Research Institute, 10666 North Torrey Pines Road, La Jolla, CA 92037.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately to (1) study the role of helix-loop-helix genes in hematopoietic differentiation and (2) identify genes capable of cooperating with interleukin-6 in multistep plasmacytoma genesis. Experience in protein biochemistry and/or molecular biology desirable. Send curriculum vitae and names of three references to: **Dr. Stephen Brandt, Departments of Medicine and Cell Biology, Room C-3101 Medical Center North, Vanderbilt University Medical Center, Nashville, TN 37232.** *Vanderbilt is an Equal Opportunity Employer.*

POSITION AVAILABLE to teach courses in immunology and to conduct research in signal transduction mechanisms by which T lymphocytes are triggered for immune recognition and destruction of tumors. Requires Ph.D., demonstrated ability in culturing and molecular analysis of human T lymphocytes, knowledge of biochemistry, molecular biology and immunology and scholarly publication record. Send résumé to: **Dr. Douglas Falter, Boston University School of Medicine, 80 East Concord Street, Boston, MA 02118.** *An Affirmative Action/Equal Opportunity Employer.*

MIT/HARVARD POSTDOCTORAL POSITION available in the area of tissue engineering to create tissue implants from cells and biodegradable polymer scaffolds. A person with interdisciplinary interests and a background in cellular and developmental biology or cell-material interactions is desired. Send résumés to: **Dr. Robert Langer, Germeshausen Professor, Massachusetts Institute of Technology, E25-342, Cambridge, MA 02139.**

POSTDOCTORAL POSITION available immediately to study either (1) the translational regulation of gene expression by tumor necrosis factor- α (TNF); or (2) the comparative actions of TNF- α and TNF- β *in vitro* and *in vivo*. Please send curriculum vitae and the names and telephone numbers of three references to: **Dr. David B. Donner, Indiana University School of Medicine, The Walther Oncology Center, IB 564, Indianapolis, IN 46202.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION TO STUDY VARICELLA LATENCY AND GENE EXPRESSION. July 1, 1993 position available on NIH Training Grant for an individual with strong training in molecular virology—genetics to collaborate with a team studying varicella virus latency and gene expression. Send curriculum vitae and names of three references to: **Dr. Donald H. Gilden, Professor and Chairman of Neurology, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Box B-182, Denver, CO 80262.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATE

Position available immediately, for at least two years, to study transduction mechanisms in olfactory receptor cells in response to mixtures. Applicant should be a neurophysiologist, with a Ph.D. in Biology, Neuroscience, Physiology, or related field, preferably with experience with patch clamping. Salary range: \$22,000 to \$24,000 per annum. This position will be open until filled. Send curriculum vitae and names of three references to: **Dr. Charles D. Derby, Department of Biology, Georgia State University, P.O. Box 4010, Atlanta, GA 30302-4010.** Georgia State University, a unit of the University System of Georgia, is an Equal Opportunity Educational Institution and an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN



POSTDOCTORAL POSITION

Postdoctoral candidates with broad interests in molecules that bind to DNA are sought for our exciting DNA-binding drug program. The applications for DNA-binding drugs are very broad; our current focus lies in the fields of immunology and virology. The postdoctoral research projects will be dedicated to investigating the molecular basis of sequence-specific interactions between DNA-binding molecules and DNA. Candidates should have ample experience in molecular biology, specifically studies directed toward DNA: protein interactions or DNA: small molecule interactions. A theoretical background in biochemistry, particularly kinetics, is also highly desirable. Interested applicants should forward curriculum vitae to: **Genelabs Technologies, Inc., 505 Penobscot Drive, Redwood City, CA 94063.** *We are an Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately to study molecular biology of insect development. Research will focus on hormonal regulation of developmentally regulated genes. Candidate should have a strong background in molecular biology. Experience in protein biochemistry and/or hormone-receptor studies is preferred. Starting salary: \$32,000 to \$34,000 plus benefits. Send curriculum vitae including names of three references to: **Dr. Shiv Hiremath, USDA Forest Service, 359 Main Road, Delaware, OH 43015.** *Affirmative Action/Equal Employment Opportunity Employer.*

POSTDOCTORAL BIOCHEMIST/MOLECULAR BIOLOGIST POSITION available to study structure/function, expression and regulation of lysyl oxidase and interacting matrix proteins. Strong background in molecular biology is important, experience in site-directed mutagenesis desirable. Send résumé and three letters of reference to: **Dr. Herbert M. Kagan, Department of Biochemistry, Boston University School of Medicine, Boston, MA 02118.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available to study the participation of the cytoskeleton in neurite growth under normal or pathological conditions. Demonstrated experience in primary neuronal culture, light, electron and video microscopy, image analysis, immunocytochemistry and polyclonal/monoclonal antibody production is required. A strong background in cellular neurobiology is highly desirable. Salary based on qualification and experience will be determined by NIH guidelines. Send curriculum vitae and names of three references to: **Dr. Kenneth Kosik, Center for Neurologic Diseases, LMRC, 221 Longwood Avenue, Boston, MA 02115.**

POSTDOCTORAL RESEARCH SCIENTIST/ASSOCIATE RESEARCH SCIENTIST/ASSISTANT PROFESSOR to study molecular basis of cancer development and evolution. Experience in molecular biology (cDNA library construction and screening, subtraction hybridization, vector construction), retrovirus construction and sequencing, creating transgenic mice. Positions available immediately. Salary negotiable. Contact: **Dr. Nurul Sarkar, Medical College of Georgia, Augusta, GA 30912.** Telephone: (706) 721-7657; FAX: (706) 721-7507.

POSTDOCTORAL POSITION, HARVARD MEDICAL SCHOOL, Hematopoietic Stem Cell Growth Factors. A position is available to isolate and characterize hematopoietic stem cell growth factors in the *Xenopus* species. The focus of these studies will be to understand ventral patterning and mesoderm induction, with particular emphasis on induction of zygotic transcription of several hematopoietic transcription factors (PNAS December 1991, p10642-6). Experiments will include expression cloning of cDNAs for hematopoietic inducers, embryo dissections, RNA *in situ* analyses, and standard molecular biology techniques. Requirements include a Ph.D. or M.D. degree and a strong background in the *Xenopus* system. Send curriculum vitae, brief research summary, and three letters of recommendation to: **Leonard I. Zon, M.D., Children's Hospital of Boston, 300 Longwood Avenue, Enders 781, Boston, MA 02115.** FAX: 617-735-7262. *An Equal Opportunity/Affirmative Action Employer.*

THE 1993 LOUISA GROSS HORWITZ PRIZE

The Louisa Gross Horwitz Prize was established under the will of the late S. Gross Horwitz through a bequest to Columbia University, and is named to honor the donor's mother. Louisa Gross Horwitz was the daughter of Dr. Samuel David Gross (1805–1889), a prominent surgeon of Philadelphia, and author of the outstanding "Systems of Surgery" who served as president of the American Medical Association.

Each year, since its inception in 1967, Columbia University has awarded the Louisa Gross Horwitz Prize for outstanding basic research in the fields of Biology or Biochemistry. The purpose of this award is to honor a scientific investigator, or group of investigators, whose contributions to knowledge in either of these fields is deemed worthy of special recognition.



The prize consists of an honorarium and a citation which are awarded at a special presentation event. Unless otherwise recommended by the Prize Committee, the prize is awarded annually. The 1992 awardees were Professors Christiane Nüsslein-Volhard, Max-Planck-Institut für Entwicklungsbiologie (Developmental Biology) and Edward B. Lewis, California Institute of Technology.

QUALIFICATIONS FOR THE AWARD

The Prize Committee recognizes no geographical limitations. The prize may be awarded to an individual or a group. When the prize is awarded to a group, the honorarium will be divided among the recipients, but each member will receive a citation. Preference will be given to work done in the recent past.

Prospective recipients should be nominated to the Louisa Gross Horwitz Prize Committee. Nomination letters should include:

1. A summary, preferably less than 500 words, of the research on which this nomination is based.
2. A summary, preferably less than 500 words, of the significance of this research in the fields of biology or biochemistry.
3. A brief biographical sketch of the nominee, including positions held and awards received by the nominee.
4. A listing of up to ten of the nominee's most significant publications relating to the research noted under Item 1.
5. A copy of the nominee's curriculum vitae.

Send to: Louisa Gross Horwitz Prize Committee, Office of the Vice President for Health Sciences and Dean of the Faculty of Medicine, Columbia University, 630 West 168th Street, New York, New York 10032.

Deadline for receipt of nominations is January 8, 1993.

MOLECULAR BIOLOGISTS & CHEMISTS

OLIGONUCLEOTIDE THERAPEUTICS

PharmaGenics, Inc. a research and development stage company, investigates oligonucleotides as therapeutic agents for cancer and viral diseases. Due to our continued growth, we are seeking highly motivated professionals to conduct research in our Molecular & Cell Biology and Chemistry departments.

MOLECULAR & CELL BIOLOGY Assistant/Associate Investigators

A BS or MS in Biochemistry, Cell Biology or Molecular Biology is required. Research experience in two or more of the following areas is desirable: mammalian cell culture, cell fractionation, protein/RNA purification, in vitro transcription and translation, antisense oligonucleotides, nucleic acid hybridization assays and PCR.

CHEMISTRY Associate Investigators

A BS or MS degree in Chemistry is required, preferably with bench experience in synthetic organic chemistry and familiarity with a wide range of standard laboratory techniques. Experience with NMR spectroscopy is highly desirable.

PharmaGenics, Inc. is located in a pleasant suburban environment in Northern New Jersey with state-of-the-art facilities. We offer a competitive salary and benefits package along with the growth opportunities and challenges only a leading edge technology company can offer. Please send a current CV including the names and addresses of three references, in confidence to: Ms. Joyce Mecionis, PharmaGenics, Inc., 4 Pearl Court, Allendale, N.J. 07401.



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FACULTY POSITIONS UCR/UCLA PROGRAM IN BIOMEDICAL SCIENCES

The UCR/UCLA Program in Biomedical Sciences, which offers an accelerated M.D. curriculum jointly between the University of California, Riverside (UCR), and the University of California, Los Angeles (UCLA), School of Medicine, has two tenure-track openings at the level of ASSISTANT PROFESSOR in the Division of Biomedical Sciences at UCR available July 1, 1993.

NEUROSCIENCES. Primary teaching responsibilities will be in cellular neurobiology, including electrophysiology, for first-year medical students.

PHYSIOLOGY. Primary teaching responsibilities will be in cardiovascular, respiratory and gastrointestinal physiology for first-year medical students.

Applicants must have a Ph.D. and/or M.D. degree, postdoctoral research experience, and must be able to develop a strong independent research program. The specific area of research is open, but preference will be given to cell biologists or physiologists who are using molecular and cellular techniques in their studies. Applicants should also have a strong commitment to teaching both medical and graduate students. Prior teaching experience in a medical school basic science curriculum is preferred. Applicants should send a curriculum vitae, bibliography, two or three representative reprints, a statement of present and future research goals, current grant support, and the names of three references. The deadline for applications and nominations is December 1, 1992.

Send applications to: David A. Johnson, Chair (Neurosciences) or Paul M. Quinton, Chair (Physiology), Division of Biomedical Sciences, University of California, Riverside, CA 92521-0121.

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

POSITIONS OPEN

The USDA Forest Service, Northeastern Forest Experiment Station in Durham, New Hampshire has a **POSTDOCTORAL POSITION** open for a Quantitative Plant Physiologist in its Quantitative Methods Project. Salary: \$38,861 to \$50,516 (GS-12). Assignment is to formulate and conduct research addressing (1) the effect of environmental stress on the anatomical development and physiological functions of woody plants and (2) the development and application of biometrical techniques to the physiological problems of tree growth and architecture. For full recruitment bulletin and application instructions, contact: **Betty Higgins, (215) 975-4235**.

POSTDOCTORAL APPOINTMENTS NMR PROTEIN STRUCTURE DETERMINATION

The Biochemistry and Spectroscopy Group (INC-14) of the Isotope and Nuclear Chemistry Division at the Los Alamos National Laboratory has immediate openings for two postdoctoral fellows. The projects will involve applications of stable isotope labeling and multidimensional NMR techniques to the study of protein structures in solution. Specifically we are interested in small electron transport proteins, and calcium binding protein complexes. We have a new 500 MHz NMR spectrometer equipped with the necessary accessories for three and four dimensional NMR spectroscopy as well as gradient enhanced spectroscopy. We also have a variety of other spectroscopic facilities and expertise, and there will be ample opportunity for complementary work using, for example, Raman, FTIR, and CD spectroscopies, as well as small-angle X-ray and neutron scattering. In addition, the group is well equipped for ¹³C, ¹⁵N, and ²H labeling of proteins using bacterial expression systems. To be eligible for this program, candidates must have earned their Ph.D. within the last three years. Although desirable, the candidate need not have extensive experience in NMR spectroscopy. He or she should have experience in protein structural work and a background in biophysics or biochemistry. For more information on the research projects please contact the principal investigators: **Dr. Clifford J. Unkefer, Telephone: (505) 665-2560** and **Dr. Jill Trehwella, (505) 667-2031**; INC-14, MS C345, Los Alamos National Laboratory, Los Alamos, NM 87545.

Postdoctoral appointments are for two years, may be renewed for a third year and pay a starting salary of \$39,660 to \$41,770 per annum. Appointees receive generous employee benefits, including incoming travel and moving expenses. To formally apply send curriculum vitae, three letters of reference, graduate and undergraduate transcripts, and Laboratory application to: **Mary Anne With (MS P280), Human Resources Development Division PD-92-113, Los Alamos National Laboratory, Los Alamos, NM 87545. Affirmative Action/Equal Opportunity Employer. Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy.**

POSTDOCTORAL ASSOCIATE TO STUDY CFTR

One or two postdoctoral positions are available for study of the molecular biology and protein chemistry of the cystic fibrosis transmembrane conductance regulator (CFTR). Projects available include structure and function analysis of purified CFTR protein, structural characterization (including x-ray crystallography) of CFTR, and development of CFTR gene delivery systems for human respiratory epithelia. A background in molecular biology and genetics and/or membrane protein chemistry is preferred. Please send curriculum vitae, names and addresses of three references, and a letter of research interests to: **Dr. Eric J. Sorscher, Department of Physiology and Biophysics, Gregory Fleming James Cystic Fibrosis Research Center, The University of Alabama at Birmingham, BHSB 761, Birmingham, AL 35294. UAB is an Equal Opportunity Employer.**

TWO POSTDOCTORAL POSITIONS IN EUKARYOTIC TRANSCRIPTION immediately available to study initiation and regulation mechanisms of ribosomal and 5S RNA expression. Experience in gene cloning and protein purification desired. Send résumé and three letters of recommendation to: **Marvin Paule, Department of Biochemistry, Colorado State University (CSU), Fort Collins, CO 80523. Telephone: 303-491-5576, FAX: 303-491-0494. CSU is an Equal Employment Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

LOS ALAMOS NATIONAL LABORATORY POSTDOCTORAL POSITION

The Theoretical Biology and Biophysics Group (T-10) at Los Alamos National Laboratory seeks applications from outstanding postdoctoral candidates to study structure-function relationships of unusual DNA structures and the protein factors that specifically recognize them. The work will utilize biophysical techniques including high resolution multidimensional NMR spectroscopy, CD/UV spectroscopy, and gel electrophoresis. Experience using the 400/500 MHz spectrometer is required. Experience in molecular modeling is desirable. Annual stipends are approximately \$39,660 to \$41,770. Appointments are for two years, reviewed annually. Eligibility is limited to candidates who have received a doctoral degree within the past three years. The selection committee meets in December, 1992, February, May, and August 1993. For initial consideration, send curriculum vitae to: **Dr. Christian Burks, T-10, MS B210, Los Alamos National Laboratory, Los Alamos, NM 87545**. To formally apply, send curriculum vitae, employment application, three letters of reference and graduate and undergraduate transcripts to: **Mary Anne With (MS P280), Human Resources Development Division PD-92-111, Los Alamos National Laboratory, Los Alamos, NM 87545. Affirmative Action/Equal Opportunity Employer. Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy.**

POSTDOCTORAL POSITIONS SIGNAL TRANSDUCTION UNIVERSITY OF UTAH

Ph.D. molecular biologists with expertise in **biochemistry, genetics, or microbiology** to study molecular mechanisms of sensory signaling in *E. coli*. Current projects include: role of membrane-spanning segments in transmembrane signaling by chemoreceptors; structural characterization of soluble receptor fragments with constitutive signaling activities; structure-function analysis of a protein kinase central to intracellular signaling; *in vivo* and *in vitro* studies of coupling reactions between membrane receptors and cytoplasmic kinases. Starting dates between January and June, 1993; periods of two to four years; salaries at NIH fellowship levels. Send curriculum vitae and have three recommendation letters sent to: **Dr. John S. Parkinson, Biology Department, 201 Biology Building, University of Utah, Salt Lake City, UT 84112. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL ASSOCIATE

Applicants should have a Ph.D. in biochemistry, molecular biology, cell biology or related experience in these disciplines. The work involves studies of protein kinases and protein phosphorylation in the prostate in relation to the androgen action. Although specific experience is not required, a background in basic biochemical and molecular biological techniques is essential. Salary is commensurate with experience.

Send curriculum vitae along with three names of referees to: **Dr. Khalil Ahmed, Department of Laboratory Medicine and Pathology, Box 198 UMHC, 420 Delaware Street SE, Minneapolis, MN 55455. Telephone: 612-725-2000, extension 2594 or 2876, FAX: 612-625-2093.**

The University of Minnesota is an Equal Opportunity Educator and Employer.

POSTDOCTORAL POSITION available, with funding for three years, in a project investigating mutations in the target enzyme as a mechanism of clinical resistance to an anticancer drug. Techniques of molecular biology and enzymology, including steady state and transient state kinetics, are being used to determine which mutations of the enzyme confer the greatest resistance while maintaining efficient catalytic activity. The possible presence of such mutations in tumor cells of patients relapsing during treatment with the drug is being investigated. Ph.D. in biochemistry, cell biology or a closely related discipline required, and experience in directed mutagenesis, PCR and related techniques an advantage. Salary as for NIH fellowships. Removal expenses reimbursed up to \$1,500, and professional development funds of \$1,000 annually. Send curriculum vitae with names of three references to: **Raymond L. Blakley, Ph.D., D.Sc., Department of Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101. Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS available for study of (1) proteins associated with dystrophin and related proteins and (2) proteins involved in clustering of the nicotinic acetylcholine receptor, both in close collaboration with a molecular biology laboratory (S. C. Froehner) in this Department. Applicants should have experience in molecular biology, protein biochemistry or monoclonal antibody techniques. Send curriculum vitae and the names/addresses of three references to: **Robert Sealock, Department of Physiology, CB7545, University of North Carolina Medical School, Chapel Hill, NC 27599 or FAX: (919) 966-6927.**

POSTDOCTORAL POSITION available to study the function and regulation of integrin adhesion molecules from platelets and other cells. Strong background in molecular biology required. Send curriculum vitae, statement of research interests, and names of three references to: **Leslie V. Parise, Ph.D., Department of Pharmacology, CB# 7365, University of North Carolina, Chapel Hill, NC 27599. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION: K⁺ CHANNEL GENE REGULATION

Postdoctoral position available immediately to define the lymphocyte-specific and mitogen-activation-dependent regulatory elements that control K⁺ channel gene (Kv1.3, Kv3.1) expression in normal and diseased lymphocytes. Previous experience in molecular biology required. Send curriculum vitae with references to: **Dr. K. George Chandy, Department of Physiology and Biophysics, University of California Irvine (UCI), Irvine, CA 92717. Telephone: 714-725-2133, FAX: 714-856-8540. UCI is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN GROWTH FACTOR SIGNAL TRANSDUCTION.

Available immediately for a recent Ph.D. with training in cell and molecular biology. Research involves the role of receptor coupling components/p21^{ras}/second messenger in growth factor signalling of normal and transformed cells, with particular emphasis on TGFβ. Send curriculum vitae and names of three references to: **Dr. Kathleen M. Mulder, Department of Pharmacology, Pennsylvania State University College of Medicine, 500 University Drive, Hershey, PA 17033, FAX: 717-531-5013.**

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

POSTDOCTORAL AND PREDOCTORAL TRAINING IN NEURAL PROCESSES IN COGNITION. Opportunities for investigating cortical function at multiple levels of analysis. This is a joint program between the University of Pittsburgh, its School of Medicine, and Carnegie Mellon University. Applications are encouraged from individuals with interest in biology, psychology, engineering, physics, mathematics, or computer science. *Postdoctoral applicants must be permanent U.S. residents.* Application deadline is February 1, 1993. For information contact: **W. Schneider, Program Director, Neural Processes in Cognition, University of Pittsburgh, 3939 O'Hara Street, Pittsburgh, PA 15260. Telephone: 412-624-7061. E-mail: NEUROCOG@PITTVMS.BITNET.**

POSTDOCTORAL POSITION supported by an NIH grant, available January 1993, to study molecular biology of coagulation factors VII and X. Study to involve PCR, recombinant DNA, site-directed mutagenesis, documentation of genetic variants, eukaryotic cell expression, structure-function correlates related to interactive sites, computer-assisted molecular modeling, and design of inhibitory peptides. Send curriculum vitae, selected papers, and names of three references to: **Harold L. James, Ph.D., Department of Biochemistry, The University of Texas Health Center at Tyler, Tyler, TX 75710. Telephone: 903-877-7003; FAX: 903-877-7558. Equal Opportunity/Affirmative Action Employer.**

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CRC Return Fellowships

The Cancer Research Campaign announces its 1993/94 Return Fellowship Programme to encourage the return to the UK of outstanding young research scientists currently working abroad.

Candidates should have a PhD, normally be aged less than 40 years and have completed at least one three year period working in an overseas laboratory. A CRC Return Fellowship may be held in any CRC-funded Research Institute, Laboratory or Research Group, or alternately in an appropriate UK university department, subject to the usual CRC funding restrictions.

The Fellowship, will provide both personal and research support, and will normally be awarded for six years.

For further details and application forms please contact Dr Fiona Hemsley, Cancer Research Campaign, Cambridge House, 6-10 Cambridge Terrace, Regent's Park, London NW1 4JL. Telephone 071-224 1333 ext 184. Fax 071-487 4302.

Closing date for applications: 26th February 1993.

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RESEARCH ASSOCIATES

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Responsibilities involve DNA sequencing in support of on-going research and product development programs.

Qualifications include a BS or MS degree in Molecular Biology, Biochemistry or related discipline with at least one year experience in the dideoxy chain termination method of DNA sequencing. Basic skills in Molecular Biology, cloning techniques and computer analysis of DNA sequencing are also essential. Experience with ABI 373 automatic sequencer preferred. Code #S-807

PHARMACOLOGY

This Research Associate position involves in vivo research and requires knowledge of surgical and catheterization techniques, injection methods, tissue and blood sampling, as well as biochemical/immunologic. Statistical analysis and computer skills are preferred. Code #S-136

If you have the necessary qualifications and would like to be part of an organization that places its highest value on the contributions of its people, send your CV indicating Job Code # to: Amgen, Inc., Staffing Department (Mail Code 10-1-A-411), Amgen Center, Thousand Oaks, CA 91320-1789. Amgen is an Equal Opportunity Employer.



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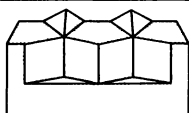
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POSTDOCTORAL POSITIONS Dept. of Neurosurgery The Mount Sinai School of Medicine

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Postdoctoral position to study cerebral ischemia. After a period of successful work in the laboratory, this position could lead to a faculty appointment. Ph.D. in Neuroscience is required; experience in cerebral blood flow and metabolism is preferred.

Competitive salaries and benefits. Please send CV and three letters of reference, indicating position of interest, to: **Administrator, Department of Neurosurgery, Box 1136, The Mount Sinai Medical Center, One Gustave L. Levy Place, New York, NY 10029-6574.** An Equal Opportunity Employer.

MOUNT SINAI

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Microbial Physiologist

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We offer competitive salaries and a full range of benefits including medical and dental insurance, paid holidays and vacations, educational assistance, savings and investment plans, pension plan, relocation assistance and more.

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POSTDOCTORAL POSITION UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

For genetic studies of human genome composition (1. Linkage disequilibrium mapping; 2. Mutation processes in simple sequence repeats). Experience in human or yeast genetics helpful. Send curriculum vitae with names of references to: **Dr. Nelson Freimer, Neurogenetics Laboratory, University of California, Box 0984, San Francisco, CA 94143 or call (415) 476-7864.**

POSTDOCTORAL POSITION available immediately to work on a multidisciplinary approach to the Ah receptor, a novel ligand binding transcriptional activator (see Burbach, K. et al., *Proc. Natl. Acad. Sci.* **89**:8185-8189, September 1992). Send curriculum vitae and names of two or three references to: **Dr. Alan Poland, McArdle Laboratory for Cancer Research, University of Wisconsin-Madison, Madison, WI 53706. FAX: 608-262-2824. Affirmative Action/Equal Opportunity Employer.**

CANCER BIOLOGY TRAINING

Graduate training (D.V.M., predoctoral and postdoctoral students) is available in the **CANCER BIOLOGY LABORATORIES**, Department of Pathology, Cornell University. Training in the areas of regulatory genes controlling cell proliferation and differentiation in hematopoietic and epithelial cells, adhesion molecules in cancer metastasis, and signal transduction by cell adhesion receptor integrins is available in the laboratories of Drs. Jun-Lin Guan, Roy Levine, Bendicht Pauli and Andrew Yen. Please write to: **Cancer Biology Laboratories, 215 Veterinary Research Tower, Cornell University, Ithaca, NY 14853** with curriculum vitae, statement of experience and interests, and names of three references by November 25, 1992. *Cornell University is an Affirmative Action/Equal Opportunity Employer/Educator.*

POSTDOCTORAL FELLOWSHIPS AND GRADUATE RESEARCH ASSISTANTSHIPS IN PLANT-INSECT INTERACTIONS UNIVERSITY OF ARIZONA

The Interdisciplinary Research Training Program (RTP) on Plant-Insect Interactions at the University of Arizona invites applications for Postdoctoral Fellowships and Graduate Research Assistantships.

The RTP is funded by the DOE/NSF/USDA Joint Program on Collaborative Research in Plant Biology. Its goals are to provide effective interdisciplinary training in plant and insect sciences and to develop a better understanding of the complex interactions between plants and insects to serve as a guide for genetic engineering of plants for protection against insects.

For further information, interested students should write to: **Plant-Insect Interdisciplinary Program, 410 Forbes Building, The University of Arizona, Tucson, AZ 85721.**

According to the conditions of the grant, stipend recipients must be citizens, nationals, or permanent residents of the United States. The University of Arizona is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW

Position is available immediately to study how aging modulates intracellular calcium metabolism. Experience with flow cytometry, image analysis, signal transduction and molecular biology techniques is desirable. Salary dependent on qualifications and experience. Send letter of application and curriculum vitae, and arrange for three letters of recommendation to be sent to: **Dr. Dike N. Kalu, Department of Physiology, University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-7756. An Affirmative Action/Equal Opportunity Employer.**

MOLECULAR CYTOGENETICS

A POSTDOCTORAL RESEARCH ASSOCIATE position in **Molecular Cytogenetics** is available to study the mechanism of cytogenetic abnormalities and effects on human development. Applicants must possess Ph.D. or M.D. degree and have significant research experience in either mammalian cytogenetics or molecular biology techniques. A.B.M.G. certification in Clinical Cytogenetics or Molecular Genetics is available. Please send curriculum vitae and names of three references to: **Dr. David H. Ledbetter, Institute for Molecular Genetics, Baylor College of Medicine, Houston, TX 77030.**

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIPS for training in Immunology and Virology at the University of Massachusetts Medical Center. Cellular Immunology: Robert Humphreys, M.D., Ph.D.; Lawrence Jung, M.D.; Alan Michelson, M.D.; Carol Miller, Ph.D.; David C. Parker, Ph.D.; Paul L. Romain, M.D.; Robert T. Woodland, Ph.D. **Molecular Immunology:** John E. Mole, Ph.D.; Peter E. Newburger, M.D.; Janet Stavenzer, Ph.D. **Viral Immunology:** Neil R. Blacklow, M.D.; Francis A. Ennis, M.D.; John E. Herrmann, Ph.D.; Ichiro Kurane, M.D.; John L. Sullivan, M.D.; Raymond M. Welsh, Ph.D. **Molecular Virology:** Trudy G. Morrison, Ph.D.; Carel Mulder, D.Phil.; Ronald M. Iorio, Ph.D.; Harriet L. Robinson, Ph.D. **Experimental Diabetes:** Arthur A. Like, M.D.; Aldo A. Rossini, M.D.; Bruce A. Woda, M.D. Candidates interested in joining this active, multidisciplinary, NIH-supported training program should send a résumé, the names of three references, and a letter stating their research interests and the laboratories in which they would be interested in undertaking training to: **Dr. Harriet L. Robinson, Department of Pathology, U. Mass Medical Center, 55 Lake Avenue North, Worcester, MA 01655. The University of Massachusetts Medical Center is an Affirmative Action Employer.**

POSTDOCTORAL FELLOWSHIP DROSOPHILA IMMUNE REACTIONS

In a project focused on the molecular mechanisms that trigger the antibacterial defense in *Drosophila*. The genes for cecropins, inducible bactericidal peptides, were cloned and characterized in the lab during the past few years. We are now interested in the primary events that lead to the induction of the cecropins. Approaches include molecular screens for cell surface receptors and genetic screens for *trans*-acting factors, using reporter gene fusions, and *in vitro* studies of an inducible blood cell line. The candidate should have a strong background in genetics, molecular biology or immunology, and a Ph.D. not older than three years. Starting date: January-June 1993, decision will be taken by mid-December 1992. Send curriculum vitae, a description of research interests and the names of three references (if possible with FAX numbers) to: **Dr. Dan Hultmark, Department of Molecular Biology, Stockholm University, S-106 91 Stockholm, Sweden: FAX: +46-8-15 23 50; E-mail: Dan@molbio.su.se.**

PREDOCTORAL AND POSTDOCTORAL FELLOWSHIPS

NSF-sponsored cytoskeleton biology training program. Unique benefits include interdisciplinary training, collaboration among a diverse faculty and travel funds. Faculty: L.J. Banaszak, E.H. Egelman, T.S. Hays, R. Kuriyama, P.A. Lefebvre, P.C. Letourneau, R.W. Linck, M.E. Porter, J.E. Shaw, C.D. Silflow, D.P. Snustad, D.D. Thomas, S.M. Wick. Research training includes: molecular, cellular and developmental biology, biochemistry, biophysics, genetics and structural biology of actin, microtubule and IF systems in *Arabidopsis*, *C. elegans*, *Chlamydomonas*, *Dictyostelium*, *Drosophila*, sea urchin, chick and vert cells. Send curriculum vitae and three letters of recommendation or contact: **Dr. R. Linck, Cell Biology, 4-135 Jackson Hall, University of Minnesota, 321 Church Street, Minneapolis, MN 55455. Telephone: (612) 624-5179, FAX: (612) 624-8118, linck@snowman.med.umn.edu.**

POSTDOCTORAL RESEARCH FELLOWSHIP for NIH-funded studies of the immune response to coagulation factor VIII. Opening for M.D. or Ph.D. with strong background in immunology, preferably with experience in studies of human T cells. Send curriculum vitae, a cover letter describing research experience, and name/address of three references to: **Leon W. Hoyer, M.D., HOLLAND LABORATORY, American Red Cross, 15601 Crabbs Branch Way, Rockville, MD 20855. Equal Opportunity Employer M/F/V/H.**

POSTDOCTORAL FELLOW OR RESEARCH ASSOCIATE (M.D. or Ph.D.) available to investigate new antiviral and viral vaccine approaches. Required experience includes recombinant DNA methods, expression vector construction for gene expression in bacterial and animal cells, molecular biology of human immunodeficiency virus (HIV) or other retroviruses, and tissue culture growth and assay of HIV or other retroviruses. Contact: **Susan Singh, Room S-156, Stanford University School of Medicine, Stanford, CA 94305. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIP IN IMMUNOLOGY

A postdoctoral fellowship position is available immediately in Immunology/Cell Biology laboratory. Research interests include structure/function of signal transducing cell surface molecules on immune cells and regulation of IgE isotype switching. Expertise in molecular biology and/or biochemistry is highly desirable. Funding is provided by a National Institutes of Health training grant for a maximum of three years. Send curriculum vitae and references to: **Dr. Raif S. Geha, Children's Hospital, 300 Longwood Avenue, Boston, MA 02115.**

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POSTDOCTORAL FELLOW RESEARCH ASSOCIATE

Position available to join a group studying interactions of antiviral agents with host at a molecular level. Experience in biochemistry and molecular biology is essential. Molecular studies will require Southern and Northern, blot analysis, CAT assays, gel mobility shift assays, transfection, etc. A Ph.D. in biochemistry or equivalent with experience in gene expression regulation is desirable. Stipend is highly competitive. Forward curriculum vitae and names of three references to: **Dr. J.P. Sommadossi, AIDS Pharmacology Program—VH 113, 1700 University Boulevard, University of Alabama at Birmingham (UAB), Birmingham, AL 35294-0019. UAB is an Affirmative Action/Equal Opportunity Employer.**

NEW COOPERATIVE HUMAN LINKAGE CENTER has open positions to develop high resolution genetic maps of the human genome. **POSTDOCTORATE** and **RESEARCH ASSOCIATE** candidates must have a Ph.D. in genetics, molecular biology or a related discipline. **RESEARCH ASSISTANT** candidates must have a B.S./B.A. or equivalent combination of education and experience in a related field. *The University of Iowa is an Equal Opportunity/Affirmative Action Employer; minorities and women are encouraged to apply.* Send curriculum vitae to: **Val Sheffield, M.D., Ph.D., or Jeff Murray, M.D., Pediatrics-Genetics, University of Iowa, Iowa City, IA 52242.**

POSTDOCTORAL RESEARCH ASSOCIATE, Brookhaven National Laboratory. The Medical Department has a position available for a recent Ph.D. in organic chemistry. Experience with synthesis of macrocycles, handling and measurement of radioactivity, radiolabeling of monoclonal antibodies, cell binding assays, serum stability studies and techniques such as HPLC, ITLC and PAGE is desirable. The successful candidate will participate in research to develop and evaluate Cu-67, Sm-153 and Au-199 labeled antibodies. Responsibilities will include synthesis of new macrocyclic chelating agents and modification of known chelates; development of functionalization and conjugation methods to link those chelates to antibodies without loss of immunoreactivity; and radiolabeling of the immunoconjugates.

Candidates can apply by sending curriculum vitae, publications list, and names of three references to: **Dr. L. F. Mausner, Medical Department, Building 490, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, NY 11973. Equal Opportunity Employer M/F/D/V.**

POSTDOCTORAL RESEARCHERS

The Department of Physiology and Biophysics, University of California, Irvine, is developing a postdoctoral candidate pool for possible openings during the remainder of the 1991-92 fiscal year. Openings may be available in the following research areas: ion channels in lipid bilayers; physical chemistry of membranes; mechanisms and regulations of steroid hormone biosynthesis; exercise physiology; molecular properties of ion channels in excitable cell membranes; molecular and electrophysiological aspects of lymphocyte activation. Salary is in accordance with current NIH/NSF postdoctoral stipends which are based upon qualifications and years of prior, relevant postdoctoral experience. *Minorities and women are encouraged to apply.* Send curriculum vitae and names of three references to: **Michael D. Cahalan, Ph.D., Chairman, Department of Physiology and Biophysics, University of California, Irvine, Irvine, CA 92717. The University of California, Irvine is an Affirmative Action/Equal Opportunity Employer.**

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BIOLOGISTS

Northeast Missouri State University (NMSU) offers two tenure-track positions (pending budgetary approval) in BIOLOGY at the Assistant Professor level, starting August 1993. (1) We seek a **PHYSIOLOGIST** to broaden our coverage of physiology beyond existing teaching and research strengths in comparative and exercise physiology. Teaching responsibilities include rotations through Physiology and Human Physiology courses. (2) We seek a **DEVELOPMENTAL BIOLOGIST** who uses modern, experimental methods to study developmental processes. Teaching responsibilities for this position include rotation through Embryology and Developmental Biology. *For both positions, rotations through General Biology courses and service as an academic advisor are also expected.* Teaching and research are mutually supportive activities at NMSU; the successful candidates must be strongly committed to both teaching and the development of active research programs involving undergraduates and M.S. students. Laboratory space and start-up funds will be provided.

The mission of Northeast Missouri State University, the state's public Liberal Arts and Sciences University, is to provide an outstanding educational environment to an academically-talented student body while remaining economically accessible. Northeast is committed to challenging and supporting students in their learning, and it subscribes to the AAHE's "Seven Principles for Good Practice in Undergraduate Education." Active learning is a major component of the educational experience—in the classroom or laboratory, in advising sessions, in collaborative research, and in service to the university.

Candidates must possess a Ph.D. and demonstrate a strong commitment to undergraduate education. *Women, minorities, the disabled, and veterans are particularly encouraged to apply as NMSU seeks to culturally broaden and diversify both faculty and student bodies.* Complete applications, including a curriculum vitae, statements of teaching philosophy and research goals, undergraduate and graduate transcripts, and names, addresses, and telephone numbers of three references, should be sent to Dr. Michael G. Tannenbaum, Biology Search Committee, Division of Science, Northeast Missouri State University, Kirksville, MO (816-785-4597). Completed applications will be reviewed starting 1 December 1992.

National Institute of Allergy & Infectious Diseases NATIONAL INSTITUTES OF HEALTH

MOLECULAR GENETICIST

The Laboratory of Microbial Structure & Function, Rocky Mountain Laboratories, Hamilton, Montana, Public Health Service invites applications for an immediate opening. Applicants must have a Ph.D., M.D., D.V.M., or equivalent experience, plus postdoctoral research experience. Salary begins at \$37,000 and is commensurate with experience. The applicant must have backgrounds in pathogenic bacteriology and molecular genetics, and he/she should be knowledgeable in the techniques necessary for study of triplex DNA. The successful applicant will join a research group involved in studying a variety of genes of *Neisseria gonorrhoeae*, especially the *opa* gene family and its control.

To apply, send curriculum vitae and three letters of recommendation to:

Dr. John Swanson
Chief
Laboratory of Microbial Structure & Function
Rocky Mountain Laboratories
National Institute of Allergy
& Infectious Diseases
National Institutes of Health
903 South Fourth Street
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LABORATORY INFORMATION MANAGEMENT

The Department of Data Management is seeking applicants for the position of **LABORATORY INFORMATION MANAGER**. The successful applicant will be part of a team responsible for the development and implementation of information management systems in support of laboratory research activities in the research division. The manager will be responsible for working closely with research scientists and other information management professionals to identify information management needs, provide solutions, and explore new information management technologies.

EDUCATION/EXPERIENCE: Ph.D. or equivalent work experience in molecular biology, molecular genetics or related scientific field with experience in mathematics or computer science. Experience with 4th generation languages such as Foxbase/Foxpro, end-user application development tools and client-server systems will be very helpful. Pioneer offers competitive salaries, excellent facilities and a highly cooperative research environment. Application deadline 15 Nov 92. Position available 01 Jan 93.

Send resume to:

Pioneer Hi-Bred International, Inc.
Plant Breeding Division
Department of Data Management
Attn: Kristy McKenna
7250 N.W. 62nd Ave. P.O. Box 1004
Johnston, IA 50131-1004

Pioneer Hi-Bred International, Inc. is an Equal Opportunity employer.

CARBOHYDRATE CHEMIST/BIOLOGIST

Miles Inc., Pharmaceutical Division, has an opening at the Berkeley, CA site for the position of a Research Scientist with experience in complex carbohydrate analysis of mammalian glycoproteins. Responsibilities include:

- Glycosyl composition and linkage analysis of natural and recombinant proteins
- Analysis/interpretation of data and technical report preparation
- Evaluation of structural data for possible *in vivo* effects

A Ph.D. in an appropriate discipline with a minimum of 4 years of experience in complex carbohydrate analysis is required. Miles Inc. offers attractive compensation and generous benefits. Send resume and salary history to JoAnn McHugh, Miles Inc., 4th & Parker Sts., P.O. Box 1986, Berkeley, CA 94701.



Pharmaceutical Division
An Equal Opportunity Employer

POSITIONS OPEN

POSTDOCTORAL RESEARCH IN BIOCHEMISTRY

Los Alamos National Laboratory is seeking applications for a postdoctoral research associate position in biochemistry to carry out basic research on respiratory proteins from the thermophilic, eubacterium *Thermus thermophilus*. Individuals interested in examining the spectroscopic, mechanistic and/or genetic aspects of cellular respiration are encouraged to apply. Candidates should have a strong background in physical biochemistry and/or molecular genetics and a strong desire to pursue a career in bioenergetics. The starting salary range is \$39,660 to \$41,770; starting date will be between January and June, 1993. Applicants must have received a Ph.D. in Chemistry, Biochemistry or Molecular Biology during the past three years. For initial consideration, interested candidates should forward curriculum vitae including a list of publications to: **James A. Fee, MS C-345, Los Alamos National Laboratory, Los Alamos, NM 87545**. To formally apply for this position, send curriculum vitae, employment application, three letters of reference, graduate and undergraduate transcripts to: **Mary Anne With (MS P280), Human Resources Development Division PD-92-117, Los Alamos National Laboratory, Los Alamos, NM 87545**. *Affirmative Action/Equal Opportunity Employer. U.S. citizenship required. Los Alamos National Laboratory is operated by the University of California for the U.S. Department of Energy.*

ASSISTANT RESEARCH SCIENTIST

NYU Medical Center has a **POSTDOCTORAL RESEARCH SCIENTIST** position available to clone the gene for a novel murine B cell IgA receptor and study its structure, function and regulation. Ph.D. in molecular biology required. Send curriculum vitae and names of three references to: **Maha Singh, Human Resources Department, New York University Medical Center, 550 First Avenue, New York, NY 10016**. *Equal Opportunity Employer, M/F.*

RESEARCH ASSISTANT MOLECULAR BIOLOGY

Accea Pharmaceuticals, Inc., a start-up neurobiotechnology company located in Irvine, California, seeks a research assistant for its Molecular Biology Group. The successful candidate will have a master's degree in molecular biology or biochemistry or equivalent work experience. A strong background in DNA sequencing is a must. Experience is also desirable in PCR and in various aspects of cDNA cloning, including purification of phage and plasmid DNA, filter hybridizations, and DNA and RNA gel electrophoresis.

Send a cover letter and résumé including the names and addresses of three references to: **John Guastella, Ph.D., Accea Pharmaceuticals, Inc., 1003 Health Sciences Road West, Irvine, CA 92715**.

RESEARCH STAFF MEMBER: Performs research and development in optical storage technology. Duties include growth and processing of organic and inorganic thin films using spin coating, sputtering and molecular beam epitaxy; optical characterization of materials via photo absorption, Raman and photoluminescence spectroscopies; characterization of nonradiative defect levels in thin films via deep level transient spectroscopy; surface chemical analysis of thin films using Auger electron spectroscopy and mass spectroscopy; investigation of the correlation between semiconductor quantum well laser performance to growth conditions and device structures. Maintains and develops state-of-the-art microprobe spectroscopic system; sets up a static laser test for laser diode optical writing in thin films. Requirements: Ph.D. in Materials Science; demonstrated background in above methodologies, including cryogenic and high vacuum equipment; processing semiconductors; the use of high power ion lasers in conjunction with dye and solid state lasers. Must have fundamental understanding of optical and electrical properties of low dimensional structures. Minimum of five publications in refereed international journals; experience in presenting papers in international conferences. Forty hours per week; salary: \$56,500 per year. Jobsite and interview: San Jose, California. Send this ad and your résumé to: **Job #SK2489, P.O. Box 9560, Sacramento, CA 95823-0560** not later than November 14, 1992.

POSITIONS OPEN

TEL AVIV UNIVERSITY, ISRAEL RESEARCH ASSOCIATE

The Institute for Cereal Crops Improvement, Tel Aviv University, Tel Aviv, Israel, is seeking applicants for a full-time tenure-track faculty position. The appointee will be expected to develop an independent research program on aspects associated with fungal pathogens/small grains (cultivated and wild) relationships, and participate in teaching of undergraduate and graduate students. Experience in physiology, breeding and molecular biology is preferred. Position is available immediately. Deadline for applications is February 1, 1993. Send letter of application, curriculum vitae, academic transcripts, a statement of research interests, and three letters of recommendation to: **Professor Y. Anikster, Department of Botany, Tel Aviv University, Tel Aviv 69978, Israel**.

RESEARCH ASSOCIATE: Postdoctoral position (Ph.D. or D.V.M.) in research to be involved in ongoing project aimed at understanding the mechanisms of immune dysfunctions in AIDS on a non-human primate model. Individual must have background in molecular biology; experience in cytokine regulation and retrovirology is desirable. Responsibilities will include overseeing technical staff in laboratory. The applicant should have a minimum of two years of research at a postdoctoral level with proven publication record. The annual salary for this position is \$24,000. Please send curriculum vitae to: **Georgia Department of Labor, 1275 Clarendon Avenue, Avondale Estates, GA 30002** or to the nearest Georgia Job Placement Center. **Job Order Number: GA 5575421**.

ASSISTANT STAFF RESEARCH INVESTIGATOR

Conduct research regarding the causes and cures of high blood pressure. The research will use recombinant technology to express proteins relevant to hypertension research. Must work independently to research vasoactive hormones in the regulation of cardiovascular and renal functions. Must also train research fellows, publish findings and present results at academic meetings. No direct patient care. Need M.S. or M.D. in biochemistry or medicine, plus two years of research fellowship in molecular biology with at least one year of conducting research independently, reporting results to superior only upon completion of research project(s). Also need six months as Assistant Staff Research Investigator or as Teaching Instructor at medical school. Sixty hours per week. \$35,000 per year. *Must have proof of legal authority to work indefinitely in the United States*. Send résumés to: **7310 Woodward Avenue, Room 415, Detroit, MI 48202**. Reference No. 62792.

RESEARCH VIROLOGIST

Position in veterinary virology and immunology available immediately with rapidly growing biotechnology firm, located just outside Des Moines, Iowa. Candidates must possess M.S. or Ph.D. degree, preferably with 5 plus years of work experience. Required skills: cell culture manipulation, virus and antibody assays, experimental design and evaluation of veterinary vaccines utilizing latest virological and immunological technology. Please send résumé to: **Human Resources, Ambico, Inc., Box 522, 902 Sugar Grove Avenue, Dallas Center, IA 50063**.

OCEANOGRAPHER, GS-13/14. (Salary range: \$49,907 to \$76,666 per annum). The Damage Assessment Center, National Oceanic and Atmospheric Administration (NOAA), seeks a senior-level scientist for its Long Beach, California office. Applicants should have strong technical, communication, and management skills. Experience in planning and conducting marine research projects; a broad knowledge of marine sciences; knowledge of damage assessment procedures; and experience in interagency coordination are highly desirable. Responsibilities include: conducting damage assessments for NOAA trust resources affected by oil spills and releases of toxic materials. Applicants should submit a completed SF 171, Application for Federal Employment to **Vacancy Announcement No. FLP: 02-93** by November 27, 1992 to: **U.S. Office of Personnel Management, Los Angeles Area Office, ATTN: ESTM-JPC, 9650 Flair Drive, Suite 100A, El Monte, CA 91731**. *Applicants must be U.S. Citizens.*

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RESEARCH

MANAGER

The Renal Division of Baxter Healthcare Corporation is the world's leading provider of innovative dialysis products and services. We have grown to be a highly successful international business. Now, we are seeking an experienced professional to support our growth and reputation for excellence.

Working closely with our Research Group you will be involved with world class investigators in exciting projects which are often international in scope. Your main responsibilities will include direct in-house and external research efforts aimed at understanding metabolic lipid abnormalities associated with chronic renal failure and to design interventional therapies for treating dyslipoproteinemia observed in dialysis patients.

The ideal candidate will possess a Ph.D. in biochemistry, pharmacology or a related discipline and have previous experience in lipid metabolism research. Strong interpersonal skills are a must.

Baxter offers a competitive salary and benefits package, including tuition reimbursement, pension plan, and 401(k) savings plan. For immediate consideration, forward your resume, indicating salary history to: **Baxter Healthcare Corporation, 1620 Waukegan Road, Human Resources-RM, McGaw Park, IL 60085.** Equal Opportunity Employer.

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INTERNATIONAL SPINAL RESEARCH TRUST

Research Grant

The ISRT is dedicated to encourage and support research which may lead to the restoration of function after spinal cord injury. However it also recognises the huge potential of recent basic discoveries of the many factors associated with growth, guidance and target recognition. While the Trust excludes no promising approaches, it considers a particularly promising area to be the behaviour of whole cells *in vivo*. In order to advance, it may now be useful to form groups from various disciplines who would co-operate on the next stages. It intends to offer core support of up to \$500,000 over three years to allow one or more such groups to form.

Applicants are asked to send a two page letter outlining a plan of research for such a potential grouping. A preliminary budget breakdown is also requested. Background material on available research facilities and on the record of the principal investigators should be included. The project may be in basic, applied or clinical sciences in any country. Successful applicants will be approached by ISRT for detailed plans.

CONTACT: Research Director, ISRT Research Division, Unit 7 Bramley Business Centre, Station Road, Bramley, Guildford, Surrey, GU5 0AZ, UK

Fax no: 0483 898763

Deadline for preliminary applications: Friday, 22nd January 1993

Expected date for decision on shortlist: Friday, 26th March 1993

POSITION ANNOUNCEMENT

**Dean of School of Forestry
and Director of the Montana Forest and
Conservation Experiment Station
The University of Montana at Missoula**

The University of Montana seeks applications and nominations for the position of Dean of the School of Forestry and Director of the Montana Forest and Conservation Experiment Station at Missoula.

The School of Forestry has academic programs in Forestry Resources Management, Recreation Management, Range Resources Management, Wildlife Biology and Wilderness Studies. The school enrolls, nationally and internationally, approximately 600 undergraduate and 125 graduate (Master's and Ph.D.) students. The Montana Forest and Conservation Experiment Station administers research programs that are national and global in scope. In all, there are 33 teaching and research faculty and another 30 research staff.

The job description and selection criteria may be obtained from:

Dr. David Strobel
Associate Graduate Dean and
Chair of the Search Committee
The University of Montana,
Missoula, MT 59812

(406) 243-2572, FAX (406) 243-4593.

Review of applications begins January 18, 1993, and will continue until a candidate is found.

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Please send your resume in confidence to: Rita McFayden, NOVEX, 4202 Sorrento Valley Blvd., San Diego, CA 92121

DIRECTOR, OFFICE OF EXPLORATORY RESEARCH OFFICE OF RESEARCH AND DEVELOPMENT U.S. ENVIRONMENTAL PROTECTION AGENCY

EPA is seeking a senior administrator as Director of the Office of Exploratory Research (OER) in the Office of Research and Development (ORD) in Washington, D.C. The Director develops policies and administers ORD's scientific review of requests for funding assistance in the grants and centers programs with the university community, Small Business Innovation Research Program, and personnel development programs. The Director also serves as the ORD focal point for university and other Federal agency relations with EPA's extramural research programs.

Applicants for this Senior Executive Service (SES) position must have a bachelors or higher degree (doctorate preferable) in one of the engineering, biological or physical sciences and substantial professional experience demonstrating scientific leadership and competence. Experience in the academic community is desirable. Salary range for this position will be between \$90,000 and \$108,300. For a copy of the Vacancy Announcement, or to submit an application, contact Ms. Chaunta Gladney, Environmental Protection Agency, Executive Resources and Special Programs Division, PM-224, Room M3910, 401 M Street, S.W., Washington, D.C. 20460. The telephone number is 202-260-3328.

Applications must be postmarked by December 8, 1992.

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SENIOR SCIENTIST Bronchopulmonary Research

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Our Bronchopulmonary Department is expanding and strengthening its efforts to discover the next generation of therapeutics for the treatment of asthma and allergies. To assist us in this effort, we are seeking an outstanding researcher at the Senior Scientist level to develop an independent research program. The focus of this position will be on the application of molecular biology techniques to the study of receptor-ligand interactions, molecular mechanisms of cellular activation and signal transduction.

The successful candidate will have a Ph.D in Biochemistry, Cell Biology, Immunology, Molecular Biology or Molecular Pharmacology and a minimum of 2 years of postdoctoral training in a related research area.

The esteem with which Roche holds this position is reflected in a compensation package designed to attract and retain a candidate of preeminent scientific intellect. Please send resume with salary history/requirements (those without this information will not be acknowledged) to: **Mrs. Eleanor Malone, Staffing Dept. EM162JK, Hoffmann-La Roche Inc., Nutley, NJ 07110-1199.** An equal opportunity employer.

ROCHE**Hoffmann-La Roche**

Markey Fellowships for graduate study programs in La Jolla.

Predocutorial Training in Cellular and Molecular Biology

A fellowship program for graduate studies supported by the **Lucille P. Markey Charitable Trust** is being offered at UCSD. The fellowships will provide outstanding students with unique research and training opportunities at the **University of California at San Diego, the Salk Institute, the Scripps Research Institute, and the La Jolla Cancer Research Foundation.**

This innovative program will be integrated with already existing UCSD graduate student training program in **Biology, Biomedical Sciences, Chemistry (Biochemistry), Molecular Pathology, and Neurosciences.**

Students accepted in the program will receive full support as Markey fellows at a nationally competitive level and will have lateral mobility from one program to another during the first year of studies.

To receive more information about the application procedure contact: Tel: 619/534-8671 Fax: 619/534-8549 UCSD, MC 0651, 9500 Gilman Dr., La Jolla, CA 92093-0651, Attn: Markey.

Vice President Product Development

Anergen is an exciting and growing biotechnology firm developing novel therapeutics for the treatment of human autoimmune diseases including multiple sclerosis, myasthenia gravis and rheumatoid arthritis.

In this senior production development position, you will plan and direct the activities relating to the design and development of the company's product line. Requires an MD, PhD or equivalent in a pharmaceutical discipline and 5+ years' experience in the development of protein-based therapeutics from IND through product approval. Experience interacting with clinical and regulatory affairs, internally and externally, is essential.

Anergen offers an attractive compensation and benefits package, including equity participation. Please forward your resume to: **Anergen, Inc., Attn: Joan Shields, 301 Penobscot Drive, Redwood City, CA 94063; fax (415) 361-8958. EOE.**

**Anergen, Inc.**

CELL AND MOLECULAR BIOLOGISTS

Department of Cell & Structural Biology. University of Illinois at Urbana-Champaign, invites applications for **ASSISTANT, ASSOCIATE, or FULL PROFESSOR**, from PhD scientists interested in establishing an outstanding research program in a young, expanding department. Potential areas of focus include membrane receptors and signaling, cell cycle control, nuclear and cytoskeletal structure/function, cellular immunology, developmental biology, and molecular aspects of virus/host interactions. Responsibilities also include teaching core cell biology courses. Position is full-time, available beginning 1993-94 academic year. Salary will be commensurate with experience and level.

Substantial start-up funds and laboratory facilities are available, along with exceptional physical and intellectual resources of the University: Transgenic Animal Facility; Center for Electron Microscopy; Genetic Engineering Facility, providing oligonucleotide and peptide synthesis and automated protein sequencing; Cell Science Laboratory, providing hybridoma culture and flow cytometry; Molecular Graphics Facility; National Center for Supercomputing Applications; and Beckman Institute for Advanced Science and Technology, which combines research in biological and physical sciences.

Urbana-Champaign offers the residential advantages of a medium-sized city (population 120,000) plus excellent cultural amenities on campus. Its location gives easy access to Chicago and St. Louis.

Applicants should send curriculum vitae, summary of research interests, and three letters of reference to: **Ms. Ann Zielinski, Search Coordinator, Department of Cell and Structural Biology, University of Illinois, 506 Morrill Hall, Urbana, IL 61801. Telephone: (217) 333-6118.**

To ensure full consideration, applications should be received by 15 January 1993. Interviews may be conducted before this date, but all applications received by then will be given full consideration. Final selection will not be made until after this date.

■ *The University of*

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CELL BIOLOGIST Pharmaceutical Products Division

You will participate in research relating to the overexpression of recombinant proteins in mammalian and insect cells, the establishment of primary cultures from various tissues, and the large-scale culture of mammalian cells. Specific duties will include supervising a group of cell biologists as they collaborate with scientists throughout the anti-infective, cardiovascular, immunoscience, and neuroscience fields.

We require a PhD or equivalent in the life sciences—cell biology preferred—and 3-5+ years of relevant postdoctoral experience. Knowledge of molecular biology would be a plus. **Reply to Patricia Handy, Job# BS7500.**

RESEARCH INSTRUMENT SCIENTIST Diagnostics Division

You will be responsible for research of interfacial effects in the dispensing, motion, and mixing of small volumes of fluid. Additional duties include developing methods to experimentally determine and quantitatively analyze the mechanisms through which inter-

faces alter the stability and motion of multiphase flows in instrument fluid delivery systems.

We require 5+ years of industrial research background, including practical experience with optical measurement techniques/instrumentation. Familiarity with UNIX, MacIntosh, and DOS computer systems is essential. A PhD in Engineering, Physics, or Physical Chemistry is preferred. **Reply to Linda DeLavallade, Job# 15857.**

Abbott provides an excellent salary and benefits package including profit sharing and a stock retirement plan. We are located in an attractive suburban setting, approximately 30 miles north of Chicago. For confidential consideration, please forward a resume (indicating appropriate reply name and Job #) with salary history to: **Corporate Staffing, Abbott Laboratories, One Abbott Park Rd., Abbott Park, IL 60064.** Abbott is an Affirmative Action Employer/Smoke-Free Environment.

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CHAIRMAN OF MICROBIOLOGY

Boston University School of Medicine solicits applications for the position of Chairman of Microbiology to direct the research, teaching, and administrative functions of the department. Individuals with active research programs in molecular virology, retrovirology, molecular immunology, and AIDS research are of particular interest but individuals with established expertise in other relevant fields will also be considered. Applicants are requested to submit a current curriculum vitae and the names and addresses of three referees to

Mary C. Williams, Ph.D.
The Pulmonary Center, K-6
80 E. Concord St., Boston, MA 02118.

Applications are requested by December 15, 1992, but may be submitted thereafter until a candidate is appointed. Applications from women and minorities are particularly sought.

Boston University is an equal rights employer.

FACULTY POSITION: CANCER RESEARCH—TRANSGENIC MICE

The Department of Molecular Genetics at the Ohio State University, in collaboration with the OSU Comprehensive Cancer Center, is searching for a tenure-track faculty member at the Assistant, Associate or Full Professor level. We are interested in highly qualified applicants who are conducting basic investigations in the general field of cancer research and who use transgenic mice as the experimental system. The faculty member will be housed in a spacious, newly renovated laboratory in the Biological Sciences Building and will have excellent access to the recently completed transgenic mouse facility located at the OSU Biotechnology Center. The transgenic facility includes state-of-the-art equipment as well as technical support.

A generous recruiting package is available, including a highly competitive, hard money salary, as well as substantial funds for equipment purchase and initial operating expenses. The Ohio State University is in the process of a major expansion in Molecular Biology and Biotechnology, and a substantial number of additional positions are anticipated in the future. Research with transgenic mice is one of the areas targeted for expansion.

The Ohio State University is the flagship institution of the state's higher education system. It is located in the state capital, Columbus, which is a growing, yet highly affordable metropolitan area of about 1.3 million people. Columbus has been ranked by *Newsweek* as one of the country's best places to live and work.

Applications should include a detailed curriculum vitae, a description of research experience, a statement of the nature of the planned independent research program, and the name, address and telephone number of each of four scientists who have agreed to serve as references. Applications will be accepted until suitable candidates are hired, but recruiting is scheduled to begin in earnest by January 1993. Information about our Department can be obtained by calling our office at 614-292-8084.

Applications should be sent to: **Dr. Lee Johnson, Molecular Genetics Search, Department of Molecular Genetics, The Ohio State University, 484 W. 12th Avenue, Columbus, OH 43210.**

The Ohio State University is an Equal Opportunity/Affirmative Action Employer. Qualified women, minorities, Vietnam-era Veterans, disabled veterans and individuals with disabilities are encouraged to apply.

POSITIONS OPEN

BOTANIST ST. LAWRENCE UNIVERSITY

We seek a broadly trained botanist to teach general ecology, vascular plants, and some combination of courses from the applicant's field of expertise, and/or the environmental sciences. Ph.D. expected. The successful applicant will be expected to develop an active research program involving plants, preferably field-oriented, which will involve undergraduate student participation. Applicants with an interest in interdisciplinary teaching will be given preference. This position is a tenure-track appointment to begin in August 1993. Review of complete applications will begin November 20, 1992. Send curriculum vitae and two letters of reference to:

Dr. Kenneth L. Crowell, Search Chair
Department of Biology
St. Lawrence University
Canton, NY 13617

St. Lawrence University is committed to fostering multicultural diversity in its faculty, staff, student body and programs of instruction. As an Equal Opportunity/Affirmative Action Employer, we specifically encourage applications from women, minorities and persons with disabilities.

DEVELOPMENTAL BIOLOGIST. Faculty position available in the Department of Anatomy for a Developmental Biologist with research program in molecular aspects of development, e.g., gene expression, cell and tissue interactions, role of regulatory molecules in development. Must have postdoctoral experience and ability to develop independent, productive research program. Teaching responsibilities include participation in teaching anatomical sciences in the Medical-Dental curriculum; participation in the graduate program in developmental biology. Prior teaching or training in anatomy desirable but not required. Applicants should submit curriculum vitae, list of publications, projected research plans, and names of three references to: **Dr. S.J. Cooperstein, Professor Emeritus and Acting Head, Department of Anatomy, MC 3405, The University of Connecticut Health Center, Farmington, CT 06030.** Applications will be accepted until the position is filled. **AN EQUAL OPPORTUNITY EMPLOYER.**

The Biotechnology Patent Examining Group of the Patent and Trademark Office is currently recruiting scientists for positions as **PATENT EXAMINERS**. Individuals with advanced degrees and/or equivalent experience in the fields of immunology, molecular biology, gene therapy, plant genetics and plant breeding, biochemistry, protein engineering and microbiology are urged to send a resume or SF-171 to the following address:

Patent and Trademark Office
Office of Personnel
Box 171
Washington, DC 20231
ATTN: D. Dowell (180)

For further information, call David L. Lacey at (703) 308-4314. **U.S. CITIZENSHIP IS REQUIRED FOR EMPLOYMENT.**

(1) **TUMOR/CELL BIOLOGIST.** Background in evaluation of cancer markers, cancer immunology and/or cell metabolic pathways. Familiarity with molecular biology techniques and breast cancer biology highly desirable. (2) **BIOCHEMIST/IMMUNOLOGIST.** Investigate protein-bound photoactivatable compounds in tumor targeting. Must be eager to work in a multidisciplinary environment, including photobiology, and be capable of initiating independent programs. Salary and positions commensurate with experience; can be research fellow to assistant professor. Contact: **T. Hasan, Ph.D., Wellman Laboratories of Photomedicine, Harvard Medical School, Massachusetts General Hospital, Boston, MA 02114.**

WILDLIFE PARASITOLOGIST. An individual experienced with identification of wildlife parasites in a variety of species (primarily avian) is sought by the U.S. Fish and Wildlife Service. Duties will include identification of parasites submitted by pathologists as cases are necropsied, preparation of written reports of findings and occasional investigative work to determine the significance of certain parasites in wildlife. *Must be a U.S. citizen.* Full performance level for this Federal position is GS-12 (\$38,861 to \$50,516). For information contact: **Joan Degenhardt, National Wildlife Health Research Center, 6006 Schroeder Road, Madison, WI 53711.**

POSITIONS OPEN

BIOLOGIST. Wofford College, tenure-track position, Fall 1993. Ph.D. and strong commitment to teaching expected. Primary area, animal physiology. Additional areas might include vertebrate zoology/ecology, histology, immunology, neurobiology, human anatomy and physiology, or endocrinology. Salary competitive. Rank according to experience. Send curriculum vitae, recommendations, and statement of interests to: **Dr. George Shiflet, Biology, Wofford College, Spartanburg, SC 29303-3663.** Minorities encouraged to apply.

BIOCHEMIST. Hamilton College is seeking a biochemist for a tenure-track position, funded in part by the Howard Hughes Medical Institute, starting in the fall of 1993. The rank and specialty are open, but preference will be given to a physical biochemist. Applicants should have a strong interest in teaching and research at the undergraduate level. Teaching responsibilities include two upper level courses in biochemistry and participation in an appropriate lower level course. Supervision of senior research is expected and start-up funds are available. Interested candidates should send current curriculum vitae and transcripts, a statement of research interests, and three letters of recommendation all by January 1, 1993 to: **Professor R. B. Kinnel, Chair, Department of Chemistry, Hamilton College, Clinton, NY 13323-1292.** Hamilton College is an Affirmative Action/Equal Opportunity Employer, and women and minority candidates are encouraged to apply.

UCSF POSITIONS IN PRION RESEARCH

Molecular Biologist. At least three years of postdoctoral experience required. Produce and analyze transgenic mice expressing prion protein (PrP) genes. Requires isolation of cosmid clones, site directed mutagenesis, PCR and hybridization assays of transgenes. Salary: \$35,000 to \$49,000 per year. **Electron microscopy technician:** B.A./B.S. and two or more years of experience of transmission EM with negative staining, immuno EM, thin sections and image analysis. Salary \$28,000 to \$40,000 per year. **Cell culture technician:** B.A./B.S. and two years of experience. Establish and maintain cell lines, metabolic radiolabelling, infection and cloning, immunofluorescence, immunoblotting. Salary: \$28,000 to \$35,000 per year. **Postdoctoral fellows:** Ph.D. in molecular biology with experience in protein expression, protein structure, or protein chemistry. Study PrP secondary and tertiary structure using expression systems, protein purification, crystallization, NMR, IR spectroscopy and X-ray diffraction. Supported by **NIH Training grant; postdoctoral candidates must be U.S. citizens or hold a U.S. permanent residence visa.** All applicants send curriculum vitae and three letters of recommendation to: **S. B. Prusiner, UCSF, San Francisco, CA 94143-0518.** UCSF is an Equal Opportunity Employer, women and minorities are encouraged to apply.

COURSES AND TRAINING

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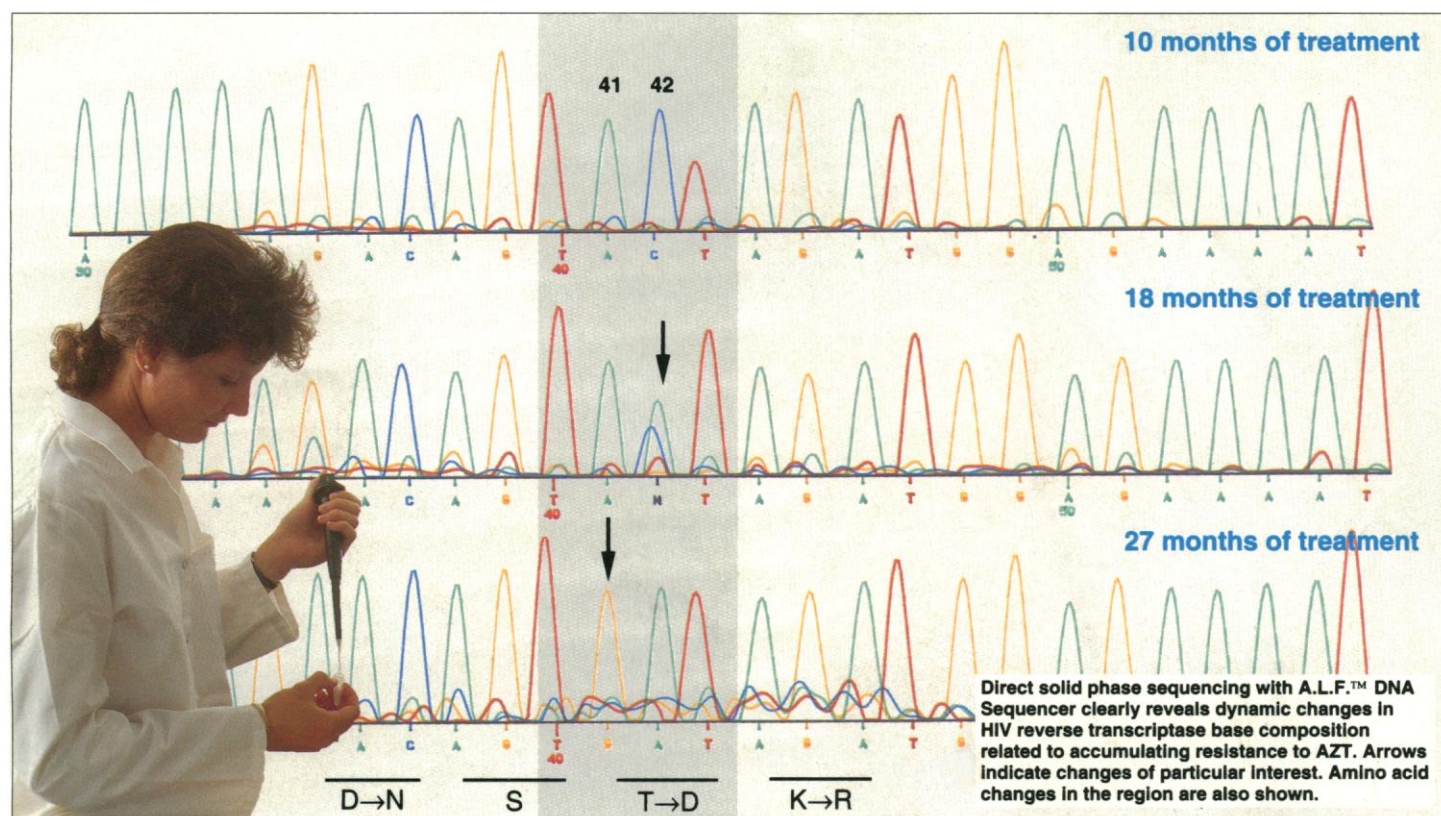
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A.L.F.™ DNA Sequencer helps AZT fight HIV

Accurate detection of heterozygote point mutations has enormous potential as a clinical research tool. Nothing illustrates this better than the recent spectacular analysis of emerging AZT resistant HIV species by direct, solid phase genomic sequencing with A.L.F.™ DNA Sequencer.

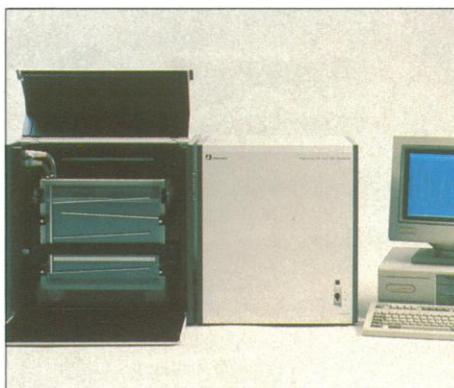
The non-edited data output above shows DNA sequences of HIV RT from a patient undergoing AZT treatment⁽¹⁾. This clean sequence with little background signal emphasizes the suitability of A.L.F. for direct genomic sequencing of clinical samples. Detailed analysis revealed dynamic changes in base composition.

Take a close look at the changes A.L.F. detected at position 42. The C residue after 10 months treatment became a 50% A/C mixture at 18 months and a clear A nucleotide at 27 months. With a secondary shift from A to G at position 41, Thr69 changed to Asp, a substitution not previously reported.

Only the Automated Laser Fluorescent detection system of A.L.F. combines all the advantages for detecting point mutations like these.

Fixed laser detection of sample bases is essential to reduce background noise. With its unique fixed laser (A.L.F. has no moving parts apart from the door), background noise is lower than other sequencers. Hence its base calling is more accurate.

And because A.L.F. uses just one single fluorescent label, you don't have to worry about spectral overlaps and mobility shifts, which again makes base calling more accurate.



A.L.F. DNA Sequencer accurately detects heterozygote point mutations. DNA sequencing with A.L.F. has many applications in clinical research.

Furthermore, the well-proven Sanger technique, already cited more than 20,000 times, leaves nothing to chance with the reaction chemistry.

A.L.F. thus provides the accuracy needed to yield the "consensus" sequence of viral genomes in samples from HIV-1 infected patients treated with AZT.

So with A.L.F. generating precision data like this, clinical researchers can rapidly determine the molecular basis for drug resistance and more effectively plan treatment with alternative drugs or combinations of drugs. And, of course, direct DNA sequencing with A.L.F. has plenty of other clinical applications in areas such as infectious diseases, cancer, genetic disorders and forensics.

Ask for more details and a reprint of the reference.

1. Dynamic changes in HIV-1 quasispecies from azidothymidine (AZT) treated patients. *FASEB Journal* 6 (1992), Wahlberg, J., Albert, J., Lundberg, J., Cox, S., Wahren, B., Uhlen, M.



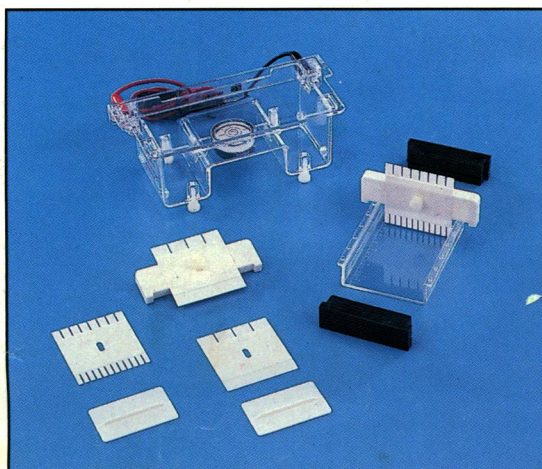
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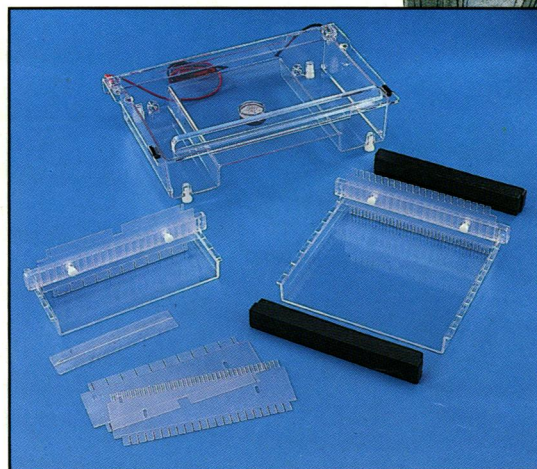
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