Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations are accepted. All copy should be typewritten in double spacing. A minimum charge covers one inch on a single column; one inch equals 10 lines; two inches equals 20 lines (or spaces per line). No charge for use of box number. No agency commission is paid. Prepayment for one year is required for all foreign ads. Purchase orders and/or remittance, including billing address required for all other advertising.

To ESTIMATE ad cost: Structure ad copy on a separate page, on lines of 52 characters per line (with spaces). The number of characters (not including any desired heading) each line of heading, and/or extra lines, and all partial lines (including any additional information) are counted as full lines. Ad titles located within the text are printed in boldface type and are only 32 characters per line. The cost is multiplied by the number of full lines, including any estimated lines and final typeset lines and the resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.

CANCELLATION POLICY: NOTE: All cancellations made after Thursday, TWO weeks prior to the date of publication, will result in a 10% production charge. Final deadline for cancellations is 12 p.m. Tuesday, ONE week prior to issue date. Cancellations must be in writing.

Send copy for all Positions Wanted ads and Line Classified ads less than 1/8 page in size (39 lines) to:

SCIENCE Classified Advertising
1333 H Street, NW, Room 949
Washington, DC 20005
Telephone: 202-737-3000


The Retardation of Aging and Disease by Dietary Restriction. Richard Weindruch and Roy L. Walford, Thomas, Springfield, IL, 1988. xxi, 436 pp., illus. $69.75.


To the Arctic. An Introduction to the Far Northern World. Steven B. Young, Wiley, New York, 1989. xiv, 354 pp., illus. $42.95. Wiley Science Editors.


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To the Arctic. An Introduction to the Far Northern World. Steven B. Young, Wiley, New York, 1989. xiv, 354 pp., illus. $42.95. Wiley Science Editors.

Positions Open

Assistant Professor

The Department of Biology at Lakehead University invites applications for a probationary (tenure-track) position in animal physiology. Applicants must have a Ph.D., postdoctoral experience, and will be expected to establish an independent, externally funded research program. Experience in teaching is desirable. The successful candidate will be expected to teach in subjects of higher interest as well as a semester course in human physiology. Applications should include a curriculum vitae, three letters of reference, a brief statement of research interests, copies of recent publications, a list of courses to which the candidate could contribute, and three letters of reference. Application deadline is May 1, 1990.

Assistant Professor

The University of Alberta invites applications for a tenure-track position at the level of Assistant Professor. Responsibilities include commitment to the development of a strong research program in any subspecialty of biology with specific emphasis on the application of modern molecular biological techniques to teaching research, teaching undergraduate and graduate courses in the application of molecular biology techniques, educational participation in introductory courses, undergraduate and graduate seminars, directing graduate student research, and academic advising. Candidates with postdoctoral experience are preferred. Start date is August 1989. Applicants must provide curriculum vitae, concise statement of teaching and research goals, recent reprints, and three letters of recommendation to: Dr. J. H. M. Anderson, Department of Biology, University of Alberta, Edmonton, Alberta, Canada T6G 2E9. The closing date for applications is March 30, 1989.

Assistant Professor

The University of Alabama at Tuscaloosa invites applications for a tenure-track position at the level of Assistant Professor. Responsibilities include commitment to the development of a strong research program in any subspecialty of biology with specific emphasis on the application of modern molecular biological techniques to teaching research, teaching undergraduate and graduate courses in the application of molecular biology techniques, educational participation in introductory courses, undergraduate and graduate seminars, directing graduate student research, and academic advising. Candidates with postdoctoral experience are preferred. Start date is August 1989. Applicants must provide curriculum vitae, concise statement of teaching and research goals, recent reprints, and three letters of recommendation to: Dr. J. H. M. Anderson, Department of Biology, University of Alabama, Tuscaloosa, Alabama, USA. The closing date for applications is March 30, 1989.

Assistant Professor

The University of Alberta invites applications for a tenure-track position at the level of Assistant Professor. Responsibilities include commitment to the development of a strong research program in any subspecialty of biology with specific emphasis on the application of modern molecular biological techniques to teaching research, teaching undergraduate and graduate courses in the application of molecular biology techniques, educational participation in introductory courses, undergraduate and graduate seminars, directing graduate student research, and academic advising. Candidates with postdoctoral experience are preferred. Start date is August 1989. Applicants must provide curriculum vitae, concise statement of teaching and research goals, recent reprints, and three letters of recommendation to: Dr. J. H. M. Anderson, Department of Biology, University of Alberta, Edmonton, Alberta, Canada T6G 2E9. The closing date for applications is March 30, 1989.

Positions Open

Assistant Professor of Pharmacology

The Department of Pharmacology at University of Alabama at Birmingham invites applications for a tenured position at the level of Assistant Professor. Responsibilities include commitment to the development of a strong research program in any subspecialty of biology with specific emphasis on the application of modern molecular biological techniques to teaching research, teaching undergraduate and graduate courses in the application of molecular biology techniques, educational participation in introductory courses, undergraduate and graduate seminars, directing graduate student research, and academic advising. Candidates with postdoctoral experience are preferred. Start date is August 1989. Applicants must provide curriculum vitae, concise statement of teaching and research goals, recent reprints, and three letters of recommendation to: Dr. J. H. M. Anderson, Department of Biology, University of Alabama, Tuscaloosa, Alabama, USA. The closing date for applications is March 30, 1989.
ASSISTANT/ASSOCIATE PROFESSORSHIPS IN PHARMACOLOGY

The University of Pittsburgh School of Medicine has embarked upon a major program to expand the Department of Pharmacology. Two tenure-track positions are available for the next academic year (1989 to 1990). Applicants will be expected to develop a vigorous research program, participate in the medical and graduate programs, and to interact with existing clinical and basic science projects. Previous experience in lung and cancer pharmacology and other similar interest, although candidates in all areas of pharmacology will be considered. Applicants should forward a letter of application, curriculum vitae, description of research interests and the names of three references to:

Richard D. Herman, M.D., Chairperson, Search Committee for Pharmacology, Department of Pharmacology, University of Pittsburgh, 351 Scaife Hall, Pittsburgh, PA 15261.


BIOLICAL SCIENTIST

Position available for basic scientist to do full-time research in urology. Research would involve prostate disease, growth factors, and oncogene expression. The position is non-tenure-track but includes a basic science title and courtesy appointment. Teaching load will be limited so as to permit full-time research. Applicants should have training in molecular genetics, recombinant DNA tissue culture experience and a Ph.D. in a biologic science. Salary commensurate with experience. Please send curriculum vitae to: Mark J. Noble, M.D., Urology, University of Kansas Medical Center, 39th and Rainbow, Kansas City, KS 66103. An Equal Opportunity/Affirmative Action Employer.

Baylor University—Biology: LECTURER, BIOLOGY. Nontenure-track, available August 1989. A Ph.D. is required. Responsibilities include teaching undergraduate courses in modern concepts of bioscience for majors, and an undergraduate course in general biology for non-majors. Research is encouraged. Send letter of application, curriculum vitae, transcripts, and three letters of recommendation to: Dr. W. Keith Hartberg, Chairman, Department of Biology, Baylor University, Waco, TX 76798. Deadline for applications will be 24 April 1989, and continue until the position is filled. Baylor University is an Equal Opportunity/Affirmative Action Employer.

Emory University Department of Ophthalmology offers a faculty level position for a BIOPHYSICIST to participate in corneal research. Specific areas of expertise or interest would include biomechanics of the cornea, optics, laser physics, and computer science. Personal qualities include laboratory management, ability to integrate engineering and biological science, flexible interaction with individuals at varying levels of training, and the ability to create and complete scientific manuscripts. Independent research and career development are encouraged. Submit qualifications to: John Carter, Department of Ophthalmology, Emory University School of Medicine, 1367 Clifton Road, Atlanta, GA 30322. Emory University is an Affirmative Action/Equal Opportunity Employer.

CHAIRMAN, DEPARTMENT OF MEDICINE

Four hundred thirty-five-bed acute-care community teaching hospital seeking Chairman, Department of Medicine. Requires a strong, experienced Physician-in-Chief to form the Internal Medicine Residency Program and Transitional Year Residency Program. Serves as Administrative Physician in Department of Medicine. Send curriculum vitae to: Richard D. Herman, M.D., Chairperson, Search Committee for Chairman, Department of Medicine, St. Luke's Hospital, 1033 Oosterbaan Street, Bethlehem, PA 18015. An Equal Opportunity Employer.

ASSOCIATE PROFESSORSHIP IN BIOCHEMISTRY

The Department of Biochemistry at the University of Massachusetts Medical School is seeking an outstanding scientist for a faculty position at the Associate Professor rank. Responsibilities include teaching, research, mentorship of graduate and medical students, and other duties as assigned. Ph.D. and postdoctoral training in biochemistry or a closely related discipline are required. A demonstrated record of research productivity, examples of which should be submitted with applications, is essential. Experience in teaching, training, and administration is desirable. Salary is commensurate with experience. Applications are invited from women and minority candidates. Deadline for applications is 15 June 1989. The University of Massachusetts Medical School is an Affirmative Action/Equal Opportunity Employer.

CHAIRPERSON AND PROFESSOR, Department of Horticulture, College of Agriculture and Natural Resources, Michigan State University, East Lansing, Michigan 48824.

Michigan State University is seeking a chairperson to provide visionary leadership for the College of Agriculture and Natural Resources, and to shape the future of the department. The chairperson will have primary responsibility for leading the department's faculty, staff, and students of the Horticulture Department. An applicant should have a Ph.D. in horticulture or a related plant science discipline, have demonstrated excellence in teaching, research, extension, and/or administration, and be an effective communicator with faculty, student, staff, administrative, industry, and professional groups. The successful candidate will be expected to:

- Dr. Stanley Rice, Chairperson, Search and Screening Committee, Department of Horticulture, Michigan State University, East Lansing, Michigan 48824. Telephone: 517-355-5196. Applications should include a biographical resume, a list of publications, a statement concerning philosophy of teaching and education of not more than two pages, and have five letters of reference forwarded to: The Chairperson of the Search and Screening Committee. Application deadline is 1 July 1989, or until a suitable candidate is found.

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

CLIMATE CHANGE

ECOLOGY OR CLIMATOLOGY. Need versatile M.S. or Ph.D. experienced in greenhouse issue to assess significance of technical information for decision-makers. Requires relating science to policy, writing and people skills in a small firm. Global perspective required. Experience with diverse clients. Send resume and writing sample: SPA, Inc., Landmark 400, 1333 H Street, NW, Washington, DC 20005.

COMPUTATIONAL SCIENTIST—AMES LABORATORY—U.S. DOE

The Applied Mathematical Sciences Program in the Ames Laboratory—U.S. DOE is seeking a computational scientist with a record of achievement in highly parallel scientific computation. Experience in adapting and developing algorithms for highly parallel computational environments and in the performance evaluation of such algorithms is required. Some knowledge of the visualization of scientific information is also expected. The successful applicant must have the ability to work with other mathematical and physical scientists on joint projects.

A Ph.D. in mathematical, physical, or computer science and at least 3 years of experience post Ph.D. is required. It is anticipated that the successful applicant will have an adjunct appointment with an academic department at Iowa State University.

Salary commensurate with experience. Applicants should send resume with names and addresses of three references to: The Chairperson, Search Committee, Ames Laboratory, 137 Spedding Hall, Iowa State University, Ames, IA 50011. Application deadline is 31 May 1989 or until filled. Ames Laboratory is an Equal Opportunity/Affirmative Action Employer. M/F/V/H.

DIRECTOR

NORTHWESTERN UNIVERSITY INSTITUTE FOR NEUROSCIENCE

Applications and nominations are invited for the Directorship of the newly formed Institute for Neuroscience at Northwestern University. This is a University-wide institute whose members come from ten departments spread across four schools and several teaching hospitals. Current Institute membership exceeds 50 faculty. The Director will be expected to oversee the University-wide commitment to further expand faculty and research activities in the neurosciences. The Director will also become the endowed Chair in Neuroscience. Candidates are expected to be internationally recognized leaders in the field of neuroscience.

Those interested in submitting a post-doctoral curriculum vitae along with the names of four references to:

Dr. Robert D. Goldman, Chairman Institute for Neuroscience Search Committee Department of Cell Biology and Anatomy 303 East Chicago Avenue Chicago, IL 60611-3008 Northwestern University is an Affirmative Action/Equal Opportunity Employer.

DEAN, College of Basic Sciences, Louisiana State University invites applications. The college includes Departments of Biology, Chemistry, Computer Science, Microbiology, Physics and Astronomy, Zoology and Physiology, Biodynamics Institute as well as School of Nursing and the College of Geology and Geophysics. The Dean is responsible for the administration of the college, for preparing the annual budgets, for evaluating the faculty, and for coordinating the research, teaching, and service programs of the college.

Positions OPEN

The University of California at Berkeley invites applications and nominations for the position of Dean of the School of Education. The School of Education is a well-established research institution with a vigorous academic program, two affiliated national research and development centers, substantial educational, instructional, and administrative funding, and a significant presence in the nation's major public educational institutions. We seek a Dean to provide continued leadership to the School in carrying out its scholarly and professional mission.

Qualifications for the Deanship include experience as a professional educator, demonstrated skills in administration and fund raising, and a national reputation for leadership in the field. Scholarship and research or other significant achievement in Education or a related discipline warranting a full professorship is required. The Dean is expected to support an intellectual and cultural environment that will encourage and foster research and programs that address the field of education. The Dean should facilitate collaborative programming both on and off-campus, and coordinate the School's efforts with academic and professional units on the Berkeley campus, with local school districts, colleges and universities, and with state, federal, and international agencies.

Nominations and applications should be sent to: Education Search Committee Provost, Professional Schools and Colleges 200 California Hall University of California at Berkeley Berkeley, CA 94720

Applications, including an up-to-date resume, at least three references, and a statement of personal interest regarding the position, should be submitted for consideration. Closing date for nominations and applications is 1 July 1989.

ECS—AMERICA is an Affirmative Action/Affirmative Action Employer.

MEDICAL MICROBIOLOGY AND IMMUNOLOGY DEPARTMENT HEAD

The College of Medicine, Texas A&M University, invites applications for the position of Head, Department of Medical Microbiology and Immunology. The Department presently consists of a small, diverse faculty and is located on the campus of a major university with excellent opportunities for interdepartmental and intercollegiate collaboration. Academic responsibilities include both medical and graduate education. Applications are encouraged from faculty at the level of associate professor and above with active research programs in immunology or one of the major subdisciplines of microbiology and a proven ability to compete successfully for extramural funding. Qualifications should also include demonstrated expertise in teaching and administration.

Submit a letter of application, curriculum vitae, statement of philosophy and goals, and names, addresses, and telephone numbers of three references to: Dr. Harry Granger, Chairman, Medical Microbiology and Immunology Search Committee, Department of Medical Physiology, College of Medicine, Texas A&M University, College Station, TX 77843. Applications will be received through 30 June 1989, or until the position is filled.

Texas A&M University is an Affirmative Action/Affirmative Action Employer.
The Center for Advanced Research in Biotechnology (CARB)  
**MOLECULAR MODELING OF ANTIBODY-ANTIGEN INTERACTIONS**

IGEN Inc. wishes to appoint a post-doctoral CARB-IGEN fellow to work on the development of computer algorithms for determining the mode of interaction of antigens with antibody molecules. The successful applicant will be based primarily at the new CARB facility at the Shady Grove Campus of the University of Maryland in Rockville, Maryland, outside Washington, DC. He or she will also interact closely with the IGEN team developing catalytic antibody technology. In addition, collaboration with the antibody engineering group of Dr. A.R. Rees at the University of Oxford will be possible.

The successful candidate will have experience in the development of software for the computer modeling of protein structure and function, and will have a keen interest in meeting the challenges posed by the antibody antigen recognition problem.

Please send a current CV, and a list of 3 individuals who will serve as references to: Dr. John Moul, CARB, 9600 Gudelsky Drive, Rockville, MD 20850. The University of Maryland is an equal opportunity employer.

**CARB** is a joint venture between the University of Maryland and the National Institute of Standards and Technology. CARB's goal is to build a center of research excellence in the area of protein structure, function, engineering and design. Molecular modeling is an important component of this program, and is supported by a number of Silicon Graphics workstations and an Alliant minisupercomputer.

IGEN  
**CATALYTIC ANTIBODIES**

IGEN Inc. is seeking a post-doctoral scientist with experience in computational chemistry of small molecules to join its team on the design of transition state analogues for use in the production of catalytic antibodies. Knowledge of protein structure and function would also be an advantage. The successful candidate should be able to participate in the academic activities of CARB.

Please send a current CV, and a list of 3 individuals who will serve as references to: IGEN Inc., Human Resource Manager, 1530 East Jefferson Street, Rockville, Maryland 20852.

**IGEN** is a biotechnology company located in Maryland, close to Washington, DC, specializing in the development of a new generic diagnostic technology and in the pharmaceutical and therapeutic applications of catalytic antibodies (ABzymes™).

EEOC

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**FACULTY POSITION**

**MOLECULAR VIROLOGY**  
*University of Pittsburgh*

The Department of Infectious Diseases and Microbiology of the Graduate School of Public Health of the University of Pittsburgh is seeking applicants for at least two tenure track faculty positions. Our department is committed to the continuing development of a strong multidisciplinary program which integrates basic research at the molecular level with ongoing immunological, clinical, and epidemiological studies in the area of HIV and EBV pathogenesis. We are seeking outstanding individuals who are able to utilize molecular tools to examine the regulation of viral gene expression in either a retrovirus or herpesvirus system. Candidates should have a Ph.D., M.D., or equivalent, and have had sufficient research experience to demonstrate their ability to establish an independent basic research program with extramural funding. Candidates must be highly motivated individuals who recognize the unique scientific opportunities offered by the integration of basic science with clinical medicine. Successful candidates will be expected to participate in the training and teaching of graduate students. Competitive start up funds and newly-renovated laboratory space with access to state of the art scientific equipment and computer facilities will be available. In addition, the University of Pittsburgh has in house facilities for the synthesis and analysis of peptides, DNA and monoclonal antibodies. Exceptional candidates who qualify for senior level positions will also be considered.

Letters of application including curriculum vitae, bibliography, a brief statement of research interests, and the names of three references should be sent to: Chairperson, IDM Search Committee, A450 Crabtree Hall, University of Pittsburgh, Pittsburgh, PA. 15261.

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

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**POSITION AVAILABLE**

**ASSISTANT MANAGING EDITOR**

Science Magazine is seeking an assistant managing editor. Qualifications include at least a B.S. degree in science, advanced degree preferred in biochemistry; minimum of three to five years experience with the peer review process; and two or more years experience supervising support staff and scientific editors. Strong verbal and written communication skills required; familiarity with database management systems for manuscript tracking a plus. Send resume and cover letter stating salary requirements to:

Ms. Debra Wright  
American Association for the Advancement of Science  
Office of Human Resources  
1333 H. Street, N.W. Suite 850  
Washington, DC 20005

EOE
**COLLEGE OF SCIENCE**  
**KUWAIT UNIVERSITY**  
**STATE OF KUWAIT**

The Kuwait University College of Science, Dept. of Botany and Microbiology invites applications for posts of Professor, Associate Professor and Assistant Professor for the academic year 1989/1990, tenable February 10, 1990 in the following disciplines:

- Plant Breeding
- Microbial Physiology
- Agriculture & Economic Botany

The language of instruction of the College of Science is English. The method of teaching is based on the credit hour system. Applicants must hold the Ph.D. or its equivalent at the time of application. For applications and conditions of service write to:

**Kuwait University Office**  
3500 International Dr., N.W.  
Washington, D.C. 20008  
(202-363-8055)

All applications, together with non-returnable copies of academic qualifications and representative publications should be sent by registered post directly to:

**Dean**  
**College of Science**  
P.O. Box 5969  
13060 Safat  
Kuwait

*All applications must be received by August 31, 1989.*

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**DIRECTOR OF DRUG DISCOVERY**

Corvas, Inc., a biopharmaceutical company located in the biomedical research center of La Jolla, is seeking a Director of Drug Discovery to lead projects in the rational design of novel agents for the treatment of thrombosis and related diseases.

The Director of Drug Discovery will be responsible for management and scientific direction of a multidisciplinary group of scientists developing anti-thrombotic drugs.

Applicants must have a Ph.D. or Ph.D./M.D. and 8 to 10 years of innovative accomplishment in protein biochemistry, immunochemistry or molecular enzymology. Experience in the molecular biology or enzymology of coagulation and in industrial management is highly desirable. Candidates must possess the outstanding leadership and communication skills necessary to play a major role in the growth of an exciting young company.

Corvas offers attractive salaries and benefits, an excellent opportunity for equity participation, and a highly interactive scientific environment.

If you have the necessary qualifications, and the desire to contribute to the cardiovascular health field, please send your resume, in confidence, to:

**President**  
**Corvas, Inc.**  
11077 N. Torrey Pines Road  
La Jolla, California 92037

Corvas, Inc. is an Equal Opportunity Employer

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**ASSISTANT PROFESSOR**

The Department of Anatomy of UMDNJ-Robert Wood Johnson Medical School seeks applicants for an Assistant Professorship (potentially tenure track). The successful applicant will participate in the teaching of the Gross and Developmental Anatomy course taught during the fall semester. He or she should have the potential to develop an active, independent research program, preferably in Neurobiology. Anatomy, an active, research-oriented department with strengths in Neurobiology and Muscle, is currently establishing an NIH-funded, multi-user computer-assisted, high resolution image enhancement and analysis facility. The UMDNJ-Robert Wood Johnson Medical School is adjacent to the Rutgers University Busch Campus in Piscataway, NJ, centrally located between New York and Philadelphia.

Please send curriculum vitae and three letters of recommendation to: **David Egger, Ph.D., Acting Chairman, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854-5635.**

The UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer M/F/H/V.

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**Staff Scientists/ Biochemistry/Molecular Biology/Fermentation Technology**

CIBA-GEIGY has immediate openings for staff/senior scientists in the Biotechnology Department of its Pharma Research Division. The positions will involve the expression of recombinant proteins in microorganisms, mainly yeast, with emphasis on host strain improvement by physiological/fermentation means.

The qualified individuals will have a PhD in microbiology/biochemistry with a strong background in molecular biology or, alternatively, in biochemical engineering, 2–4 years postdoctoral and/or industrial experience, written and oral communication skills as well as a commitment to team work.

We provide a stimulating professional atmosphere with many opportunities for collaborative projects with small Biotech companies as well as University Institutes. We offer competitive salaries and a comprehensive benefit program. For consideration please forward your CV, list of publications and the name of three referees under ref. “Science 346” to Mr. H. Schmid, CIBA-GEIGY Ltd., Personnel Department, P.O. Box, CH-4002 Basle.
CHIEF, LABORATORY OF 
MOLECULAR GENETICS 
NATIONAL INSTITUTES OF 
HEALTH 
PUBLIC HEALTH SERVICE 
DEPARTMENT OF HEALTH AND HUMAN 
SERVICES 

The Intramural Research Program of the National Institute on Aging (NIA), Baltimore, Maryland invites nominations and applications for the position of Chief, Laboratory of Molecular Genetics. This is a Civil Service Position with a salary range of $57,158 to $74,303 per annum depending upon qualifications. Candidates may be eligible for Physician's Comparability Allowance up to $20,000 per year. Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.

The Chief of the Laboratory of Molecular Genetics is responsible for planning, directing and conducting research programs which use molecular and genetic approaches to the study of aging and related processes; for recruiting staff and providing professional leadership for senior staff in their projects; and for originating, designing, and conducting independent and collaborative research on age and disease related alterations in the structure and regulation of genes.

Applicants must have a Doctoral degree with a record of outstanding scientific accomplishment in the field of Molecular Genetics. In addition, applicants should possess qualifications that demonstrate competence in executive level management and leadership ability.

Further information may be obtained by contacting Ms. Barbara Hughes at (301) 550-1733. An Application for Federal Employment (SF-171) with a current curriculum vitae and bibliography should be submitted to:

Personnel Office, Gerontology 
Research Center 
National Institute on Aging 
4940 Eastern Avenue 
Baltimore, Maryland 21224.

APPLICATIONS MUST BE POSTMARKED NO LATER THAN MAY 31, 1989.

All qualified candidates will receive consideration without regard to race, religion, color, sex, age, national origin, lawful political affiliation, marital status, union membership, or nondisqualifying physical or mental handicap.

U.S. Citizenship is required.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER
ENVIRONMENTAL TOXICOLOGY AND WATER ADVISOR (Sacramento, Yolo, Calaveras, El Dorado, and Amador Counties). The University of California (UC), Division of Agriculture and Natural Resources, Cooperative Extension, is seeking an individual to provide research based educational information and develop programs focusing on the environmental and economic effects of agricultural, industrial and household chemicals. Special emphasis areas are water, air, soil and foods. Include safe handling and disposal of chemicals. Minimum master's degree or equivalent combination of education, experience, agricultural, chemical, environmental toxicology, environmental science, industrial hygiene, or related fields. As needed assignments include research and delivery of programs. Recommended starting salary: $23,000, depending on qualifications. Benefits and relocation expenses available. Send curriculum vitae, letter of reference, and five publications to: UC Division of Agriculture and Natural Resources Personnel, 6th Floor, 500 Lakeside Drive, Oakland, CA 94612-3560. Telephone: 415-987-0088. Close 16 June 1989. Refer to: A-99-033. Affective Action/Equal Opportunity Employer M/F/V/H.

EXPERIMENTAL PATHOLOGY

The Department of Pathology, Emory University School of Medicine, is expanding its program in experimental pathology. We seek candidates at the ASSISTANT OR ASSOCIATE PROFESSOR level, tenured or tenure-track, in the areas of fundamental immunology, autoimmunity, immunopathology, and tumor immunology. Experience with conducting laboratory and clinical research in pathology and cellular immunology and the ability to raise and maintain substantial research funds is required. Candidates should have a strong commitment to both teaching and research. Applicants for this position are expected to develop an independent research program which is commensurate with their rank. The successful candidate will have demonstrated ability to train and direct laboratory personnel and to participate in the research training of graduate students. Applicants will be expected to contribute significantly to the expansion of the teaching and research programs in this Division. The successful candidate will be expected to develop and maintain an externally funded research program. The position will require the candidate to develop a research program which is consistent with the other scholarly activities of the Division.

The successful candidate is expected to have a Ph.D. or M.D. degree in pathology or a related field. Experience in conducting and supervising research on environmental issues facing the transportation industry. Skills in experimental pathology are essential. The successful candidate should be able to communicate clearly and effectively with students, clinicians, and the public. Applicants are expected to have a strong background in research and teaching. Applications are invited from individuals who have demonstrated a commitment to diversity and have a strong interest in developing a research program in experimental pathology.

Send inquiries to: Dr. C. Channa Reddy, Department of Pathology and Laboratory Medicine, 703 Woodruff Memorial Building, Atlanta, GA 30322. Emory University is an Equal Opportunity/Characteristic Action Employer. Women and minorities are encouraged to apply.

THE JOHN THOMAS LADUE McGINTY EMERITUS SCHOLAR CHAIR IN MARINE BIOLOGY AT FLORIDA ATLANTIC UNIVERSITY, P. O. BOX 7901, BOCA RATON, FL 33439-7901

Florida State University System

Applications and nominations are invited for the John Thomas Ladue McGinty Emeritus Scholar Chair in Marine Biology at Florida Atlantic University. This position is supported by a $1,000,000 endowment and will be filled at a senior level in the Department of Biological Sciences.

The successful candidate will have a demonstrated interest in the study of marine biology and be able to develop and maintain an externally funded research program in marine biology. Applicants with a background in marine biology, marine science, marine science education, or related disciplines are encouraged to apply. Applications and nominations should be addressed to: The John Thomas Ladue McGinty Scholar Committee, Department of Biological Sciences, Florida Atlantic University, 777 document University Drive, Boca Raton, FL 33439-7901. An Equal Opportunity/Characteristic Action Employer.
POST-DOCTORAL FELLOWSHIPS

The Imperial Cancer Research Fund is one of the largest independent cancer research institutes in Europe employing approximately 400 scientists and clinicians. It has a wide-ranging programme in fundamental, applied and clinical cancer research.

There are approximately seventy research groups encompassing the major disciplines of cellular and molecular biology including biochemistry, genetics, immunology, and virology. Most are housed at the main building in Central London; there are also research units at Clare Hall, North London and at Dominion House attached to St Bartholomew’s Hospital. ICRF’s external clinical units based in major teaching hospitals form the link between fundamental research and clinical activities.

Each research group works independently. All have access to centralized services including cell production, oligonucleotide and peptide synthesis, amino acid and DNA sequencing, a library of DNA probes and somatic cell hybrids for gene mapping, experimental animal breeding and maintenance including transgenic mice, electron microscopy, and a large computer facility.

Fellowships

Approximately 40 post-doctoral fellowships are available each year to scientists of any nationality. Most of these are three-year fellowships, but visiting fellowships for a period of one or two years are also offered.

Salaries for post-doctoral fellows are in the range of £12,500-£16,000, dependent on age and experience. This is subject to UK tax but avoidance of double taxation agreements exist with all countries of the EEC, the Commonwealth and the USA. Salaries for Visiting Fellows are dependent on age and experience. Visitors are entitled to medical and dental care under the National Health Service. ICRF will provide assistance with relocation expenses.

The projects currently available are listed below.

Applications giving the relevant project number and including a full Curriculum Vitae should be sent by 12 May 1989 to:

Recruitment Officer (Ref: 108/R), Imperial Cancer Research Fund, PO Box 123, Lincoln’s Inn Fields, London WC2A 3PX.
Fax No: 011 441 242 1510.

1. John Armstrong
   Role of ras-like G-proteins in membrane traffic of S. pombe.
2. Lionel Crawford (Cambridge)
   Transformation of human keratinocytes by human papillomaviruses and oncogenes.
3. Clive Dickson
   The function of int-2 and related growth factors in tumourigenesis and normal fetal development.
4. Agamemnon Epenetos
   Design of chimeric anti-tumour immunconjugates.
5. Michael Fried
   Mammalian gene organization and expression.
6. Michael Fried
   Molecular analysis and cloning of amplified DNA.
7. Stephen Goodbourn
   Regulation of human IFN-α interferon expression.
8. Bridget Hill
   Drug resistance mechanisms in cells pre-exposed to X-irradiation and expressing atypical multidrug resistance.
9. Bridget Hill
   Modified DNA repair capacity and cisplatin resistance.
10. Nancy Hogg
    Analysis of monocyte molecules including adhesion receptors in immune responses.
11. Michael Horton
    Molecular analysis of bone cell specific genes.
12. Nicholas Jones
    Transcriptional regulation by the adenovirus EIA gene product.
13. Peter Karran
    DNA mismatch repair in human cells.
14. Roger King
    Growth factors and breast cancer cell proliferation.
15. Roger King
    Use of transfected oestadiol receptor (ER) cDNA to study mechanisms of oestrogen action.
16. Kevin Lee
    Regulation of transcription by cyclic-AMP.
17. Mark Meuth
    Fine structure deletion mapping of a potential origin of DNA replication in the hamster APRT locus.
18. Malcolm Parker
    Molecular aspects of steroid hormone action.
19. Gordon Peters
    Functions of the int-2 and hst oncogenes in tumourigenesis and embryogenesis.
20. Denise Sheer
    Molecular genetic analysis of selected solid tumours in children.
21. George Stark
    Regulation of gene expression by interferon.
22. George Stark
    Molecular analysis of mammalian gene amplification.
23. Michael Sternberg
    Computer algorithms to detect protein sequence homology.
24. Joyce Taylor
    Use of synthetic peptides and glycopeptides as immunogens in cancer.
25. Joyce Taylor
    Oncogenic transformation of human mammary epithelial cells: an in vitro model for studying breast cancer.
26. Graham Warren
    Re-assembly of the Golgi apparatus in a cell-free system.
27. Roger Watson
    C-myc expression in haemopoietic cells.
28. Stephen West
    Homologous pairing and formation of synaptic intermediates between regions of duplex DNA by RecA protein.
29. Stephen West
    Characterization of an endonuclease from S. cerevisiae that resolves Holliday junctions in DNA.
30. Roland Wolf (Edinburgh)
    Identification of human genes involved in drug resistance towards alkylating agents by complementation in yeast.
31. Richard Wood
    The biochemistry of DNA excision repair in human cells.
32. Nicholas Wright/Susan Kirkland
    Control of differentiation in colorectal carcinoma cells.
33. Bryan Young
    Molecular analysis of Philadelphia chromosome positive leukaeasias.
THE JAMES E. BIRREN CHAIR IN GERONTOLOGY AT THE ETHEL PERCY ANDRUS GERONTOLOGY CENTER UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

Named in honor of the emeritus Dean of the Center, the Chair is supported by an endowment established by gifts from the friends and admirers of Dr. Birren. The Chair holder is expected to carry on the tradition of research and scholarship which has distinguished Dr. Birren's career.

The person selected is expected to be a distinguished scientist whose research relates to Alzheimer's disease, a devastating chronic disease that affects millions of Americans. The Chair holder is expected to be a scientist of sufficient stature and commitment to the aging sciences and to the emeritus scientist for whom the chair is named.

Some teaching is expected, but the majority of the individual's time should be devoted to research, scholarship, and national leadership. This is a key leadership position in continuing the development and expansion of a group of investigators at the Andrus Gerontology Center who are pursuing an understanding of the pathophysiology of Alzheimer's disease, with the ultimate goal of preventing or ameliorating the effects of this disease.

It is hoped that the Chair can be in residence by 1 September 1989.

Letters of application should be sent by 1 June 1989. Mail to:

Dr. Caleb B. Finch, Chairman
USC Gerontology Center
3715 McClintock Avenue
Los Angeles, CA 90089-0191

MANAGER, ENVIRONMENTAL LABORATORY, ASSISTANT PROFESSOR, 12-month, tenure-track. Salary: $34,000. Manage laboratory, teach, research; and committees. Ph.D. in health physics, pharmacological sciences, or related discipline required. Demonstrated teaching and research skills. Should have health physics and nuclear counting experience. Deadline: 2 June 1989. Submit résumé and three references with addresses and telephone numbers to: Dr. B. W. Graham, Idaho State University, College of Pharmacy, Box 8288, Pocatello, ID 83209. Equal Employment Opportunity/Affirmative Action.

MANAGER, PROTEIN STRUCTURE LABORATORY. Duties will include operating and maintenance of the Protein Structure Laboratory. This facility now includes sophisticated equipment to synthesize peptides and to sequence proteins. The tasks will be to set up operating procedures for accepting sequencing or synthesis jobs from inside and outside the University. The successful applicant will be responsible for the operation and maintenance of state-of-the-art scientific equipment designed to sequence proteins, synthesize peptides, billing service of the laboratory, equipment repair and calibration, and conduct an independent research program. Ph.D. in biochemistry, chemistry, or a related area required and experience in operating protein sequencers based on the Edman Degradation type of chemistry. Send a letter of application, current curricular vitae, statement of research interest, and three letters of recommendation by 31 May 1989 to: Dr. Fred W. Wagner, Department of Biochemistry, University of Nebraska-Lincoln, Lincoln, NE 68583-0718. Equal Opportunity/Affirmative Action/Equal Opportunity Employer.

MOLECULAR NEUROBIOLOGY NATIONAL INSTITUTE FOR DRUG ABUSE (NIDA) TENURE-TRACK AND FELLOWSHIP POSITIONS

The Addiction Research Center (ARC), NIDA, wishes to enhance its programs in molecular neurobiology. Current efforts center on cloning and expression of regulatory genes relevant to neurotransmission and drug abuse, and solubilization and purification of drug receptors. Applicants for postdoctoral fellowship are encouraged to be working in molecular neurobiology. Two NIDA tenure-track and three NIDA postdoctoral positions are available.

Each applicant is expected to achieve a position equal to that of a nonfederally funded postdoctoral fellow. Applicants interested in applying for these positions should send a letter of interest, including a summary of past research experience, and a curriculum vitae to: Dr. S. Colburn, ARC, National Institute of Alcohol Abuse and Alcoholism, 5600 Fishers Lane, Rockville, MD 20857.

DEPARTMENT OF PSYCHIATRY UNIVERSITY OF TORONTO

Applications are invited for the position of Assistant Professor in the area of Molecular Neurogenetics as applied to psychiatric disorders. This position requires a Ph.D. or other doctoral degree and significant post-doctoral experience in molecular genetics, molecular neurobiology or an equivalent field. The successful candidate will be expected to work collaboratively with a multidisciplinary neuroscience/neuropsychiatric research group comprised of basic and clinical researchers investigating the neurobiology and neuropathogenesis of psychiatric diseases. The position requires demonstrated ability to conduct independent research within a collaborative group and to compete for extramural funding.

The position is tenure track equivalent supported initially by the Anson fund. Salary is commensurate with rank and experience. The position also includes a one-time start-up research grant.

The University encourages both men and women to apply for positions. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

Candidates should submit a letter of application, a curriculum vitae and the names of three referees from whom letters of recommendation may be solicited. Please submit responses to: Dr. Jerry J. Warsh, Director of Research, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario MST 1R8.

The successful candidate would be expected to take up the appointment prior to September 1, 1989.

Closing date for applications is May 19, 1989.
Research Assistant/Postdoctoral Fellow

Beth Israel Medical Center, a major 945-bed teaching hospital affiliated with the Mount Sinai School of Medicine, has a position available for a Research Assistant/Postdoctoral Fellow to work on studies of reproductive endocrinology in rats. You will be part of our state-of-the-art environment working with high caliber colleagues. Salary commensurate with experience. Excellent benefits. Please send C.V. to: L. Poretsky, MD, Division of Endocrinology, Department of Medicine.

Beth Israel Medical Center
First Avenue at East 16th Street
New York, New York 10003
An Equal Opportunity Employer
Committed to a SMOKE-FREE Environment

Microbiologist

Pfizer, a leader in pharmaceutical research, has a new opening for a Microbiologist (PhD) in the Department of Clinical and Scientific Affairs at world headquarters in New York City.

As a member of a multidisciplinary project team, you will be exposed to all aspects of the development program for our anti-infective drugs. The successful team microbiologist will participate in the management of clinical research programs involving investigator selection, protocol design and the evaluation of data for new drug candidates. Designing in vitro microbiology studies in support of the clinical studies will be an important part of this position. You will review preclinical and clinical data of drugs undergoing licensing evaluation, provide scientific support for marketing activities and participate in preparing regulatory submissions for the FDA.

Candidates should have a PhD in Microbiology with a minimum of 5 years experience in academia/industry. We seek individuals who are self-motivated and possess excellent interpersonal and writing skills.

For immediate, confidential consideration, please send your resume including salary history to: Charlene Mirett, Associate Personnel Manager, Pfizer Pharmaceuticals, Human Resources, 15th Floor, 235 East 42nd Street, New York, NY 10017. Only candidates with appropriate backgrounds will be considered. An equal opportunity employer.

RESEARCH SCIENTIST

Enzo Therapeutics, Inc., an expanding subsidiary of Enzo Biochem, Inc., is seeking an experienced Molecular Biologist/Virologist whose previous work has involved analysis of gene expression and regulation and the use of mammalian expression vectors, including retroviral vectors, to participate in a growing effort directed toward the development of therapeutic materials and genetic therapeutic strategies for disease treatment and for veterinary and agricultural applications.

This position requires an independent individual with the demonstrated ability to design and implement cohesive research programs and good communication and interactive skills. This position offers great potential for career development in exciting new areas of pharmaceutical applications of biotechnology.

Please send your CV to:
Enzo Therapeutics, Inc.
ENZO BIOCHEM, INC.
385 Hudson Street
New York, NY 10013
Attn: SF
EOE M/F

MOLECULAR IMMUNOLOGIST

Cancer Therapeutics

The Dow Chemical Company, in Midland, Michigan, is a recognized world leader in the chemical industry. Expanded research efforts in the area of cancer therapeutics and immunotherapy have created an immediate need within the Bioproducts Laboratory in the Central Research Department for a qualified Molecular Immunologist.

The successful candidate will have a Ph.D. and some postdoctoral experience with developing and testing antibodies. Familiarity with state-of-the-art discovery of monoclonals, immunoassays and immunochemistry is required. Research efforts will be directed toward obtaining and testing novel antibody specificities for our biotechnology-based cancer therapeutic program. The above candidates must also possess strong communication skills and a desire to carry out independent research while functioning as part of an interdisciplinary research team.

The Dow Chemical Company offers a stimulating work environment and a competitive salary and benefits package. For consideration, send your resume to: Technical Recruiting, Department AT, The Dow Chemical Company, 1801 Building, Midland, MI 48674. The Dow Chemical Company is an Equal Opportunity Employer.
DEPUTY DIRECTOR, OFFICE OF HEALTH & ENVIRONMENTAL ASSESSMENT (OHEA) DIRECTOR, HUMAN HEALTH ASSESSMENT GROUP (HHAG)

The U.S. Environmental Protection Agency (EPA) is seeking highly qualified candidates for two Senior Executive Service (SES) positions located at EPA Headquarters in Washington, D.C.

The OHEA oversees an Exposure Assessment Group and HHAG at Headquarters, Environmental Criteria Assessment Offices at Cincinnati, Ohio, and Research Triangle Park, North Carolina. OHEA is responsible for the technical direction and management of programs for assessing effects of environmental pollutants on human health and ecological systems, i.e., performing hazard assessments, developing risk assessment methods, guidelines, providing other forms of scientific advice to Agency regulatory offices, and planning/implementing research aimed at reducing uncertainty in risk assessment.

The Director, HHAG oversees four branches with emphases on toxicology, epidemiology, biostatistics, mechanisms of toxic action. HHAG provides the Agency with health hazard, risk information for use in regulatory decision-making with recommendations being defensible at national/ international levels.

Applicants must have a bachelor’s or higher degree in life or health sciences, or a related field relating to the work of the positions and professional experience demonstrating leadership and technical competence in one of those fields. Notable experience in human health risk assessment or in public health protection is desirable. Must meet the technical/executive qualifications described in Vacancy Announcement. For a copy of the Vacancy Announcement call or write: Edna Morse, Environmental Protection Agency, Executive Resources and Special Programs Division, PM 224, 401 M Street, S.W., Washington, D.C. 20460. The telephone number is (202) 322-3328.

Applications must be postmarked by June 1, 1989. A separate SF-171, Application for Federal Employment, MUST be submitted for each position.

EPA is an Equal Employment Opportunity Employer.

Dental Educator

The Department of Oral Medicine and Pathology at New York University College of Dentistry is seeking to fill a full-time tenure-track position. The ideal candidate should hold a dental degree and advanced training in either Oral Pathology or Oral Medicine and additional training (preferably at the Ph.D. level) in either Oral Biology, Biochemistry, Cell and Molecular Biology, Immunology or Experimental Pathology. Candidates who lack training in Oral Pathology or Oral Medicine, but have research training in any of the above scientific disciplines, will also be strongly considered.

Individuals with advanced training in Oral Pathology and Oral Medicine and only modest (1-2 years) research experience are also encouraged to apply. Research areas of particular interest to the department include bone cell biology, connective tissue biochemistry, salivary gland biochemistry or physiology, oral immunology and oral mucosal diseases. The successful candidate is expected to develop a research program and participate in the teaching of Oral Medicine and Pathology. Academic rank and salary will be commensurate with the candidate’s qualifications.

Kindly send letter of application and curriculum vitae to:

David B. Krizer
Dental Center
College of Dentistry
345 E. 24th Street
New York, New York 10010
Attn: Dr. Barry R. Rifkin, Chairperson
Department of Oral Medicine and Pathology

NYU encourages applications from women and members of minority groups.

Colgate-Palmolive

SENSORY EVALUATION

Colgate-Palmolive’s Corporate Technology Center is currently seeking a qualified psychologist with expertise in experimental design.

As an integral member of our Basic Research-Life Sciences Group, your key responsibilities will include designing and implementing sensory product testing, developing and optimizing sensory methodology, and providing statistical design guidance for staff along with relevant computer programming for sensory needs.

The successful candidate will have a Ph.D. in Experimental Psychology or Psychometrics and 3 years experience, or an MS with 8-10 years experience.

- Demonstrated accomplishments in experimental Design/ Psychometrics
- Demonstrated accomplishments in questionnaire development/multivariate statistics, and use of SPSS and/or BMDP

Centrally located on an 80-acre campus in Piscataway, Corporate Technology develops Colgate’s household and personal care products that are marketed globally.

We offer competitive compensation and attractive benefits.

For immediate consideration, please forward resume with salary history in confidence to: Manager, Human Resources Department BA-30, 909 River Road, Piscataway, NJ 08854.

COLGATE-PALMOLIVE COMPANY

An Equal Opportunity Employer M/F

Regional Medical Associate

A Proud Heritage in Pharmaceuticals

At Smith Kline & French laboratories, we revolutionized the treatment of mental illness, peptic ulcer disease and hypertension. Our anti-infective products meet virtually every antibiotic need. We’re proud of our past, and we’re investing nearly $400 million annually in research and development to ensure that our future is just as exciting. We’re pioneers in genetic engineering, have a demonstrated commitment to gastrointestinal and cardiovascular products, and we are the world’s leading supplier of polo and measles vaccines.

Be Part of Our Future in Sales

Currently we have an opening in the Mid-Atlantic Region for a Regional Medical Associate to combine both scientific expertise and marketing skills. The selected candidate will be headquartered in Philadelphia, PA.

Responsibilities are to establish effective relationships within key medical institutions, providing scientific liaison and indepth information essential to appropriate use of SKF’s products. There is also responsibility for training Representatives and medical professionals. Up to 50% travel.

Qualifications: Pharm. D. or Ph.D. in Pharmacology, Biochemistry, Microbiology or other Life Sciences. Must possess initiative, strong communication skills, and interest in Marketing.

In addition to an independent work environment where personal and professional growth are a way of life, we offer an outstanding training program and one of the best compensation/benefits packages, including car, in the industry.

Please send your resume and salary information to:

Box 60, SCIENCE
We are an Equal Opportunity Employer. M/F/H/V/
BS/MS SCIENTISTS
Monoclonal Antibody Research Group

For more than a century, scientists at ELI LILLY AND COMPANY have developed innovative, high quality pharmaceutical products. Lilly invests over $500 million annually in research and development programs. More than 3,000 scientists at the company's Lilly Research Laboratories are pursuing creative research programs that involve many important health care needs.

To further build its research capabilities, Lilly is seeking self-motivated, innovative scientists for the Monoclonal Antibody Research Group. The ideal candidate will have the following qualifications:
- Bachelor's or Master's degree in biology, immunology, biochemistry, or a related discipline.
- Experience in hybridoma production, monoclonal antibody characterization, SDS-PAGE, protein purification, and in vivo animal work.
- Excellent organizational and communication skills.

Eli Lilly and Company is committed to scientific excellence. Lilly provides a stimulating professional atmosphere with many opportunities for collaborative, multidisciplinary research. The company offers an attractive total compensation program. Entry level and salary will be based upon each candidate's experience.

For prompt consideration, please forward your résumé to:
Blake A. Caley
Science Recruitment (MA-1)
Eli Lilly and Company
Lilly Corporate Center
Indianapolis, Indiana 46285

The World Health Organization (WHO) is an intergovernmental agency internationally recognized for its integrity and lasting achievements. Guided by humanitarian concerns, WHO works to direct and coordinate global and national efforts to improve the health of peoples throughout the world. To meet its objectives, WHO depends on staff members with special qualities of leadership, dedication and commitment.

The UNDP/WORLD BANK/WHO Special Programme for Research and Training in Tropical Diseases (TDR) is a globally coordinated effort to bring the resources of modern science to bear upon the control of major tropical diseases and to strengthen the research capability of endemic, developing countries where new disease control technologies are most needed. To meet its objectives, TDR has recruited into its global network scientists of the highest calibre to participate in this international research effort.

TDR
Scientist/Product Development Manager
Tropical Diseases Research Programme
WHO
Geneva, Switzerland

The Tropical Diseases Research Programme (TDR) has taken a leading role in the research and development of new and improved tools for the prevention, diagnosis and treatment of tropical diseases and now wishes to promote further development, production and testing of these new products, with specific emphasis on their production and testing in developing countries. Such new products, which include drugs, diagnostic tools, vaccines and new tools/methods for vector control, are destined for eventual integration into disease control programmes.

TDR is seeking to hire a scientist/product development manager with experience in the development, production and testing of biotechnological products and pharmaceuticals. The successful candidate will work in close collaboration with various TDR Steering Committees and will provide expertise and support related to the promotion and management of product development, particularly in relation to disease endemic countries. The product development manager will be expected to contribute to TDR’s strategies for product development, including the establishment of innovative and productive interactions with industry, and to coordinate their implementation. One of the major challenges will be to initiate the development and production, in particular in developing countries, of biotechnology-derived products for use in large-scale field testing and eventual use in disease control programmes.

Applicants should have extensive experience in biotechnology or pharmaceutical research and development, ideally in a major biotechnology or pharmaceutical company, including up-to-date knowledge of the development, production and testing of biotechnological products and pharmaceuticals. A broad knowledge of the biology of tropical diseases would be an asset. A doctoral level degree in biological sciences is a requirement, as is an excellent knowledge of English or French, with a good working knowledge of the other.

Please send your detailed curriculum vitae and a letter of application by 12 May 1989 to Personnel, WHO, Avenue Appia, CH-1211 Geneva 27, Switzerland, quoting PDM/TDR/89 and the name of the journal in which this announcement appeared. Applications from women are encouraged.

Only candidates under serious consideration will be contacted.
University of South Carolina (USC) at Aiken anticipates a TENURE-TRACK POSITION in MOLECULAR BIOLOGY for fall 1989. Ph.D. required. Excellence in teaching and research in context of undergraduate institution expected. Preference for persons with active research program in molecular genetics. Application letter, curriculum vitae, transcripts, names and telephone numbers of three references by 19 May 1989 should be directed to: Dr. Harold Ornes, Biology Department, USC-Aiken, Aiken, SC 29801. USC is an Affirmative Action/Equal Opportunity Employer.

MOLECULAR GENETICS COLUMBIA UNIVERSITY POSTDOCTORAL FELLOWSHIPS

We invite inquiries from candidates with a Ph.D. or M.D. degree in Molecular Genetics or Molecular Biology to work in a fast-paced, highly collaborative environment. Positions are available immediately and will be filled on a continuing basis. Preference will be given to candidates with postdoctoral experience or outstanding thesis work including chromosomal techniques and cloning, or a related area of molecular biology. Projects include mapping and cloning of disease genes; development of brain specific DNA markers; and computer analysis of complex banding patterns. Positions are supported by the W. M. Keck Foundation.

Please address inquiries plus curriculum vitae to: Dr. Conrad W. Zon, Genetics Laboratory, College of Physicians and Surgeons, Columbia University, 630 West 168th Street, New York, NY 10032. Equal Opportunity/Affirmative Action Employer.

OPPORTUNITIES FOR ADVANCED STUDY IN MAMMALIAN REPRODUCTIVE BIOLOGY

NIH-supported predoctoral and postdoctoral training opportunities with an interdepartmental, multidisciplinary orientation. Research areas include: Glycoprotein synthesis and secretion mechanisms; Placenta and decidua; Testis structure and function; Insulin-like growth factors; Genetic and environmental control of cell differentiation, and other areas of research in the Department of Obstetrics and Gynecology. Positions are available immediately and will be filled on a continuing basis. Preference will be given to candidates with postdoctoral experience or outstanding thesis work including techniques and cloning, or a related area of molecular biology. Projects include mapping and cloning of disease genes; development of brain specific DNA markers; and computer analysis of complex banding patterns. Positions are supported by the W. M. Keck Foundation.

Please address inquiries plus curriculum vitae to: Dr. Conrad W. Zon, Genetics Laboratory, College of Physicians and Surgeons, Columbia University, 630 West 168th Street, New York, NY 10032. Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP—POSTDOCTORAL—The University of Oklahoma Health Sciences Center in Oklahoma City is seeking an individual with research interest in endometriosis. Training in immunology, biochemistry, and pathology is required. Must be skilled in resident teaching, research design, and statistical analysis. Send curriculum vitae and bibliography: Robert A. Cade, M.D., Department of Obstetrics and Gynecology, University of Oklahoma College of Medicine, P.O. Box 26901, 4572P0, Oklahoma City, OK 73190.

PHYSIOLOGY VISITING ASSISTANT PROFESSOR

Division of Biological Sciences, University of Montana seeks a Visiting Assistant Professor to teach neuroendocrine functions of the hypothalamicpituitary-gonadal axis in students with a background in one or more of the following areas: neuroendocrinology, physiology, endocrinology, or behavioral neurobiology. Ability to teach the course using a computer laboratory is also desirable. Send curriculum vitae, letter of interest, and three letters of recommendation by 15 May 1989 to: Chairman, Physiology Search Committee, Division of Biological Sciences, University of Montana, Missoula, MT 59812; Fax: 406-243-4184. Affirmative Action/Equal Opportunity Employer.

POLYMER SCIENCE AND ENGINEERING UNIVERSITY OF MASSACHUSETTS

Applications and nominations are invited for a tenure-track faculty position at the ASSISTANT PROFESSOR level in the Department of Polymer Science and Engineering to begin September 1989. Candidates must have an earned doctorate and a strong commitment to research and teaching excellence. Salary commensurate with qualifications and experience. Applicants should submit curriculum vitae, and an outline of research plans, and arrange for three letters of reference to be sent to: Professor Frank V. Small, Chair, Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MA 01003. Closing date is 15 May 1989. The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL ASSOCIATE position(s) available in a neuroscience laboratory which studies neurotransmitter release due to pain and analgesia, especially with respect to amino and related substances. Experience doing HPLC, receptor binding or in vivo microdialysis is desirable. Ph.D. in biological sciences required. Send curriculum vitae and three letters of recommendation by 15 May 1989 to: Alice A. Larson, Ph.D., Department of Veterinary Medicine, University of Minnesota, 1987 Fitch Avenue, Minneapolis, MN 55455. University of Minnesota is an Affirmative Action Educator and Employer. Specifically invites and encourages applications from women and minorities.

COLUMBIA UNIVERSITY CENTER FOR RADIOLOGICAL RESEARCH POSTDOCTORAL/ASSOCIATE RESEARCH SCIENTIST POSITION(S)

Molecular cyogenetics as applied to the effects of ionizing radiation on mammalian cells. Oriented to an understanding of the molecular basis of mutation, aberration induction and oncogenic transformation. Knowledge of recent literature and technology to human health needs. Interested candidates should write to: Dr. Charles Geard, Center for Radiological Research, College of Physicians and Surgeons, Columbia University, 630 West 168th Street, New York, NY 10032. Columbia University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW—IMMUNOLOGY, TOXICOLOGY AND Virology, to study systemic autoimmune disease in mice and humans. Special emphasis on the cultural and functional aspects of B and T cells and their interactions with pathogenic autoantibodies and structures. Experience in molecular biology techniques preferred. Send curriculum vitae and three letters of recommendation to: Dr. Syman K. Datta, Department of Medicine, Tufts University—New England Medical Center, 750 Washington Street, Boston, MA 02111. EEO/AA Employer.

ARCHBOLD BIOLOGICAL STATION POSTDOCTORAL FELLOWSHIPS

Archbold Biological Station invites ecologists or evolutionary biologists to apply for one of two postdoctoral fellowships based at the Station in north-central Ohio. One fellowship is available for an applied ecologist or evolutionary biologist who will be given opportunities to develop research projects and to work with a variety of biologists at the Station. Funding for the project will be provided by a grant of $20,000 and may be renewed for a second year. Applicants should apply to: Archbold Biological Station, Department S, P.O. Box 2057, Lake Placid, FL 33852. Telephone 813-465-2571.

Equal Opportunity/Affirmative Action Employer.
POSTDOCTORAL FELLOWSHIP—University of North Carolina at Chapel Hill. Protein Chemistry and Enzymology of Blood Coagulation. Completion of advanced degree (Ph.D. or M.D.) is required. Prefer background in protein chemistry, site-specific mutagenesis, PCR reaction, enzyme kinetics, receptor characterization, or protein solution conformational analysis. Send curriculum vitae and letter of recommendation to: Dr. Roger Lundeblad, Dental Research Center, CB#7455, School of Dentistry, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7455. Equal Opportunity Employer.

POSTDOCTORAL FELLOWSHIP IN BIOLOGICAL NMR available now for Ph.D. chemist or biochemist at SUNY Health Science Center, Syracuse. Projects will involve 31P- and 1H-NMR studies of cultured epithelial cells. Salary will be determined using NIH scale for level of postdoctoral experience. Experiments will be performed at NIH Resource Lab for Multinuclear NMR at Syracuse University in collaboration with Dr. George Levy. Send curriculum vitae and names of three references to: Dr. Steven Scheiman, SUNY Health Science Center, 750 East Adams Street, Syracuse, NY 13210. Equal Opportunity Employer.

TWO POSTDOCTORAL FELLOWSHIP POSITIONS are available immediately for Ph.D.s or M.D.s interested in investigating the function of growth factor receptors in normal and malignant cells, using genetic, biochemical, and immunologic approaches. The laboratory is especially interested in EGF and related molecules. Skills in molecular biology will be particularly valuable. Salary based on level of experience. Send curriculum vitae with names and addresses of three references by 30 May 1989 to: John Mendelsohn, Laboratory of Receptor Biology, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021.

POSTDOCTORAL OR RESEARCH SCIENTIST available immediately for research on in vivo and in vitro (cellular, biochemical) mechanisms of obesity diabetes and hyperlipidemia. Send resume to: Dr. Barbara Hansen Department of Physiology School of Medicine Room 257 660 West Redwood Street Baltimore, MD 21201

A POSTDOCTORAL POSITION is available to study the molecular biology of simian immunodeficiency virus (SIV). Possible projects include (i) elucidating molecular mechanisms of SIV pathogenesis; (ii) identifying factors that regulate viral expression; (iii) studying mechanisms of viral activation in macrophages. Please send curriculum vitae, publications, and three references to: Dr. Yen Li New England Regional Primate Research Center Harvard Medical School 1. Pine Hill Drive Southborough, MA 01772

POSTDOCTORAL POSITION: Immediate opening to study translational regulation in rat intestinal epithelial cells. Background in molecular biology, biochemistry or monoclonal antibodies. Salary competitive. Send curriculum vitae, a brief description of research experience, copies of publications, and names of three references by 19 May 1989 to: Dr. Kenneth C. Kleene, Department of Biology, University of Massachusetts, Boston, MA 02125. An Equal Opportunity Employer.

Research & Development

Scientists/Chemists

An Environment For Career Growth At CIBA-GEIGY Corporate Headquarters In Westchester

CIBA-GEIGY is known for quality pharmaceuticals and specialty chemicals that touch the lives of people worldwide. At our headquarters in suburban Westchester County, New York, you may participate in research and development activities that result in innovative new products, and work with professionals who maintain the highest standards of excellence. Recent graduates and experienced candidates are invited to consider these current openings:

Transdermal Drugs

Be part of a team involved in physical chemical characterization, in vitro percutaneous absorption, pharmaceutical formulations, and alternative membrane diffusion of drugs. BS/MS in Chemistry, Chemical Engineering, or equivalent is necessary, plus up to 5 years experience in transdermal drug delivery systems R&D. Respond to Dept. 227-4.

Binding Assay/Radioimmunoassay Analysis

Determine drugs in biological fluids using RIA, ELISA, EMT, HPLC and related techniques. Will also apply radiotopes/ separation and various chromatographic techniques. BS/MS in Chemistry, Biochemistry, Immunology, or equivalent is necessary, along with up to 3 years academic or industrial experience in chemistry, biochemistry or immunology. Must have some exposure to computers/microprocessors and be proficient in developing radioimmunoassays. Respond to Dept. 228-4.

Analytical Chemistry

Assist in developing sensitive and specific methods for assaying drug metabolites in biological fluids by GC/MS, LC/MS or MS/MS, optimizing assay performance and providing basic validation data. Also assist in metabolite identification. BS/MS in Analytical Chemistry, Chemistry, Biochemistry or equivalent is required; up to 3 years academic or industrial experience with extraction methods and/or GC/MS assay development is desirable and computer literacy is an advantage. Respond to Dept. 229-4.

Gastrointestinal Absorption Studies

Participate in both in vivo pharmacokinetic/pharmacodynamic and in vitro gastrointestinal absorption studies, perform analyses and small animal surgery. BS/MS in Chemistry, Physiology, Biochemistry or equivalent is required, plus up to 3 years experience in oral drug delivery research and development. Additional experience with large animals would be helpful. Respond to Dept. 230.

Synthetic Organic Chemistry

Conduct research projects leading to the development of new and improved products, assisting to attain relevant technical data. BS in Chemistry, or equivalent is necessary. Recent graduates and those with up to 3 years laboratory experience will be considered. Respond to Dept. 192.

In addition to significant professional advantages, you will enjoy CIBA-GEIGY’s distinctive campus-like setting, conveniently located to major highways. We offer competitive salaries and benefits, and high corporate quality of life. Please forward two copies of your resume and salary requirements, indicating appropriate department number, to: Patricia A. Garrett, CIBA-GEIGY Corporation, 444 Saw Mill River Road, Ardsley, New York 10502-2699. We Are An Equal Opportunity Employer M/F/H/V.
POSTDOCTORAL POSITION IN MOLECULAR BIOLOGY AT NIH

Position available immediately to study transcriptional regulation of bacteriophage T4 replication proteins. Candidate must be a recent Ph.D. with a background in biochemistry or molecular biology. Position is for two years with a one-year extension possible. Please send curriculum vitae and names and addresses of three references to:

Dr. Deborah Hinton
National Institute of Diabetes and Digestive and Kidney Diseases
National Institutes of Health
Building 8, Room 2A-13
9000 Rockville Pike
Bethesda, MD 20892

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

Senior Research Biochemist

Eisai Research Institute of Boston, Inc., a recently established pharmaceutical research company, is looking for a creative and motivated Biochemist or Biological Pharmacologist to join an existing team of scientists working toward innovative solutions to challenging pharmaceutical problems.

Suitable candidates will have a Ph.D. in a relevant biological science and more than five years' experience beyond the postdoctoral level developing procedures and directing others to work on new approaches to the screening of potential drug entities. The successful candidate will have experience in academic or pharmaceutical research with demonstrated ability to communicate new ideas and supervise a team of researchers. Areas of expertise will include design and development of quantitative enzyme and drug receptor assay systems, especially with respect to signal transducing systems. In addition the candidate should be well versed in establishing and maintaining animal cell cultures.

Interested candidates should send a resume and salary requirements to the Director of Administration, Eisai Research Institute, 128 Spring Street, Lexington, MA 02173. An equal opportunity employer.

Research Scientist Immunoparasitologist

Pfizer Central Research has an excellent opportunity for a creative scientist at its modern Animal Health Research facility in Terre Haute, Indiana. As a member of the anticoccidial project team, you will have an opportunity to exercise ingenuity and originality in developing and conducting basic and applied research toward the in vivo evaluation of potential anticoccidial agents.

We are seeking an accomplished scientist who is innovative, enthusiastic, has good communication skills and enjoys working as part of a strong multidisciplinary project team. You must possess a Ph.D. and postdoctoral experience would be an asset; however, educational training, intellectual capabilities and leadership traits are most important.

Pfizer provides an outstanding opportunity for professional recognition and career growth. We offer excellent compensation, comprehensive benefits and relocation assistance. Qualified applicants should submit a current resume with names of three references to: Ms. Christina Batjer, Senior Personnel Supervisor, Pfizer Inc., P.O. Box 86, Terre Haute, IN 47808. An equal opportunity employer.

EISAI RESEARCH INSTITUTE OF BOSTON

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WRITE TO:

SCIENCE MAGAZINE
NEW LAB SERVICE DEPT.
1515 BROADWAY
NEW YORK, N.Y. 10036
PROTEIN CHEMIST
FOR PROTEIN SEQUENCING AND MOLECULAR ANALYSIS FACILITY

The Clinical Neuroscience Branch, Division of Intramural Research Programs, National Institute of Mental Health, invites applications for a highly motivated, innovative protein chemist to operate a core facility performing protein sequence and molecular structure analysis, as well as participate on a collaborative basis with other investigators within the program. The candidates will join a multidisciplinary basic and clinical research group exploring the genetic and biochemical basis of neuropsychiatric disorders. Candidates must have a background in the analysis of functional domains of enzymes, receptors, and other nervous system protein peptides, as well as an understanding of the biochemical basis of lysosomal and other neurological and psychiatric disorders. Experience in state-of-the-art microsequencing, amino acid analysis, and synthesis, purification, and HPLC analysis of peptides and oligonucleotides is required. Candidates must have working knowledge of purification of proteins from mammalian cell cultures, recombinant DNA techniques, automated DNA sequencing, PCR technology, and be experienced in purification/crystallization of recombinant proteins (especially glycoproteins) from retroviral and baculoviral expression systems. Candidates must be U.S. citizens or permanent residents. Candidates must have a doctoral degree or the equivalent, and have at least 5 years of relevant postdoctoral experience. Appointment is at the GS-13 level, with a salary range of $41,121 - $50,000, depending on qualifications and current salary. Further appointment requirements may be obtained by calling Mr. Joseph Whitaker at (301) 496-5337. The position is located on the NIH campus in Bethesda, Maryland. Interested candidates should send curriculum vitae, a statement of research interests, and the names and telephone numbers of three references to:

Dr. Edward Ginn
Clinical Neuroscience Branch
Building 10, Room 4N212
NIMH/NIA
9000 Rockville Pike
Bethesda, Maryland 20892

NIMH IS AN EQUAL OPPORTUNITY EMPLOYER

Molecular Biologist
Gene Expression

Somatix Corporation is a growing biotechnology company developing applications of somatic cell delivery systems in the field of human gene therapy. We are seeking talented scientists to join us in investigating and building the foundations of a new and exciting technology in human health care. Research positions are available at the Ph.D., M.S. and B.S. levels in our expanding gene expression group for qualified individuals experienced in molecular cloning methods, eukaryotic gene expression systems, DNA sequencing and cell culture techniques.

Staff Scientists
Candidates should possess a Ph.D. in molecular biology or virology and have a strong background including publication record in molecular cloning and eukaryotic expression studies. Preference will be given to candidates with experience in retrovirus or yeast gene expression systems. The successful candidates will be expected to conduct independent research that will contribute to the development of gene expression systems designed to address the specialized requirements of our ongoing cell biology programs.

Research Associates
Applicants must possess a B.S. or M.S. in molecular biology, biochemistry or biology. Laboratory experience in molecular cloning methods is highly desirable.

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

1 Kendall Square, Building 650, Cambridge, MA 02139

Scientist

Genentech, Inc., a leader in the field of biotechnology, is currently seeking a Protein Biochemist to work on programs using recombinant molecules for identification of novel new leads for therapeutic molecules. Responsibilities will include protein isolation and characterization, mechanism of action studies and development of in vitro assays.

Requirements include a minimum of 2 or more years' postdoctoral experience in cardiovascular research with experience in protein purification and characterization, enzyme-substrate and/or receptor-ligand interactions. Experience in cellular mechanisms desirable.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For consideration, please send your cover letter and resume to Carol Deasy, Department 1817, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

Respiratory Pharmacologist

The Procter & Gamble Company has an immediate entry level opening for a Ph.D. respiratory pharmacologist or physiologist. Postdoctoral research experience would be desirable. Requirements include an understanding of the in vivo and in vitro techniques used to investigate the pharmacological regulation of pulmonary function in normal and diseased states. Research experience in allergic airway disease would be an advantage.

The successful candidate will be expected to design preclinical research strategies to evaluate novel approaches to treat airway diseases. Applicants must be U.S. citizens or permanent residents. Send resume and publication list to:

Dr. T. J. Logan, Manager
Ph.D. Recruiting
Respiratory Pharmacologist Position
THE PROCTER & GAMBLE COMPANY
P.O. Box 398707
Cincinnati, Ohio 45239-8707

An Equal Opportunity Employer
POSTDOCTORAL POSITION—Control of human muscle cell growth and differentiation in defined medium. Experience in biochemical, pharmacological, growth factors, or muscle cell differentiation preferred. Prior cell culture experience optional. Available immediately. Funded. Send curriculum vitae and names of three references to: Dr. Richard G. Ham, Department of Molecular, Cellular, and Developmental Biology, University of Michigan, Ann Arbor, MI 48109. Applications are due 30 June 1989.

POSTDOCTORAL POSITION for summer/fall, 1989, to construct mouse strains with deficiencies of the purine salvage gene APRT. Work will include the isolation and molecular characterization of APRT-deficient cells directly from mouse tissues and from cultured cell lines. Send curriculum vitae and names and addresses of three references to: Dr. Mitchell Turkew, Department of Pathology, Markey Cancer Center, University of Kentucky, Lexington, KY 40536-0093.

POSTDOCTORAL POSITION: Funded project for a postdoctoral to become immediately productive using available reagents and probes to study the expression of cell control normal and malignant cell behavior. Experience in molecular biological techniques essential. $25,000 stipend. Send curriculum vitae and names of three references to: Prof. P. Quigley or J. Lamppa, Department of Molecular Genetics and Cell Biology, The University of Chicago, 920 East 57th Street, Chicago, IL 60637. An Affirmative Action/Equal Opportunity Educator and Employer.

POSTDOCTORAL POSITION available immediately to study the molecular mechanism of protein import into the chloroplast, proteolytic processing of precursor proteins, processing enzyme characterization, gene isolation and expression. Candidate should have extensive experience in either molecular biology or protein biochemistry. Send curriculum vitae, summary of graduate research, and references to: Dr. Gayle Lampmpa, Department of Molecular Genetics and Cell Biology, The University of Chicago, 920 East 57th Street, Chicago, IL 60637. An Affirmative Action/Equal Opportunity Educator and Employer.

POSTDOCTORAL POSITION available immediately for studies on cellular development and myelination in the mammalian central nervous system. Ph.D. required; experience in tissue culture, biochemistry, and molecular biology is desirable. Send curriculum vitae and the names of three reference to: Dr. F. Arthur McMorrin, The Walter Reed Army Institute of Research, 6000 Fitch and Spence Streets, Philadelphia, PA 19104. Equal Opportunity Employer M/F.

POSTDOCTORAL RESEARCH (IMMUNOLOGY/VIROLOGY) Applications are invited from qualified candidates for a research position in an NIH-funded research program to study host immune responses to lentivirus infections and experimental lentivirus vaccines. The current research emphasis is centered around experimentation with cell-mediated immune responses to the Equine Infectious Anemia Virus (EIAV) and the Simian Immunodeficiency Virus (SIV). Fully equipped laboratory facilities are available and include a new BL-3 Biocertification facility and a Flow Cytometry facility.

Applicants should have a Ph.D. degree in immunology or virology. Candidates with a D.V.M. or M.D. and advanced training in the fields of immunology and virology are also encouraged to apply. The salary range is $21,000 to $25,000 per year and is commensurate with experience and educational background. Starting position will be for 2 years with possibility of renewal for additional years.

Interested applicants should send a current resume and the name, addresses, and telephone numbers of three references to:

Dr. Mark J. Newman
Assistant Professor of Immunology
Veterinary Medicine and Pathology
School of Veterinary Medicine
Louisiana State University
Baton Rouge, LA 70803.

Closing date for receipt of applications is 19 May 1989. LSU is an Equal Opportunity Employer.

POSTDOCTORAL POSITION, available on or around 1 July 1989, to study autoantibody/paraneoplastic factor(s) in patients with SLE. Ph.D. or equivalent required. Send curriculum vitae and names of three references to: Dr. William R. Ganellin, Veterans Administration Medical Center, 3700 S. Parker Road, Littleton, CO 80120.

POSTDOCTORAL POSITION available on or around 1 July 1989, to study autoantibody/paraneoplastic factor(s) in patients with SLE. Ph.D. or equivalent required. Send curriculum vitae and names of three references to: Dr. William R. Ganellin, Veterans Administration Medical Center, 3700 S. Parker Road, Littleton, CO 80120.

POSTDOCTORAL POSITION IN IMMUNOLOGY, MOLECULAR BIOLOGY, AND VIROLOGY. Several are available in multidisciplinary experimental studies utilizing anti-idiotypic antibodies to examine the molecular basis of idotype-linked B-cell responses. Ideal applicants will have a Ph.D. or M.D. with experience in: (1) studies on the idiotypic network; (2) in vitro studies using anti-idiotypic antibodies; (3) purification and characterization of idiotype-bearing B-cells. Applicants should send curriculum vitae and telephone numbers of at least three references to: Dr. William R. Ganellin, Veterans Administration Medical Center, 3700 S. Parker Road, Littleton, CO 80120.

DUTIES: Engaged in high level research and teaching of both graduate and undergraduate students. Experience in teaching is desirable. Salary negotiable. Send resume with two names for reference to: Dr. Mary Edmonds, Department of Biological Sciences, Pennsylvania State University, State College, PA 16802. Equal Opportunity Affirmative Action Employer.

THE UNIVERSITY OF TEXAS AT DALLAS POSTDOCTORAL RESEARCH ASSOCIATE UNCLASSIFIED

A postdoctoral position will be available Summer 1989 to study the structural and functional expression and regulation of the genes that encode different isoforms of subunits of the mammalian mitochondrial ATP synthase complex. Applicants should have a Ph.D., and experience in respiratory chain studies is desirable. A competitive salary is available for at least 3 years. Send curriculum vitae and names, addresses, and telephone numbers of three references (indication of sex and ethnic identity) for Affirmative Action statistical purposes is requested but not required to:

Dr. G. Bee
Molecular and Cell Biology Program
PO Box 30066
Richardson, TX 75083-0668
The University of Texas at Dallas is an Affirmative Action/Equal Employment Opportunity Employer.

RADIOLOGY—Full-time, tenure-track position available in the Department of Diagnostic Sciences, School of Dentistry, University of Texas Health Science Center at San Antonio (UTHSCSA) available 1 September 1989. D.D.S. from accredited dental school, Ph.D. in radiology or radiological physics, magnetic resonance imaging, radiation biology, and teaching experience in oral radiology required. Rank and salary commensurate with training and experience. UTHSCSA is an Affirmative Action/Equal Employment Opportunity Employer. Direct applications are invited with curriculum vitae and two references to: Dr. Stephen R. Martz, Chairman, Department of Diagnostic Sciences, UTHSCSA, 7703 Floyd Curl Drive, San Antonio, TX 78284-7919 by 1 June 1989.

RESEARCH SCIENTIST IN GENETICS/MALONIC ACIDUREA

The Department of Psychology, University of California, Irvine (UCI), anticipates filling several postdoctoral research positions in the laboratory of the faculty sponsor from dates between 1 September and 1 November 1989. The current faculty and their research interests are: D. Araw (neurochemistry); M. Baudry (cell biology); G. G. Brockett (cell growth and plasticity); R. Josephson (comparative physiology of muscles); M.-L. Keen (linguistics and neural mechanisms of language processing); H. Killacky (developmental neuroanatomy); M. Leon (neurobiology of early learning); G. Lynch (physiology, neurochemistry); J. Marshall (neural plasticity of catecholamines); J. McCaugh (memory, storage processes); R. Milledi (synaptic physiology and molecular neurobiology); N. Weinberger (neural mechanisms of learning); and P. Yahr (neuropathology and behavior).

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

UNIVERSITY OF CALIFORNIA IRVINE
POSTDOCTORAL RESEARCH IN PSYCHOBIOLOGY

A RESEARCH ASSOCIATE position (Job Order #: 4237128) is available to participate in an ongoing research project focused in evaluation of radiation damage to biological materials. Responsibilities will include radiation damage, chemical radioprotection and optical monitoring of x-ray damage; and preparation of sample holders. Applicant(s) must have a Ph.D. in radiation biology. Forty hours per week. Excellent benefit package. Salary: $19,475 yearly. Send resume or curriculum vitae to: The Philadelphia Job Bank, 540 North 3rd Street, 3rd Floor, Philadelphia, PA 19123.

RESEARCH SCIENTIST, NMR SPECIES

The University of Arizona has an opening for a research scientist with experience in NMR spectroscopy. Applicants should have an advanced degree, preferably a Ph.D., in a relevant discipline and several years of NMR experience. Duties will involve managing a core facility equipped with two new Bruker spectrometers (AM 500 and AMX 400WB), and training users. The successful applicant will be expected to conduct independent research and apply for grants to support his research program, as well as to coordinate joint applications for the facilities. The position is contingent upon funding, and the salary will be commensurate with qualifications. It is anticipated that the position will be at a level of assistant research scientist, but particularly well-qualified candidates at more senior levels are encouraged to apply. Applicants should submit curriculum vitae and three letters of recommendation to: Dr. John H. Law, Biotechnology Program, Biosciences West, University of Arizona, Tucson, AZ 85721. Inquiries may be directed to: Dr. Neil MacKenzie: 602-626-4898 or Dr. Robert Gillies: 622-626-5052. Applications will be examined after 31 May 1989, but will be accepted until the position is filled. The University of Arizona is an Equal Opportunity/ Affirmative Action Employer.

RESEARCH SCIENTIST/PHARMACOKINETICS

Design and conduct pharmacokinetic and drug disposition studies to support the development of novel chemical entities for the treatment of eye and skin diseases. Supervise personnel to develop biochemical analyses. Background in pharmacokinetics, drug metabolism, and animal models. Must have strong background in pharmacokinetics and drug disposition of ocular drugs, with experience in develop-
Research Opportunities at Monsanto

The Monsanto Corporate Research organization, located in suburban St. Louis, is committed to quality life science related research leading to new products in health care, animal nutrition and agriculture. Scientists are being recruited to fill the positions described below.

Analytical Immunochemist

This assignment involves coordinating and leading a team of researchers focused on developing and providing state-of-the-art assay technology (including ELISA and receptor procedures) and antibody production (including preparation of hybridoma cell lines and antisera).

The position calls for a Ph.D. or equivalent in a relevant area of biology or chemistry and significant experience in assay and antibody technologies. Supervisory experience is desirable.

Biochemist

This assignment involves developing and running screening assays for a wide range of pharmacological targets. The position calls for a Ph.D. or equivalent in biochemistry and laboratory experience with receptor binding and/or enzymology. Experience in robotics and computer controls is preferred.

Natural Products Chemist

This assignment involves the isolation and structural elucidation of natural products with biological activities. The position calls for a Ph.D. or equivalent in natural products chemistry or a related area and experience in structural elucidation by nuclear magnetic resonance and mass spectroscopic techniques.

Purification Chemist

This assignment involves the isolation and characterization of potential new products from diverse raw materials produced by fermentation, tissue culture, and biotransformations. These activities include process definition, evaluation, development and scale-up.

This position calls for a Ph.D. or equivalent in biochemistry, chemistry, analytical chemistry or biochemical engineering, and a strong basic science background with an interest in applied science is highly desirable.

These are excellent opportunities to apply your skills to new discoveries and challenges. Please send your curriculum vitae and names of three references to: MONSANTO COMPANY; BB5B-PN; 700 Chesterfield Village Parkway; St. Louis, MO 63198. Equal Opportunity Employer M/F/H/V.

Monsanto

R&D Scientists for Biotechnology

Life Technologies, Inc. Research Products Division on Grand Island, New York, a well-established and rapidly-growing company, has immediate openings for research scientists to develop innovative products for cell culture technology. Vacancies are at the B.S., M.S. and Ph.D. levels. Applicants should have experience or postdoctoral training in the following:

- Culturing of cells and cultivating of viruses by various methods.
- Cell culture nutrition, metabolism and media formulations.
- Regulation of cellular proliferation.
- Protein production, purification and characterization.
- Ability to publish, work independently, and supervise.

The company offers a competitive salary, an attractive benefit package, as well as an opportunity for advancement. The location offers a wide variety of cultural, recreational, and educational opportunities as well as excellent availability of housing and quality of life.

Please send your resume, with references, to:
Mr. Harry Cardin, Personnel Manager
LIFE TECHNOLOGIES, INC.
Research Products Division
P.O. Box 68, Grand Island, NY 14072
(A suburb of Buffalo)

LIFE TECHNOLOGIES, INC.
RESEARCH PRODUCTS DIVISION
An equal opportunity employer. M/F/V/H

Ph.D. or M.D.

Recombinant Protein Research (Including Pilot Production)

Hoechst, one of the world’s largest pharmaceutical companies, has opportunities for creative, highly motivated scientists to join its Japanese Research Laboratories. We are committed to the rapid expansion of recombinant research, pursuing programs in fermentation and mammalian cell culture technology, cell biology and protein chemistry.

Located in a pleasant suburb of Tokyo, our laboratories offer an open and independent research environment. Interaction with other scientists throughout the world and publication of scientific papers are actively supported.

Candidates for these highly visible positions (Recombinant Protein Researcher/Pilot Plant Deputy Manager) must be fluent in both Japanese and English. Ph.D. or M.D. degree essential with extensive background in the above mentioned scientific fields and management ability to guide a research group.

If you are interested and qualified, please send CV including details of publications to: Dr. Elmar Konz, Head of Pharma Research Laboratories, Hoechst Japan Limited, 1-3-2 Minami-dai, Kawagoe-shi, Saitama 350, Japan (0492-43-6110).
BIOCHEMIST/ MOLECULAR BIOLOGIST

The Molecular Pharmacology and Biochemistry Department of Merck Sharp & Dohme Research Laboratories is currently expanding its research group involved in the study of the molecular mechanisms of transmembrane signal transduction. We have two positions open for biochemists: (1) The first position involves study of structure function relationships of G protein produced by recombinant DNA techniques. Experience in proteins purification techniques including chromatography, electrophoresis and the use of radioisotopes is required. Experience in the basic techniques of molecular biology and working knowledge of HPLC/FLPLC is desirable. (2) The second position involves structure-function studies of membrane receptors in signal transduction pathways. Candidates should have at least 2-3 years of laboratory experience in recombinant DNA, sequencing and mutagenesis techniques, or gene expression studies. A strong background in biophysics is desirable but not required.

Candidates for both positions should have a B.S., M.S. or equivalent in biochemistry or a related field.

Merck Sharp & Dohme Research Laboratories are located in Rahway, New Jersey, approximately 25 miles from New York City. Our salaries, benefits and growth potential are excellent. Interested candidates should submit their resumes with the names of three references and salary requirements to: Mr. Dan Hoffman, Merck & Co., Inc., P.O. Box 2000, Rahway, New Jersey 07065.

An Equal Opportunity Employer

Vaccines Research

Our ability to attract and maintain a growing number of highly skilled and managerial professionals is attributed to our innovative environment and the very best laboratory, technical and administrative support staff available. We currently have two positions available involving the research and development of our vaccine products at our U.S. headquarters in Swiftwater, PA.

SR. RESEARCH BIOCHEMIST—Requires a Ph.D. in Chemistry or Biochemistry and 2-3 years experience in the chemical modification of biological molecules or peptide synthesis for modulation of antigenicity. Specific experience in protein, carbohydrate, and/or immune chemistry, protein purification and characterization, or analytical biochemistry a plus.

RESEARCH ASSISTANT—Requires an individual with an MS degree in Chemistry or Biochemistry and at least 1-2 years industrial laboratory experience in quantitative chemical and instrumental analysis (UV, HPLC) and protein or polysaccharide preparation/purification. A BS degree with several years relevant experience will also be considered. Work with highly innovative and enterprising individuals, and benefit from one of the finest compensation programs in the industry. Please send your resume and salary requirements to: Human Resources, Dept. SC, CONNAUGHT LABORATORIES, INC., Rt. 811, P.O. Box 187, Swiftwater, PA 18370.

An equal opportunity employer.

Faculy Position in Developmental and Molecular Biology

Institute for Molecular Biology and Biotechnology
McMaster University

The newly-created Institute for Molecular Biology and Biotechnology seeks to build a group composed of independent, but interactive scientists interested in the molecular biology of development. One tenure-track position is currently available at the assistant professor level. Applications are invited from but not restricted to individuals with research interests in the regulation of gene expression, the role of oncogenes in development, growth and differentiation factors, and gene targeting in embryonic stem cells. A Ph.D. or M.D. degree and postdoctoral experience is required. The start date is July 1, 1990, or as soon thereafter as possible. Salary will be commensurate with experience. This position is subject to final budgetary approval.

In accordance with Canadian Immigration requirements priority will be given to Canadian citizens and permanent residents of Canada.

Applicants should send a current curriculum vitae, a statement describing research accomplishments and future goals, and the names of three references by May 31, 1989 to:

Dr. John A. Hassell
Institute for Molecular Biology and Biotechnology
McMaster University
1280 Main Street West
Hamilton, Ontario L8S 4K1, Canada

THE SCIENCE RECRUITMENT "FOUR DAY CLOSE" NOW YOU CAN SEE YOUR AD IN SCIENCE FOUR DAYS AFTER SUBMISSION

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. ¼ and ½ page ads only.

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For further information, telephone Ed. Keller, Recruitment Advertising Manager, or Donna Rivera, Production Manager at Science: 212-730-1050, or write to Science, 1515 Broadway, NY, NY 10036.

CURRENT DISTRIBUTION 160,000
The Dow Chemical Company, in Midland, Michigan, is a recognized world leader in the chemical industry. Expanded research efforts in the area of cancer therapeutics and immunotherapy have created an immediate need within the Bioproducts Laboratory in the Central Research Department for a qualified Molecular Biologist for Antibody Cloning.

The successful candidate will have a Ph.D. and some postdoctoral experience in genetic engineering, as well as hands-on experience with immunological systems. Experience in cDNA cloning, preparation and screening of genomic libraries, eukaryotic expression vectors, and DNA sequencing is required. Research efforts will be directed toward protein design for application in our biotechnology-based cancer therapeutic program.

The above candidates must also possess strong communication skills and a desire to carry out independent research while functioning as part of an interdisciplinary research team.

The Dow Chemical Company offers a stimulating work environment and a competitive salary/benefits package. For consideration, send your resume to: Technical Recruiting, Department MB-1, The Dow Chemical Company, 1801 Building, Midland, MI 48674. An equal opportunity employer.

**Postdoctoral Scientist Drug Metabolism**

The Drug Metabolism Department of Smith Kline & French Laboratories is seeking Postdoctoral Scientists to perform basic research in areas relevant to Drug Metabolism. These positions offer the opportunity to interact with senior members of the department to facilitate professional growth. Candidates will report research results within the company and at national scientific meetings and are encouraged to publish these results in leading scientific journals. All positions require a Ph.D. in biological, chemical or pharmaceutical sciences and a working knowledge of bioanalytical methods development. Positions, which are 2 years in duration, exist in the following areas:

**Protein/Peptide Chemistry**
The scientist will perform studies directed toward understanding the effects of glycosylation and carbohydrate structure on metabolism/pharmacokinetics of therapeutic glycoproteins. A scientist with a working knowledge of electrophoretic and HPLC techniques applicable to protein quantification is preferred. Refer to position L0057

**Bioanalytical Chemistry**
The scientist will formulate and conduct a basic research program on the use of specific antibodies in the development of new analytical technologies in Drug Metabolism. A scientist with a working knowledge of radioimmunoassay development is preferred. Position L0058

**Biochemistry**
The scientist will conduct a basic research program directed at understanding the mechanisms of metabolism or absorption of novel therapeutic agents. A scientist with previous experience in in vitro or in vivo techniques for quantification of drug metabolism or absorption is preferred. Position L0060

**Separation Science**
The scientist will initiate a basic research program in the application of high performance liquid chromatography, capillary zone electrophoresis and novel chemical derivatization approaches to the development of bioanalytical methods for drugs and metabolites, including peptides and proteins. Position L0060

We offer an attractive compensation/benefits/relocation package and a stimulating highly supportive research environment. Resume & names of three references to: Liz McKendry, Position Smith Kline & French Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0339.

Equal Opportunity Employer, M/F/H/V.
POSITIONS OPEN

RESEARCH FELLOW (M.D. or Ph.D.) position available immediately to perform research in one of the following areas: (i) development of a novel technique to increase the identification of specific receptors in the anterior chamber of the eye; (ii) immunobiology of corneal transplants; and (iii) immune regulation in the eye. Applicant must have Ph.D. or M.D. and post-doctoral research experience. Send curriculum vitae, cover letter stating research interests, and three letters or recommendation to: Dr. T. Y. Niederkorn, Department of Ophthalmology, University of Texas Southwest Medical Center, Dallas, TX 75235, Equal Opportunity Employer.

RESEARCH TECHNICIAN/ASSOCIATE needed to maintain plant cell cultures and isolate plant cell walls, cell wall polysaccharides, and oligosaccharide fragments of the polysaccharides. The technician will be trained to perform structurally characterized complex carbohydrate analysis. Experience in any of the following techniques would be desirable: liquid or gas chromatography, working with enzymes, tissue culture, carbohydrate chemistry, B.S. required/M.S. preferred in biology or biochemistry. Salary negotiable depending on experience. Send applications at May 15, 1989 to: Dr. Albersheim, Co-Directors, Complex Carbohydrate Research Center, University of Georgia, P.O. Box 5677, Russell Research Center, Athens, GA 30613. An Equal Employment Opportunity/Affirmative Action Institution.

THEORECTICAL/EXPERIMENTAL NEUROSCIENTIST
NORTHERN UNIVERSITY MEDICAL SCHOOL AND INSTITUTE FOR NEUROSCIENCE

Applications are invited for a tenure-track faculty position in Neurobiology. Level may vary from assistant to full professor, depending on experience and credentials of the applicant. Candidates must have a Ph.D. and A.D. and 2 years of postdoctoral experience. Individuals with research interests in neural network models are encouraged to apply. Applicants are expected to have a research group of faculty with strong commitment to the study of cellular and integrative aspects of neural control of physiological systems. Candidates should exhibit potential for developing a strong, independent research program. Duties also include teaching professional and Ph.D. students and development of computer-assisted instructional materials. In order to receive full consideration, interested applicants should submit curriculum vitae, statement of research goals and accomplishments, summary of teaching experience, and the names of four references to the address below by 1 July 1989. Northwestern University is an Affirmative Action and Equal Opportunity Employer. Hiring is contingent upon eligibility to work in the United States.

Barry W. Peterson, Ph.D. Chairman, Search Committee Department of Physiology Northwestern University Medical School 303 East Chicago Avenue Chicago, IL 60611

UNDERGRADUATE CHEMISTRY LABORA-
TORY DIRECTOR (ULD)—Non-tenure-track, full-
time position of technical and administrative supervisor of the chemistry teaching laboratories at MIT with direct responsibility for their efficient management and operation, starting 15 August 1989. The ULD provides essential functions of laboratory activities throughout every scheduled laboratory period; enforces proper safety procedures; is responsible for maintenance of laboratory equipment, facilities, and supplies; is thoroughly knowledgeable with and capable of troubleshooting problems in experimental procedures and operation of equipment; provides training to teaching assistants in experimental procedures and use of equipment and instrumentation. In conjunction with the faculty, the ULD suggests and develops new experiments for future use in teaching laboratories. An advanced degree in chemistry, or a B.S. in chemistry with substantial equivalency experience is required. Submit curriculum vitae and arrange for three letters of recommendation to be sent by 19 May 1989 to: T. T. Koo, Department of Chemistry, 18-399, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139. MIT is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

VERTEBRATE BIOLOGIST—ASSISTANT PROFESSOR

A tenure-track position at the assistant professor level is available in the vertebrate biology faculty of the Boston University Marine Biology Laboratory. The candidate will be involved in teaching undergraduate and graduate courses in vertebrate biology and conducting research with undergraduate and graduate students. Applications are invited from candidates with a Ph.D. in biological sciences or related field.恶性要求:(~Tenure) and extraordinary recommendations of the candidate's prior teaching and research. Send applications and names of three references to: Dr. Donald H. Reiss, Chair, Search Committee. Boston University Marine Biology Laboratory, PO Box 1213, Woods Hole, MA 02543.

WETLAND ECOLOGIST

Envirospere Company, the environmental consulting division of Escabo Services Inc., located in Northern New Jersey, is seeking a wetland ecologist with experience in field identification of wetland types and wetland parameter methodology, or in design of freshwater wetland mitigation projects. Good oral and written communication skills essential, and ability to work independently required. This is an excellent opportunity to work in an interesting and enjoyable environment. Send resume, including salary history, to: T. A. Casparo, Escabo Services Inc., 160 Chubb Avenue, Lyndhurst, NJ 07071.

CONFERENCE

AMERICAN SOCIETY FOR CELL BIOLOGY (ASCB) 1989 Annual Meeting
5 to 9 November 1989 Houston, Texas

ASCB SUMMER RESEARCH CONFERENCE
Chromosome Structure and Segregation
8 to 12 September 1989 Airlie, Virginia


PROGRAM

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain the Doctor of Optometry (O.D.) degree in two calendar years. Experienced in private practice, industry, education and research. Contact: Dr. T. Shaunney, Program Director, Accelerated Program, The New England College of Optometry, Room S, 424 Beacon Street, Boston, MA 02115.

WORKSHOP

X-RAY MICROIMAGING FOR THE LIFE SCIENCES
LAWRENCE BERKELEY LABORATORY
24 to 26 May 1989

Sponsored by the U.S. Department of Energy, Office of Health and Environmental Research and Lawrence Berkeley Laboratory. This WORKSHOP is designed to explore the potential for direct imaging of macromolecular to subcellular structures with spatial resolution beyond that which has been demonstrated to date. The emphasis will be on direct x-ray imaging techniques applied to biological structure and function, sequencing and mapping, as well as required high brightness radiation sources such as short wavelength undulator and lasers. In addition there will be overview of current and projected capabilities utilizing x-ray tunneling techniques, electron microscopy, and x-ray crystallographic techniques. For information, contact: Shirley Aldley, Conferences, Lawrence Berkeley Laboratory, Berkeley, CA 94720. Telephone: 415-486-6387.

COURSE

SUMMER COURSES IN GROSS ANATOMY HISTOLOGY, EMBRYOLOGY AND NEUROANATOMY

Will be offered to medical, dental, health science and medical illustration students by the Department of Anatomy and Cell Biology, Georgetown University, starting 19 June 1989. For further information, contact: Dr. Martin A. Dumn, Chairman. Department of Anatomy and Cell Biology, Georgetown University, Georgetown University Medical Center, 3900 Reservoir Road, NW Washington, DC 20007 Telephone: 202-687-1051-1711

TRAINING PROGRAM

POSTDOCTORAL FELLOWSHIPS

Multidisciplinary postdoctoral training in tumor biology and genetics is available immediately at the University of Alabama at Birmingham (UAB). This program supported by the National Cancer Institute includes scientists and clinicians as preceptors in the Departments of Microbiology, Biochemistry, Medicine, Pediatrics, Surgery, Pathology and Epidemiology. UAB has active research programs in subdisciplines such as molecular genetics, immunogenetics, cellular immunobiology, tumor immunology, immunogenetics, virology, molecular cell biology as well as clinical investigations on improved methods for the diagnosis and treatment of patients with malignant diseases. In addition to research experience, courses, journals and research symposium are offered in various areas of tumor biology. The fellowships are available on a competitive basis to applicants (U.S. citizens and permanent residents only) with a Ph.D., M.D., D.D.S., or V.D.M. Send: (i) curriculum vitae, (ii) three letters of reference, and (iii) a statement of research and career goals to: Ronald T. Aston, Ph.D., Department of Microbiology and Director, Multidisciplinary Training in Tumor Biology Training Program, UAB Station, Volker Hall, P.O. Box 201, University of Alabama at Birmingham, Birmingham, AL 35294.

FELLOWSHIP

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S.C. 302

SCIENCE, VOL. 244
Latest LSC technology cuts sample and cocktail costs; increases throughput

In the past, liquid scintillation counting used traditional technology to overcome background noise. Now, there's a new, more sensitive technology – TR-LSC or Time-Resolved Liquid Scintillation Counting – that reduces background noise by an additional 30%-40%, and more. This new patented technology is available only in Packard's Tri-Carb® liquid scintillation analyzers. Originally developed for extremely low level counting, TR-LSC technology has now been applied to a broad range of applications. While these don't always require high sensitivity, additional benefits have been realized. By increasing sensitivity, TR-LSC reduces sample and cocktail consumption while shortening the time required for accurate counts. The benefits? Lower cocktail costs, lower disposal costs, and increased throughput.

How TR-LSC is superior to older technology

Traditional counters are based on two-dimensional pulse analysis: pulse height and pulse counts. They provide a level of sensitivity that's merely adequate for most applications. Patented TR-LSC adds a third dimension to pulse analysis: a pulse index that measures over time the afterpulses associated with background. In doing so, TR-LSC clearly distinguishes between beta pulses and background pulses. By identifying, and reducing, background noise, TR-LSC provides a great level of sensitivity (see chart comparing E/B values) and more accurate counts.

Achieve accurate counts on samples as small as 25 μL

Traditional technology limits sensitivity. The improved sensitivity of TR-LSC, however, allows you to achieve accurate DPM results for single and dual label samples in volumes as small as 25 μL. That can add up to substantial savings in sample and cocktail costs.

Slash radioactive waste disposal costs

Counting smaller samples will also reduce radioactive liquid disposal costs, which can be $500 per drum, or higher. While you may not pay this cost directly, your operating budget could be affected. With TR-LSC you can cut operating costs while reducing environmental hazards.

Increase sample throughput by over 80%

Just as TR-LSC reduces the volume of sample and cocktail required for accurate counting, it also reduces the time required for an accurate count. By cutting background in half, high sensitivity TR-LSC lets you count nearly twice the number of vials of a 250-DPM sample, in the time it would take to count a single vial using conventional technology. For lower activity samples, the increase in throughput with TR-LSC is even greater.

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Free Investigator's Guide provides a complete explanation of the benefits of TR-LSC

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The typical beta scintillation pulse (top) is very fast and may be followed by a delayed component. The typical background pulse is followed by a series of afterpulses. Patented TR-LSC distinguishes between the two.
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