

### Amino Acid Analyzer

The Knauer Amino Acid Analyzer performs quantitative and qualitative determination of amino acid composition of protein hydrolyzates and physiological fluids. It can separate inorganic, organic, and biological substances. Up to 96 samples can be analyzed and stored in a cooled sample room. The fully automatic delivery and derivitization are the key to the high precision and reproducibility of analyses. The analyzer completes routine analyses in the picomole range within 30 min. Knauer. Circle 554.

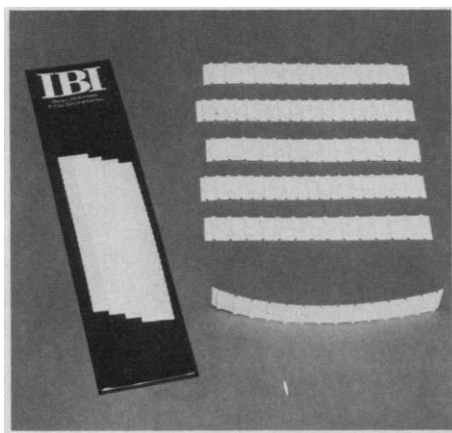
### Rapid Scan NMR Spectrometer

Model R-1200 Rapid Scan nuclear magnetic resonance spectrometer is the only totally microcomputer-controlled 60-Mhz instrument available. The Rapid Scan feature allows spectra to be acquired more than ten times faster than on conventional analog instruments. Digital signal processing and the Field Cure feature ensure drift-free operation and allow the accumulation and averaging of multiple spectra for an increased signal-to-noise ratio. Chemical shift values are calculated automatically by the microcomputer and printed directly on the spectrum at the appropriate peak position. Digital integration eliminates phasing problems and the need to reintegrate if field shifts occur. Hitachi Instruments. Circle 555.

### Gel Combs for Rapid Well Formation

Instawell Combs are designed for rapid well formation in both IBI Instacryl Copolymer and acrylamide gel applications. The combs have a corrugated surface that permits fast and easy formation of sample wells. Ridges created by the corrugated design serve as compartments through which the wells can be filled individually. The combs are placed horizontally between two pieces of cassette glass with the rounded rib side

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.



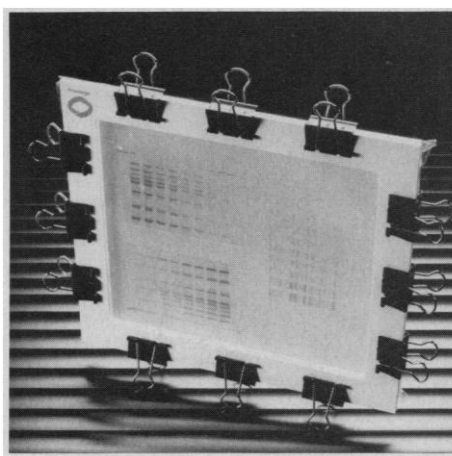
facing front. Once the plastic comb has been pressed into the surface of the gel and the top buffer tank filled, sample wells are created and ready to be loaded with a microliter syringe or micropipette. When the electrophoresis process is completed, Instawell Combs can be discarded or rinsed with running water for reuse. International Biotechnologies Inc. Circle 568.

### Complementary DNA Libraries

Custom cDNA libraries offer a choice of custom library construction in either prokaryotic or eukaryotic expression phagemids to facilitate screening, or in lambda vectors gt10 to gt11. Each library is constructed to customer specifications of insert size and number of recombinants, and most libraries can be completed and delivered in a matter of weeks, working from either cells, tissue, or RNA. Invitrogen. Circle 567.

### Gel-Drying Kits

Gel-drying frames and film are a convenient and inexpensive alternative to vacuum gel drying. Both polyacrylamide and agarose gels can be air-dried overnight between



sheets of clear gel-drying film. Gels dried in this manner are easily viewed while drying and, once dry, can be scanned densitometrically or even projected at lab meetings with an overhead projector. Promega. Circle 569.

### High-Volume Atomic Absorption Spectrometer

Designed for laboratories with heavy workloads, the SpectrAA-5 atomic absorption spectrometer can analyze hundreds of samples per hour. Measurements can be made in absorbance, concentration, or emission modes at the touch of a key. All results and numerical entries are shown on the large light-emitting diode display. Calibration is simply a matter of keying in the values of the standards and then aspirating them. The instrument determines the absorbance of the standards and instantly computes the calibration. All elements can be determined, from arsenic at 189.0 nm to cesium at 852.1 nm, with a highly sensitive multialkali photomultiplier tube. Varian Associates. Circle 572.

### Nonvolatile Heat Transfer Fluid

CryoCool is a stable heat transfer fluid for use in all refrigerated cold traps. The liquid can be used in place of methanol and ethanol in all stainless steel refrigerated traps and does not need to be replaced or replenished periodically. CryoCool exhibits an extremely low level of water adsorption, so water and CryoCool are immiscible. When CryoCool is used, any water condensed in the trap over a period of time falls to the bottom and freezes. The ice can then be scooped out, leaving the CryoCool. The liquid has a high flash point, requires no special storage, and presents no fire or explosion hazards. Savant Instruments. Circle 564.

### Literature

*High Purity Solvents* is a 28-page catalog describing an extensive line of OmniSolv products for high-performance liquid chromatography and high-resolution gas chromatography. OmniSolv products include 65 organic solvents, including alcohols, alkanes, and halogenated hydrocarbons. For each solvent, the catalog details specifications for purity, including ultraviolet transparency, color, evaporation residue, fluorescence, gradients, water content, and pesticide residue limits. EM Science. Circle 442.

# Personnel Placement

**SCIENCE** publishes each Friday, except the last Friday of the year, and is mailed on issue date. Personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference. **SCIENCE** reserves the right, in its discretion, to decline to publish advertisements submitted to it.

## LINE CLASSIFIED ADVERTISEMENTS

**DEADLINE:** Thursday, 10 a.m., 2 weeks prior to issue date. Advertising is accepted only in writing.

**POLICIES:** All classified ads will be edited and typeset according to **SCIENCE** style guidelines. NO ABBREVIATIONS. Any deadline for applications stated in ad must be at least 2 weeks after date of publication.

**CLASSIFICATION:** **SCIENCE** publishes line classified ads under the following headings: **Positions Open, Employment Agencies, Situations Wanted, Courses and Training, Meetings, Announcements, and Marketplace.** Advertisers should specify classification desired; however, **SCIENCE** reserves the right to decline classification requests which it believes may be misleading to readers.

**RATE:** \$41 per line, \$410 minimum, per week. One line equals 52 characters and spaces; centered headings equal 32 characters and spaces per line. No charge for use of blind box number. No agency commission for ads less than 40 lines. To ESTIMATE ad cost, structure ad copy on a 52-character line; include any desired heading on 32-character lines. Each line of heading, one line of white space between heading and body of ad, and all partial lines (including centered reply information, if desired) are counted as full lines. Multiply total number of lines x \$41 = approximate cost of ad, per week. (This is an approximate cost ONLY. Allow for variation between estimated lines and actual typeset lines and resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment. **SCIENCE** cannot provide proofs of typeset ads.)

**CREDIT CARDS:** **SCIENCE** accepts MasterCard and VISA.

**PREPAYMENT DISCOUNT:** A 3% cash discount is granted to all prepaid line ads. Prepayment in U.S. dollars by checks drawn on U.S. banks is required for all foreign ads.

**BOXES AND LOGOS:** Any 1-column line classified ad can be boxed and/or published with logo. No extra production charge for use of box or logo. For boxed ads, one line equals 48 characters and spaces; two additional lines will be added to cost of ad to allow for top and bottom rules. Logos are billed according to number of lines needed to accommodate logo.

**SITUATIONS WANTED ADS:** As a service to AAAS members in good standing, **SCIENCE** offers free placement of Situations Wanted ads for individuals seeking full-time or part-time employment. A blind box may be used. Ads must be submitted in writing with text of 20 words or less, not including address or box number, and are limited to two insertions per member in each calendar year. Please enclose **SCIENCE** mailing label including AAAS membership number when submitting ad.

**CANCELLATIONS:** Deadline for cancellations is 10 a.m. Tuesday, 10 days prior to issue date.

Address ad copy or requests for information to:

**SCIENCE Classified Advertising**  
1333 H Street, NW, Room 940  
Washington, DC 20005  
Telephone: 202-326-6555  
FAX: 202-682-0816

## DISPLAY PERSONNEL ADVERTISEMENTS

For rates, deadlines, and information about fractional display ads (1/6 page and larger) and all Marketplace listings of available products and services, contact:

**Scherago Associates, Inc.**  
1515 Broadway  
New York, NY 10036  
Telephone: 212-730-1050  
FAX: 212-382-3725

## RESPONSES TO EMPLOYMENT ADS

Applicants should read Positions Open ads carefully in order to submit all required material when responding, and should especially check for any stated deadline for receipt of applications. **SCIENCE** encourages applicants for positions to investigate employment laws, non-discrimination policies, visa requirements, and cultural differences in the country advertising for employees.

To reply to a blind box ad, address correspondence to:

**Box (give number)**  
**SCIENCE Classified Advertising**  
1333 H Street, NW, Room 940  
Washington, DC 20005

## POSITIONS OPEN

**ASSISTANT PROFESSOR OF PHARMACOLOGY** (Ph.D. and/or M.D.). For a tenure-track position in drug metabolism. A focus in the area of toxicology, cancer chemotherapy, anesthetics, or pharmacokinetics is desirable. Several years of postdoctoral research experience is required. Candidates are expected to develop an independent research program with extramural funding and to participate in the departmental teaching programs. Application deadline: 15 November 1990. Send curriculum vitae, research plans, and list of three references to: **Dr. Hall Downes, Department of Pharmacology L221, Oregon Health Sciences University (OHSU), 3181 S.W. Sam Jackson Park Road, Portland, OR 97201-3098. OHSU is an Affirmative Action/Equal Opportunity Employer.**

**ASSISTANT PROFESSOR, MOLECULAR PHARMACOLOGY/BIOLOGY.** Tenure-track position, Department of Pharmacology, Southern Illinois University (SIU) School of Medicine in Springfield, Illinois. Ph.D. degree, postdoctoral experience, potential for fundable research, and teaching graduate/medical pharmacology required. Preference given to pharmacologically relevant research (e.g., receptors study) and mastering of molecular biological techniques (e.g., gene cloning, sequencing, transgenic animals). Hire date: 1 January 1991. Send curriculum vitae, representative publications, research plans, and three letters of reference by 14 September 1990 to: **Dr. Ezio Jacobini, Professor and Chairman, Department of Pharmacology, SIU School of Medicine, P.O. Box 19230, Springfield, IL 62794-9230. Equal Opportunity/Affirmative Action Employer.**

## DEPARTMENT OF BIOCHEMISTRY COLLEGE OF MEDICINE ASSISTANT PROFESSOR

The Department of Biochemistry invites applications for the tenure-track position of assistant professor. Qualifications for the position include demonstrated ability for imaginative research, interest in graduate and medical student teaching, and at least 2 years of postdoctoral experience. Candidates interested in using biochemical and physical-chemical approaches to investigate the chemistry of membrane-related functions such as receptors and/or signal transduction are preferred.

The successful applicant will be expected to develop a funded independent research program, to teach medical students, and to participate in the Ph.D. program in biomedical sciences.

Submit curriculum vitae, bibliography, summary of research program, and the names of three references by 1 October 1990 to: **Dr. M. Lou Ernst-Fonberg, Chair, Department of Biochemistry, James H. Quillen College of Medicine, East Tennessee State University (ETSU), Johnson City, TN 37614-0002.**

*ETSU is an Affirmative Action/Equal Opportunity Employer.*

Three faculty Ph.D. positions in microbiology: a molecular biologist with teaching expertise in parasitology, a retrovirologist, and a molecular immunologist with research interest in AIDS/HIV. These positions are at **ASSISTANT/ASSOCIATE PROFESSOR** levels and salary is negotiable. Spanish is an advantage, but not required. Starting on or before 1 October 1990. Send résumé and three recommendation letters to: **Dr. Eli Pagan, Chairman, Microbiology Department, Ponce School of Medicine, P.O. Box 7004, Ponce, PR 00732. Telephone: 809-840-2551. An Equal Opportunity Employer.**

## ASSISTANT OR ASSOCIATE PROFESSORS BIOCHEMISTRY/MOLECULAR BIOLOGY

The Department of Biochemistry at the University of Mississippi Medical Center invites applications for two tenure-track positions. The department has strong research programs in eukaryotic gene organization and expression, protein synthesis, ribosome biogenesis, neurobiochemistry, nucleic acid biophysics, enzymology, and protein chemistry. Successful applicants are expected to establish or have independent, high-quality, funded research programs and to participate in the training of medical, dental, and graduate students. Special consideration will be given to candidates in areas that complement current research programs. Send curriculum vitae, an outline of future research plans, and the names of three references by 30 October 1990 to: **Dr. Mark Olson, Chair, Department of Biochemistry, The University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216-4505. Equal Opportunity Employer, M/F/H/V.**

## POSITIONS OPEN

### ASSISTANT PROFESSOR DEPARTMENT OF RADIATION ONCOLOGY THE UNIVERSITY OF ARIZONA

The Department of Radiation Oncology is seeking a tenure-track assistant professor who has a research interest in molecular genetics as broadly related to cancer. Research in the areas of molecular genetics related to the regulation of cellular proliferation and differentiation during development and multistage carcinogenesis is of special interest. Applicants should have two or more years of postdoctoral experience and a demonstrated potential to establish an independent research program. Applicants should send curriculum vitae, a statement of their research interests, copies of three representative publications, and the names of three references to: **G. Tim Bowden, Ph.D. Chairman, Faculty Search Committee, Department of Radiation Oncology, University of Arizona, College of Medicine, 1501 North Campbell Avenue, Tucson, AZ 85724.** Review of applications begins on 14 September 1990 and will continue until the position is filled. *The University of Arizona is an Equal Opportunity/Affirmative Action Employer and applications from female and minority group members are strongly encouraged.*

**BIOPHYSICAL CHEMIST,** Dartmouth College. Application is invited for a tenure-track position at the **ASSISTANT PROFESSOR** level starting July or September 1991. The Dartmouth Department of Chemistry seeks an individual who will establish a vigorous, productive research program in the area of physical biochemistry and who will excel at teaching in both our undergraduate and Ph.D. programs. This new appointment originates from a Dartmouth initiative in structural biology and preference will be given to applicants with research interests in the structural and chemical properties of biological macromolecules. The new appointee will be expected to teach undergraduate courses in general chemistry and physical biochemistry and graduate level courses in his or her specialty. Applicants should submit curriculum vitae, a description of research projects that would be pursued, a list of start-up requirements, and a brief statement of teaching experience and interests. Applicants also should arrange to have graduate and undergraduate transcripts and three letters of recommendation sent on their behalf. All application materials should be sent to: **Professor Dean Wilcox, Chair, Faculty Search Committee, Department of Chemistry, Dartmouth College, Hanover, NH 03755,** and should be received no later than 15 October 1990. *Dartmouth College is an Equal Opportunity/Affirmative Action Employer.*

Anatomy Department seeks **ASSISTANT/ASSOCIATE PROFESSOR** expert in cellular and molecular biology and sensory systems, particularly vision. Applicant should have independent program and cooperate with colleagues within and outside the department. Send curriculum vitae to: **Dr. Dale E. Bockman, Department of Anatomy, Medical College of Georgia, Augusta, GA 30912-2000. An Equal Opportunity/Affirmative Action Institution. Females and minorities are encouraged to apply.**

## ASSISTANT OR ASSOCIATE PROFESSOR PHYSIOLOGY AND BIOPHYSICS

The Department of Physiology and Biophysics in the College of Medicine at the University of Nebraska Medical Center invites applications for two tenure-leading faculty positions at the assistant or associate professor levels. Applicants should hold a doctoral degree and have completed at least 2 years of postdoctoral training. The department seeks individuals in the areas of neural control of the circulation and/or microcirculatory control. The successful candidate should provide evidence of a strong, extramurally funded research program in either of these areas. In addition, a commitment to teaching medical students, allied health students, and graduate students is required. The department will offer competitive salary commensurate with experience and rank. Substantial set-up funds are also available. Applicants should send curriculum vitae with the names of three references by 30 September 1990, to:

**Irving H. Zucker, Ph.D.  
Professor and Chairman  
Department of Physiology and Biophysics  
University of Nebraska College of Medicine  
600 South 42nd Street  
Omaha, NE 68198-4575**

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

## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSOR REPRODUCTIVE BIOLOGIST

The Division of Reproductive Endocrinology at the University of Colorado Health Sciences Center in Denver is seeking a Ph.D. with extensive IVF and andrology experience to become the director of the Reproductive Endocrinology Laboratory. Candidates are expected to establish the IVF/andrology laboratory at a new clinical facility. Ample opportunity will be provided for the candidate to pursue independent research. Academic rank and salary are dependent on experience and achievements. Interested applicants should send curriculum vitae and a list of three references to: **William D. Schlaff, M.D., Department of Obstetrics and Gynecology, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Campus Box B198, Denver, CO 80262.**

*An Equal Opportunity/Affirmative Action Employer.*

### ANTISENSE OLIGONUCLEOTIDES AS A NEW THERAPEUTIC MODALITY

Hybridon, Inc., a new Boston-area company led by some of the scientific pioneers of antisense technology, is developing oligonucleotide drugs against a variety of human diseases for which there is no effective treatment, such as AIDS. Recently published references to this new therapeutic principle include *Proc. Natl. Acad. Sci. U.S.A.* 86, 7790-7794 (1989); 87, 3430-3434 (1990).

We seek highly motivated Ph.D. organic chemists or biochemists with postdoctoral experience and some familiarity with oligonucleotide synthesis. We offer an excellent salary and benefits package and an exciting environment centered on drug discovery that is conducive to career development. For confidential consideration, send résumé with names of three references to:

**Hybridon, Inc.  
68 Harvard Street  
Brookline, MA 02146**



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

ARS is seeking applicants for the position of **RESEARCH LEADER** of the Plant Introduction Research Unit and **DIRECTOR** of the North Central Plant Introduction Center at Ames, Iowa. This Center is one of four such stations in the United States charged with the introduction, increase, evaluation, cataloging, maintenance, and distribution of plant germplasm resources (both seed and clonally propagated plants) to scientists throughout the United States and abroad. The incumbent must coordinate North Central activities with the other three regional plant introduction stations and other units of the National Plant Germplasm System. The research leader directs federal and state scientists, research associates, technicians, and other workers and administers an annual operating budget of \$1.3 million.

Candidates must have a degree (Ph.D. is desirable) in the biological sciences. Salary and benefits are commensurate with experience. Send curriculum vitae with the names of three references to: **Area Director, Midwest Area, 1815 North University, Peoria, IL 61604.** Applications must be marked **ON052** and received by 30 September 1990. Additional information concerning this position can be obtained by calling **C. G. Crawford** at 309-685-4011, Ext. 599.

*ARS is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

**GENETIC RESOURCES ANALYST. ASSISTANT DIRECTOR** of University of California, Genetic Resources Conservation Program, Davis campus. Conduct analysis of genetic resources and biological diversity, manage small grants program, coordinate conferences, prepare reports/proposals with program director and faculty; may conduct research. Advance training in ecology, genetics, or relevant biological and agricultural fields. Appropriate professional degree in relevant field of science required. Demonstrated writing and computer skills essential. Assure Affirmative Action in development and delivery of programs. Salary range: \$27,840 to \$58,308. Send curriculum vitae, academic transcripts, and three reference letters to: **Division of Agriculture and Natural Resources Personnel, 6th Floor, 300 Lakeside Drive, Oakland, CA 94612-3560.** Telephone: 415-987-0088. FAX: 415-987-0672. Close: 17 September 1990. Refer to #A-90-091. *Affirmative Action/Equal Opportunity Employer.*

17 AUGUST 1990

## NATIONAL INSTITUTE of MENTAL HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

### DEPUTY DIRECTOR DIVISION OF INTRAMURAL RESEARCH

The National Institute of Mental Health (NIMH), one of three scientific Institutes of the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), is seeking nominations and applications for the position of Deputy Director, Division of Intramural Research Programs (DIRP). The Division is the largest scientific research center in the world focused on mental health, mental illness, and behavioral and brain research. Its diverse research programs are conducted by over 750 employees, including over 200 doctoral-level scientists, in 21 different laboratories and clinical branches.

Responsibilities of the Deputy Director, DIRP, includes serving as full Deputy to the Institute's Scientific Director, with full delegation of authority to act for the Scientific Director in both scientific and administrative matters related to the overall operation of the Institute's intramural research program; advising and consulting with the Scientific Director and with the Laboratory and Branch Chiefs on policy issues that have impact throughout the Division; allocating and controlling the Division's human, financial, and space resources in the Director's name; devising methods to attract and retain world-class leaders in the field of mental health research; and providing advice, counsel, and direction to the Laboratory and Branch Chiefs, and to

their subordinates, on the development and implementation of program plans.

Minimum qualifications requirements include a degree of Doctor of Medicine, Doctor of Philosophy, Doctor of Osteopathy, or a bachelor's or higher degree in an academic field related to the health sciences, and progressively responsible experience in developing, administering, and evaluating biomedical research programs.

The person selected for this position will receive a career appointment to the Senior Executive Service with an annual income of \$79,200 (plus up to \$20,000 per annum allowance for physicians only). The proposed income range to be effective January 1991, pending issuance of an Executive Order, is \$84,000 to \$97,000 (plus up to \$20,000 allowance for physicians only). Senior Executive Service members are also eligible for performance awards of 5 to 20 percent of base salary.

Additional information about the position and qualifications requirements may be obtained by contacting Mr. Joseph W. Whitaker at (301) 496-5337. An SF-171, Application for Federal Employment, accompanied by a current curriculum vitae and bibliography, and the names and addresses of three references, should be submitted to:

**Mr. Whitaker  
NIMH-IRP Personnel Office  
Building 10, Room 4C101  
National Institutes of Health  
9000 Rockville Pike  
Bethesda, Maryland 20892**

Complete application packages, including the SF-171, must be postmarked by the closing date, August 31, 1990. Resumes are not acceptable for entrance into the Senior Executive Service. *Applications will be accepted from all qualified Federal employees, and from individuals with SES reinstatement eligibility ONLY.*

Applications from women and minority group members are solicited.

The Alcohol, Drug Abuse, and Mental Health Administration  
is an Equal Opportunity Employer

## DEAN - SCHOOL OF BIOLOGICAL SCIENCES

### UNIVERSITY OF CALIFORNIA, IRVINE

The University of California, Irvine, invites nominations and applications for the position of Dean of the School of Biological Sciences. We seek an individual with a recognized national and international reputation within the scientific community who will bring vision and innovative leadership abilities to the School. The scholarly achievement of this individual should be appropriate for appointment as a full Professor in the University of California system. The School of Biological Sciences contains four academic departments: Developmental and Cell Biology, Ecology and Evolutionary Biology, Molecular Biology and Biochemistry, and Psychobiology.

Applications and nominations will be received until the position has been filled. However, the screening process will begin immediately, and applications are encouraged prior to the 15th of September.

Nominations and expressions of interest, along with curriculum vitae and names of three references, should be submitted to:

**William H. Parker**  
Acting Executive Vice Chancellor  
Attn: Patricia A. Adams  
Office of Academic Affairs  
509 Administration  
University of California  
Irvine, CA 92717

The University of California, Irvine is an equal opportunity, affirmative action employer.

## WILKES UNIVERSITY

### CHAIR - EARTH & ENVIRONMENTAL SCIENCES

The School of Science and Engineering invites applications from individuals who have strong commitment to excellence in teaching and research to chair its Earth & Environmental Sciences Department. The position offers the opportunity to lead the department as it moves forward to continue its interdisciplinary undergraduate programs (including environmental engineering in cooperation with the Engineering Department), expand the research and community services of a masters degree program in E & ES. Demonstrated academic leadership, research, and management skills, coupled with teaching excellence are expected. An earned Ph.D. in the sciences or engineering is required. An emphasis in chemistry is desirable but not obligatory. Starting date, January or September, 1991.

Wilkes is a comprehensive university of 2200 students and is located in Wilkes-Barre's historic district, adjacent to the Pocono ski and resort area. The location provides convenient access to the industrial and cultural centers of Boston, New York, Philadelphia, and Washington DC. Wilkes is the lead institution in the region in addressing environmental issues and problems. Ample opportunities are available for professional growth and interaction with industry and government. The Chair reports to the Dean of the School.

Send resume and documents (with three references) to: Dr. Brian Redmond, Associate Dean, School of Science and Engineering, Wilkes University, Wilkes-Barre, PA 18766. Screening of applications will begin in October and continue until the position is filled. Minorities and Women are encouraged to apply. AA/EEO.

## POSITIONS OPEN

### DIRECTOR HOLLINGS ONCOLOGY CENTER MEDICAL UNIVERSITY OF SOUTH CAROLINA

The director for a new cancer center to be established at the Medical University of South Carolina in Charleston will have a mission to develop and maintain a coordinated and multidisciplinary center of excellence in cancer research, treatment, and outreach.

The Hollings Oncology Center is a university center on this campus and its planning and administrative oversight is by a university center planning and management group appointed by the president. Ground-breaking for its separate building is in October 1990.

The candidate's background should include administrative experience commensurate with directing an academic department or institute and a record of outstanding achievement in clinical and research oncology.

Nominations and credentials, including bibliography and curriculum vitae, should be sent to: **Edward L. Hogan, M.D., Chairman, Search Committee for Director of Hollings Oncology Center, Office of the President, Medical University of South Carolina, Charleston, SC 29425.**



*An Equal Opportunity/Affirmative Action Employer,  
Minority/Female/Handicapped/Veteran.*

### CHAIRPERSON DEPARTMENT OF ANATOMY

The University of Nebraska College of Medicine is seeking a nationally recognized investigator to fill the position of chairperson of the Department of Anatomy. The candidate should have a Ph.D. or M.D. degree, a distinguished research program that is currently active and funded, strong leadership qualities, and a major interest in the education of health professionals. Nominations or applications, including curriculum vitae and the names and addresses of three references, should be addressed to: **Chairman, Anatomy Chairperson Search Committee, c/o Office of the Dean, University of Nebraska College of Medicine, 600 South 42nd Street, Omaha, NE 68198-6545.** Application deadline is 1 October 1990. *The University of Nebraska is an Equal Opportunity/Affirmative Action Employer.*

### HEAD DEPARTMENT OF FOREST RESOURCES

Provides: leadership in recruitment and development of faculty and staff; direction for instruction, research, and extension; and budget development and administration. Qualifications include: an earned doctorate; a record of scholarship in forest resources commensurate with the rank of full professor; a sense of the broad spectrum of values society attaches to forest resources, and the processes by which these values are translated into policy; discriminating judgment in the quality of contemporary forest science; and the ability to administer programs in teaching, research, and extension. Send cover letter, curriculum vitae, and names of four references by 9 November 1990 to: **Professor James N. Long, Department of Forest Resources, College of Natural Resources, Utah State University (USU), Logan, UT 84322-5215.** Telephone: 801-750-2455. Position open until filled.

*USU is an Affirmative Action/Equal Opportunity Employer.*

**COORDINATOR OF EXTERNAL RELATIONS.** The Center for Compound Semiconductor Microelectronics of The University of Illinois at Urbana-Champaign seeks a person to support publication, reporting, public information, and special programs efforts. Requires bachelor's degree, 5 years of experience, and excellent communications skills; computer experience preferred. Salary commensurate with qualifications; regular, full-time position. Close date: 4 September 1990. Start date: 1 October 1990. Send application to: **James Renshaw, Micro Lab, 208 North Wright Street, Room 127, Urbana, IL 61801.** Telephone: 217-333-3097. *An Affirmative Action/Equal Opportunity Employer.*

More than 150,000 people paid to see your ad in **SCIENCE**. Classified Advertising Department telephone: 202-326-6555. FAX: 202-682-0816.

## POSITIONS OPEN



The Goddard Space Flight Center is seeking candidates for the position of **HEAD, SOLAR PHYSICS BRANCH**, Laboratory for Astronomy and Solar Physics.

The branch carries out a broad observational and theoretical solar research program using space and ground-based observations. Areas of interest include the deep solar interior and the solar dynamo, coronal heating and the solar wind, solar flares, and other manifestations of solar activity. Current research programs are conducted in four major areas: UV/EUV observations from SMM, rockets, and instruments on SoHO and OSL; hard x-ray and gamma-ray observations from SMM, balloons, and the Mars Observer; ground-based visible-flight magnetograph and helioseismology observations; and solar plasma physics theory and numerical modeling. The branch head is responsible for formulating and advocating a continuing vigorous research and development program in solar physics. He/she is also responsible for the supervision of branch personnel and the management of branch resources. Candidates should have professional experience equivalent to at least GM-14 in the federal service and be actively engaged in advanced research, and show demonstrated capability in leading and developing such research efforts. A Ph.D. degree in physical sciences or engineering is desirable.

The salary range is \$59,216 to \$76,982 per annum (grade GM-15), depending on experience. Applicants should submit a résumé or Application for Federal Employment (SF-171) by 30 September 1990 to: **NASA/Goddard Space Flight Center, Employment and Employee Services Branch, Code 115SOC, Greenbelt, MD 20771.** Technical inquiries should be directed to: **Dr. Michael Hauser at 301-286-8701.**

*Equal Opportunity Employer. U.S. citizenship required.*

**CHEMIST.** Stanley H. Kaplan Educational Center is seeking an M.S. chemist to research, write, and edit technical educational material in our midtown Manhattan office. Candidate will have some management responsibilities. Full benefit package; salary commensurate with experience. Send résumé and cover letter to: **Research Department MT, 810 7th Avenue, 22nd Floor, New York, NY 10019.**

### ELECTROPHYSIOLOGIST

The Cardiology Branch of the National Heart, Lung, and Blood Institute is recruiting for an electrophysiologist to perform clinical and research investigations. The need for an electrophysiologist who is senior and experienced is essential, as many high-risk patients, including those with HCM, will be routinely investigated. The environment is extremely stimulating and exciting. Annual starting salary: \$56,128. Contact: **Dr. Stephen Epstein, NIH, Building 10, Room 7B15, 9000 Rockville Pike, Bethesda, MD 20892.** Telephone: 301-496-5817.

### EPIDEMIOLOGIST CENTERS FOR DISEASE CONTROL (CDC) ATLANTA

The Radiation Studies Branch, Division of Environmental Hazards and Health Effects (EHHE), Center for Environmental Health and Injury Control, has a vacancy for an epidemiologist to conduct epidemiologic studies related to possible health effects of populations exposed to ionizing radiation. EHHE has approximately 50 professional, technical, and support personnel responsible for a variety of challenging environmental public health programs. Although not required for consideration, a Ph.D., M.D., Sc.D., or Dr.P.H. degree with a strong background in epidemiology, biostatistics, and environmental health; four or more years experience in related environmental health work; and a relevant publication record in peer-reviewed journals are desirable. Specifically, experience in epidemiologic studies involving ionizing radiation would be a strong attribute for qualified applicants. The approximate salary range is from \$42,000 to \$67,000, depending on qualifications and experience.

Interested persons should send curriculum vitae to: **James M. Smith, Ph.D., Chief, Radiation Studies Branch, Centers for Disease Control, Mail Stop F-28, 1600 Clifton Road, N.E., Atlanta, GA 30333.**

*CDC is an Equal Opportunity Employer and provides a smoke-free environment.*

# DIRECTOR, BIOLOGICAL RESEARCH & DEVELOPMENT

Lead a team of scientists  
in large scope projects.

Wyeth-Ayerst Research is one of the world leaders in pharmaceutical research and development. Currently we seek a top level individual to join our fast paced, innovative global research environment as Director of Biological Research and Development.

Responsibilities will include overall supervision of our Biological Pilot Plant, planning the direction and scope of research and development with Assistant VP, as well as providing expertise and solutions to clinical R&D and production staff involved in product development. We are looking for an individual with a successful track record in biological research and development who is recognized internally and externally as a highly qualified resource in infectious diseases and vaccine development. You will have the opportunity for publication and assure publication of scientific accomplishments for department.

Ideal candidate will have an M.D. or Ph.D. degree in biological sciences, and a minimum of 9 years experience in the administration and performance of biological research. A strong background in infectious diseases, molecular biology, virology, immunology and tissue culture is required, the ability to stay current with new developments in the field is essential.

Explore your exceptional career advantages with Wyeth-Ayerst. We offer a competitive salary, comprehensive company benefits and an innovative environment with top professional colleagues. For confidential consideration, forward your resume with salary requirements to: **Wyeth-Ayerst, Research Personnel, Position #112, P.O. Box 8299, Philadelphia, PA 19101.** Equal opportunity employer, M/F/H/V responses encouraged.



## Position Available National Institute on Alcohol Abuse and Alcoholism Public Health Service Department of Health and Human Services

The National Institute on Alcohol Abuse and Alcoholism (NIAAA), one of three scientific Institutes of the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA), is seeking nominations and applications for the position of Director, Division of Intramural Clinical and Biological Research (DICBR). The Director, DICBR, has the primary responsibility for the scientific and administrative management of the NIAAA intramural research program.

Responsibilities of the Director, DICBR, include directing programs of multidisciplinary biomedical and clinical research for NIAAA, providing advice to the Institute Director on Institute intramural research programs, and participating with the Institute Director and other senior staff in the development and implementation of broad Institute decisions on such matters as development, program direction, planning, budget formulation, and resource allocation.

The person selected for this position (located in Bethesda, Maryland) will receive a career appointment to the Senior Executive Service (SES) with an annual salary of \$71,200 to \$99,200. The top figure includes base salary and an allowance of up to \$20,000 for physicians. The proposed income range to be effective January 1991, pending issuance of an Executive Order, is \$84,000 to \$117,000 (again including the maximum \$20,000 allowance for physicians). Senior Executive Service members are also eligible for performance awards of 5 to 20 percent of base salary.

Minimum qualification requirements include a degree of Doctor of Medicine, Doctor of Philosophy, Doctor of Osteopathy, or a bachelor's or higher degree in an academic field related to the health sciences, and progressively responsible experience in developing, administering, and evaluating health research programs.

Additional information about the position and qualifications requirements may be obtained by contacting Ms. Lynn E. Brooks-Smith, (301) 443-5030. An SF 171 (Application for Federal Employment) accompanied by a current curriculum vitae and bibliography should be submitted to Ms. Brooks-Smith at the Division of Personnel Management, ADAMHA, Room 15C-26, 5600 Fishers Lane, Rockville, Maryland 20857. Complete application material (including SF 171) **must be postmarked** by the closing date of September 7, 1990. **Resumes are not acceptable for entrance into the Senior Executive Service.**

Applications from women and minority group members are solicited.

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**Position: PROFESSOR AND HEAD**  
**Department of Microbiology**

**Responsibilities To Be Fulfilled:**

Direct the education, research and service programs of a Microbiology Department in the College of Medicine.

**Qualifications:**

**Basic:** Ph.D. or M.D. degree or equivalent and demonstrated scholar and leader in Microbiology or directly related area such as Biochemistry, Genetics, Molecular Biology, Immunology and Physiology.

**Desirable:** Demonstrated ability to attract extramural funds. Established and continuing record of research productivity. Strong interpersonal skills and proven ability to work with others. Proven excellence in teaching at the undergraduate and graduate levels. National and international reputation.

**Salary:**

Commensurate for a Professor and Head of Microbiology. Excellent fringe benefits.

**Employer:**

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

**Application:**

Interested persons are invited to direct inquiries and submit vitae to:

Michael A. Pfaller, M.D.  
Chairperson, Microbiology Search  
Committee  
273 Medical Research Center  
Department of Pathology  
College of Medicine  
University of Iowa  
Iowa City, IA 52242



**Oceanography Faculty  
Positions**

Duke University will appoint three tenure-track faculty positions at the Assistant or Associate Professor level in geological, chemical and/or physical oceanography. The faculty will be resident at the Marine Laboratory in Beaufort, North Carolina. Candidates with sea-going programs are particularly encouraged to apply. The Marine Laboratory is the home port for the R/V CAPE HATTERAS, a member of the NSF academic oceanographic fleet. The appointees will be expected to develop aggressive research programs and contribute to Duke's developing curriculum in the ocean sciences.

**Send curriculum vitae, names of three referees, and letter of research and teaching interests to: Prof. R. T. Barber, Chairman, Oceanography Search Committee, Duke University Marine Laboratory, Beaufort, NC 28516, by 1 November 1990.**

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**THE UNIVERSITY OF AUCKLAND**  
**New Zealand**

**LECTURER IN MOLECULAR GENETICS**  
**Department of Cellular & Molecular Biology**

Provision exists for an exceptionally well qualified candidate to be appointed at Senior Lecturer level.

The Department of Cellular and Molecular Biology is well equipped for research in Molecular Biology and currently accommodates approximately 75 staff, research fellows, graduate students and technicians. In 1991, it is proposed to form a School of Biological Sciences which will incorporate the Departments of Cellular and Molecular Biology, Botany, Biochemistry and Zoology.

Applicants should have a PhD or equivalent qualification and some years of post-doctoral experience. The position involves teaching and research in eukaryotic molecular genetics. We seek an appointee able to initiate a strong research programme in human molecular genetics. Opportunity will exist for the development of strong interactions with staff in the Medical School and with DNA Diagnostics Ltd, a University-based company involved in genetic testing.

The successful applicant will contribute to the undergraduate and graduate teaching programme in molecular genetics and will supervise and carry out research.

Commencing salary will be established within the following ranges:

Senior Lecturer NZ\$50,000 – NZ\$58,600 per annum;  
Lecturer NZ\$36,000 – NZ\$47,200 per annum.

Conditions of Appointment and Method of Application are available from Appointments (38216), Association of Commonwealth Universities, 36 Gordon Square, London, WC1H 0PF, UK; or from the Assistant Registrar (Academic Appointments), University of Auckland, Private Bag, Auckland, New Zealand. Applications should be forwarded as soon as possible but not later than the closing date **13 September 1990**.

The University of Auckland  
An Equal Employment Opportunity Employer

**LABORATORY DATA MANAGER**

The Department of Data Management at Pioneer Hi-Bred International, Inc. is seeking applicants for a Laboratory Data Manager. This position will be responsible for coordination of design and development of lab databases and lab data analysis computer applications to facilitate laboratory information management for Biotechnology and Research Specialist Departments. Strong emphasis will be given to facilitating integration of field and lab data. Responsible for supervising laboratory support personnel in the use of existing computer applications and assisting with evaluation and recommendations of third party software. Applicants must have a Ph.D. in Biological Sciences with experience in laboratory computer applications. One to two years relational database experience desired. Must possess good oral and written communication skills and able to work cooperatively with others. Send resume including the names of three references to:

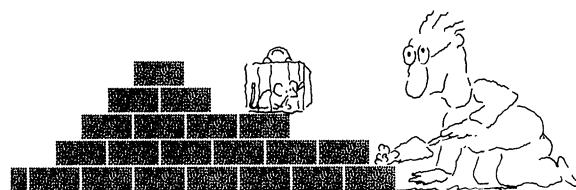


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Attn: Twila Carzoli

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### Chairman, Department of Anatomy

Applications are invited for the position of Chairman, Department of Anatomy, Northeastern Ohio Universities College of Medicine (NEOUCOM). The Department of Anatomy is responsible for teaching gross anatomy, microscopic anatomy and embryology to medical students.

Successful candidates will have established leadership skills and a commitment to medical and graduate teaching programs, including an active interest in maintaining a dissection course in gross anatomy. Candidates should have a proven record of research and publications in the areas of either biological anthropology or cell biology and academic credentials which will support a tenure-track appointment at the level of professor. The Department's current research strengths are in muscle biology and neuroendocrine regulation. Additional faculty positions will be available.

NEOUCOM, a consortium of The University of Akron, Kent State University and Youngstown State University, in association with eight community teaching hospitals in northeastern Ohio, offers a combined BS/MD degree. The College has graduated ten classes. NEOUCOM faculty participate in graduate programs leading to the M.S. and Ph.D. degrees and are graduate faculty of the School of Biomedical Sciences of Kent State University. A Ph.D. in clinical biomedical sciences utilizing the facilities of the consortium is in the planning stages.

Applicants are requested to forward their curriculum vitae and names of three references by September 30, 1990, to the Office of Human Resources, Attention Glenn A. Saltzman, Ph.D., Director, Division of Basic Medical Sciences, Northeastern Ohio Universities College of Medicine, P.O. Box 95, Rootstown, Ohio 44272. An equal opportunity affirmative action employer.

### CHAIR OF VETERINARY BIOLOGY AND TENURED ASSOCIATE OR FULL PROFESSOR

College of Veterinary Medicine  
University of Minnesota

Applications and nominations are invited for the position of Chair and Tenured Associate or Full Professor in the Department of Veterinary Biology. The department includes 16 faculty in the disciplines of anatomy, biochemistry, physiology and pharmacology, and occupies modern laboratory and teaching facilities. The College is located on the Twin Cities Campus in St. Paul with the opportunity for interaction with colleagues from many other units of the University including the Medical School, the College of Biological Sciences and the College of Agriculture.

Candidates must have the Ph.D. degree or relevant foreign equivalent and preference will be given to individuals who also hold the D.V.M. degree or foreign equivalent. The appointee will be expected to have a strong record of research and teaching accomplishments, with proven leadership and administrative abilities. The appointee must be able to: 1) provide leadership, both in professional and graduate education, and in developing competitive research programs, and 2) have an understanding of future trends in the veterinary profession and current issues relating to veterinary medical education. Letters of application must include a current curriculum vitae, a statement of goals, a summary of administrative experience and the names and addresses of 3 or more references.

Applications with supporting material will be accepted until October 15, 1990 and should be sent to: VB CHAIR SEARCH, College of Veterinary Medicine, University of Minnesota, St. Paul, Minnesota 55108. THE UNIVERSITY OF MINNESOTA IS AN EQUAL OPPORTUNITY EDUCATOR AND EMPLOYER AND SPECIFICALLY INVITES AND ENCOURAGES APPLICATIONS FROM WOMEN AND MINORITIES.

## BIOLOGY RESEARCH ASSOCIATES

The Upjohn Company, a recognized leader in research, production and marketing of pharmaceuticals invites applications for Biology Research Associate positions in our Upjohn Laboratories Division. Qualifications include a BS or MS degree with high academic achievement in Biology, Biomedical Science or related discipline. Several years of relevant, recent experience, a strong commitment to the laboratory and the ability to solve technical problems are needed.

**CARDIOVASCULAR DISEASES:** Conduct studies of membrane electrophysiologic effects of compounds on cardiovascular functions; explore basic mechanisms; proficiency in use of microelectrodes and patch clamp techniques needed.

**HYPERSENSITIVITY DISEASES:** Perform drug studies in arthritis research using animal dosing, surgery, drug preparation and computer technology; no animal allergies.

**MEMBRANE BIOLOGY:** Study neuronal receptors and ion transports in the CNS; apply biochemical and electrophysiological techniques.

Upjohn offers a competitive compensation and benefits package in addition to a stimulating, multi-disciplinary research environment at our modern laboratories in Kalamazoo, Michigan. Send your cv/resume and copy of transcripts to: The Upjohn Company, Corporate Recruiting/Code 6001-HA, Kalamazoo, MI, 49001-0199. Refer to Job Code 6001-HA in your cover letter. An Equal Opportunity Employer M/F.

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## STERLING RESEARCH GROUP



### CARDIOVASCULAR PHARMACOLOGY

#### RESEARCH INVESTIGATOR/CELLULAR BIOCHEMIST (RS-104)

Candidate will be part of a multidisciplinary approach to drug discovery by participating in ongoing drug discovery programs and by initiating new research ideas focused on the treatment of cardiovascular diseases. The position requires a Ph.D. in biochemistry or pharmacology with two or more years' relevant postdoctoral experience and research in signal transduction/second messenger mechanisms or cellular biochemistry. Experience in cardiovascular pharmacology/physiology desirable.

#### RESEARCH INVESTIGATOR/*in vivo* CARDIOVASCULAR PHARMACOLOGIST (RS-103)

Candidate will perform *in vivo* cardiovascular studies and serve on development project teams. Ph.D. in Cardiovascular Physiology or Pharmacology with 2-3 years' relevant postdoctoral experience required. Ability to contribute new ideas/research to cardiovascular projects with an emphasis in heart failure, reperfusion injury, echocardiography or renal function desirable.



### NATURAL PRODUCTS BIOLOGY

#### RESEARCH INVESTIGATOR (RS-115)

Candidate will aid in the design and implementation of biosynthetic processes for generating novel and biologically active structures. Responsibilities include establishing research direction in microbial biotransformation in conjunction with ongoing activities in molecular targeted drug discovery and taking an active lead in conducting fermentation research in the evaluation of microbial product formation. A Ph.D. in Biochemistry/Microbiology or equivalent, postdoctoral training in biocatalysis, strong bioanalytical skills and experience in enzymology, industrial microbiology and chromatography are required.

*We offer a very competitive salary and benefits package. To apply, please include the department code and send your resume to: Sterling Research Group, 81 Columbia Turnpike, Rensselaer, New York 12144. An equal opportunity employer M/F/H/V.*



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## TOXICOLOGIST

Staff position available at the Inhalation Toxicology Research Institute for toxicologist with orientation towards multidisciplinary team approach to solving research problems. We seek an individual with doctoral level training in toxicology who has completed a rigorous postdoctoral fellowship or possesses equivalent experience, and has relevant open literature publications. American Board of Toxicology certification or eligibility desirable. A background in chemistry, biochemistry, cell or molecular biology, pathology, immunology, particle deposition/clearance, physiology, pharmacology, pharmacokinetics, metabolism or other related fields will be considered. Competitive salary and fringe benefit package. Submit resume to Human Resources Unit. Refer to Job #103.



Inhalation Toxicology Research Institute  
P.O. Box 5890, Dept. M  
Albuquerque, NM 87185

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## POSTDOCTORAL RESEARCH ASSOCIATE

Salary Range: \$25,000 to  
\$28,000 Per Annum

Postdoctoral position available for 1 to 3 years in the National Institute of Allergy and Infectious Diseases, Laboratory of Immunopathology to study the immunological and molecular parameters of tumor cell-host interactions in DNA viral carcinogenesis (see Science, 277:15-20, 1985 and Virol. 163:347-390, 1988 for reviews). Background in either (or some combination of) cell biology, molecular virology, cellular immunology required. Send CV to:

**Dr. Andrew M. Lewis, Jr.**  
NIH/NIAD  
Bldg. 7, Room 303  
9000 Rockville Pike  
Bethesda, MD 20892  
(301) 496-4436

U.S. Citizenship Required  
NIH is an Equal Opportunity  
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## POSITIONS OPEN

### UNIVERSITY OF GENEVA FACULTY OF SCIENCE

A **PROFESSORSHIP** will be available in the Department of Zoology and Animal Biology at the University of Geneva.

The successful candidate will be expected to participate in both undergraduate and graduate teaching and to establish a strong independent research program. Applications are particularly invited from candidates whose area of research is the biology of the lower eukaryotes. However, outstanding biologists whose research interests are outside of this area will also be considered. The teaching will be in French and the applicants must be prepared to undertake an effort to become fluent in a reasonable time. The position is available October 1991, negotiable.

Applications should be sent by 30 November 1990 to: **Secrétariat de la Faculté des Sciences, 30, quai Ernest-Ansermet, 1211 Genève 4, Switzerland**, where inquiries can also be addressed.

### FACULTY, BACTERIAL PATHOGENESIS

The Department of Immunology and Medical Microbiology invites applicants for a 12-month, tenure-track research and teaching position to complement ongoing programs in bacterial pathogenesis, molecular genetics, virology, and immunology. The individual will be expected to develop an independent research program preferably in molecular pathogenesis of bacteria at the **ASSISTANT PROFESSOR** level, although the rank is negotiable. Well-qualified individuals with interests in closely related areas will also be considered. M.D. or Ph.D., plus postdoctoral experience. Send curriculum vitae, bibliography, brief description of research plans, and names and addresses of three references by 31 December 1990 to: **Dr. James B. Flanagan, Box J-266 JHMHC, University of Florida, Gainesville, FL 32610-0266**.

Equal Opportunity/Affirmative Action Employer.

The Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, Texas A&M University, is seeking applicants for a 12-month, tenure-track **FACULTY POSITION** in pharmacology. The position requires expertise in teaching and research and will be open to individuals who possess a D.V.M. or equivalent and/or Ph.D. in pharmacology. Expertise in clinical pharmacology is desirable. The position will be open 1 September 1990. Rank and salary will be commensurate with qualifications. Send curriculum vitae, statement of academic interests and goals, and list of references to: **Dawn Boothe, Department of Veterinary Physiology and Pharmacology, Texas A&M University, College Station, TX 77843-4466**.

**INSTRUCTORSHIP**, nontenure track, is available in the Department of Anatomy and Neurobiology, The University of Tennessee (UT), Memphis. Candidates must show evidence of strong research achievement and the ability to set up an independent research program. M.D. and/or Ph.D. degree and at least 4 years of research experience is required. In addition, applicants should have established credentials in the field of striatal tissue transplants, including experience in creating experimental striatal tissue transplants, light and electron microscopic immunocytochemical analysis, and intracellular recording and staining of transplanted neurons. Medical training and an interest in the clinical applications of brain tissue grafts are preferred. The successful candidate must be qualified to teach gross anatomy and embryology and graduate courses in areas of expertise. Annual salary: \$18,000. The department is the center of an expanding multidisciplinary neuroscience community. Please submit by 15 September 1990 curriculum vitae, statement of research interests, and names of three individuals who can be contacted for letters of reference to: **Mrs. Edna Flynn, Tennessee Job Service, 1295 Poplar, Memphis, TN 38104**. *UT Memphis is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION.** Investigating proline-directed phosphorylation (PDP) during cell differentiation. The role of PDP in mediating growth factor response and PDP's interaction with other kinases is being examined in selected cell lines.

Contact: **Dr. P. R. Vulliet, Department of Veterinary Pharmacology, University of California, Davis, CA 95616**. Telephone: 916-752-7409. *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### AGRICULTURAL RESOURCE MANAGEMENT SPECIALIST THE ROCKEFELLER FOUNDATION

Agricultural Sciences Division of the Rockefeller Foundation invites applications for a field staff position to develop a new program on agricultural resource management in the developing world, aimed at increasing the knowledge of how soil, water, and forest resources contribute to sustainable food, fuel, and fiber production; increased understanding of the impact of agriculture on natural resources; and the application of this knowledge to improve agriculture and natural resource use. Candidates must have scientific expertise in relevant discipline, ability to independently evaluate the intellectual and scientific merit of proposed research, 10 years of experience with some in the developing world, reputation of absolute honesty and impartiality, an ability to conceptualize and develop a program of grants and recommendations to the director and other foundation officers, and excellent writing skills in English and speaking in Spanish. Send letter of application, complete curriculum vitae, and names of references before 1 October 1990 to: **Agricultural Sciences Division, The Rockefeller Foundation, 1133 Avenue of the Americas, New York, NY 10036**.

**MOLECULAR BIOLOGIST/INFORMATION SPECIALIST.** The National Library of Medicine (NLM), National Institutes of Health, Public Health Service, has full-time permanent openings for technical information specialists to analyze published gene sequence data from international biomedical journals as part of its indexing operation. Positions to be filled at the GS-9 (starting at \$24,705) or GS-11 (starting at \$29,891) level. For application package, contact: **Ms. Apolito, NLM, Building 38, Room 2N17, 8600 Rockville Pike, Bethesda, MD 20894**. Telephone: 301-496-4943. *NLM is an Equal Opportunity Employer. U.S. citizenship required.* Applicants must meet the following selective factors: experience in gene sequence analysis or molecular biology and knowledge of at least two foreign languages (knowledge of computers may be substituted for one of the foreign languages). Applications must be received by close of business 4 September 1990. **Vacancy 9037L095.**

The Anatomy Department of the Medical College of Ohio has openings for **NEUROBIOLOGISTS** who are studying neural organization or development at the molecular, cellular, or system level. Appointments may be either tenured or tenure track with teaching responsibility in neurobiology, microanatomy, or gross anatomy. Applicants for assistant professorship should have demonstrated the ability to establish an independent and funded research program. Applicants for more senior appointments should have ongoing and funded programs. The medical college offers excellent research facilities and very competitive salaries and start-up funds. Faculty hired in the upcoming year will join a growing neuroscience group which will be expanded by subsequent recruitment. Forward curriculum vitae and the names of three references to: **Dr. John T. Wall, Faculty Search Committee, Department of Anatomy, Medical College of Ohio, Toledo, OH 43699**. *Equal Opportunity Employer.*

**POSTDOCTORAL POSITION.** To study conformational dynamics of membrane proteins using fluorescence techniques. Experience in biophysical chemistry and preparative biochemistry desirable. Position available immediately. Send curriculum vitae and three letters of reference to: **T. Gregory Dewey, Department of Chemistry, University of Denver, Denver, CO 80208**.

### POSTDOCTORAL POSITION

Several immediate positions open for candidates with a Doctorate of Philosophy in biochemistry, molecular biology, or in related fields to study the mechanisms of receptor-mediated signal transduction processes. Current studies depend heavily on the utilization of molecular genetic, biochemical, and pharmacological approaches to understanding these processes. Apply with curriculum vitae and three letters of reference to:

**Rameshwar K. Sharma, Ph.D. (FFB-42)**  
Section Head, Regulatory Biology  
Department of Brain and Vascular Research  
The Cleveland Clinic Foundation  
9500 Euclid Avenue  
Cleveland, OH 44195-5068



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### SCIENTIST

The selected candidate must possess a Ph.D. in biochemistry or a related field and 0-4 years postdoctoral and/or industrial experience. Experience with Chlamydia Trachomatis is required.

We offer competitive compensation and benefits including profit sharing and a stock retirement plan. We are located in an attractive suburban area approximately 30 miles north of Chicago. For consideration, please send your resume to: **Ann Ribbens, Corporate Placement, Job #7717, Abbott Laboratories, One Abbott Park Road, Abbott Park, IL 60064.** (To facilitate the handling of your resume, please indicate job number on your cover letter or resume). Abbott is an Affirmative Action Employer.

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## SENIOR SCIENTIST

### In Vivo Cardiovascular Pharmacology

Glaxo Inc. is one of the largest pharmaceutical firms in the U.S. Join us today in this exciting Research & Development opportunity. This position is located at our Corporate Headquarters facility in Research Triangle Park, N.C.

As a member of our comprehensive team of scientists focused on discovery of pharmacological treatments for cardiovascular diseases, candidate will conduct studies in the area of arrhythmia — induced sudden death. Background must include 3-7 years relevant post-doctoral experience in evaluating arrhythmogenic mechanisms. Experience with programmed electrical simulation is preferred.

Join us and enjoy excellent pay, flexible benefits, an on-site recreation and fitness center, a spirit of enthusiasm and teamwork and outstanding opportunities for career satisfaction. Send your resume including salary history, to: **Human Resources Department, Job #9110B910, Glaxo Inc., P.O. Box 13398, Research Triangle Park, N.C. 27709.** (No phone calls or agency referrals, please). An Equal Opportunity Employer M/F/H/V.

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***Our belief begins with you.***

### CHEMIST (MOLECULAR DYNAMICS) GM-861-13 potential 14 or 14

The Air Force Office of Scientific Research located at Bolling Air Force Base in Washington DC invites applications from qualified US citizens with a background in molecular dynamics research. An earned PhD is desired. The successful applicant will plan, advocate and manage the Air Force basic research program in spectroscopy, chemical kinetics, collisional energy transfer, chemiluminescence, and laser chemistry. A broad knowledge of US and foreign research in these areas is desired. The position is competitive civil service GM-13/14 or 14 with a salary range at GM-13 from \$42,601 to \$55,381 or at GM-14 from \$50,342 to \$65,444 per annum. No prior Government service is required. Applications will be screened by the Civilian Personnel Office.

Send applications (SF 171) to:

Civilian Personnel Office  
1776 ABW/MSCA  
Ann. No. 90-314  
Andrews AFB MD 20331-5964

*Equal Opportunity Employer*

Applications must be received by: 15 September 1990

### RESEARCH ASSOCIATE Eastern Regional Research Center

The Eastern Regional Research Center (ERRC), Agricultural Research Service, USDA, has four openings for Research Associates. The Center has an active research program in many agriculturally, industrially and nutritionally important areas conducted by over 250 scientists, engineers and support staff. The Center has available for staff use state-of-the-art instrumentation, computer, and library. Located on an attractive 27 acre campus just outside of Philadelphia in Wyndmoor, Montgomery County, Pennsylvania, ample free parking, cafeteria, close to public transportation, and a flexible work schedule. The areas of research are:

**Milk Components Utilization:** Research Chemist to study molecular biology of beneficial streptococci essential in industrial food fermentations. Contact George A. Somkuti, 215-233-6474. Application #0N043.

**Biochemistry & Chemistry of Lipids:** Research Chemist to study the enzymatic conversion of fats and oils to industrially important chemicals. Contact George J. Piazza, 215-233-6511. Application #0N034.

**Macromolecular and Cell Structure:** Research Chemist to develop affinity chromatographic techniques for isolation and analysis of antibiotics in tissues and fluids of food producing animals. Contact Marjorie Medina, 215-233-6436. Application #0N044.

**Biochemistry & Chemistry of Lipids:** Molecular Biologist to develop a system for the high level expression of a cloned fungal lipase gene. Contact Michael Haas, 215-233-6459. Application #0N045.

Appointments are for 2 years. Salary commensurate with experience (\$29,891 to \$35,825). Must have relevant Ph.D. within the last 3 years. Send resume/application including 3 references to the appropriate contact listed above and mail by **September 24, 1990**, to: **USDA, ARS, Eastern Regional Research Center, 600 East Mermaid Lane, Wyndmoor, Pennsylvania 19118.** Applications in response to this advertisement should be marked with the appropriate number.

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Agricultural  
Research  
Center

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Department of  
Agriculture

# SCIENTISTS

IITRI is a renowned not-for-profit contract research and development organization. We are seeking Ph.D. level scientists to conduct research in our Life Sciences Department.

## RESEARCH BIOCHEMISTS/PHARMACOLOGISTS:

Conduct research with interdisciplinary teams in cancer chemoprevention/carcinogenesis. Postdoctoral experience in one or more of the following areas is desirable: micronutrient analysis, tissue distribution, pharmacokinetics, metabolism studies, and/or lipid biochemistry. Development of research program in area of expertise encouraged. Direct resume to: Dept.#S/RBP.

## TOXICOLOGIST/PHARMACOLOGIST:

Advanced degree and 2-4 years of industrial or postdoctoral experience. Responsibilities include Study Director functions for regulatory toxicology studies; the design and conduct of studies to evaluate xenobiotic bioavailability and disposition (i.e., ADME) following various routes of exposure; preparation of research proposals, reports and publications; and supervision of technical staff. Must have in vivo toxicology and drug metabolism experience as well as a demonstrated comprehension of analytical methodologies. A solid background in fundamental toxicology is essential. Familiarity with GLP regulations, in vitro research techniques and pharmacokinetics is desirable as is experience in inhalation toxicology. Direct resume to: Dept.#S/TPO.

## MOLECULAR BIOLOGIST OR MOLECULAR PHARMACOLOGIST:

Candidate should have at least 2 years postdoctoral experience and a strong interest in the areas of carcinogenesis and cancer chemoprevention. Participate in an ongoing program in cellular biology, retinoids, growth factors and hormones as related to mammary cancer. Candidate will also be encouraged to develop a research program in area of interest. Direct resume to: Dept.#S/MBP.

## NUTRITION AND/OR CARCINOGENESIS:

Conduct research with interdisciplinary team in cancer chemoprevention and carcinogenesis. Postdoctoral experience in diet formulation and analysis highly desirable. Development of research program in area of expertise encouraged. Direct resume to: Dept.#S/NUC.

IITRI provides a competitive compensation/benefit portfolio. Submit resume with salary specifics in confidence to: Ms. L. Amft, IIT Research Institute, 10 West 35th Street, Chicago, IL 60616. An Equal Opportunity/Affirmative Action Employer.



IIT Research Institute

## POSITIONS OPEN

**POSTDOCTORAL POSITION IN HUMAN LUNG CARCINOGENESIS STUDIES.** Experience in molecular and cellular biology of oncogene (*ras*, *myc*, and *raf*)-induced carcinogenesis and radiation resistance in human epithelial cells required. Send curriculum vitae and names of three references to: Dr. Curtis C. Harris, Building 37, Room 2C05, NIH, Bethesda, MD 20892.

## POSTDOCTORAL POSITIONS IN MOLECULAR BIOLOGY

Position(s) available to study the regulation and function of DNA-binding proteins and other transcription factors in yeast. (See *Cell* 56, 409; *Genetics* 124, 283.) Candidate should have experience in genetics, protein, and/or nucleic acid chemistry. Send curriculum vitae and names of three references to: Dr. Clyde L. Denis, Department of Biochemistry, University of New Hampshire (UNH), Durham, NH 03824. Women and minorities are encouraged to apply. UNH is an Affirmative Action/Equal Opportunity Employer.

## POSTDOCTORAL POSITION SIGNAL TRANSDUCTION

Available immediately to participate in the study of the mechanisms of interplay between cAMP-generating systems and  $Ca^{2+}$ -mobilizing systems in cultured cells. The approach involves both measurement of second messengers and molecular biological characterization of the regulatory components. Experience with either molecular biological methods or signal transduction systems desired. Please send your curriculum vitae and names of references to: Dr. D. M. F. Cooper, Department of Pharmacology, Box C-236, University of Colorado Health Sciences Center, Denver, CO 80262.

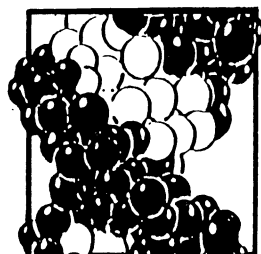
## POSTDOCTORAL POSITION THYMIC SELECTION IN TRANSGENICS

Available immediately to study T cell development using a transgenic mouse model system (see *Nature* 341, 746). Projects involve molecular and cellular approaches to study tolerance induction and MHC recognition during T cell maturation. Applicants should send curriculum vitae, statement of research experience and interests, and names of three references to: Dr. Jonathan Kaye, Department of Immunology, IMM8, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, CA 92037.

## POSTDOCTORAL POSITIONS IN DEVELOPMENTAL BIOLOGY AND NEUROBIOLOGY.

Available for research with Dr. Hans Bode (molecular basis of stem-cell differentiation and patterning in *Hydra*), Dr. Ralph Bradshaw (polypeptide growth factors and their receptors), Dr. Marianne Bronner-Fraser (role of extracellular matrix in neural crest migration and neural crest cell lineage), Dr. Peter Bryant (molecular genetics of cell adhesion and proliferation control in *Drosophila*), Dr. Susan Bryant (molecular and cellular analysis of growth and patterning in vertebrate limbs), Dr. Frank Calzone (molecular biology of tissue-specific genetic switches in animals), Dr. Scott Fraser (videomicroscopic analysis of nerve patterning, analysis of neuronal cell lineages, and analysis of gap junction in tissue patterning), Dr. Edward Jones (gene regulation for transmitter- and second messenger-related proteins in the primate central nervous system), Dr. Herbert Killackey (the organization and development of the somatosensory system), Dr. J. Lawrence Marsh (molecular genetics of cell signaling events in *Drosophila* development, genetics and evolution of catecholamine producing enzymes in mammals and insects), Dr. Ronald Meyer (cellular regulation of nerve regeneration in adult rodents and fish using in vitro and in vivo models), Dr. Ben Murray (molecular and cellular biology of vertebrate cell-adhesion molecules and their roles in development), Dr. Diane O'Dowd (function and regulation of ion channels in *Drosophila*), Dr. Michael O'Connor (regulation of homeotic gene expression and mechanisms of dorsal-ventral patterning in *Drosophila*), or Dr. Martin Smith (cellular and molecular studies of the role of extracellular matrix components in synaptogenesis). U.S. citizenship or permanent residency status required. Submit résumé and description of research interests and have three letters of recommendation sent to: Director, Developmental Biology Center, University of California, Irvine, CA 92717. Deadline: 15 October 1990. University of California is an Equal Opportunity/Affirmative Action Employer. The Developmental Biology Center is particularly interested in receiving applications from women and minority candidates.

SCIENCE, VOL. 249



# Research & Results

## Senior Scientist Molecular Cytogenetics

In 1984, Integrated Genetics initiated a major research program devoted to the study of genetic disease.

In 1986, IG became the first commercial laboratory licensed to perform DNA-based testing for inherited disease.

In 1989, IG became the first fully integrated prenatal genetic testing laboratory by adding cytogenetic and biochemical testing to its extensive menu of DNA-based tests.

Research and results from IG - the comprehensive approach to prenatal genetic testing.

In this capacity, you will manage a research group devoted to the development of in situ hybridization-based diagnostics to detect chromosomal abnormalities. Your primary responsibility will be to ensure that clinical products are developed according to plan. You will be supported by a group with strong molecular biology and cytogenetic skills, although you will also interact with a more basic science research group utilizing the same technology. Candidates must possess 5-7 years of postdoctoral experience with areas of expertise encompassing nucleic acid biochemistry, fluorescent probes, and product development. Strong managerial skills a necessity; ability to interface with hardware developers desirable.

Integrated Genetics offers an excellent compensation and benefits package, including equity participation, a 401(k) Plan with a company match, tuition assistance and medical, dental, life and vision care insurance. For immediate consideration, please call us at 1-800-877-2557 and speak with Steve Grossman. Alternatively, please send your resume to: Director, Human Resources, Dept. S817, Integrated Genetics, One Mountain Road, Framingham, MA 01701.

An equal opportunity employer



## POSITIONS OPEN

### POSTDOCTORAL POSITION

Available immediately to study signal transduction during mammalian fertilization. Projects include the identification, isolation, and characterization of receptors and ion channels from sperm that are regulated by egg-derived agonists [see *Dev. Biol.* 135, 133-146 (1989)]. Applications with expertise in electrophysiology or membrane protein biochemistry are encouraged. Please send curriculum vitae and names of three referees to: **Dr. Harvey Florman, c/o Personnel Department, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

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

### POSTDOCTORAL POSITIONS INSTITUTE FOR TOXICOLOGY SCHOOL OF PHARMACY UNIVERSITY OF SOUTHERN CALIFORNIA

Two postdoctoral positions are available at the Institute for Toxicology, University of Southern California. The fellowship pays an annual stipend of \$25,000 to \$28,000. Individuals with backgrounds in biochemistry, chemistry, pharmacology, or toxicology with an interest in free radical mechanisms are invited to apply.

Send curriculum vitae and two letters of reference to: **Dr. Enrique Cadenas, Institute for Toxicology, University of Southern California, 1985 Zonal Avenue, Los Angeles, CA 90033.** *The University of Southern California is an Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL POSITION STANFORD UNIVERSITY SCHOOL OF MEDICINE

A postdoctoral position is available to study protein-tyrosine kinases involved in intestinal epithelial cell growth regulation. Current research is focused on the structure, function and regulation of pp60<sup>c-src</sup> and related protein-tyrosine kinases during differentiation and malignant transformation of intestinal cells. Applicants should have a strong background in molecular biology and/or cell biology.

Please send curriculum vitae, approximate date of availability, and names, addresses, and telephone numbers of three references to: **Chris Cartwright, Stanford University School of Medicine, Gastroenterology, Room #S069, Stanford, CA 94305-5100.**

*Stanford University is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITIONS IN BIOTECHNOLOGY AND ENVIRONMENTAL RESEARCH.** IGT, a leader in advanced energy and environmental R&D, seeks talented scientists and engineers to become part of a fast-growing multidisciplinary research team involved in fundamental and applied research in bioremediation of toxic and hazardous substances, biotransformation for production of value-added chemicals, biodesulfurization of fossil fuels, and anaerobic digestion of organic wastes. Selected candidates will work as part of a team and will be responsible for conducting innovative research on existing fully funded programs with the opportunity to develop new programs in related areas of their interest. We are seeking candidates with a recent Ph.D. and background in microbial physiology, molecular genetics, soil microbiology, biochemistry, biochemical engineering, or environmental engineering. Must have strong analytical skills, effective interpersonal and communication skills, and supervisory potential. We offer an attractive salary with opportunity for professional growth. Please send detailed résumé to: **Personnel Department VS, Institute of Gas Technology, 3424 South State Street, Chicago, IL 60616.** *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOWSHIP IN DEVELOPMENTAL ASPECTS OF LOCOMOTION.** A position is available immediately for a postdoctoral candidate interested in working in the general area of developmental aspects of locomotion in normal children and children with cerebral palsy. Experience in human motor system research, writing data acquisition and analysis programs, as well as a background in kinematic and dynamic analysis, are highly recommended. Send curriculum vitae, statement of research interests, and list of three references to: **James R. Bloedel, Division of Neurobiology, Barrow Neurological Institute, 350 West Thomas Road, Phoenix, AZ 85013.** *An Equal Opportunity/Affirmative Action Employer.*

17 AUGUST 1990

## LABORATORY DIRECTOR

Bio Ventures Division - Worcester

The Bio Ventures Division of Failure Analysis Associates, Inc., an international engineering consulting firm, currently seeks a Laboratory Director with outstanding academic and professional credentials.

You will manage an expanding, state-of-the-art cell culture laboratory, determine project goals and provide project technical leadership. You will also ensure that projects are clearly defined and communicate project status and results. Establishing applicable theoretical bases and principles, manpower and expense requirements, and methodologies to be followed will also be among your responsibilities. You need a PhD and 3-5 years' post-doctoral experience in mammalian cell structure, cellular physiology, biology of cell-to-cell interaction, or mammalian hematopoietic stem cell cultures. Experience in molecular biology is helpful. The successful candidate will be a motivated self-starter with excellent communication skills. You must be able to effectively manage and interact with staff.

We offer a comprehensive compensation and benefits package. For confidential consideration, please send your resume to, Vernetta Wilson, AD# SSM854, Human Resources Dept., Failure Analysis Associates, Inc., P.O. Box 3015, Menlo Park, CA 94025, or fax to (415) 328-3049. EOE

**Failure  
Analysis  
Associates.**

## EXPLORATORY DRUG METABOLISM PROGRAM



Hoffmann-La Roche, one of the world's most innovative health care companies, is in the process of building an Exploratory Drug Metabolism program at our Nutley, New Jersey headquarters, creating a variety of opportunities for scientists at all levels.

**RESEARCH INVESTIGATOR:** Lead a group responsible for the design and conduct of investigations into the absorption, distribution and metabolism of experimental drugs. A PhD in Pharmaceutical Chemistry, Biochemistry or related field, demonstrated experience in drug metabolism research and practical experience with *in vivo* and *in vitro* drug disposition and bioanalytical techniques essential. **Please respond to Eleanor M. Malone, Department DL.**

**SCIENTIST:** A background in analytical methods development, *in vivo* and *in vitro* drug metabolism techniques, a BS/MS and 5+ years' pharmaceutical industry experience essential. **Please respond to Frances Newman, Department BG.**

**ASSISTANT/ASSOCIATE SCIENTISTS:** Develop and utilize analytical chromatographic methods, use *in vitro* and *in vivo* techniques and isolate/identify metabolites. A BS/MS in Chemistry, Biochemistry or a related biological science and 0-4 years' experience required. **Please respond to Lynn Harac, Department HS.**

Please send your resume with present salary (those without this information will not be acknowledged), to the person and department indicated, at: **Hoffmann-La Roche Inc., Nutley, New Jersey 07110.** We are an equal opportunity employer.



**Hoffmann-La Roche**

Working Today For A Healthier Tomorrow

## RESEARCH OPPORTUNITIES IN MOLECULAR AND CELLULAR BIOLOGY

**Amgen**, a recognized and innovative leader in the discovery and development of human therapeutic products through applied biotechnology, is actively seeking scientists at BS, MS and Ph.D. levels to conduct research within our Colon Biology program. The objectives of this program will be defining, isolating, cloning and characterizing protein factors involved in the growth and differentiation of the colonic epithelium.

### RESEARCH SCIENTISTS Dept. #549

Candidates for Research Scientist positions must have a Ph.D. in molecular or cellular biology and 2 to 5 years' relevant postdoctoral experience. Candidates must have a strong publication record reflective of their achievements.

Applications for Molecular Biology positions should have a strong foundation in molecular biology and related techniques including the construction and screening of cDNA libraries. Experience in expression cloning is particularly valuable.

Candidates for Cellular Biology positions must have experience in bioassay development and protein purification. This investigator will be responsible for establishing appropriate bioassays for growth and/or differentiation factors and participating in their isolation and characterization.

### POSTDOCTORAL SCIENTIST Dept. #550

Candidates for postdoctoral positions must have a Ph.D. in molecular biology or a related discipline and be familiar with routinely used methodologies in cDNA cloning. Postdoctoral assignments have a maximum term of 2 years.

### RESEARCH ASSOCIATES Dept. #551

Minimum qualifications for these positions include a BS in an appropriate field with two years' research experience in molecular and cellular biology. Experience in basic recombinant DNA methodologies and cell culture techniques is highly desirable.

**Amgen** offers a stimulating and challenging research environment on the leading edge of biotechnology. Our need for these positions reflects an ever increasing commitment to the development of significant products for human health care through excellence in research.

If you have the necessary skills and would like to be a part of an organization that places a high priority on its human resources, please send a complete CV, in confidence, to:

**AMGEN, INC.**  
**Recruitment, Dept. # (please specify)**  
**Amgen Center**  
**Thousand Oaks**  
**CA 91320-1789**

Equal  
Opportunity  
Employer

# AMGEN

## ANIMAL SCIENCE RESEARCH

### PhD Scientist

**H**offmann-La Roche, one of the most widely respected organizations involved in the development of pharmaceuticals, diagnostics, vitamins and fine chemicals, has a highly visible opportunity for a PhD in our Animal Science Research Department.

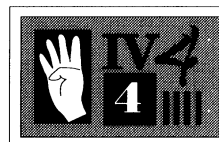
You will conduct research to characterize the interrelationships of vitamins, drugs, hormones and nutrients in control of animal growth and reproduction. This will involve conducting studies at basic biochemical and physiological levels in animal models pertinent to field conditions for food animals. Objectives will include discovery of new methods of altering animal growth, performance and reproduction. To qualify, you must have a PhD in Biochemistry and/or Physiology, a comprehensive understanding of food animal growth and reproduction and experience in isolation, purification and quantitation of peptides, proteins and metabolites. An appreciation and desire to actively project fundamental research to practical applications is essential.

We offer a competitive salary commensurate with experience, a generous benefits package and the resources you'll need to conduct rewarding research. For consideration, please send your resume with present salary (those without this information will not be acknowledged), to: **Mrs. Eleanor M. Malone, Staffing and Employee Services, Department TM, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.** We are an equal opportunity employer.



**Hoffmann-La Roche**

Working Today For A Healthier Tomorrow



## THE SCIENCE RECRUITMENT "FOUR-DAY CLOSE"

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Scientific recruiters can now advertise positions almost as soon as the need arises. Instead of reserving space a month or more in advance, you can now place your ad four days before the magazine mailing date. **SCIENCE** is mailed on the cover date.

Film (right-reading, emulsion face down) or full camera-ready art and insertion order must reach: **SCIENCE, Short Close Desk, 1515 Broadway, New York, NY 10036** by NOON Mondays (except for legal holidays when material must reach New York by NOON Fridays). Because space is limited, the four-day close page will be reserved on a first-come, first-served basis, at a 15% premium.

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You can call it "INSTANT RECRUITMENT."

For further information, telephone Ed Keller, Recruitment Advertising Manager, or Gwen Cantor, Advertising Traffic Manager at **SCIENCE**: 212-730-1050, or write to:

**SCIENCE, 1515 Broadway, NY, NY 10036**  
**CURRENT DISTRIBUTION 160,000**

# PROCEPT

PROCEPT, Inc., a privately held biotechnology company located in Cambridge, Massachusetts, was founded to discover, develop and market proprietary therapeutic compounds designed to enhance the clinical management of immune system diseases such as AIDS, rheumatoid arthritis, multiple sclerosis, and disorders related to organ transplant rejection.

Within the past eighteen months, PROCEPT has rapidly propelled itself into the first tier of biotechnology companies focusing on immunotherapeutic drug development. PROCEPT's approach is based on the development of proprietary receptor technology initially pioneered through our ongoing research collaboration with a leading academic institution in the Boston medical community.

Having recently signed our second major, long-term research and development agreement with one of the largest pharmaceutical companies in the world, PROCEPT is seeking innovative, achievement-oriented individuals who are searching for a dynamic, high-energy environment to put their ideas and skills to work.

## BIOPHYSICAL PROTEIN CHEMIST

An exceptional opportunity exists in our protein receptor drug development program for a Ph.D. level scientist who has accumulated the knowledge and experience required for investigating the fundamental mechanisms governing protein folding. This position requires a minimum of two years postdoctoral training in protein folding, with a demonstrated record of achievement in applying this experience to the study of protein conformational structure and folding mechanisms. You should have direct experience with the appropriate biophysical techniques such as UV, CD and fluorescence polarization spectroscopy, differential scanning microcalorimetry and various molecular modeling programs.

You will play a key leadership role in the research program through interactions with a multidisciplinary team of biochemists, X-ray crystallographers and molecular modeling experts. The focus will be to investigate the refolding, functional renaturation and structural characterization of a variety of recombinant receptors expressed in *E.coli*.

## BIOANALYTICAL CHEMIST

This position requires a self-motivated, B.S./M.S. level research scientist, with a minimum of three years experience in protein characterization methodologies, who will enhance the success of our protein receptor program. You should be familiar with SDS-PAGE, IEF, HPLC, amino acid analysis and basic computer skills. You should also possess good mechanical/organization abilities for processing analytical data in an independent, responsible manner.

## CELLULAR IMMUNOLOGIST

An independent, Ph.D. level immunologist with two plus years postdoctoral experience in lymphocyte biology is desired to work within an interdisciplinary team of molecular and cellular biologists in our protein receptor program. You will investigate the fundamentals of both T-cell receptor recognition and immune system activation related to a variety of autoimmune diseases. In this capacity, you will be expected to make major contributions to the scientific direction and overall success of this research program.

## MOLECULAR BIOLOGIST/ GENE EXPRESSION

We seek a highly motivated research associate skilled in a variety of recombinant DNA technologies such as preparation of DNA/RNA, nucleic acid hybridization, restriction mapping, PCR, in vitro mutagenesis, and construction of plasmids for heterologous gene expression in prokaryotic cells. You will work with an energetic team of molecular biologists on the cloning and expression of various immunoregulatory proteins in microbial systems. This position requires a B.S./M.S. degree and two plus years academic or industrial experience, preferably in microbial genetics.

PROCEPT offers an excellent compensation and benefits program, including a 401k plan and incentive stock options for all scientific staff members. If you are a team player committed to excellence, with a unique vision for the future, we want to speak with you. Please forward a letter of application, including your curriculum vitae and the names and telephone numbers of three professional references, to: PROCEPT, Inc., 840 Memorial Drive, Cambridge, MA 02139, Telephone: 617-491-1100.

# ABBOTT LABORATORIES

Abbott Laboratories' Pharmaceutical Products Division is a leader in the discovery, development and manufacture of anti-infective, cardiovascular and anti-convulsant/neurological products. Our commitment to a research-based drug discovery effort is reflected in our investment in R&D which is twice the industry standard. Our extensive technical resources create a superior environment for those who would like to make a significant personal and professional commitment.

## POSTDOCTORAL SCIENTIST

### Molecular Modeling

The Computer Assisted Molecular Design Group invites a postdoctoral scientist to join our interdisciplinary environment and contribute to peptide and protein modeling. The selected candidate will be involved in the studies of peptide conformation, small molecule-macromolecule interactions and protein modeling. Qualifications include a Ph.D. in Biochemistry, Biophysics, Computational Chemistry, Organic Chemistry or the equivalent, with 0-3 years experience in molecular modeling. Experience with computational tools for modeling peptides and proteins and computer graphics is desired. Reply to Job #19912.

## POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE

### Cardiovascular Area

Opportunities are available for individuals with experience in the investigation of the regulation of endothelin biosynthesis. The qualified candidates will have a Ph.D. along with experience in biochemistry, molecular biology or pharmacology. Reply to Job #19968.

Abbott provides competitive compensation and benefits including profit sharing and a stock retirement plan. We are located in an attractive suburban area approximately 30 miles north of Chicago. For consideration, please send your resume with salary history to: Patricia Handy, Corporate Placement, Abbott Laboratories, One Abbott Park Road, Abbott Park, IL 60064. (To facilitate the handling of your resume, please indicate job number on your cover letter or resume.) Abbott is an Affirmative Action Employer.

ABBOTT LABORATORIES



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Health Care  
Worldwide  
1888-1990



## POSITIONS OPEN

### PREDOCTORAL AND POSTDOCTORAL FELLOWSHIPS IN ORAL CELLULAR AND MOLECULAR BIOLOGY

This program emphasizes a multidisciplinary approach that develops skills in cellular and molecular biology. Areas of study include: gene regulation in viral, microbial, and eukaryotic systems; signal transduction and exocytosis; glycobiology; microbial adhesion and pathogenesis; and host defense systems.

Applicants for the Ph.D. degree will be supported by an NIH-training grant and must be citizens or permanent residents of the United States. Candidates should have either a baccalaureate or D.D.S. (or equivalent) degree. In addition to a nationally competitive stipend (based upon prior education/experience), tuition remission will be given to all students. Holders of advanced degrees (Ph.D., D.D.S., or M.D.) are invited to apply for postdoctoral fellowships to be supported by individual grants or other sources. Appointments can be made immediately. For additional information, please contact: **Dr. Lawrence A. Tabak, University of Rochester, School of Medicine and Dentistry, Department of Dental Research, Box 611, Rochester, NY 14642. Telephone: 716-275-3441.**

*Applications from underrepresented minorities are particularly encouraged. The University of Rochester is an Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL FELLOWSHIP

Hematology unit and a new and rapidly growing Bone Marrow Transplant Division looking for Ph.D. to spearhead effort studying the molecular biology of hematopoietic growth factors and their receptors. Interactions of growth factors with stem cells, pathways of signal transduction, growth factor-induced signal transduction, and gene expression will be studied. Interactions with other members of the group interested in stem cell biology, embryonic stem cells, and the hematopoietic microenvironment encouraged. Interested applicants with significant molecular biology experience preferred. Applicants should submit curriculum vitae with names of references to: **John F. DiPersio, M.D., Ph.D., University of Rochester Medical Center, Hematology Unit, 601 Elmwood Avenue, P.O. Box 610, Rochester, NY 14642. Equal Opportunity Employer, M/F.**

### INTERDISCIPLINARY TOXICOLOGY TRAINING

The University of Texas Medical Branch (UTMB) at Galveston has **FELLOWSHIPS** available for graduate and postdoctoral training in molecular mechanisms of environmentally provoked injury. Utilizing the expertise of over 40 faculty from the graduate programs in the Graduate School of Biomedical Sciences, trainees will address problems in toxicology from the foundation of modern molecular approaches. This multidisciplinary program will include opportunities for training in toxicokinetics, neurotoxicology, genetic and teratologic toxicology, immunotoxicology, heavy metal toxicology, pathobiology of target organ systems, and the epidemiology of environmental diseases.

Fellowships funded by the National Institute of Environmental Health Sciences include a stipend (NIH level appropriate to training), tuition, fees, and travel support to attend national scientific meetings for presentation of the fellow's research. A baccalaureate degree or advanced graduate degree for pre- or postdoctoral positions, respectively, and U.S. citizenship or permanent residence status is required. For further information and application materials, contact: **Dr. K. Lemone Yelding, Program Director, Vice President for Research, 528 Administration Building, The University of Texas Medical Branch, Galveston, TX 77550.**

*UTMB is an Equal Opportunity, M/F/H/V/Affirmative Action Employer. UTMB hires only individuals authorized to work in the United States.*

**UTMB**

## POSITIONS OPEN

**POSTDOCTORAL FELLOW POSITION IN MOLECULAR EPIDEMIOLOGY.** Experience in analytical chemistry of carcinogen-macromolecular adducts and carcinogen metabolites, molecular dosimetry of human carcinogen exposure, molecular analysis of genetic polymorphisms, and molecular epidemiological studies of cancer risk are required. Send curriculum vitae and names of three references to: **Dr. Curtis C. Harris, Building 37, Room 2C05, NIH, Bethesda, MD 20892.**

### RESEARCH FELLOW DIVISION OF PATHOLOGY AND TOXICOLOGY

A postdoctoral position is available to conduct research on molecular effects of carcinogens with emphasis on cell culture studies.

This appointment is well suited to an individual seeking a career in cancer research at a modern, well-equipped research facility located in northern suburb of New York City. Please submit curriculum vitae:

**Dr. Gary M. Williams, Division Chief  
American Health Foundation  
Division of Pathology and Toxicology  
1 Dana Road  
Valhalla, NY 10595**

*An Equal Opportunity Employer, M/F/H/V.*

**POSTDOCTORAL/RESEARCH ASSOCIATE.** Position for Ph.D. synthetic organic chemist to work on development of new radiopharmaceuticals for diagnostic imaging [*J. Med. Chem.* 33, 171 (1990)]. The position provides close interdisciplinary interactions with the psychiatry and pharmacology departments. Send résumé to: **Hank K. Kung, Ph.D., Department of Radiology, University of Pennsylvania, Room 305, 3700 Market Street, Philadelphia, PA 19104.**

### POSTDOCTORAL RESEARCH ASSOCIATE

Position is available to study the role of polyamines in gene regulation. Particular emphasis is on exploiting these roles for development of antineoplastic therapies. Background in molecular biological techniques is essential. Send curriculum vitae and three letters of reference to: **Dr. Robert A. Casero, Jr., The Johns Hopkins Oncology Center Research Laboratories, 424 North Bond Street, Baltimore, MD 21231. An Equal Opportunity Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE.** Directed mutagenesis study of the role of amino acid residues at an enzyme-active site. Candidates for a position in this project should have research experience with publications on protein structure, molecular biology, or biophysical chemistry. For recent published work by the group, see *J. Biol. Chem.* 264, 9391 (1989); 265, 2740, 5579 (1990); and *Biochemistry* 29, 1290, 4554, and 6428 (1990). Training will be provided in directed mutagenesis and in obtaining rate constants for ligand binding and release, interconversion of conformers, and catalysis. Methods for the study of transient state kinetics as well as steady-state kinetics will be included. Results will be interpreted with the aid of computer graphics. Starting salary: \$22,000 or higher depending on relevant experience. To apply, send curriculum vitae and three references to: **Dr. R. L. Blakley, Department of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH POSITION.** Join our multidisciplinary research team investigating the effects of inflammatory bowel disease on colonic motility. Areas of study using a newly developed animal model of colitis include: smooth muscle mechanics and pharmacology, in vivo recording of electrical and mechanical activity, electrophysiologic characterization of intrinsic nerves, and assay of inflammatory mediators.

Applicants for this 2-year position must possess a Ph.D. or be in the process of obtaining one in the general areas of physiology, biochemistry, or pharmacology and have an interest in the effects of disease processes on smooth muscle function. Send curriculum vitae and two academic references to: **William H. Percy, Ph.D., and Robert Burakoff, M.D., Division of Gastroenterology, Winthrop-University Hospital, 259 First Street, Mineola, NY 11501. Equal Opportunity Employer, M/F/H/V.**

## POSITIONS OPEN

**RESEARCH ASSOCIATE.** Position for a Ph.D. or equivalent to work on lipoprotein(a) gene expression in a family of rhesus monkeys with familial hypercholesterolemia. One or two years of postdoctoral experience required. Send résumé to: **K. Jones, The University of Chicago, 5841 South Maryland, FMI 1-503, Box 231, Chicago, IL 60637. FAX: 312-702-4534. The University of Chicago is an Equal Opportunity Employer.**

### RESEARCH ASSOCIATE

**SENIOR ELECTRON MICROSCOPIST** with several years of experience in thin and thick sectioning, photography, and immunocytochemistry for electron microscopy and light microscopy. Histology, cell culture, small animal surgery, or biochemical experience desirable. Send résumé with the names, addresses, and telephone numbers of three references to: **Dr. Janet Boyles, Gladstone Foundation Laboratories, P.O. Box 40608, San Francisco, CA 94140-0608.**



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

**RESEARCH ASSOCIATE** position, Poultry Research Laboratory, Georgetown, Delaware.

ARS is seeking a research physiologist/protein biochemist for a 2-year appointment to be a team member in a multidisciplinary research effort to improve the protein-to-fat ratio and growth of poultry. The incumbent will identify, purify, and characterize proteins integral to controlling the development of poultry body composition. A further objective will be to develop specific protein assays and monoclonal antibodies to be used in conjunction with molecular investigations of poultry growth by team members. A recent Ph.D. with knowledge of protein biochemistry and growth physiology is required. Skill in electrophoresis, HPLC, and the ability to concentrate and purify protein and make monoclonal antibodies is desirable. Salary is \$29,891.

For information about the research program and position, call: **Dr. Lynn Blalock Cupo, 302-856-0046.** For application procedures/forms, contact: **Beverly Weber, 301-344-8560.** Applications in response to this advertisement should be marked **ON048.**

*USDA/ARS is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

**RESEARCH ASSOCIATE.** To investigate cytoplasmic factors which regulate DNA synthesis in lymphocytes, primary lymphocyte cultures, transformed lymphocytic cell lines, cytoplasmic extracts; measure DNA replication in vitro in isolated nuclei; measure activities of DNA polymerases and topoisomerases. B.S. in biology, biochemistry, molecular biology, or medicine. One college course each in molecular biology, biochemistry, embryology, and microbiology necessary. Knowledge through coursework or research of localization of regulatory peptides by immunohistochemical means, use of cell cultures to measure secondary messenger systems, maintenance of cells in long-term in vitro culture, nuclear incorporation, primary lymphocyte culture, cell fractionation and assays for cell proliferation, DNA polymerases, and DNA topoisomerases. Hours: 9 a.m. to 5 p.m., \$20,000 per year. Submit résumé or curriculum vitae to: **The Philadelphia Job Bank, 444 North 3rd Street, 3rd Floor, Philadelphia, PA 19123. Job Order Number 4379928.**

Two part-time positions for **RESEARCH SCIENTIST** in Neonatal Virus Disease Laboratory. CMV research in development of: (i) improved diagnostic test, (ii) subunit vaccine, and (iii) antiviral agents. Applicants must have Ph.D. or M.S. experience in recombinant DNA techniques, tissue culture work, biochemical/biophysical techniques in protein purification. Send curriculum vitae to: **New York State Institute for Basic Research, 1050 Forest Hill Road, Staten Island, NY 10314, Attention: Personnel, Reference #642.**

**PHYSICS RESEARCHER.** Design and construct a scanning tunneling microscope and utilize it to conduct surface research in ultrahigh vacuum. Requires: Ph.D. in physics and 2 years of job experience. Pays \$2166 per month to work 40 hours per week (9 a.m. to 5 p.m.). Apply at the **Texas Employment Commission, Houston, Texas**, or send résumé to: **Texas Employment Commission, TEC Building, Austin, TX 78778, J.O. #6122701. Ad paid by an Equal Employment Opportunity Employer.**



## POSTDOCTORAL FELLOWSHIPS IN PRE-CLINICAL ANTI-CANCER RESEARCH

### Immunology and Cellular/Molecular Biology

The Bristol-Myers Squibb Company is a worldwide leader in the research, development and marketing of sophisticated pharmaceutical medical care, consumer, and nutritional products. The Department of Immunology of the Bristol-Myers Squibb Pharmaceutical Research Institute currently has the following opportunities for Postdoctoral Fellows to study:

**1. Activation and signal transduction in human T cells or biology of HIV.** Join our laboratory team with strong academic collaborations in immunoregulation. Qualifications include a Ph.D. in a relevant biological discipline with strong background in molecular biology or immunology and working experience in gene cloning, southern blotting, restriction mapping, plasmid isolation, site directed mutagenesis, sequencing and transfection from cloned DNA is preferred.

**2. Immunomodulation in tumor models.** Apply *ex vivo* and *in vitro* techniques in investigating mechanisms involved in tumor-induced immunosuppression and active immunotherapy of cancer. Join a laboratory with established expertise in tumor immunology. Qualifications include a Ph.D. in immunology with strong background in the field of cell-mediated immunity is required, familiarity with tumor immunology is highly desirable.

**3. Growth activation and suppression in tumor cells.** Characterization of autocrine growth factors, their receptors and signal transduction mechanisms. The laboratory has strong interactions with other internal groups as well as academic labs. Qualifications include a Ph.D. in biochemistry, cell or molecular biology is desirable. Experience in some or all of the following is preferred: northern and southern analysis, PCR analysis, DNA transfection, receptor isolation and characterization, signal transduction mechanisms.

Candidates should demonstrate independent research skills and creativity as well as the ability to work well in a collaborative environment. Publication in peer-reviewed scientific journals is strongly supported. Appointments are made for one year with an option for renewal at a highly competitive salary.

Our Wallingford, Connecticut research facilities boast well-equipped laboratories in a new research complex with an interactive, fertile and interdisciplinary scientific environment and a commitment to drug discovery and development. For confidential consideration, forward your C.V./resume including salary history to: **Bristol-Myers Squibb Company, Pharmaceutical Research Institute, TZ/SC, 5 Research Parkway, Wallingford, CT 06942-7661.** An equal opportunity employer, M/F/H/V.

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## MOLECULAR BIOLOGIST RESEARCH OPPORTUNITY

Public Health Service  
National Institutes of Health  
National Institute of Environmental Health Sciences  
Research Triangle Park, North Carolina

Position is available in the Eicosanoid Biochemistry Workgroup of the Laboratory of Molecular Biophysics, which studies arachidonic acid and linoleic acid metabolism or prostaglandin H synthase and lipoxygenases in cell culture as related to cell growth. The research involves the application of molecular biology to the study of the structure and function of these enzymes. These studies could require the use of cloning techniques, Northern/Southern analysis, DNA sequencing, site-directed mutagenesis and the expression of cloned genes in suitable cell lines. Expertise in molecular biology preferred. General Requirements: Applicants must have a Ph.D. or equivalent degree in Biochemistry, Cell Biology, Molecular Biology, Physiology, Pharmacology, or closely related field, and show evidence of ability to carry out independent research. Candidates with up to 7 years of postdoctoral research experience will be considered. For more information, contact **Dr. Thomas E. Eling at (919) 541-3911.**

For prompt consideration, send cover letter indicating area of interest, Curriculum Vitae, and three letters of reference by September 24, 1990 to: **Mr. Bruce Wiggins (Code HNV21); NIEHS Personnel Office; P.O. Box 12233; Research Triangle Park, NC 27709.**

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## CONFERENCE ON CHEMICAL RISK ASSESSMENT IN THE DoD: SCIENCE, POLICY, AND PRACTICE

October 16, 17, and 18, 1990  
Dayton, Ohio

A conference will be held at the Holiday Inn Conference Center, sponsored by the Air Force Harry G. Armstrong Aerospace Medical Research Laboratory, the Naval Medical Research Institute Detachment (Toxicology), and the Army Biomedical Research and Development Laboratory, with the cooperation of the National Research Council Committee on Toxicology.

The goals of the conference are to promote exchange of information between those who develop risk assessment methodologies and those who perform risk assessment for the DoD. Specifically:

- to acquaint DoD practitioners with the state-of-the-art in chemical risk assessment methodology for occupational, environmental, and emergency planning applications
- to acquaint those who perform chemical risk assessment with the requirements and problems specific to the DoD
- to identify research priorities to improve the application of chemical risk assessment methods to DoD scenarios

The conference will feature invited presentations by noted individuals in the field and a poster session for studies relevant to the conference theme.

To obtain further information, contact **Ms. Lois Doncaster, Conference Coordinator, NSI Technology Services Corporation, 101 Woodman Drive, Suite 12, Dayton, Ohio 45431. Phone: (513) 258-1150.**

## POSITIONS OPEN

### RESEARCH ASSOCIATE

Opportunity available to participate and develop independent program in research involving cell and molecular biology or extracellular matrix proteins. M.D. or Ph.D. required. Background in recombinant DNA and cell culture techniques necessary.

Send résumé to: **Nicholas A. Kefalides, M.D., Ph.D., Director, Connective Tissue Research Institute, University of Pennsylvania, University City Science Center, 3624 Market Street, Philadelphia, PA 19104.**

### RESEARCH ASSOCIATE

Full-time day position available in our Hematology/Oncology Research Laboratory. Will be responsible for the development of new techniques and protocols in the molecular hematology section. Performance of basic and clinical research in molecular biology including DNA/RNA analysis, transcription and translation of cytokine message, gene rearrangement in tumor samples, and PCR and RFLP analysis.

Master's degree or higher in biological sciences with 3 to 5 years of experience in molecular biology research. Extensive knowledge of radioisotope use; DNA/RNA sequencing; cloning and insertion of genes into plasmids; Southern, Northern, and Western blotting PCR; and RFLP required. Please send résumé to: **Childrens Hospital of Orange County, 455 Main Street, Orange, CA 92668, Attention: Jackie Wiesner.**

**RESEARCH ENGINEER.** The Microelectronics Laboratory at the University of Illinois at Urbana-Champaign seeks person to operate, maintain, and develop laboratory equipment and train laboratory users. Requires BSEE or equivalent, familiarity with device fabrication, and knowledge of vacuum/computer systems. Familiarity with cleanroom protocol, ebeam lithography, and CAD desirable. Salary commensurate with qualifications. Regular, full-time position. Closing date: 4 September 1990. Starting date: 1 October 1990. Send letter of application, résumé, and reference list to: **James Renshaw, Assistant Director, University of Illinois Microelectronics Laboratory, 208 North Wright Street, Room 127, Urbana, IL 61801. Telephone: 217-333-3097. An Affirmative Action/Equal Opportunity Employer.**

**SCIENTIST, RESEARCH AND DEVELOPMENT.** Biotechnology instrument and chemicals manufacturer: participate in multidisciplinary team for development of biotechnology instrumentation including automated enzyme analyzer. Establish instrument specifications and evaluate chemistry performance. Improve existing enzyme assay methods and implement and optimize the methods into automated processes. Generate experimental protocols and develop instrument applications related to pharmaceutical research and development. Requires Ph.D. or equivalent in biochemistry or pharmacology, plus 3 years in position offered or 3 years of experience in protein chemistry research, including 1 year in organic synthesis, 1 year of research in enzymology, and 2 years of protein structural analysis. Also requires in-depth knowledge of analytical protein chemistry instrumentation, including spectrophotometers, amino acid analyzer, protein sequencer, liquid chromatographs (HPLC/EPLC), and gel electrophoresis. Salary: \$42,000 per year. Work schedule: 40 hours per week. Place of employment and interview: Foster City, California. Send this ad and résumé to: **#PC 16389, P.O. Box 9560, Sacramento, CA 95823-0560, no later than 1 September 1990.**

**CHIEF RESEARCH TECHNICIAN.** Current opening for a chief research technician in the Biomedical Physics Department of the King Faisal Specialist Hospital and Research Centre in Riyadh, Saudi Arabia. Must be capable of supporting all aspects of mammalian cell cultures including in vivo/in vitro systems. Experience in radiation biology would be desirable. Minimum of 5 to 7 years of mammalian research experience with B.S. degree in appropriate science (some reduction of experience requirement possible with M.S. degree). Potential tax-free salary and excellent benefits. Send résumé and salary requirements to: **Hospital Corporation International (HCI), 2515 Park Plaza, Nashville, TN 37203, or call toll-free at 1-800-251-2561 in the United States, 1-800-342-2110 in Tennessee, or COLLECT at 615-320-2440 from Canada. HCI is an Equal Opportunity Employer.**

## POSITIONS OPEN

**RESEARCH SCIENTIST.** Open immediately to investigate roles of 5-HT receptors in the action of antipsychotic drugs. Ph.D., M.D., or equivalent degree required. Experience in intracellular electrophysiology preferred. Annual salary: up to \$36,000, depending on experience, plus full benefits. Send résumé and three letters of reference to: **Rex Y. Wang, Ph.D., Associate Professor, Department of Psychiatry and Behavioral Science, Putnam Hall, South Campus, State University of New York (SUNY) Stony Brook, Stony Brook, NY 11794-8790. SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer. AK 136.**

**RESEARCH TECHNICIAN.** B.S. or M.S. with an extensive experience in cell culture techniques to work in an established NIH-funded Shared Research Facility dedicated to blood, lung, and heart research. Send résumé to: **K. Jones, The University of Chicago, 5841 South Maryland, FMI I-503, Box 231, Chicago, IL 60637. FAX: 312-702-4534. The University of Chicago is an Equal Opportunity Employer.**

The Department of Surgery, University of California, San Francisco, is seeking an **ASSISTANT RESEARCH PHYSIOLOGIST.** The candidate must have demonstrated research experience with isolated smooth muscle cells, pancreatic acini and acinar cells, primary culture of enteric neurons, peptide-receptor interactions, signaling from receptors and ion channels, and degradation of neuropeptides. Must have an M.D. or Ph.D. in physiology and at least 3 years of postdoctoral research, including experience in a multidisciplinary gastroenterological research group. Duties will include: directly conducting experiments to evaluate degradation of neuropeptides by single cells, to measure secretion of neuropeptides by reverse hemolytic plaque assay and radioimmunoassay, and immunocytochemistry. Salary will be \$39,300. Send application and names and addresses of three referees by 24 September 1990 to: **Dr. Nigel W. Bunnett, Department of Surgery, University of California, San Francisco, CA 94143-0660. The University of California, San Francisco, is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.**

### CONNECTIVE TISSUE BIOCHEMIST

The U.S. Environmental Protection Agency (EPA) is seeking a **STAFF SCIENTIST** to work within the Pulmonary Toxicology Branch investigating injury/repair to the lung tissue matrix of pollutant-exposed experimental animals. Specifically, we seek an individual with experience in the biochemistry of lung connective tissues and the anabolic and/or catabolic mechanisms which may lead to chronic lung disease. Both in vivo and in vitro research approaches to this question are acceptable. The successful individual will have a unique opportunity to work with a multidisciplinary team of pulmonary researchers at EPA, as well as at local universities, who share common interest in this issue. The position requires a Ph.D. or equivalent, preferably with postdoctoral experience, and U.S. citizenship; GS rating will depend on qualifications. Interested applicants should send curriculum vitae, a statement of research interests and goals, and the names of three references to: **Dr. Daniel L. Costa, Chief, Pulmonary Toxicology Branch, MD-82 HERL, U.S. EPA, Research Triangle Park, NC 27711. Affirmative Action/Equal Opportunity Employer.**

### VACCINE FORMULATION

Individuals with experience in large-scale production, purification, and vaccine formulation are being recruited into BIOSTAR's vaccine program. Applicants should have experience in downstream processing using either eukaryotic or prokaryotic systems. Interest in adjuvant technology and vaccine formulation would be an asset.

BIOSTAR, Inc., in conjunction with the Veterinary Infectious Disease Organization (VIDO), provides a stimulating atmosphere with the opportunity to collaborate with other scientists in the fields of virology, bacteriology, immunology, and molecular biology. Successful applicants will be expected to operate as an integral part of a research team and should have good communicative skills. For consideration, please forward your curriculum vitae and names of three referees to:

**Dr. Lorne A. Babiuk  
BIOSTAR**

**c/o VIDO, 124 Veterinary Road  
Saskatoon, Saskatchewan S7N 0W0, Canada**

## COURSES AND TRAINING

### TRAINING PROGRAM IN DIABETES RESEARCH AT WASHINGTON UNIVERSITY SCHOOL OF MEDICINE ST. LOUIS, MISSOURI

Postdoctoral positions are available in the use of modern cellular and molecular techniques to investigate diabetes and related endocrine diseases. Trainees will be offered opportunities in the following areas of diabetes research: cellular mechanisms in insulin secretion from  $\beta$ -cells, lipid-derived mediators and signal transduction processes, insulin action on target cells, islet transplantation, autoimmunity and effects of IL-1 and other cytokines, and vascular and neurological complications. U.S. citizenship or permanent resident status is required. Salary on NIH scale. For information, please contact: **Dr. Michael L. McDaniel, Box 8118, Washington University School of Medicine, Department of Pathology, St. Louis, MO 63110. Telephone: 314-362-7435. Washington University is an Equal Opportunity Employer. We are particularly interested in minority applicants.**

## SITUATIONS WANTED

**BIOCHEMIST.** Ph.D. (1980). Experience: enzymology, enzyme immobilization and modification, reactor control, biomass utilization, natural products extraction, bioprocessing. Seeks research position. **Box 89, SCIENCE.**

**CHEMIST.** Ph.D. (1986). Experience: biochemistry, protein chemistry, organic synthesis, computer-numeric/graphic methods, biotechnology, molecular biology. Seeks faculty/industry post. **Box 85, SCIENCE.**

**ECOTOXICOLOGIST,** Ph.D., 20 years of research, administration, teaching. Excellent communication, grantsmanship, leadership, and publication record. Seeks research, government, academic position. **Box 87, SCIENCE.**

**ENVIRONMENTAL SCIENTIST,** Ph.D., 18 years of consulting experience; 80+ publications. Excellent communication, leadership, administrative, interpersonal capabilities. Seeking senior consultant/principal position. **Box 88, SCIENCE.**

**M.D.** Former medical director, major drug companies, 25 years. Seeks full- or part-time employment. Regulatory, writing, statistics, NDAs, GCP, GLP, etc. **Telephone: 215-794-5581.**

**MICROSURGEON,** Ph.D. Experience: rat heart/lung ischemia-reperfusion injuries in vivo/vitro, perfusion, transplantation, preservation, lipid peroxidation, hypertension, enzymes, metabolism. **Box 69, SCIENCE.**

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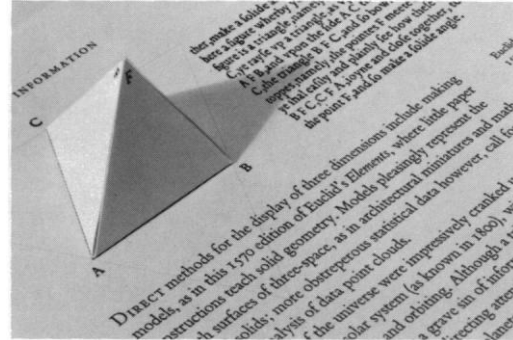
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# Here's why Gilson may be the only source you need for liquid handling, LC and HPLC instruments

Whether you're considering a new instrument or putting together a complete HPLC system, start with *Instruments for Liquid Chromatography and Sample Preparation*. You're likely to find everything you need in this new guide to Gilson instruments and systems. It presents an overview of the entire line — our well-known fraction collectors and Minipuls® Peristaltic Pumps, plus HPLC systems, detectors and automated sample processors. Here are a few examples.

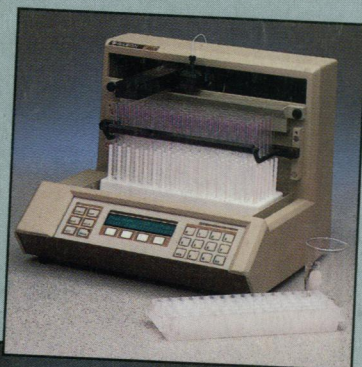
## A fraction collector with 98% problem-free performance

Most people associate Gilson with fraction collectors. Many FC 80 and FC 100 Micro-Fractionators have been in use more than 15 years. But reliability doesn't stop with these instruments. Another collector, the FC 203, has a 98% problem-free performance record. A stationary rack system is one feature that assures reliable performance. Other features simplify operation. A special HELP key gives on-line instruction for time, drop or peak mode operation. And the FC 203 is just one of five Gilson fraction collectors.

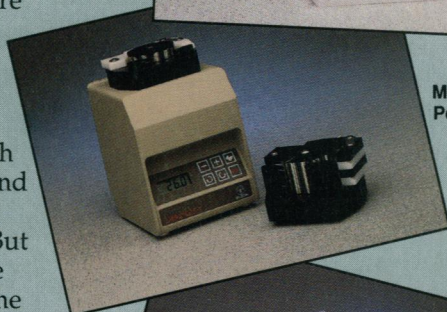
## A peristaltic pump with smooth, reproducible flow

Our Minipuls 3 is ideal for applications requiring smooth flow: LC, Flow Injection Analysis (FIA) and perfusion studies. By driving solvent with as many as 10 rollers, the pump provides nearly pulse-free flow and can operate at higher pressures. Reproducibility of flows from 10  $\mu$ l to 220 ml/min is also assured. No matter how many times you reset the pump, you can always return to a previous value. This compact pump can be integrated with other analytical instruments or used in automated systems through remote control.

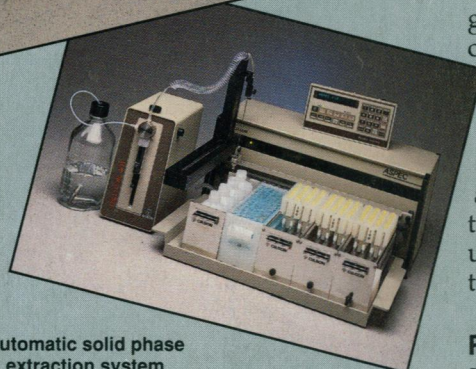
Multi-mode fraction collector



Minipuls 3 Peristaltic Pump



Automatic solid phase extraction system



Gradient Auto-Analytical HPLC System



## Sample preparation systems eliminate tedious manual work

Gilson liquid handling systems range from simple sample changers to large capacity auto-sampling injectors for up to 540 samples. Plus, we have two specialized systems. The ASPEC System automates sample cleanup with extraction columns and automatically injects the prepared samples into an on-line HPLC system. The ASTED System combines dialysis and trace enrichment to clean up complex biological samples.

## Eight complete HPLC systems to meet specific needs

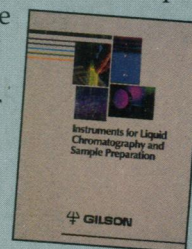
Besides individual instruments, we also offer complete HPLC systems. Eight series are offered based on gradient or isocratic elution, analytical or prep sample loads, automatic or manual injection. These can be configured with programmable pumps that provide system control or with computer-based controllers and Gilson software for system control and data analysis. And the modular design of all components facilitates upgrading at any time.

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