

## FIDIA RESEARCH FOUNDATION

SYMPOSIUM

### TRANSMITTER AMINO ACID RECEPTORS: STRUCTURES, TRANSDUCTION AND MODELS FOR DRUG DEVELOPMENT

ROYAL SOCIETY, LONDON, U.K. ■ OCTOBER 22-24, 1990

#### SCIENTIFIC PROGRAM

October 22, 1990 8:30 a.m.

Opening

Address: **E.A. Barnard** (Cambridge, U.K.)

October 22, 1990

##### I. GABA RECEPTORS: STRUCTURE AND FUNCTION

Chairman: **R.L. MacDonald** (Ann Arbor, MI)

Speakers: **M.G. Darlison** (Cambridge, U.K.)  
**P.H. Seeburg** (Heidelberg, FRG)  
**H. Möhler** (Zurich, Switzerland)  
**H. Kettenmann** (Heidelberg, FRG)  
**W.J. Wojcik** (Washington, D.C.)  
**H.R. Olpe** (Basel, Switzerland)

##### II. ALLOSTERIC MODULATION OF GABA RECEPTORS

Chairman: **G. Biggio** (Cagliari, Italy)

Speakers: **W. Haefely** (Basel, Switzerland)  
**D.W. Gallager** (New Haven, CT)  
**K.W. Gee** (Los Angeles, CA)  
**S.Z. Langer** (Paris, France)

##### III. MITOCHONDRIAL BENZODIAZEPINE RECEPTORS, NEUROSTEROIDS AND CHLORIDE CHANNELS

Chairman: **A. Guidotti** (Washington, D.C.)

Speakers: **K.E. Krueger** (Washington, D.C.)  
**P.F. Hall** (Randwick, Australia)  
**E.E. Baulieu** (Bicetre, France)  
**S. Paul** (Bethesda, MD)  
**J.J. Lambert** (Dundee, Scotland)

##### IV. NEW GABA-ERGIC DRUGS AND ENDOGENOUS BENZODIAZEPINES

Chairman: **G.G. Lunt** (Bath, U.K.)

Speakers: **P. Krogsgaard-Larsen** (Copenhagen, Denmark)  
**C.P. Taylor** (Ann Harbor, MI)  
**D.B. Sattelle** (Cambridge, U.K.)  
**A.L. De Blas** (Kansas City, MO)  
**A.S. Basile** (Bethesda, MD)  
**J.D. Rothstein** (Baltimore, MD)

October 23, 1990

##### V. EXCITATORY AMINO ACID RECEPTORS: STRUCTURE AND SIGNAL TRANSDUCTION

Chairman: **D. Colquhoun** (London, U.K.)

Speakers: **S.G. Cull-Candy** (London, U.K.)  
**S.F. Heinemann** (San Diego, CA)  
**E.A. Barnard** (Cambridge, U.K.)  
**S. Zukin** (Bronx, NY)  
**J. T. Wroblewski** (Washington, D.C.)  
**J. Bockaert** (Montpellier, France)

October 24, 1990

##### VI. EXCITATORY AMINO ACIDS: LONG TERM POTENTIATION AND NEUROTOXICITY

Chairman: **L.L. Iversen** (Harlow, U.K.)

Speakers: **T. Bliss** (London, U.K.)  
**R.A. Nicoll** (San Francisco, CA)  
**R. Bridges** (Irvine, CA)  
**D.W. Choi** (Stanford, CA)  
**H. Manev** (Washington, D.C.)  
**R.K.S. Wong** (New York, NY)

##### VII. GLYCINE RECEPTORS AND GLYCINE BINDING SITES ON NMDA RECEPTORS

Chairman: **M.V.L. Bennett** (Bronx, NY)

Speakers: **J. Bormann** (Frankfurt, FRG)  
**W. Sather** (Paris, France)  
**H. Betz** (Heidelberg, FRG)  
**C.E. Stidsen** (Bagsvaerd, Denmark)  
**F. Moroni** (Florence, Italy)  
**M.V.L. Bennett** (Bronx, NY)

Closing

Remarks: **E. Costa** (Washington, D.C.)

#### SYMPOSIUM CHAIRMEN

**Eric A. Barnard, Ph.D.**  
MRC Molecular Neurobiology Unit  
University of Cambridge  
Medical School  
Cambridge CB2 2QH  
U.K.

**Erminio Costa, M.D.**  
Fidia-Georgetown Institute  
for the Neurosciences  
3900 Reservoir Road, N.W.  
Washington, D.C. 20007  
U.S.A.

#### LOCATION AND REGISTRATION

The Symposium will be held at the Royal Society  
6 Carlton House Terrace, London, SW1  
Registration Fee: UK £150.00; Student and Postdoctoral  
Fellows UK £75.00.

For further information contact:  
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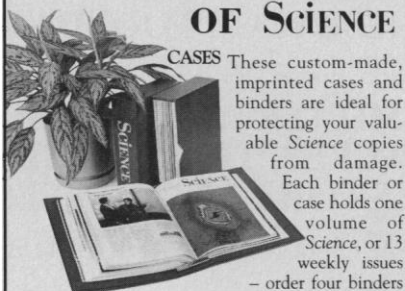
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A prize of \$100,000 will be awarded by the American Academy of Neurology to a person in recognition of major contributions to the understanding of the causes and the prevention, treatment, and ultimately the cure for Alzheimer's disease and related disorders.

Candidates may be nominated on a world-wide basis from any of the biological disciplines including biochemistry, molecular biology, molecular genetics, pharmacology, immunology, physiology, cell biology or neuropathology.

A nomination application, nominating letter citing the scientific accomplishments of the candidate in detail, two supporting nominating letters, a curriculum vitae, and up to six (6) selected reprints in nine (9) complete sets are required.

The deadline for receipt of materials is November 1, 1990. No nomination will be considered unless it is complete. The awardee must be present for the AAN Scientific Program, at its annual meeting April 23-25, 1991 in Boston, Massachusetts, U.S.A.

Request application and submit nomination to:

Potamkin Prize for Alzheimer's Disease Research  
Award Committee  
American Academy of Neurology  
2221 University Avenue S.E.—Suite 335  
Minneapolis, MN 55414  
(612) 623-8115

The Potamkin Prize is funded through the philanthropy of the Potamkin Foundation.

## APPLICATIONS FOR INDIVIDUAL EXCHANGE AND PROJECT DEVELOPMENT VISITS

The NAS invites applications from American scientists who wish to make visits to the USSR, Bulgaria, Czechoslovakia, Hungary, Poland, Romania, and Yugoslavia. The program of individual exchanges will support one- to 12-month research visits during calendar year 1992. The program of two-week project development visits will support two cycles of visits: April through August 1991 and August through December 1991. Applicants for the project development visits need to demonstrate that a joint proposal for collaborative research will be prepared during their visit for submission to the National Science Foundation for funding. There is special emphasis on young investigators in each program.

Applicants must be U.S. citizens and have doctoral degrees or their equivalent six months prior to the requested beginning date of their visit in physics; chemistry; mathematics and computer sciences; earth, atmospheric, and oceanographic sciences; agricultural, forestry, fishery, and plant sciences; biological sciences; environmental sciences; engineering; archaeology and anthropology; geography; psychology; science and technology policy; or the history and philosophy of science. Projects in the economic and social sciences that involve development of new analytical methodologies will be considered on a case-by-case basis. Necessary expenses will be met by the NAS and the foreign academy, including reimbursement for long-term visitors for salary lost up to a predetermined maximum and expenses for spouses who accompany the scientist for six months or longer.

Requests for applications for the first round of the project development visits should reach the National Academy of Sciences no later than November 15, 1990. **Applications for this program must be postmarked no later than November 30, 1990.** Requests for applications for the individual exchange program should reach the National Academy of Sciences no later than February 15, 1991. **Applications for this program must be postmarked by February 28, 1991.** Requests for applications for the second round of the project development visits should reach the National Academy of Sciences no later than February 15, 1991. **Applications for this program must be postmarked by February 28, 1991.** Address application requests to:

Soviet and East European Affairs  
National Academy of Sciences  
2101 Constitution Avenue, NW (HA-166)  
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## THE COLGATE-PALMOLIVE POST-DOCTORAL FELLOWSHIP IN *IN VITRO* TOXICOLOGY

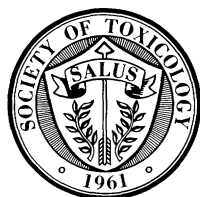
Consistent with its long-standing commitment to advance the development of non-animal methods for product safety assurance the Colgate-Palmolive Company is sponsoring a post-doctoral fellowship in *in vitro* toxicology that will be administered by the Society of Toxicology. Applications are invited from individuals conducting research in any aspect of *in vitro* toxicology. Although the award is not restricted in these areas, the Colgate-Palmolive Company has particular interest in alternatives to animal studies for assessment of dermal and ocular toxicity and in technology that could be applicable to this goal.

The award is made for two years, with funding for the second year contingent upon satisfactory research progress. The award amount is \$33,500 annually. The awardee receives \$22,000 for salary from this source of funding. The remaining monies may be used for fringe benefits, supplies, equipment or travel related to the proposed research. These funds may be supplemented by funds from other sources. Total administrative costs to the awardee's institution may not exceed 8 percent annually.

The award is available to post-doctoral trainees in their first or second year of study beyond the Ph.D., M.D., or D.V.M. degree who are employed by academic institutions or research institutes worldwide. Doctoral students who anticipate completion of their degree prior to September 1, 1991 may also apply, although the doctoral degree must have been conferred before this fellowship is awarded. The application consists of a three page description of the proposed research, the applicant's CV, graduate transcripts, reprints and letters of recommendation. A letter from the current or proposed post-doctoral advisor, who is a member of the SOT, must be submitted that describes the nature and extent of commitment of research or other institutional resources to the applicant.

Announcement and official presentation of the award will take place at the 1991 annual meeting of the SOT in Dallas, Texas. Funding may commence at that time, or no later than September 1, 1991.

Completed applications must be received at SOT Headquarters no later than November 1, 1990. For further information and an application package, contact:

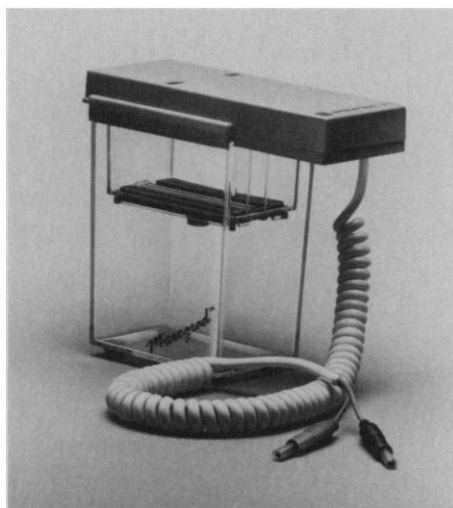


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**Colgate-Palmolive Post-Doctoral Award**  
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### ***Benchtop Incubators***

The Series "EI" Incubators are available in four models with sizes from 2 to 9 cubic feet. Temperatures range from above ambient to 80°C and have a sensitivity of  $\pm 0.5^\circ\text{C}$ , featuring a proportional control system with platinum resistance-sensing elements. The four models feature plastic-coated galvanized steel outer cases and welded stainless steel interiors, including movable perforated trays. The incubators are available with either convection or forced systems. The heavy-duty single-latch insulated outside is backed up by a tempered glass inner door with a seal, which allows for observation without disturbing the temperature control. Science/Electronics. Circle 460.

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

### ***Statistics Program for the Macintosh***

SYSTAT Version 5.0 is a comprehensive statistical analysis, data management, and graphics software package for the Apple Macintosh. SYSTAT has an integrated analysis environment that allows users to see relationships between data cells and plot points instantly, allowing users to move directly from analysis results—lines of numbers, *P* values, and other statistics—to the graphs that show the meaning behind the data. SYSTAT features the standard graphs, plots, bar charts, histograms, scatterplots, and more. It incorporates all the features of SYGRAPH, such as dimensional maps, contour plots, nonlinear scatterplot smoothing, triangular coordinate plots, kernel density estimation plots, and Voronoi tessellations. The program requires a Macintosh with 4-megabyte random access memory, System 6.0 or higher, and a hard disk. It supports hard copy devices such as Hewlett-Packard (HP) Laserjet, HP plotters, and Apple printers. SYSTAT, Inc. Circle 462.

### ***Hybridization System***

The Hybaid Hybridization System is designed for safe and consistent results in nucleic acid and protein blotting techniques. The Hybaid system requires minimal probe volumes, with 6-bottle and 12-bottle systems available. Features include easy to handle bottles, nylon mesh that prevents membranes from overlapping, stainless steel interior, fan-assisted oven for uniform temperature, platinum temperature sensor, and integral racking system that can also be used as an incubator. Midwest Scientific. Circle 449.

### ***Porous Tissue Culture Insert***

WHEATON/ANOCCELL is a new porous tissue culture plate insert that allows observation of cell growth during culturing and easy removal of the rigid membrane for further studies. The inserts incorporate the unique ANOPORE inorganic membrane, which provides a uniform surface for cell attachment and growth. The increased porosity of the membrane permits a free diffusion of ions, macromolecules, and other nutrients to both the baso-lateral and apical plasma membranes of attached cells. In addition, the membrane becomes virtually transparent when wet, providing excellent microscopic observation of cell growth. Wheaton. Circle 471.

### ***Temperature Cycler***

The EasyCycler Series is an extension of the SingleBlock and TwinBlock temperature cycler models, with added programming for ease of operation. The series features full programmability, the capability of running two experiments simultaneously, in-sample temperature monitoring, and hard copy graphics of temperature data. Ericomp. Circle 448.

### ***Software Libraries***

Three new model libraries serve the software packages MINSQ (a general purpose nonlinear least-squares package) and LAPLACE (used to simulate physical and chemical systems by numerical inversion of Laplace transforms). The MINSQ Pharmacokinetic Library includes one- and two-compartment models as well as exponential, biexponential, and triexponential equations. The MINSQ Chemical Kinetic Library includes models for zero-order, first-order, and second-order irreversible reactions; first-order reversible reactions; and parallel first-order irreversible reactions with up to three products. The LAPLACE Diffusion Library is a collection of linear models for mass diffusion and heat conduction. Micro-Match Scientific Software. Circle 463.

### ***Literature***

*Compact Floor Model Centrifuges* is a new brochure that describes the G Series of centrifuges. These models occupy less than 4 square feet of floor space. Jouan. Circle 485.

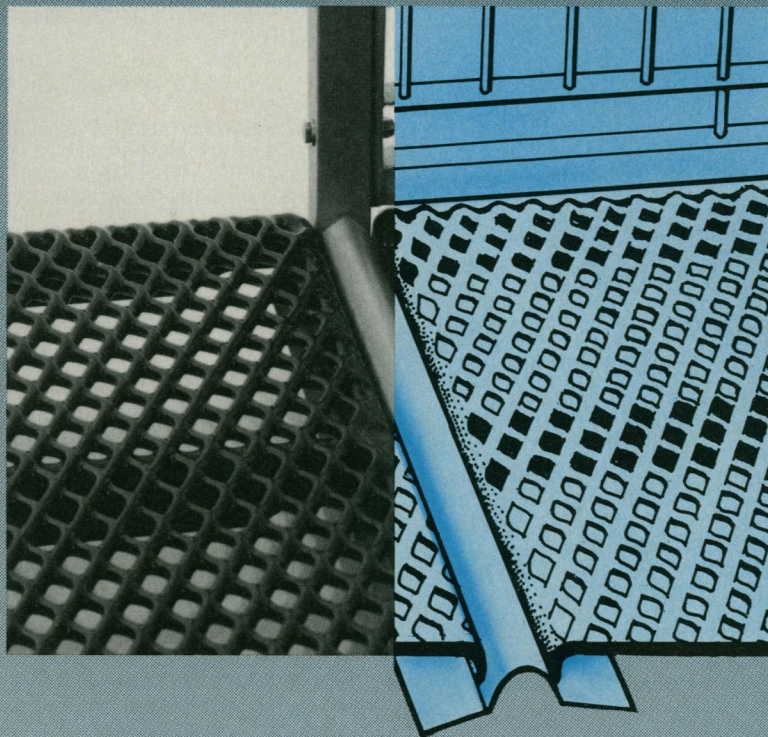
*Spotlight on Safety* is a new supplement with a variety of new safety products. The four-color booklet includes items such as right-to-know literature, safety glasses, and protective gloves. Whatman LabSales. Circle 486.

*Isotemp Ultras and Revco ULTs* is a brochure offering two complete lines of cryogenic freezers—from the five top-of-the-line Fishers to the more than 35 Revco ULTs—for use in hematology, microbiology, immunology, fertility, biochemistry, biotechnology, and industrial applications. Fisher Scientific. Circle 487.

*Forensic Chemistry 1990* is a 56-page catalog that provides a wide selection of quality chemicals, books, and equipment to assist the toxicologist, pharmacologist, and forensic scientist. The product line includes controlled substances, deuterium-labeled compounds, exempt drug standard solutions, pseudonarcotics, and related substances. Sigma Chemical Co. Circle 493.



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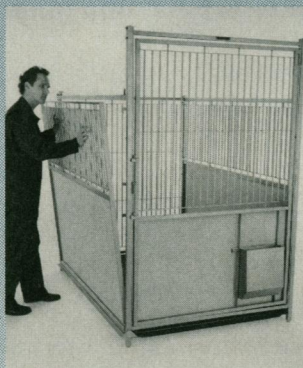


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# HUMAN GENOME II

The International Conference On The Human Genome  
2nd Annual Meeting – October 22-24, 1990  
Town & Country Hotel  
San Diego, CA

Co-Chairman: James D. Watson, Ph.D.

Co-Chairman: Charles R. Cantor, Ph.D.

## SCIENTIFIC PROGRAM

### MONDAY OCTOBER 22, 1990

#### 9:00am-12:00pm SESSION I – HGP OVERVIEW AND CENTRAL ISSUES

CHARLES CANTOR: Lawrence Berkeley Laboratory – The DOE Prospective.

JAMES WATSON: Cold Spring Harbor Laboratory – The NIH Prospective.

NANCY WEXLER: Columbia University – Ethical, Social, and Legal Issues Concerning the Human Genome Project.

CHARLES DeLISI: Boston University – Structural Biology and the Human Genome Project.

MICHAEL WATERMAN: University of Southern California – Specialized Computer Hardware for Genomic Sequence Analysis.

#### 1:00pm-4:00pm VIEWING OF EXHIBITS AND POSTERS

#### 4:00pm-7:00pm SESSION II – MODEL SYSTEMS

DAN HARTL: Washington University School of Medicine – Progress in the Physical Mapping of the Drosophila Genome.

FRANK RUDDLE: Yale University – Genomic Analysis of Mammalian Homeobox Clusters.

ALAN COULSON: Medical Research Council Laboratory, Cambridge, England – The Genome of Caenorhabditis.

DAVID BOTSTEIN: Stanford University School of Medicine – Why We Should Sequence the Yeast Genome.

ERIC LANDER: Whitehead Institute for Biomedical Research – Physical and Genetic Mapping of the Mouse by YAC Fingerprints and CA Repeats.

#### 7:00pm-9:00pm WINE AND CHEESE RECEPTION

### TUESDAY OCTOBER 23, 1990

#### 9:00am-12:00pm SESSION III – NEW METHODS

ALEXANDER GLAZER: University of California, Berkeley – Intercolation Dye-DNA Complexes and High Sensitivity Laser-Excited DNA Fluorescence Detection.

RODOJE DRMANAC/RADOMIR CRKVENJAKOV: IMGGI, Belgrad, Yugoslavia – Sequencing by Hybridization: Applications and Prospects.

RICHARD MEYERS: University of California, San Francisco – Methods for Identifying Transcripts in Cloned Genomic DNA.

DANIEL COHEN: CEPH, Paris, France – Physical Mapping Based on YAC Technology.

NIKOLAY LISITSYN: Institute of Molecular Genetics, Moscow, USSR – DNA Differences Between Humans and Chimpanzees.

ANDREI MIRZABEKOV: Shemyatkin Institute, Moscow, USSR – DNA Sequencing by Hybridization.

#### 1:00pm-4:00pm VIEWING OF EXHIBITS AND POSTERS

#### 4:00pm-7:00pm SESSION IV – HUMAN DIVERSITY AND ITS IMPLICATIONS

CHARLES COUTELLE: Zentralinstitut für Molekularbiologie Adw des DDR – Applications of Knowledge Obtained by Human Genome Analysis in National Health Service.

WALTER BODMER: Imperial Cancer Research Fund, London, England.

HENRY ERLICH: Cetus Corporation – The Analysis of Genetic Variation using PCR.

YOSHIYUKI SAKAKI: University of Tokyo, Japan – L1 (LINE-1) repetitive DNA as a novel polymorphic marker for genome analysis.

MALCOLM FERGUSON-SMITH: University of Cambridge, Cambridge, England – Contributions of Cytogenetics to Human Genome Analysis.

#### 7:00pm-9:00pm INDUSTRY SPONSORED WORKSHOPS

### WEDNESDAY OCTOBER 24, 1990

#### 9:00am-12:00pm SESSION V – INTERESTING GENE REGIONS

FRANCIS COLLINS: University of Michigan – Identifying Human Disease Genes by Positional Cloning: CF and NF.

THOMAS CASKEY: Baylor College of Medicine – Human X Chromosome Structure/Disease Loci Dysfunction.

KAY DAVIES: John Radcliffe Hospital, Oxford, England – Mapping Around the Fragile X Region of the Human X Chromosome.

DAVID HOUSEMAN: Massachusetts Institute of Technology – Genetics of Wilms Tumor.

ARGIRIS EFSTRATIADIS: Columbia University – Chromosome Specific cDNA/STSs.

#### 1:00pm-4:00pm VIEWING OF POSTERS AND EXHIBITS

#### 4:00pm-7:00pm SESSION VI – LARGE SCALE DNA SEQUENCING

CRAIG VENTER: National Institutes of Health – Automated DNA Sequence Analysis of the Human Chromosome Regions.

WALTER GILBERT: Harvard University – Multiplex Genomic Walking as an Approach to the Sequencing of Megabase-Sized Organisms.

LEROY HOOD: California Institute of Technology – Mapping and Sequencing the T-cell Receptor Loci of Mouse and Man.

WILHELM ANSORGE: European Molecular Biology Laboratory, Heidelberg Germany – Sequencing and Mapping at EMBL.

MATHIAS UHLEN: The Royal Institute of Technology, Stockholm, Sweden – Strategies for Automated Solid Phase DNA Sequencing.

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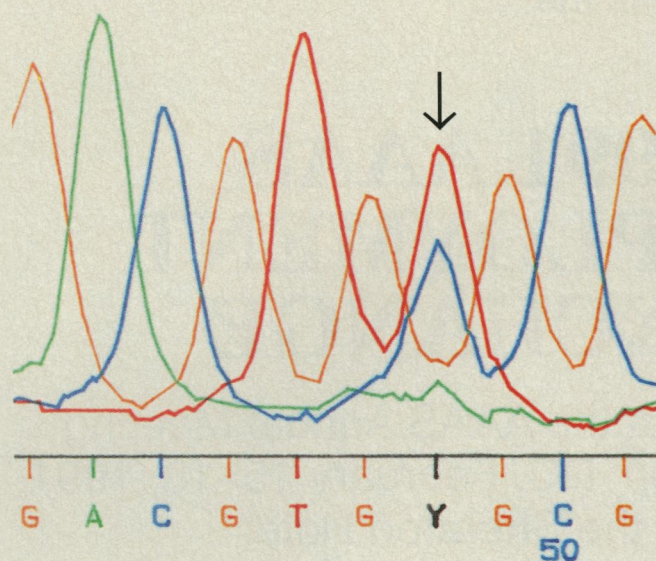
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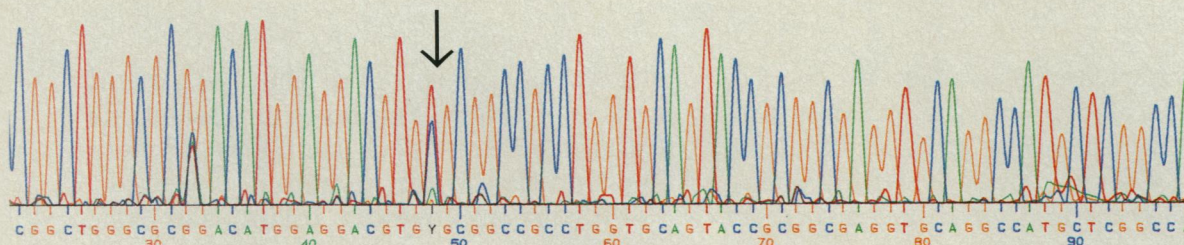
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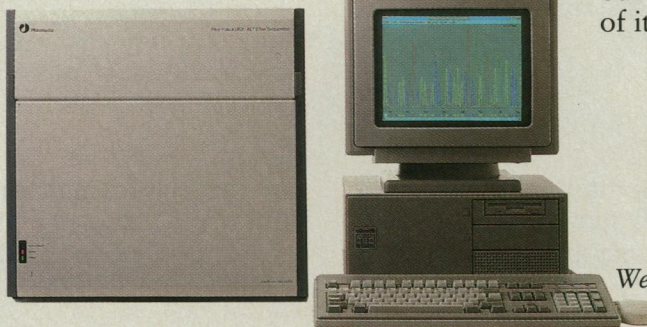
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at the Sheraton Hotel

**T**he American Association for the Advancement of Science is pleased to provide, at the upcoming Annual Meeting, the perfect forum for prospecting scientific employers and candidates to meet and interview on-site.

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**For more information and registration forms contact:** Jacquelyn Roberts, AAAS Employment Exchange, Suite 1152, 1333 H Street, NW, Washington, DC 20005, (202) 326-6737.

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# Personnel Placement

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

## LINE CLASSIFIED ADVERTISEMENTS

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

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

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

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

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

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

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

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

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

Address ad copy or requests for information to:

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

## DISPLAY PERSONNEL ADVERTISEMENTS

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

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

## RESPONSES TO EMPLOYMENT ADS

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

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

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

## POSITIONS OPEN

**ASSISTANT PROFESSOR.** A new tenure-track position will become available in August 1991 for a qualified individual who has demonstrated the ability to carry on an independent, vigorous and productive research program particularly in one of the following areas: control of gene expression, physical biochemistry, protein structure and function, membrane structure and function. Required qualifications are a Ph.D. degree in biochemistry or a closely related field, two or more years of postdoctoral training, and an established record of research productivity. Duties will include teaching graduate and/or introductory level biochemistry and molecular biology courses. The appointment is for 9 months at a salary commensurate with experience. Please submit curriculum vitae, synopsis of research plans (two to three pages), and three letters of recommendation. Applications will begin to be reviewed on 15 November 1990. Send material to: **Dr. Wesley D. Wicks, Department of Biochemistry, University of Tennessee (UTK), Knoxville, TN 37996-0840. UTK is an Affirmative Action/Equal Opportunity/Title IX/Section 504 Employer.**

**ASSISTANT PROFESSORSHIPS.** The Department of Chemistry and Biochemistry of The University of Texas at Austin solicits applications for tenure-track assistant professorships anticipated to be available September 1991. Exceptional candidates in all areas of chemistry/biochemistry will be considered. Candidates who have demonstrated outstanding research ability and show promise in teaching should forward curriculum vitae, short descriptions of research plans, and three letters of reference by 1 November 1990 to: **Search Committee, Department of Chemistry and Biochemistry, The University of Texas at Austin, Austin, TX 78712. Equal Opportunity/Affirmative Action Employer.**

## FISH BIOLOGIST

A tenure-track position is available at the **ASSISTANT PROFESSOR** level August 1991 in the Department of Biological Sciences at the University of Idaho. The successful candidate must have a Ph.D. degree and must be able to develop an extramurally funded, independent research program in molecular, cellular, or physiological fish biology. Preference will be given to candidates who have postdoctoral experience, are studying the reproductive endocrinology of fish at the cellular or molecular level, and can contribute to the University of Idaho Aquaculture Program and/or the University of Idaho/Washington State University Reproductive Biology Program. Teaching responsibilities will include an upper division course in ichthyology and one other upper division course each year. Screening of applicants will begin on 15 December 1990. Applicants should submit (i) curriculum vitae and reprints; (ii) statement of research and teaching accomplishments, interests, and goals; (iii) transcripts of academic records; and (iv) have three letters of reference sent to:

**Dr. J. G. Cloud, Chairman**  
**Search Committee**  
**Department of Biological Sciences**  
**University of Idaho**  
**Moscow, ID 83843**

*Affirmative Action/Equal Opportunity Employer.*

## PLANT BIOLOGISTS

Two tenure-track positions are available at the **ASSISTANT PROFESSOR** level in the Department of Biological Sciences at the University of Idaho. Successful candidates must have a Ph.D. and must be able to develop an independent, extramurally funded research program in one of the designated areas:

- **CELLULAR PLANT PHYSIOLOGIST.** Teaching responsibilities will include an upper division course in basic plant physiology and one other course.

- **PLANT DEVELOPMENTAL BIOLOGIST.** Teaching responsibilities will include an upper division course in plant development and one other course.

Screening of applicants will begin on 15 December 1990. Applicants should specify position sought and send curriculum vitae, statement of research interests, reprints, a statement of teaching experience and philosophy, and have three letters of reference sent directly to:

**Dr. George Spomer, Chairman**  
**Search Committee**  
**Department of Biological Sciences**  
**University of Idaho**  
**Moscow, ID 83843**

*Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**ASSISTANT PROFESSOR.** Department of Surgery, The University of Chicago, is currently seeking a full-time, medically oriented scientist with proven research and teaching skills for a tenure-track position. This person will be responsible for developing cryopreservation technology and research within the Department of Surgery, interacting and/or collaborating with other faculty on projects relating to membrane biophysics, particularly those in the field of membrane electroporation. This person will play a key role in developing a graduate curriculum in biomechanics and will be expected to teach courses in equilibrium and nonequilibrium thermodynamics as they relate to biological systems. Interested candidates with a Ph.D. or equivalent degree should send curriculum vitae and the names of six references to: **Thomas J. Krizek, M.D., Department of Surgery, The University of Chicago, 5841 South Maryland Avenue, Box 441, Chicago, IL 60637. The University of Chicago is an Affirmative Action/Equal Opportunity Employer.**

**ASSISTANT PROFESSOR.** Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School.

The Department of Biological Chemistry and Molecular Pharmacology invites applicants for the position of assistant professor. We seek individuals with strong research backgrounds in membrane biology, gene regulation, receptor ligand interactions, and signal transduction processes. Applicants should submit, prior to 15 November 1990, curriculum vitae, bibliography and statement of research plans, and arrange for three recommendations to be sent to: **Professor Christopher T. Walsh, Chairman, Department of Biological Chemistry and Molecular Pharmacology, Harvard Medical School, 240 Longwood Avenue, C1-213, Boston, MA 02115.**

*Harvard University is an Equal Opportunity/Affirmative Action Employer and encourages the applications of qualified women and minorities.*

## ASSISTANT PROFESSOR DEPARTMENTS OF OBSTETRICS AND GYNECOLOGY AND BIOCHEMISTRY UNIVERSITY OF LOUISVILLE SCHOOL OF MEDICINE

Candidates for assistant professor (tenure track) must hold a Ph.D. or equivalent degree, have at least 2 years of postdoctoral training, and have capabilities in research and teaching. Individuals working in the areas of molecular aspects of oncogene expression, action of growth factors, and cancer biology are especially encouraged to apply. The successful applicant would be involved in the development of a molecular diagnostic laboratory in the Department of Obstetrics and Gynecology. The successful applicant will be expected to develop and maintain a funded research program and to participate in the training of graduate students and medical or dental students in biochemistry. Interested individuals should submit curriculum vitae, list of references from four persons familiar with the candidate's qualifications, and a brief statement of research interests to: **Search Committee, Department of Obstetrics and Gynecology, University of Louisville School of Medicine, Health Sciences Center, Louisville, KY 40292.** Applications will be accepted up to 31 October 1990 or until a suitable candidate is identified. *The University of Louisville is an Affirmative Action/Equal Opportunity Employer.*

## ASSISTANT PROFESSOR NEUROSCIENCE

Applications are invited for a tenure-track assistant professor position to complement existing strengths in Alzheimer's disease/aging, neurodevelopment, epilepsy, stroke, and neuromuscular disease. A Ph.D. or M.D. with postdoctoral training is required. The candidate is expected to develop an independent and externally fundable research program and to participate in neuroscience teaching. Curriculum vitae, a statement of research interests, teaching experience, and the names of three references should be sent by 15 November 1990 to: **Dr. William J. Jackson, Department of Physiology and Endocrinology, Medical College of Georgia, Augusta, GA 30912-3000. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### BIOCHEMISTRY ASSISTANT PROFESSOR

Kent State University invites applications for this tenure-track position to begin August 1991 in the Department of Chemistry. Research specializations in all areas of modern biochemistry will be considered by those involving the application of recombinant DNA methods are preferred. Candidates should have a Ph.D. degree and postdoctoral training is desirable. Submit curriculum vitae, undergraduate and graduate transcripts, description of research plans, and three letters of recommendation by 14 December 1990 to: **Dr. Roger K. Gilpin, Chairman, Department of Chemistry, Kent State University, Kent, OH 44242. Equal Opportunity/Affirmative Action Employer.**

### UNIVERSITY OF UTAH DEPARTMENT OF BIOCHEMISTRY

Two tenure-track positions are available for autumn 1991 in the area of physical biochemistry. We are looking for strength and originality in the determination of the structures of macromolecules, elucidation of their mechanisms of action, and characterization of reaction energetics. Individuals expert in NMR, optical methods, thermodynamics, kinetics, or x-ray crystallography are particularly encouraged to apply. Applicants should hold a doctoral degree and have a strong record of original research. Preference will be given to applicants at the level of **ASSISTANT PROFESSOR**, but candidates at more senior ranks will also be considered. Successful candidates will join an interactive and diverse faculty and participate in vital campus-wide graduate programs. Send curriculum vitae, a statement of research background and interests, and three letters of recommendation to: **Dana Carroll, Faculty Search Committee, Department of Biochemistry, University of Utah School of Medicine, Salt Lake City, UT 84132. Deadline for applications is 1 December 1990; late applications will be considered if openings are still available. Equal Opportunity/Affirmative Action Employer.**

### ASSISTANT PROFESSOR, PHYSICS

The Smith College Physics Department invites applications for a 3-year tenure-track appointment in experimental physics at the assistant professor level, starting 1 September 1991. The candidate should have a Ph.D., a commitment to undergraduate teaching, and should have a strong research program with projects which allow undergraduate involvement. Preference will be given to persons with postdoctoral experience. Funds are available to start or extend a research project. Located in western Massachusetts, Smith College is a leader in the education of women and has an outstanding record in the number of professional women physicists who are alumnae. The Five College Consortium, comprised of Smith, Amherst, Mt. Holyoke, and Hampshire Colleges and the University of Massachusetts, provides a rich intellectual and cultural life for faculty and students as well as additional collegial opportunities in teaching and research. A curriculum vitae, statement of teaching and research interests and experience, and three letters of reference should be sent to: **Professor Bruce Hawkins, Chair, Department of Physics, Clark Science Center, Smith College, Northampton, MA 01063. Preference will be given to applications received before 15 November 1990. Smith College is an Affirmative Action/Equal Opportunity Institution. Minorities and women are encouraged to apply.**

### CYTOGENETICIST

The Department of Pathology, University of Arkansas for Medical Sciences, is recruiting for a tenure-track **ASSISTANT PROFESSOR**. Applications are invited for the position of **ASSOCIATE DIRECTOR** in a rapidly expanding full-service clinical cytogenetics laboratory. In addition to helping direct the laboratory, the successful candidate will be expected to develop an independent research program in the area of molecular cytogenetics. Applicants should send their curriculum vitae and names and addresses of three references to:

**Jeffrey Sawyer, Ph.D.  
Cytogenetics Laboratory  
Arkansas Children's Hospital  
800 Marshall Street  
Little Rock, AR 72202-3591  
Telephone: 501-370-1327**

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

## POSITIONS OPEN

### ASSISTANT PROFESSOR/BIOCHEMISTRY

Applicants are invited for a tenure-track position of assistant professor in biochemistry. Preference will be given to applicants working in molecular/biology genetics or protein structure-function relationship as determined by in vitro mutagenesis or nucleic acid structure-function relationship. Despite these preferences, applications from individuals having other research interests and expertise are encouraged. Applicants, who should have the Ph.D. and postdoctoral experience in biochemistry or a related field, will be expected to develop an active, externally funded research program, and to participate in the undergraduate and graduate teaching programs of the department. Normal teaching assignments are a one-semester lecture or laboratory course per academic year. Applications should include curriculum vitae, copies of publications, graduate and undergraduate transcripts, and a brief statement of current and future research interests. Three people, well acquainted with the applicant's research and teaching ability, should be asked to send letters of reference. Review of applications will begin in September 1990; interviews will be scheduled in late fall of 1990. Inquiries and applications should be directed to: **Dr. James B. Blair, Head, Biochemistry Department, 454 PS II, Oklahoma State University, Stillwater, OK 74078-0454. Telephone: 405-744-6189; FAX: 405-744-5339.**

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

### ASSISTANT/ASSOCIATE PROFESSOR NEUROSCIENCE

The Department of Anatomical Sciences and Neurobiology, School of Medicine at the University of Louisville, is seeking to fill an assistant or tenured associate professor position.

The preferred candidate is expected to have an independent research program combining neuroanatomical and electrophysiological techniques. Research areas may include developmental neurobiology, plasticity, cellular structure/function relationships, sensory processing, and other aspects of systems neuroscience. Applicants should have (i) at least 2 years of postdoctoral activity, (ii) an appropriate record of obtaining extramural funding, (iii) an active research program, and (iv) teaching experience in medical neurosciences and graduate level courses.

Send curriculum vitae, statement of research and career goals, list of current or proposed funding, and the names of at least four references to:

**Neuroscience Search Committee  
Department of Anatomical Sciences  
and Neurobiology  
School of Medicine  
University of Louisville  
Louisville, KY 40292**

Applications should be received by  
15 November 1990.

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

### ASSISTANT PROFESSOR DEPARTMENT OF MICROBIOLOGY THE UNIVERSITY OF TENNESSEE KNOXVILLE, TENNESSEE

Qualifications: Doctoral degree and at least 2 years of postdoctoral experience in molecular virology or closely allied biological science, demonstrated research productivity in virology, and potential excellence in teaching.

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

Starting date: 1 August 1991.

Applicants should submit a letter of interest accompanied by curriculum vitae, a description of the applicant's research program and career objectives, and the names, addresses, and telephone numbers of three individuals who can evaluate the applicant's qualifications for the position. *Applications from women and minorities are especially invited.* All material should be sent to: **Dr. Barry Rouse, Chairman, Search Committee, Department of Microbiology, University of Tennessee, Knoxville, TN 37996-0845.** Nominations should be made as soon as possible; evaluation of applications will begin in December 1990. *The University of Tennessee is an Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

## POSITIONS OPEN

### TWO ASSISTANT PROFESSORS

University of South Florida. Two tenure-track positions beginning 15 August 1991. Ph.D. in geography required. Candidates must have strong commitments to research, publications, and seeking external funding as well as to undergraduate and graduate teaching. Preferred specializations include physical (particularly digital terrain modeling, geomorphology), human (especially urban or political), and methodological (quantitative analysis, remote sensing, GIS). Supporting regional specialty highly desirable. Salary competitive.

Apply to: **Chair, Screening Committee, Department of Geography, SOC 107, University of South Florida, Tampa, FL 33620-8100.**

Letters of application and a résumé must be postmarked no later than 1 December 1990. *The University of South Florida is an Equal Opportunity/Affirmative Action Institution. Women and minorities are encouraged to apply. According to Florida law, applications and meetings regarding same are open to the public.*

### GROSS ANATOMIST

Department of Surgery, University of California, San Diego (UCSD). Tenure-track **ASSISTANT PROFESSOR** position open to teach gross anatomy at the UCSD School of Medicine beginning 1 July 1991. This is mainly a teaching and research position, with some administrative responsibilities. It requires interest and ability to teach in the medical school core gross anatomy course and to offer and participate in elective teaching. The candidate must have a Ph.D. in anatomy and research competence of a degree to allow independent productivity and effective cooperative undertakings with others. Send curriculum vitae and names of three academic references to: **N. A. Halasz, M.D., Professor and Head, Division of Anatomy, UCSD Medical Center, 225 Dickinson Street, San Diego, CA 92103.** Position closes 31 January 1991. Salary per published University of California scale. *Equal Opportunity/Affirmative Action Employer.*

**MICROBIOLOGIST.** The Biology Department of Albion College is reopening its search for a broadly trained microbiologist with experience in such areas as bacteriology, immunology, or environmental microbiology to fill a tenure-track position as **ASSISTANT PROFESSOR** to begin in August 1991. A Ph.D. is required, and teaching experience is preferred. The successful candidate will be expected to teach an upper level, undergraduate course in general microbiology with laboratory. The candidate will also share responsibilities in introductory biology courses, and competency in basic botany and zoology is expected. Modern facilities include TEM, SEM, an incubator-shaker, controlled environment chambers, and a 130-acre nature center. A research program incorporating undergraduate students is expected. *Albion College encourages applications from women and minority candidates.* Send letter of application, current curriculum vitae, copies of all academic transcripts, and three letters of reference to: **Dr. Jeffrey C. Carrier, Chair, Biology Department, Albion College, Albion, MI 49224.** Deadline for applications is 1 November 1990. *Albion College is an Equal Opportunity Employer.*

### PHARMACOLOGY

**ASSISTANT PROFESSOR**, 12-month position available immediately to teach pharmacology to optometry, pharmacy, and osteopathic medical students and to participate in the committee structure of the university. Ph.D. required. Send letter of application, complete résumé, and have three letters of reference sent by 1 November 1990 to: **Harold E. Laubach, Ph.D., Associate Dean for Basic Sciences, Southeastern University of the Health Sciences (SEUHS), 1750 N.E. 168th Street, North Miami Beach, FL 33162. SEUHS is an Affirmative Action/Equal Opportunity Employer.**

**Developmental Geneticist.** Tenure-track faculty appointment in developmental genetics, **ASSISTANT OR ASSOCIATE PROFESSOR** level. Applicants must have an earned Ph.D. in an appropriate field and should have relevant postdoctoral experience. Screening of applications begins on 17 December 1990. *Washington State University is an Equal Opportunity/Affirmative Action Employer. Protected group members are encouraged to apply.* For a position description, contact: **Dr. Gary Thorgaard, Chair, Developmental Geneticist Search, Program in Genetics and Cell Biology, Washington State University, Pullman, WA 99164-4234.**

# Fisheries and Oceans Canada

## St. John's, Newfoundland



### **Research Scientist, Redfish**

#### **Your Challenge**

You will research the dynamics of redfish and other groundfish species in offshore areas of the North Atlantic. You will also orchestrate acoustics surveys to estimate their distribution and abundance, and develop methodologies for analyzing the results.

#### **Your Credentials**

In addition to a doctoral degree and research experience in fisheries biology, you should have extensive experience in population dynamics and field program management utilizing fisheries acoustics technology, plus a strong record of publication in the primary literature.

### **Research Scientist, Gadoids**

#### **Your Challenge**

You will research the dynamics of cod in offshore areas of the North Atlantic, including stock structure, migration patterns, distribution and population. You will also develop methodologies for solving problems in marine ecology.

#### **Your Credentials**

In addition to a doctoral degree in fisheries biology and extensive experience in the above areas, including program management, you should have a solid theoretical background and a strong record of publication in the primary literature.

### **Section Head and Research Scientist, Physical Oceanography**

#### **Your Challenge**

You will be responsible for a new oceanographic research team studying the structure and dynamics of waters over the Continental Shelf of the Newfoundland-Labrador region. You will plan, conduct and review research; assist in staffing and administration; and oversee budgeting and staff management.

#### **Your Credentials**

Your doctoral degree should be in oceanography, physics or mathematics, and you should have a significant record of publication in the primary literature. Extensive experience in physical oceanography research management is also required.

### **Section Head and Research Scientist, Fisheries Ecology, Groundfish**

#### **Your Challenge**

You will research the dynamics of marine ecosystems with emphasis on demersal fisheries. This will involve field surveys, laboratory experiments, mathematical modelling investigations, and the development of problem-solving methodologies.

#### **Your Credentials**

Your doctoral degree in fisheries biology, marine ecology or a related field should be complemented by extensive research experience in marine fisheries, biological oceanography and population dynamics. A background in collaborative, interdisciplinary research is also required, as is a substantial record of publication in the primary literature.

### **Gear Technology Researcher**

#### **Your Challenge**

You will oversee a vigorous research program within the Technology Development section. Your work will involve the performance of fishing trawls and the measurement of parameters relating to gear efficiency.

#### **Your Credentials**

A doctoral degree in Engineering or equivalent experience is required. You should also have experience with electronic monitoring equipment, micro-computers, experimental design, and the supervision of contract research. Familiarity with flume tanks would be an asset.

While all positions specify a doctoral degree, a lesser degree with evidence of equivalent research experience and productivity will be considered. Knowledge of English is essential for all positions. Salaries range from \$34,343 to \$83,351, commensurate with qualifications and experience.

Please forward your résumé and/or application form by October 31, 1990, quoting reference number S-90-31-5832-47JG-G35, to: **Joan Girling, Public Service Commission of Canada, 171 Slater Street, Ottawa, Ontario Canada K1A 0M7.**

**The Public Service is committed to employment equity.**

Personal information is protected under the Privacy Act. It will be held in Personal Information Bank PSC/P-PU-040.

*Vous pouvez obtenir ces renseignements en français.*



Public Service Commission  
of Canada

Commission de la fonction publique  
du Canada

**Canada**



THE UNIVERSITY OF ADELAIDE — SOUTH AUSTRALIA  
invites applications from both women and men for the following position

## PROFESSOR OF ENVIRONMENTAL STUDIES

(Limited-Term)

(Ref: 7442) in the **MAWSON GRADUATE CENTRE FOR ENVIRONMENTAL STUDIES**. This position has been created from the Vice-Chancellor's Development Fund following an external review of the Graduate Centre for Environmental Studies (to be known as the Mawson Graduate Centre for Environmental Studies from 1 January 1991) in the University of Adelaide. As well as being the Director of the Mawson Graduate Centre, the incumbent will have academic oversight of the Mawson Collection housed in the University of Adelaide.

The Centre offers a Post-Graduate Diploma and a Master of Environmental Studies degree, based on a combination of course-work and research. The Professor will be expected to initiate a review of the structure and curriculum of the Centre's degrees, and to undertake the development of the programme to PhD level. The University is also developing environmental studies and science at the undergraduate level through various faculties, including Arts, Science and Agricultural and Natural Resource Sciences, and the Professor will be expected to contribute academic leadership to these new courses.

The Mawson Centre has a current enrolment of 75 post-graduate students from a wide range of academic backgrounds. Its courses are integrated by a perception of environmental studies as transdisciplinary and problem-solving, with a distinctive methodology and a developing philosophical base. It conducts research on general environmental problems, and also on subjects of particular interest to clients such as the South Australian Department of Environment and Planning, National Parks and Wildlife, the SA Waste Management Commission, local governments, the Murray Darling Basin Ministerial Council, and major industrial corporations. An emphasis is placed on teamwork in research and on interaction between students with complementary expertise.

To direct the Centre the University of Adelaide seeks a Professor who has achieved distinction in teaching and research in the field of environmental studies. The successful candidate will be expected to enjoy the confidence of the scientific community; accordingly, a background in the natural sciences may be an advantage. This candidate will also be expected to enjoy the confidence of the professional community with which the Centre is increasingly linked. The Professor's responsibilities as director will include convening the Centre's Board, which is broadly representative of environmentalists across the University as well outside it, and includes members from the faculties of Agricultural and Natural Resource Sciences, Architecture and Planning, Arts, Economics, Law, Medicine and Science.

The position is available from 1 February 1991, for five years in the first instance. Further information concerning the duties of the position may be obtained from Dr John Young, Director of the Mawson Graduate Centre for Environmental Studies, telephone (61 8) 228 5835. **INFORMATION** about the general conditions of appointment and selection criteria may be obtained from the Director, Personnel Services at the University.

**SALARY** per annum, AU\$56,782

**APPLICATIONS, IN DUPLICATE**, quoting reference number 7442 and giving full personal particulars (including whether candidates hold Australian permanent residency status), details of academic qualifications and names and addresses of three referees should reach the Director, Personnel Services at the University of Adelaide, GPO Box 498, Adelaide, South Australia 5001, Telex UNIVAD AA 89141, Facsimile (61 8) 224 0464 not later than 19 October 1990.

The University reserves the right to make enquiries of any person regarding any candidate's suitability for appointment, not to make an appointment or to appoint by invitation.

From 1 January, 1991, Roseworthy Agricultural College will merge with  
The University of Adelaide

THE UNIVERSITY OF ADELAIDE IS AN EQUAL OPPORTUNITY EMPLOYER

## SENIOR GROUP LEADER PLANT MOLECULAR BIOLOGY and MICROBIAL DIAGNOSTICS

**ESCAgenetics Corporation** is a growing, public biotechnology company applying leading-edge science to meet the challenges of today's food industry. Our innovative commercial programs encompass natural flavorings and food ingredients, food safety systems, improved crops and planting materials.

We have an outstanding opportunity immediately available for an energetic, productive senior scientist/manager with a strong background in molecular biology, diagnostics and cell biology. The Senior Group Leader will:

- **Provide strong technical direction for the Plant Molecular Biology and Microbial Diagnostics Programs and management of the technical staff.**
- **Develop and maintain technical liaison with clients and collaborators.**
- **Collaborate with the marketing team to develop strategic direction and implement consequent innovative technical programs.**

The successful candidate will have the following minimum qualifications:

- **A Ph.D. in Molecular Biology, Biochemistry or a related area. Must have a strong technical background and proven professional record in molecular biology research (plant molecular biology is highly desirable). A background in microbiology, diagnostics technology and cell physiology is also very desirable.**
- **Five years of successful industrial management of scientific programs and staff.**
- **Excellent presentation, management and organization skills.**

ESCAgenetics offers an excellent compensation and benefits package and is located in the San Francisco Bay Area in close proximity to outstanding cultural, recreational and educational resources. For immediate consideration, send a C.V. to: Personnel, ESCAgenetics Corporation, 830 Bransten Road, San Carlos, CA 94070.



## IMPORTANT PRIVATE PHARMACEUTICAL RESEARCH CENTER

(close to PARIS, West)

is recruiting an

# INVESTIGATOR

for its pharmacology unit  
working on :

## diabetes

The candidate we seek should have experience in biochemical, physiological and endocrinological techniques, and have a formation as a PhD, 3rd cycle or equivalent.

*Interested applicants should submit  
their C.V. + photo to PUBLIVAL/9017  
27 Route des Gardes  
92190 MEUDON (FRANCE).*

THE UNIVERSITY OF WAIKATO  
Hamilton, New Zealand

## PROFESSOR OF EARTH SCIENCES

The University of Waikato invites applications for a chair in the Department of Earth Sciences. The department has fourteen academic staff teaching a broad programme at undergraduate level with a concentration at graduate and research level in three major fields: (1) marine geosciences – including coastal processes, sediments and management, and shelf and deep sea deposits; (2) Earth resources and technology – including water, soil, rock and mineral resources and their physical and chemical properties; (3) late Cenozoic development of the SW Pacific region – including aspects of stratigraphy, volcanology, petrology, paleoenvironments, geochronology, stable isotope geology, tectonics and geomorphic development. Staff and research students are major contributors to the Antarctic Research Unit, Geochronology Research Unit and Water Research Unit of the School of Science and Technology.

The successful candidate will have a distinguished record of published research, and will be expected to take a major role in the supervision of graduates and leadership of research groups. The professor will be expected to take a full part in the work of the department, including its teaching programme, and to serve as chairperson in rotation with other senior staff members.

The salary range for Professors is NZ\$77,000 – NZ\$96,000 per annum, but is currently being reviewed.

Applicants should submit a curriculum vitae, a statement of personal research interests with comment on their relationship to the department's research fields and the names and addresses of three referees. Enquiries of an academic nature may be made to Professor M J Selby, Department of Earth Sciences (Tel. (64) 71 562889; Fax (64) 71 560115).

Information on the conditions of appointment and method of application can be obtained from the Academic Staff Registrar, University of Waikato, Private Bag 3105, Hamilton, New Zealand (Tel. (64) 71 562889, Fax (64) 71 560135). Applications quoting reference number A90/73 close on 19 October 1990.

Places for appointees' children may be available in the creche run by the Campus Creche Society (Inc). The University welcomes applications from suitable people regardless of race, creed, marital status or disability.

**FACULTY POSITION  
DEPARTMENT OF ENVIRONMENTAL HEALTH  
COLORADO STATE UNIVERSITY**

*Position: Veterinary/Medical Entomologist*

The Department of Environmental Health invites applications for a tenure-track position in the area of veterinary/medical entomology at the Assistant/Associate Professor level. Preference will be given to candidates with demonstrated expertise and interest in the application of modern quantitative epidemiologic and/or molecular approaches to vector-borne diseases. The successful candidate will be expected to develop a vigorous research program, supervise graduate students, and participate in the teaching program. The candidate will be a member of the Arthropod-borne Infectious Diseases Laboratory at Colorado State University and will have multiple opportunities for interaction with scientists at the Centers for Disease Control Division of Vector-borne Viral Diseases and at the U.S.D.A.-Arthropod-borne Animal Diseases Research Laboratory. Candidates must possess a doctoral degree (Ph.D., D.V.M., or equivalent) and postdoctoral experience.

Candidates should send their curriculum vitae, statement of research interests, and the names, addresses and phone numbers of at least three references to: Dr. John S. Reif, Search Committee Chairman, Department of Environmental Health, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, Colorado 80523. Phone: (303) 491-6074/7038. Deadline for completed applications is November 30, 1990. CSU is EEO/AA employer. E.O. Office, 314 Student Services Building.

**SENIOR  
BIOCHEMIST**

Merck Sharp & Dohme Research Laboratories is offering a Ph.D. position in the department of Safety Assessment at the research facilities in West Point, PA. The successful candidate will be responsible for developing appropriate methodology to assess drug/metabolite tissue levels and investigating mechanisms of toxicity.

The position requires a Ph.D. degree in Biochemical Toxicology, Biochemistry, Analytical Chemistry or the equivalent. Experience with bioanalytical techniques (e.g. HPLC, GLC, RIA, etc.) computerization and in vivo and in vitro methods related to toxicity is also required. Excellent salary and benefit programs accompany this position at our West Point Laboratories 25 miles northwest of Philadelphia.

Please send curriculum vitae with cover letter to: **Personnel Manager, Ad #C-30, Research Personnel, WP42-2, Merck Sharp & Dohme Research Laboratories, West Point, PA 19486.**

EEO/AA/VH/EMPLOYER



**Merck & Co., Inc.**

**Manager  
Pharmacology/Toxicology**

Triton Biosciences Inc. is a fully integrated pharmaceutical and diagnostics company focused on product development opportunities in the areas of cancer and other life-threatening diseases.

As the Manager of Pharmacology/Toxicology, you will provide managerial and technical leadership and direct pharmacologic and toxicologic evaluations of pharmaceutical compounds; develop and execute nonclinical pharmacology/toxicology plans for the completion of INDs, NDAs and PLAs; plus develop and execute clinical pharmacokinetic plans for NDAs and PLAs. In addition, you'll supervise staff responsible for study design, monitoring contract labs, and preparing final reports and summaries; prepare/monitor departmental budgets; participate in project teams; and interact with the FDA.

Your qualifications should include a PhD and 5-10 years of industry experience. Previous supervisory experience and interaction with the FDA are desirable.

Triton is located in the San Francisco Bay Area and offers competitive salaries and benefits including relocation assistance. For immediate consideration, send C.V. with salary history and references to: Triton Biosciences Inc., Job #90-067, 1501 Harbor Bay Parkway, Alameda, CA 94501. An equal opportunity employer.



**Triton Biosciences Inc.**



**Agricultural Biotechnology Research**

**SCIENTISTS**

CIBA-GEIGY Agricultural Division's Biotechnology Research Unit in Research Triangle Park, NC is a leader in creating new plants that cannot be developed solely through the use of traditional breeding methods. Research is aimed at developing novel types of seeds for plants that will be more tolerant to environmental stress, insects, disease and agricultural chemicals.

We welcome inquiries from qualified individuals. Project opportunities are available in four research disciplines: Plant Molecular Biology, Molecular Genetics, Biochemistry and Plant Tissue Culture. Our Scientists are currently involved in the transfer of genes to code for insect resistance, chemical synthesis of genes for insertion into plant cells, and regeneration of healthy, fertile plants containing new genetic information, among other activities.

CIBA-GEIGY offers competitive salaries, generous company-paid benefits and opportunities to contribute to innovative research programs. Please forward your resume, which **MUST** include salary requirements, along with 3 letters of professional reference and transcripts to: **M. Tasch, CIBA-GEIGY Corporation, Agricultural Division, PO Box 12257, Research Triangle Park, NC 27709.** We Are An Equal Opportunity Employer M/F/H/V.

**Science Serving Mankind**

**CIBA-GEIGY**

## POSITIONS OPEN

**GENETICIST.** The Department of Biological Sciences at California State University (CSU), Chico, invites applications for a tenure-track **ASSISTANT PROFESSORSHIP** beginning 1991-1992 academic year. Candidate must have a doctoral degree, specialization in animal molecular developmental genetics, a demonstrated ability to develop a vigorous research program in the molecular genetics of multicellular eukaryotes, teaching experience at the undergraduate level, and a strong interest in teaching excellence. Responsibilities include teaching courses in genetics and participation in upper and lower division developmental, molecular, and introductory biology courses. Applicants should submit a letter of application, curriculum vitae, a statement of teaching philosophy, complete academic transcripts, copies of reprints, and three letters of reference to: **Dr. William F. Derr, Chair, Department of Biological Sciences, CSU, Chico, CA 95929-0515** by 12 November 1990. *An Equal Opportunity/Affirmative Action/IRCA Employer.*

## MOLECULAR BIOLOGIST

Indiana University-Purdue University at Indianapolis invites applications for a **TENURE-TRACK POSITION** in the Department of Biology. The successful candidate will have expertise in recombinant DNA technology with application to nonmicrobial systems. Applicants for the position should have a Ph.D. and postdoctoral training. A history of grant support is highly desirable. The successful candidate must develop an active, externally funded research program; contribute to the continued development of graduate programs; and participate in undergraduate and graduate teaching. The Department of Biology will occupy a modern research facility in spring 1990.

Applicants should submit their curriculum vitae, a statement of their specific research interests and general research skills, reprints of recent publications, and four letters of recommendation to: **Dr. Charles Schauf, Professor and Chairman, Department of Biology, Purdue University School of Science, 1125 East 38th Street, Indianapolis, IN 46205.** Applications must be received by 31 October 1990. *Indiana University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are particularly encouraged to apply.*

The Department of Biological Sciences at Texas Tech University seeks to fill five tenure-track positions at the **ASSISTANT PROFESSOR** level. Texas Tech is one of only two state-approved multipurpose universities with on-campus medical and agricultural schools. Current student enrollment exceeds 25,000. Successful applicants must hold a Ph.D. degree and are expected to participate in the undergraduate curriculum, develop strong externally funded research programs, attract graduate students, and interact with other faculty in the development of collaborative research proposals. **COMPARATIVE ANIMAL PHYSIOLOGISTS:** two positions with areas of specialization in comparative biochemistry, endocrinology, or cell biology. **PLANT COMMUNITY ECOLOGIST:** preferably with research interests in landscape dynamics or disturbance ecology. **INVERTEBRATE ZOOLOGIST:** research specialization in cell and molecular biology, ecology, or evolutionary biology. **ORGANISMAL ZOOLOGIST:** with research interest in biodiversity, biosystematics, molecular evolution, phylogenetics, and/or population genetics. A letter of application, curriculum vitae, statement of research goals, and three letters of recommendation should be sent by 15 October 1990 to: **Search Committee, Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409.**

*An Equal Opportunity/Affirmative Action Employer.*

## BONUS CIRCULATION FOR YOUR CLASSIFIED AD

Our issue of 12 October 1990 will be distributed to scientists attending two important meetings: Human Genome II (San Diego, California, 22 to 24 October) and Society of Neuroscience (St. Louis, Missouri, 29 October to 2 November). Deadline for submission of line classified ads: 27 September 1990.

**SCIENCE Classified Advertising**  
Telephone: 202-326-6555  
FAX: 202-682-0816

## POSITIONS OPEN

### ASSISTANT OR ASSOCIATE PROFESSOR FUNGAL MOLECULAR BIOLOGIST

The University of Arizona invites applicants for a tenure-track assistant or associate professor position with research (75%) and teaching (25%) responsibilities. The appointee will be expected to develop a creative research program based on elucidating the molecular traits required for fungi to cause either detrimental or beneficial effects on plants. Appropriate areas of research include, but are not limited to, plant pathogenesis, biological control, or mycorrhizal associations. Deadline is 15 November 1990 or until a suitable candidate is found. Submit an application including a letter of application stating career goals, reprints, résumé, and have four letters of recommendation sent to: **H. D. VanEtten, Department of Plant Pathology, University of Arizona, Tucson, AZ 85721. Telephone: 602-621-9355.** *An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

### IMMUNOLOGIST

The Department of Microbiology and Immunology, Indiana University School of Medicine, invites applications for a tenure-track faculty position at the rank of **ASSISTANT OR ASSOCIATE PROFESSOR.** Applicants with interesting and vigorous studies of lymphocyte differentiation, activation, and/or effector functions are particularly encouraged. Strong established programs within the department include cytokine gene analysis, molecular basis of autoimmunity, cytotoxic mechanisms of natural killer cells, and hematopoiesis. Applicants should have Ph.D. or M.D. degree, at least 2 years of postdoctoral experience, and an interest in teaching within the medical and graduate student programs of the department. Applicants should submit curriculum vitae, a research plan, and names of three references to: **Dr. D. C. Bauer, Chairman, Department of Microbiology and Immunology, Indiana University School of Medicine, 635 Barnhill Drive, Indianapolis, IN 46202-5120.** Review of applications will begin 1 December 1990 and continue until the position is filled. *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT/ASSOCIATE PROFESSOR,** tenure-track academic position, to join the tumor biology group in the Department of Pathology and Laboratory Medicine at the University of Florida, College of Medicine, Gainesville. Individuals must have an M.D. and/or Ph.D. degree and established research productivity in an area of basic tumor biology or immunology, including growth factors, suppressor genes, and genetic regulation of metastases. Excellent graduate program, with ongoing cancer biology training program for doctoral and postdoctoral candidates. Salary is competitive and related to qualifications and experience. Application deadline is 3 December 1990 with an anticipated starting date of 31 January 1991. Send curriculum vitae, bibliography, and two recent reprints of your work in referred journals, and names of three references to:

**Richard T. Smith, M.D.**  
University of Florida

Department of Pathology and Laboratory Medicine  
Box J275 JHMH  
Gainesville, FL 32610-0275

*An Affirmative Action/Equal Opportunity Employer.*

### UNIVERSITY OF WISCONSIN-MILWAUKEE DEPARTMENT OF CHEMISTRY

The Department of Chemistry of the University of Wisconsin-Milwaukee expects the opening of a faculty position at the level of **ASSISTANT or ASSOCIATE PROFESSOR** for a biochemical NMR spectroscopist. The successful candidate will oversee operation of the NMR facilities which include 250- and 500-MHz multinuclear spectrometers and a molecular graphics workstation, maintained by a Ph.D. level Director of Operations. Preference will be given to candidates with proven research and funding accomplishments. To apply, send curriculum vitae with a research plan and arrange for three letters of recommendation to be sent to: **Professor C. Frank Shaw III, Chair, Department of Chemistry, University of Wisconsin-Milwaukee, P.O. Box 413, Milwaukee, WI 53201.** Screening of applications will begin 9 November 1990. Applications will continue to be considered until 15 February 1991 if the position is not filled before this date.

*The University of Wisconsin-Milwaukee is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### ECOLOGIST/CONSERVATION BIOLOGIST

The Environmental Studies Board at the University of California, Santa Cruz (UCSC), is recruiting an **ASSISTANT PROFESSOR** in the area of population or community ecology with research interests in conservation. Duties include disciplinary and interdisciplinary teaching at the undergraduate and graduate levels. Candidates must have a Ph.D. A letter of application, curriculum vitae, and names, addresses, and telephone numbers of at least three references must be sent by 15 October 1990 to: **Michael Soule, Environmental Studies Board, University of California, Santa Cruz, CA 95064.** Refer to 225-901 in your reply. *UCSC is an Affirmative Action/Equal Opportunity Employer.*

**MOLECULAR BIOLOGIST.** The Department of Obstetrics and Gynecology at the Medical College of Georgia seeks an **ASSISTANT/ASSOCIATE PROFESSOR** with expertise in the molecular biology of developmental systems. This is a tenure-track faculty position with salary and rank commensurate with background. The applicant should have an independent program, but is expected to cooperate with ongoing programs within and outside the department. *The Medical College of Georgia is an Equal Opportunity/Affirmative Action Institution.* Send curriculum vitae to: **Donald M. Sherline, Chairman, Department of Obstetrics and Gynecology, Medical College of Georgia, Augusta, GA 30912.**

### CENTERS FOR DISEASE CONTROL ASSISTANT DIRECTOR FOR SCIENCE

Applications are invited for the position of assistant director for science, Centers for Disease Control (CDC), Atlanta, Georgia. The assistant director for science serves as the primary adviser on scientific issues to the director, CDC, and program managers, and assists in the development of overall policy on scientific/medical matters. He/she represents the agency in numerous liaison functions with national and international professional groups and provides leadership in CDC's research activities to assure the quality and integrity of research. Qualifications preferred include a doctoral degree (M.D., Ph.D., or equivalent), in-depth knowledge of the scientific principles applicable to research related to the control and prevention of diseases, and indications of national stature among professional peers. Interested candidates should send their curriculum vitae and names of three professional references by 10 October 1990 to: **Nancy Peterson, Personnel Management Office, Mailstop D01, Centers for Disease Control, 1600 Clifton Road, Atlanta, GA 30333. Telephone: 404-639-1521.** *CDC is an Equal Opportunity Employer and provides a smoke-free work environment.* This is a position designated for drug testing.

### UNIVERSITY OF MICHIGAN BIOLOGICAL ASSISTANT/ASSOCIATE DIRECTOR

The University of Michigan Biological Station (UMBS) invites applications for a permanent staff position at the rank of assistant or associate director, effective 1 March 1991. This person will be responsible for the management of the research, teaching, and public service programs of UMBS. He/she will supervise a year-round staff of about 20 individuals and a summer staff of about 80 persons, prepare and supervise the annual budget, assist in the preparation of funding proposals, and other duties as assigned by the director.

UMBS is a 13,000-acre field station located in northern Lower Michigan about 260 miles north of Ann Arbor. The station conducts year-round programs of field-based research and teaching in the areas of the natural sciences and related topics. Currently the main UMBS office is located in Ann Arbor during the academic year and at the station in the summer.

Requirements: graduate experience in field-based natural sciences and demonstrated excellence in management. This position requires outstanding personnel and organizational skills in working with university scientists, graduate and undergraduate students, teachers, and the public. Superior communications skills are a necessity. Rank and salary will be commensurate with background and experience. Deadline for the receipt of applications is 1 November 1990. Send statement of interest, curriculum vitae, and the names and addresses of four references to: **James A. Teeri, Director, University of Michigan Biological Station, 1111 Natural Science Building, Ann Arbor, MI 48109-1048.** *The University of Michigan is an Equal Opportunity/Affirmative Action Employer.*



FACULTY OF SCIENCE

### CHAIR OF GENETICS (1967)

Applications are invited for appointment to the Chair of Genetics (1967) which has become vacant on the retirement of Professor George Dawson.

Further particulars of the appointment, including details of salary and other benefits, may be obtained from and discussed with:

**The College Secretary**  
West Theatre,  
Trinity College,  
Dublin 2  
TEL.: 778421  
FAX: 722853

to whom formal applications should be sent, *preferably before 5th October 1990.*

Trinity College is an Equal Opportunities Employer

## Manager of Environmental Affairs

# Help enhance our reputation for clean, safe and environmentally-sound operations.

We're Noramco Inc., the domestic bulk pharmaceutical/fine chemicals manufacturing subsidiary of Johnson & Johnson, the most broadly based health care products company in the world. We seek a candidate with a BS in Chemistry or Chemical Engineering and at least 3 years experience with EPA regulations and a knowledge of state-of-the-art technology for water and air control.

The successful candidate will assume broad responsibilities in developing and carrying out programs to assure that our domestic facilities are in compliance with Federal, state, local and Corporate environmental regulations. You must have excellent written/oral communication skills and be able to interface effectively with customers for our fine chemicals and materials (particularly those requiring CGMP operations) as well as regulatory agencies, Corporate, industrial and public interest groups.

Significant travel will be required from our Headquarters in New Brunswick, NJ.

If you are ready to bring your business acumen to a name you know and trust, you'll enjoy a competitive salary plus the comprehensive benefits of a Johnson & Johnson company including our LIVE FOR LIFE Wellness Program with on-site fitness center and our recently opened on-site Child Development Center.

For immediate consideration, please send your resume and earnings record to: Employment Dept. JT, Johnson & Johnson World Headquarters, One Johnson & Johnson Plaza, New Brunswick, NJ 08933. An Equal Opportunity Employer.

 **NORAMCO** INC  
a Johnson & Johnson company

**Leadership  
Beyond  
Compliance**



## Biochemical Research

### Senior Scientist

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

We are seeking a PhD level Scientist who will be involved in studying receptor pharmacology, as it relates to drug discovery efforts in the areas of inflammation and cardiovascular diseases, in the Biochemical Profiling group in the Research Department. Credentials should include a PhD in Pharmacology or Biochemistry and 2-3 years post-doctoral experience. The qualified candidate will be familiar with techniques in receptor biochemistry, receptor isolation and/or autoradiography. Preference will be given to those individuals possessing skills in molecular biology, specifically, expression of receptors in eukaryotic systems. The position is based at our 100-acre headquarters complex in Summit, New Jersey and will supervise 3 non-PhD scientists.

We offer competitive salaries, excellent benefits, and opportunities for advancement. Please send resume with salary history and requirements to: **Al Aronson, Staffing Center, CIBA-GEIGY Corporation, Pharmaceuticals Division, Dept. 367, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

Science Serving Mankind

# CIBA-GEIGY

## NUCLEOTIDE CHEMIST

United States Biochemical Corporation is a Cleveland based company with an excellent reputation in the supply of research biochemicals and molecular biology products. We are seeking applications from individuals with training and experience in synthetic nucleotide chemistry. We will consider individuals with at least two years of relevant experiences beyond the Ph.D. degree. Interested applicants should submit their resumes and the names of at least three individuals who can be contacted as references to:

Manager Personnel Services  
United States Biochemical Corporation  
26111 Miles Road  
Cleveland, OH 44128  
EEO Employer M/V/H



## Staff Scientist Protein Chemistry

IMMUNEX RESEARCH AND DEVELOPMENT CORPORATION, a Seattle-based biopharmaceutical company committed to research and development of immunological therapeutic products, is searching for qualified candidates for the position of Staff Scientist—Protein Chemistry.

The successful candidate's primary responsibility will be to direct the purification, characterization and biophysical analysis of recombinant proteins for our rational drug design projects. Techniques available for analysis include conventional and HPLC chromatography, amino acid analysis and sequencing, PAGE, peptide synthesis, and UV, fluorescence, CD and mass spectroscopy. Opportunities will exist to interface with other scientists on collaborative projects involving mutagenesis, organic synthesis, molecular modeling, NMR and X-ray crystallography. In addition to excellent communication skills, applicants should have a doctoral degree in biochemistry or a related field and at least two years of post-doctoral experience. Preference will be given to candidates with extensive experience in protein purification, characterization and analysis utilizing progressive technology.

Immunex Research and Development Corporation offers excellent opportunities for career development as well as competitive salaries and an excellent benefits package. For consideration, please submit C.V., names of three references, and list of publications to: **Immunex Research and Development Corporation, Human Resources Director, 51 University Street, Seattle, WA 98101.** Equal Opportunity Employer.

# IMMUNEX

## Toxicologist

FMC CORPORATION, a Fortune 150 international machinery and chemical corporation has an opening for a Toxicologist at our new Chemical Research and Development Center located in Princeton, NJ. Responsibilities will include interpreting, analyzing and reviewing toxicology data; planning, directing and monitoring contacted toxicology studies; assisting in the compilation and dissemination of technical information.

Position requires a PhD degree in Toxicology or related science, MS with some industrial experience, and/or up to 5 years post-doctoral or industrial training. FMC offers excellent salary and benefits package. Please send resume with salary requirements to: **FMC CORPORATION, Dept. 90-52, P.O. Box 8, Princeton, NJ 08543. ATTN: Ron Wehner,** Principals only. Equal Opportunity Employer, M/F.

# FMC®

## CHIEF

### Toxicology Branch, GM-14/15

The Developmental Therapeutics Program (DTP) of the Division of Cancer Treatment plays a major role in the national effort to discover and develop agents for the treatment of cancer and AIDS. The program operates much like a pharmaceutical company, with the major functional elements found in such a company. The Toxicology Branch within DTP develops, implements, and analyzes, through a collaborative research program, investigations on the toxicological and pharmacological properties of agents in *in vivo* and *in vitro* experimental systems. Protocol studies carried out under Good Laboratory Practice Regulations yield data which 1) establish an initial dose for clinical trials; 2) evaluate organ systems adversely affected; 3) assess the reversibility of the adverse effects; and 4) determine the schedule dependency of observed toxic effects. Information collected by the Toxicology Branch is filed with the Food and Drug Administration as the preclinical data base for Investigational New Drug Applications which are required prior to initiation of clinical trials. Pharmacology studies are designed to determine the schedule dependency of organ toxicity and to provide information to guide dose escalation procedures and the initial design of clinical trials regimens. These efforts are performed under contract and are managed by the professional staff of the Branch. The Branch Chief directs this effort and coordinates the activities of the Branch with other preclinical and clinical components of the Division.

This position requires a Ph.D. (or equivalent) in toxicology, pharmacology, or chemistry. Preference will be given to candidates with extensive experience in drug development or discovery, especially as related to cancer or AIDS. Salary range is \$50,342 to \$76,982.

Candidates should send a copy of their Application for Federal Employment (SF-171), curriculum vitae and bibliography to:

**National Institutes of Health  
National Cancer Institute  
Personnel Management Branch  
9000 Rockville Pike  
Executive Plaza South, Room T-43  
ATTN: JAC  
Bethesda, Maryland 20892**

**Applications must be received by October 31, 1990.** For further technical information, interested parties may call Dr. Saul Schepartz (301) 496-8720

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

# The Perfect Environment for the World's Most Advanced Research.

## We're Los Alamos.

### Molecular Radiobiology Postdoctoral Candidates

We are seeking exceptional candidates to conduct innovative research in the molecular radiobiology section of the Genetics Group, Life Sciences Division. Our program is particularly concerned with the relationship of DNA lesions and their repair to the induction of mutations, genetic recombination and other molecular/genetic events important in radiation and chemical carcinogenesis. Our principal investigators and their research interests are:

- **Dr. David J-C Chem:** the cloning of ionizing radiation repair genes by complementation of rodent and/or yeast radiation/sensitive mutant cells and the defining of molecular mechanisms of radiation-induced mutation in human cells.
- **Dr. Mark A. Macinnes:** the characterization of the cloned human excision repair gene ERCC-5, its regulation, cDNA isolation, protein structure and function.
- **Dr. Richard T. Okinaka:** the application of new molecular techniques, including PCR and denaturing gradient gel electrophoresis, in examining ionizing radiation-induced mutational spectra in human cells.
- **Dr. Richard J. Reynolds:** the elucidation of the relationship between radiation-induced DNA lesions and the stimulation of mutagenesis and genetic recombination and mechanisms of translesion synthesis in eucaryotic cells.
- **Dr. Gary F. Strniste:** the development of molecular systems (e.g., shuttle vectors) for determining mechanisms of radiation-induced DNA damage and its repair in mammalian cells. The determination of molecular/cellular effects of low-level ionizing radiation exposure.

Candidates should have excellent academic credentials and demonstrated research potential, including refereed publications from their thesis work. Selected Los Alamos Postdoctoral Fellows receive \$34,920-\$37,740 per year, comprehensive benefits and relocation expenses. Consideration will be given to predoctoral (within 1 year from anticipated graduation) and postdoctoral (within 2 years after graduation) applicants.

To formally apply for this position, you must reference Ad Number **PD-90-070** on your resume. Interested candidates should forward a current resume, statement of research interest with reference to one or more of the above listed investigators and copies of their undergraduate and graduate transcripts to Ronnie Cohen (MS P280), Human Resources Division **PD-90-070**, Los Alamos National Laboratory, Los Alamos, NM 87545.

Affirmative Action/Equal Opportunity Employer.

# Los Alamos

NATIONAL LABORATORY

## POSITIONS OPEN

### UNIVERSITY OF TEXAS AT EL PASO CHAIRPERSON DEPARTMENT OF BIOLOGICAL SCIENCES

The University of Texas at El Paso invites applications for chairperson of the Department of Biological Sciences. Selection criteria include achievement in research and grantsmanship commensurate with appointment at the rank of full professor, proven administrative and leadership skills, and a concern for quality undergraduate and graduate education. The department consists of 17 faculty members and has current strengths in ecological and evolutionary biology and in microbiological-molecular biology; B.S. degrees are offered in biology and microbiology, and the M.S. degree in biology. Salary is open and competitive, with an expected starting date of 1 September 1991. Positions is contingent on funding approval.

We invite interested individuals to send a letter of application, curriculum vitae, evidence of administrative ability, statement of research goals, and listing of five references (name, address, telephone) to: **Dr. Larry P. Jones, Search Committee Chairperson, Department of Biological Sciences, University of Texas at El Paso, El Paso, TX 79968-0519.** Women and minorities are encouraged to apply. Deadline is 7 December 1990. The university is an Equal Opportunity/Affirmative Action Employer.

### IMMUNOLOGIST

The Meningitis and Special Pathogens Branch, Division of Bacterial Diseases, Center for Infectious Diseases, Centers for Disease Control, invites applications for the position of **CHIEF, IMMUNOLOGY LABORATORY.** A Ph.D., M.D., or equivalent degree with background of research and training in immunology is preferred. Applied research will include development of immunologic assays, animal models, and genetic models to determine efficacy of conjugate vaccines for meningococcal, Group B streptococcal, and *Haemophilus influenzae* meningitis; determination of host and bacterial factors associated with vaccine failures; and development of monoclonal antibody typing systems.

This is a career civil service position with a starting salary of \$42,601 to \$50,342 per annum dependent upon qualifications. Applicants must submit Standard Form 171 (Application for Federal Employment, which is available from any federal personnel office), curriculum vitae, and the names of three references to: **Ms. Sharlyn Wilkinson, Personnel Management Office (D01), Centers for Disease Control, Atlanta, GA 30333.** The Centers for Disease Control is an Equal Opportunity Employer and provides for a smoke-free work environment.

### AQUATIC BIOLOGIST/ENVIRONMENTAL SCIENTIST, GM-14

The United States Environmental Protection Agency (EPA), Narragansett, Rhode Island, is seeking highly qualified candidates for the position of **TECHNICAL DIRECTOR, Near-Coastal Ecosystems** component of EPA's national Environmental Monitoring and Assessment Program (EMAP). As a matrix manager, the incumbent plays a major role in planning, reviewing, coordinating, and directing a national program aimed at designing and evaluating the status and trends in ecological condition and pollutant exposure in near-coastal ecosystems. He/she plans, implements, and evaluates this component of EMAP to ensure responsiveness to EPA's policy and goals and coordinates with other EMAP programs in EPA. Responsible for scientific and technical soundness and quality of data and for the planning, coordination, and integration of the scientific research program and an integrated logistics support program. *Candidate must be a U.S. citizen; have a bachelor's or higher degree (a Ph.D. is preferred) in life sciences, physical sciences, or engineering with substantive additional professional experience in environmental sciences demonstrating scientific leadership, and national expertise in the field of exposure and pollutant effects on marine ecosystems and knowledge of near-coastal ecosystems.* Candidate must also have experience in managing a scientific research program which included providing integrated logistical support. Salary range is \$50,342 to \$65,444. For further job details, call: **Don Phelps, 401-782-3004.** For application forms, write to: **U.S., EPA Human Resources Office at Las Vegas, P.O. Box 98516, Las Vegas, NV 89193-8516.** Completed applications must be submitted, postmarked no later than 9 October 1990. The United States Environmental Protection Agency is an Equal Opportunity Employer.

## POSITIONS OPEN

### CHAIRMAN, DEPARTMENT OF PSYCHIATRY

The University of Florida, College of Medicine, seeks a distinguished individual to serve as professor and chairman of the Department of Psychiatry. Applicants should have an M.D. degree, a record of significant accomplishments in research, and substantial clinical and administrative skills in psychiatry. Position is available after 1 January 1991. Qualified individuals should send curriculum vitae and complete bibliography by 1 November 1990 to: **Dr. Albert L. Rhoton, Jr., Chairman, Psychiatry Search Committee, University of Florida, College of Medicine, Box J-265, Gainesville, FL 32610.** An Equal Opportunity/Affirmative Action Employer.

### DIRECTOR, CANCER PROGRAM UNIVERSITY OF MASSACHUSETTS MEDICAL CENTER

The University of Massachusetts Medical Center is recruiting a leading clinician/scientist to develop and direct a cancer program. The position will be in the Department of Medicine, with responsibility for direction of the Hematology/Oncology Division, and provides a unique opportunity to develop a major interdisciplinary program including the Departments of Radiation Oncology, Nuclear Medicine, Surgery, Gynecology, and Pediatrics and the Institute of Molecular Medicine. This program will be expected to deliver comprehensive cancer prevention, diagnosis, and treatment, as well as to support a strong tumor biology and clinical research effort. Candidates should forward their curriculum vitae and bibliography to: **Dr. Lewis E. Braverman, Chair, Search Committee, 55 Lake Avenue North, Worcester, MA 01655.** An Equal Opportunity/Affirmative Action Employer.

### DIRECTOR CENTER FOR ENVIRONMENTAL STUDIES WILLIAMS COLLEGE

Williams College invites applications for the position of director of its Center for Environmental Studies, effective 1 July 1991. This is a tenure-track appointment with salary and professorial rank open and includes affiliation with the department appropriate to the director's academic discipline. In addition to assuming overall responsibility for the administration of the center and related activities the director customarily teaches three courses each year. Candidates should hold the highest earned degree in their field, possess the teaching and administrative skills required by this position, and have a clear commitment to the liberal arts. Letters of application should be sent by 1 November 1990 to: **Chair, Search Committee, Center for Environmental Studies, Kellogg House, Williams College, Williamstown, MA 01267,** accompanied by curriculum vitae and the names and addresses of three references.

*As an Affirmative Action/Equal Opportunity Employer Williams College especially welcomes and encourages applications from women and minority candidates.*

### FACULTY POSITION/MOLECULAR BIOLOGY

The Department of Growth and Development at the University of California School of Dentistry invites applications and nominations for a tenure-track position in molecular developmental biology. This individual must hold a doctoral degree and have a well-established expertise in the field of growth factors, particularly those known to affect the differentiation and function of skeletal and connective tissues. In addition, he or she must have an ongoing research program and show evidence of substantial prior research productivity. Candidates will be expected to maintain and/or develop independently funded research programs, to teach at both the predoctoral and postgraduate level, and to contribute to an academic community that includes both scientists and clinicians. Academic rank and salary will be commensurate with the candidate's qualifications. Nominations and applications, including curriculum vitae, the names of three references, and a description of current and future research activities, should be sent to: **Dr. Caroline Damsky, Chair of Search Committee, Department of Growth and Development, School of Dentistry, University of California, San Francisco, CA 94143-0640.** Closing date 1 November 1990. Applications from women and minority candidates are especially welcome. The University of California is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**FACULTY POSITIONS IN EUKARYOTIC MOLECULAR GENETICS.** Applications and nominations are invited for positions at the **ASSISTANT PROFESSOR** or higher level. Candidates with outstanding academic achievements who will develop vigorous research programs in eukaryotic molecular genetics are sought.

Candidates should send curriculum vitae, a research plan, and request three letters of recommendation be sent to: **Dr. Raju Kuchelapati, Department of Molecular Genetics, Albert Einstein College of Medicine (AECOM), Jack and Pearl Resnick Campus, 1300 Morris Park Avenue, Bronx, NY 10461.** AECOM is an Equal Opportunity/Affirmative Action Employer.

### TENURE-TRACK FACULTY POSITIONS IN PHARMACOLOGY

The University of Illinois College of Medicine at Rockford expects one to two tenure-track positions in its diversified Department of Biomedical Sciences at the level of **ASSISTANT PROFESSOR** of pharmacology. The emphasis will be on excellence in research. The specific research area is open, but individuals will be expected to develop an independent, reputable, and externally fundable research program. Contribution to a team-taught course in medical pharmacology is expected. Submit curriculum vitae, a short statement of research interests, and the names and addresses of three references to: **Chair, Pharmacologist Search Committee, Department of Biomedical Sciences, University of Illinois College of Medicine at Rockford, 1601 Parkview Avenue, Rockford, IL 61107-1897.** Applications will be reviewed starting 1 November 1990. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.

### FACULTY POSITIONS IN VIROLOGY AND IMMUNOLOGY

Applications are invited for tenure and tenure-track faculty positions in the Department of Microbiology and Immunology at Loyola University Chicago, Stritch School of Medicine. We are seeking talented investigators whose research interests are in virology or molecular immunology to join a growing interactive group of investigators. Candidates are expected to develop independent, externally funded, high-quality research programs. Excellent new facilities and attractive start-up funds are available. Submit curriculum vitae, statement of research interest, and a list of three references to: **Dr. Katherine L. Knight, Chairperson, Department of Microbiology and Immunology, Loyola University Chicago, Stritch School of Medicine, 2160 South First Avenue, Maywood, IL 60153.** Loyola University Chicago is an Equal Opportunity/Affirmative Action Employer.

### SEARCH REOPENED FACULTY POSITION IN TOXICOLOGY UNIVERSITY OF CALIFORNIA LOS ANGELES (UCLA) SCHOOL OF PUBLIC HEALTH

The Department of Environmental Health Sciences of the UCLA School of Public Health invites applications for a tenure-track faculty position in toxicology. Emphasis will be on an appointment at the **PROFESSORIAL LEVEL** although an appointment at the **ASSOCIATE PROFESSOR** level will be considered. The candidate should have an established scientific reputation with national and international standing; a strong background in chemistry, biochemistry, or the basic biological sciences; and research interests in biochemical or environmental toxicology. The appointee will be responsible for expanding the research and teaching program in toxicology at the School of Public Health and will interact with faculty in the department, the UCLA Occupational Health Center, and the Environmental Science and Engineering Program.

Qualified individuals should send curriculum vitae and the names and addresses of three references to: **Dr. John R. Froines, Chair, Search Committee, Department of Environmental Health Sciences, UCLA School of Public Health, Los Angeles, CA 90024-1772.**

*The University of California is an Affirmative Action/Equal Opportunity Employer and will welcome applications from members of minority groups and women.* Applications will be received until 1 October 1990.

*Under federal law, the University of California may employ only individuals who are legally authorized to work in the United States as established by providing documents specified in the Immigration Reform and Control Act of 1986.*



## FACULTY POSITIONS IN MOLECULAR BIOLOGY SOUTHERN ILLINOIS UNIVERSITY AT CARBONDALE

Applications are invited for tenure track openings at the Assistant Professor level in the area of Molecular Biology/Genetics. These new 12 month appointments are part of the University's commitment to strengthen and expand its program in molecular biology in the College of Agriculture, College of Science, and School of Medicine. The initial openings are in the departments listed below. In addition to establishing a strong research program, teaching at the undergraduate and graduate levels is expected. All candidates must have an earned doctorate and postdoctoral research experience. Salary, research facilities and start-up funds are very competitive. Applications will be accepted by the Departments as shown below until at least Oct. 22, 1990 or until the positions are filled. Separate applications should be forwarded to each Department.

**Chemistry and Biochemistry.** A position is available in the general area of molecular biology. All qualified candidates will be considered but preference will be given to persons working on problems associated with regulation of gene expression in eucaryotes. Applicants should send their curriculum vitae, a statement of research plans and have at least three letters of reference sent to Dr. R. Gupta; Department of Chemistry and Biochemistry; Southern Illinois University at Carbondale; Carbondale, IL 62901.

**Microbiology.** A position is available for a molecular geneticist. All qualified applicants will be considered but preference will be given to those whose primary area of research interest is in some aspect of the molecular genetics of the immune system, or the molecular genetics of industrially or environmentally important microorganisms. Interested applicants should send their curriculum vitae, a statement of research plans, and have at least three references sent to Jack Parker, Chair, Department of Microbiology, Southern Illinois University at Carbondale, Carbondale, IL 62901.

**Plant and Soil Science.** A position is available in the general area of molecular/cell agronomy. All qualified candidates will be considered but preference will be given to individuals whose primary interest is in using techniques of molecular biology for the improvement of agronomic crops. To apply, send a letter of application, curriculum vitae, a statement of research plans, all college transcripts, and have at least three letters of reference sent to: Dr. Donald Stucky, Chairman; Department of Plant and Soil Science; Southern Illinois University at Carbondale; Carbondale, IL 62901. Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action Employer.

Recognized for excellence in the research of agricultural products, Sandoz Crop Protection offers a challenging and stimulating working environment.

**Scientist II, Biologicals, #90-309-** Independent handling of assigned projects designed to improve strains of *B. thuringiensis* used in production of natural pesticides. Requires BS/MS in molecular biology or microbiology with extensive experience and background in plasmid/protein analysis & bacterial physiology.

**Scientist II, Plant Biotechnology, #90-320-** Transformation and biochemical analysis of maize. Requires plant transformation experience, prefer biolistic process; MS degree in plant science or genetics or BS with extensive applicable exper.

**Scientist II, Plant Biotechnology, #JW4-** Manage and work in small facility for DNA sequencing and synthesis. BS/MS with significant DNA sequencing experience required; extensive knowledge of current DNA analysis software and oligonucleotide synthesis desired.

**Postdoctoral Fellow-** Available January 1991 (yearly renewal)- Investigation of basic mechanisms that regulate gene expression in corn. Potential areas of study: Promoter characterization, transcription, post-transcriptional processing of RNA and mRNA stability. Requires Ph.D. and experience in appropriate area of molecular biology and recombinant DNA techniques. Background in plant science desired. Include three professional references with response.

For consideration, please send resume to:

**Sandoz Crop Protection**  
Human Resources Department  
975 California Avenue  
Palo Alto, CA 94304-1104  
AA/EOE



## INTERNATIONAL INSTITUTE OF TROPICAL AGRICULTURE IBADAN, NIGERIA

The International Institute of Tropical Agriculture (IITA) seeks applications for two senior research management positions: Director of Crop Improvement and Chief of Party, Cameroon National Cereals Research and Extension Project (NCRE).

IITA is an international agricultural research institute in a world-wide consortium of 13 centers co-sponsored by the World Bank, FAO and the UNDP. The Institute has outreach programs in many countries of sub-Saharan Africa. IITA scientists from 45 nations work with national agricultural agencies to increase sustainable food production in tropical Africa, and ultimately to raise the productivity and income of small-scale farmers.

### Director of Crop Improvement

The Director of Crop Improvement reports to the Deputy Director General, Research and is responsible for research on the important food crops—cassava, maize, cowpea, yams, soybeans and plantains—of the farming systems of tropical Africa. The Director is responsible for managing multidisciplinary crop improvement teams and the supporting units (genetic resources, virology and biotechnology). He or she will also be responsible for research planning and the evaluation of approximately 25 senior scientists, and 10 post-doctoral fellows whose research is conducted at the IITA headquarters site in Ibadan, Nigeria, and at substations located to cover the range of eco-environments in Africa.

### Chief of Party (NCRE)

The objective of this project is to strengthen the capacity of Cameroon's Institute of Agronomic Research (IRA) to carry out high quality research on maize, rice, sorghum and millet. The project which is supported by USAID will enter its third phase on January 1, 1991 after 10 years of very successful operation. This is one of the largest such projects in Africa, currently employing 18 expatriate scientists and specialists.

The position of Chief of Party, located in Yaounde, Cameroon, reports directly to the Deputy Director General, International Cooperation. He or she will be responsible for the management of the technical performance of all personnel working or engaged under the NCRE project; liaison with IRA, USAID, IITA, government agencies and research institutions in Cameroon for effective co-ordination, implementation and review of the project; and development of the IRA's capacity for effective linkage between its research effort and extension services.

These are highly responsible research management positions. Candidates should have a Ph.D. in agriculture with 15 years appropriate research experience. They must have strong analytical and organizational skills, leadership ability, and commitment to sustainable agriculture development for small-scale farmers of Africa. Knowledge of French is desirable. The Director of Crop Improvement should be known by peers in advanced laboratories and have a strong record of scientific publications.

The salaries and benefits for these positions are internationally competitive and included housing, personal care, assisted education, annual home leave travel, health services and non-contributory pension scheme. The Institute's headquarters, research facilities, and residential and recreational areas are situated on an attractive 1,000 hectare campus outside Ibadan.

Applicants are invited to send their curriculum vitae, date of availability, names and addresses of three referees to the following address:

Director General, IITA  
c/o Lambourn & Co. Ltd.  
Carolyn House  
26 Dingwall Road  
Croydon CR9 3EE, England

## POSITIONS OPEN

### FACULTY POSITIONS DEPARTMENT OF PHARMACOLOGY UNIVERSITY OF NEBRASKA MEDICAL CENTER

Applications are invited for two tenure-leading faculty positions in the Department of Pharmacology at the ASSISTANT/ASSOCIATE PROFESSOR level. Individuals working at the cellular or molecular level with research interests which complement current departmental programs in neuroscience, toxicology, and cell biology are of particular interest. Outstanding applicants in all areas will be considered. Candidates should have a Ph.D. and/or M.D. degree and postdoctoral experience. Successful candidates will be expected to develop and/or maintain an independent externally funded research program and to teach graduate, medical, and pharmacy students. Applications will be reviewed starting 15 November 1990. Applicants should submit curriculum vitae, a detailed description of research goals, and names of three references to: **Dr. David B. Bylund, Chairman, Department of Pharmacology, University of Nebraska Medical Center, 600 South 42nd Street, Omaha, NE 68198-6260.** The University of Nebraska Medical Center is an Equal Opportunity/Affirmative Action Employer.

**ACADEMIC HEMATOLOGY/ONCOLOGY.** The University of Vermont (UVM). Full-time FACULTY POSITION in the Department of Medicine. Candidates must be Board-certified in internal medicine and Board-eligible or -certified in hematology or hematology/oncology. He/she should have documented research performance in hemostasis and thrombosis, or in hematopoietic growth factors or receptors, or in autologous bone marrow transplantation. The application must provide evidence of a productive research program and the potential for independent support. The position includes teaching and clinical responsibilities. Academic rank and salary will be consistent with the applicant's qualifications. Please direct inquiries with curriculum vitae and names and addresses of three references to: **Richard Branda, M.D., Director, Hematology/Oncology Unit, 32 North Prospect Street, Burlington, VT 05401.** UVM is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply. Applications will be accepted until the position is filled.

### MOLECULAR BIOLOGY OF MICROBIAL PATHOGENESIS JUNIOR OR SENIOR FACULTY POSITIONS AVAILABLE

The Department of Microbiology and Immunology in the College of Medicine at The University of Tennessee, Memphis, invites applications for several junior or senior level, tenure-track positions focusing on significant problems in microbial pathogenesis using genetic and molecular approaches. Senior candidates should have a strong record of research accomplishment with sustained program growth and development. Junior candidates will be expected to develop a high quality, independent research program with long-term growth potential. Teaching responsibilities, which emphasize quality rather than quantity, include medical, dental, and graduate students. The University of Tennessee, Memphis, is well into a major growth phase. The department has recently moved into a completely renovated building and will be appointing at least five new faculty during the next several years. New faculty are also being appointed in the Departments of Anatomy, Pharmacology, and Biochemistry.

A large Center of Excellence grant has resulted in establishment of a Molecular Resource Center within the department featuring state-of-the-art facilities for: oligonucleotide synthesis, peptide synthesis, monoclonal antibody production, amino acid analysis, protein sequencing, polymerase chain reaction, molecular graphics, and flow cytometry. Funds for the initiation of research programs will be available and salaries will be highly competitive.

Applications will be received until 1 October 1990 or until the position is filled thereafter. Applications should consist of curriculum vitae, copies of several recent publications, a brief statement of future research goals, and three letters of reference to be sent to:

**Dr. Terrance G. Cooper**  
Department of Microbiology and Immunology  
The University of Tennessee, Memphis  
858 Madison Avenue, Room 801  
Memphis, TN 38163

The University of Tennessee is an Affirmative Action/Equal Opportunity Employer, Section 504, Title IX.

## POSITIONS OPEN

### MOLECULAR AND CELL BIOLOGY UNIVERSITY OF CALIFORNIA BERKELEY

The Department of Molecular and Cell Biology invites applications for the following **SIX TENURE-TRACK POSITIONS**, with appointments beginning 1 July 1991. Candidates should have demonstrated excellence, originality, and productivity in research and should have a strong interest in undergraduate and graduate teaching.

• **STRUCTURAL BIOLOGY**, assistant, associate, or full professor: one of a series of positions to be filled in the next few years; research emphasis in the broad area of structural biology, including, for example, protein folding, crystallographic or NMR studies of macromolecules, macromolecular interactions, or structure of membrane proteins.

• **NEUROBIOLOGY**, assistant, associate, or full professor: one of a series of positions to be filled in the next few years; research interests at any level of analysis, including, for example, molecular, developmental, biophysical, systems, or integrative neurobiology.

• **CELL AND DEVELOPMENTAL BIOLOGY**, assistant professor: research emphasis in the broad area of modern cell biology including, for example, cell surface receptors, intracellular signaling, or control of the cytoskeleton.

• **GENETICS**, two assistant professors: research emphasizing molecular or classical genetic approaches to problems of eukaryotic cell or developmental biology.

• **BIOCHEMISTRY AND MOLECULAR BIOLOGY**, assistant professor: research emphasizing the isolation and characterization of molecules involved in key cellular or viral processes such as the cell division cycle, regulation of RNA maturation, stress responses, or complex protein or membrane assembly.

Applications should include a cover letter indicating the position(s) sought, curriculum vitae, a bibliography, a statement of research objectives and teaching interests, three letters of recommendation, and reprints of three representative publications. The closing date for acceptance of applications is 15 November 1990. Applications should be sent to: **Ms. M. Tiaven, Molecular and Cell Biology Search Committee, Room 597, Life Sciences Addition, University of California, Berkeley, CA 94720.** Early applications are encouraged.

The University of California is an Affirmative Action/Equal Opportunity Employer. We especially invite women and underrepresented minorities to apply.

### FACULTY POSITION IN MOLECULAR BIOLOGY AND MOLECULAR PHARMACOLOGY

The Department of Pharmacology and Molecular Biology at The Chicago Medical School is initiating the third phase of faculty recruitment for tenure-track positions at all levels. Preference will be given to applicants with research interests in eukaryotic and/or viral gene expression, molecular mechanism of action of hormones and growth factors, molecular aspects of development, and cancer. The school relocated to a new modern facility adjacent to the very pleasant North Shore community of Lake Bluff, 38 miles from downtown Chicago and yet easily accessible by car or train. The department is now in an exciting stage of growth and development and has already recruited faculty of high calibre. Excellent core facilities are available. Strong M.D./Ph.D. program with substantial financial support. Salary and other benefits highly competitive. Please send curriculum vitae, research plans, and three references to: **Dr. Samson T. Jacob, Chairman, Department of Pharmacology and Molecular Biology, The Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064.** Chicago Medical School is an Equal Opportunity/Affirmative Action Employer.

### BONUS CIRCULATION FOR YOUR CLASSIFIED AD

Our issue of 12 October 1990 will be distributed to scientists attending two important meetings: Human Genome II (San Diego, California, 22 to 24 October) and Society of Neuroscience (St. Louis, Missouri, 29 October to 2 November). Deadline for submission of line classified ads: 27 September 1990.

SCIENCE Classified Advertising  
Telephone: 202-326-6555  
FAX: 202-682-0816

## POSITIONS OPEN

University of California, Irvine. **FACULTY POSITIONS IN ORGANIC CHEMISTRY.** Three positions are available this year and all levels of appointment and areas of research will be considered. At least one of the appointments will be made at the ASSISTANT PROFESSOR level. Candidates for appointments at the ASSOCIATE AND FULL PROFESSOR ranks must present evidence of outstanding accomplishments in research and be recognized nationally and internationally; for assistant professor applicants, there must be visible prospects for future excellence. The ability to effectively teach at the undergraduate and graduate levels is a requirement for all appointments. Candidates should submit complete curriculum vitae, publication list, and a brief statement of research interests. Applicants for assistant professor appointments must also arrange for letters of recommendation from at least three professional referees. Applications should be sent to: **Professor Kenneth J. Shea, Organic Search Committee, Department of Chemistry, University of California, Irvine, CA 92717.** To ensure full consideration, applications should be received by 15 October 1990. The University of California is an Affirmative Action/Equal Opportunity Employer. The Department of Chemistry is particularly interested in receiving applications from minority and female candidates.

### FACULTY POSITIONS IN BIOLOGY AND CHEMISTRY

The University of West Florida plans to fill tenure-track faculty positions for its new Center for Environmental Diagnostics and Bioremediation. The positions are in four areas: (i) **IMMUNOLOGY**: immunodiagnostics and immunopathology, hybridoma technology and immunoassays, molecular approaches to immune function and regulation; (ii) **MICROBIAL GENETICS**: genetic approaches to bioremediation, regulation and organization of genes encoding metabolic pathways, construction and detection of organisms with new metabolic phenotypes; (iii) **MICROBIAL BIOCHEMISTRY**: biodegradation and transformation of xenobiotics, metabolic pathways and enzyme recruitment, and development of microbial systems to degrade chemical mixtures; (iv) **ENVIRONMENTAL CHEMISTRY**: separation and structural determination of natural/xenobiotic chemicals, chemistry and fate of pollutants. The recruited faculty are expected to develop a vigorous research program, with an assignment of 75% research and 25% teaching. Rank and salary will be based on academic and research record. Minimum requirements include Ph.D. and relevant postdoctoral training. Positions are expected to be available in January 1991. Application deadline is 31 October 1990. A letter of application, résumé, transcripts, three letters of evaluation, and a statement of research goals should be sent to: **Dr. K. Ranga Rao, Department of Biology, University of West Florida, Pensacola, FL 32514. Telephone: 904-474-2755.** An Equal Opportunity/Affirmative Action Employer.

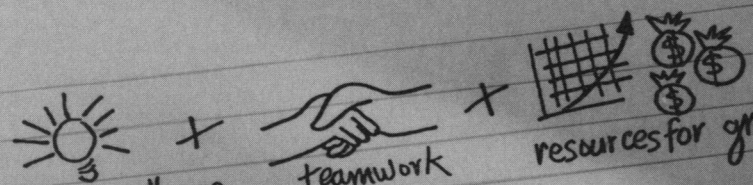
### WATER QUALITY/LIMNOLOGY

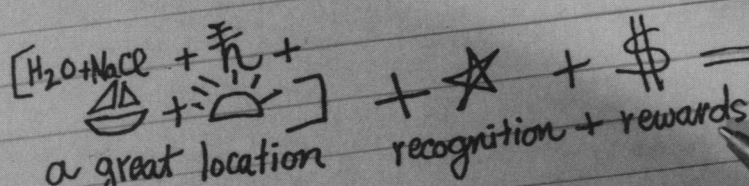
The Department of Biology at the University of Mississippi invites applications for a **TENURE-TRACK POSITION** in water quality/limnology as part of its expanding Freshwater Biology Program. Duties: conduct basic and applied research in biological, chemical, and physical aspects of water quality emphasizing a physico-chemical perspective; develop an extramurally funded, collaborative research program, in part using the University of Mississippi Biological Field Station and other nearby field opportunities; participate in undergraduate and graduate teaching including limnology, aquatic biology, and introductory biology; direct master's and doctoral students; and participate in local and national professional service. Qualifications: earned doctorate in an appropriate field; a record of professional accomplishment and publications; evidence of ability to obtain extramural funding and of a collaborative research orientation.

Academic rank is open, salary depends on qualifications. Position available in August 1991. Women and minorities are encouraged to apply. Please submit a letter of application, complete curriculum vitae, description of current research interests and future research plans, and the names, addresses, and telephone numbers of at least three references to: **James A. Kushlan, Chair, Department of Biology, The University of Mississippi, University, MS 38677.** Deadline for application is 15 October 1990 or until filled.

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**Applied Biotechnology**—Create, develop and implement state-of-the-art assay methodologies leading to novel human therapeutics for several diseases.

**Cellular Immunology/Biochemistry**—Perform *in vitro* T lymphocyte activation, signal transduction and ion channel studies, and determine intracellular mechanisms of immunosuppressive agents.

**Neurochemistry**—Study pharmacotherapy of mental illness and central nervous system disorders.

**Atherosclerosis**—Develop screens for the identification of novel anti-atherosclerosis agents.

**Immunology/Biochemistry**—Investigate immune response during parasitic infections.

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*ISIS Pharmaceuticals, located in Carlsbad, CA (San Diego County), is a pharmaceutical company focused on antisense oligonucleotide therapeutics. ISIS has innovative research programs, strong funding, a world-class scientific advisory board, excellent facilities and strong academic ties which make ISIS an exciting opportunity for outstanding individuals. Present openings in the Molecular and Cellular Biology and Medicinal Chemistry Department include:*

### Molecular Virologists

ISIS is seeking innovative Ph.D. and BS/MS scientists to develop programs in virology, particularly influenza CMV and HIV. Candidates should have a strong background in molecular biology and the ability to lead a molecular virology research program within a drug discovery effort. The program will be linked with a strong synthetic chemical effort providing novel oligonucleotide analogs designed to specifically regulate gene expression. Candidates should have at least two years' experience past the Ph.D. Experience in a major pharmaceutical company is highly desirable.

### Molecular Biologist/Biochemist Inflammation Research

ISIS is seeking innovative Ph.D. and BS/MS scientists to develop programs in anti-inflammatory drug discovery. Candidates should have a strong background in the molecular biology and/or biochemistry of inflammatory responses. Candidates with experience in the signal transduction pathway of inflammatory mediators are highly desired. The program will be linked with a strong synthetic chemical effort providing novel oligonucleotide analogs designed to specifically regulate gene expression. Ph.D. candidates should have post-doctoral experience.

### Biochemists/Molecular Biologists BS/MS

ISIS has several positions for BS/MS scientists with experience in biochemical and molecular biology techniques such as protein purification, DNA and RNA sequencing, cloning and cell culture.

### Ph.D. Synthetic Organic or Medicinal Chemists

Several Sr. Scientists with Ph.D.'s in Synthetic Organic or Medicinal Chemistry are sought to serve as members of interdisciplinary antisense design and synthesis teams. These scientists will have at least three years of experience post Ph.D. in nucleoside and oligonucleotide chemistry or natural product synthesis. Candidates keenly interested in team-oriented, rational drug design along with documented achievements are highly desirable.

### Analytical Development Chemists

Several experienced Ph.D. and BS/MS analytical chemists are required to perform analytical methods development in support of antisense oligonucleotide research and product development. Expertise in formulation/stability studies and GMP and IND regulations are desirable.

ISIS Pharmaceuticals offers a competitive salary, benefits, and substantial equity participation. Our new facility is located in San Diego County near the University of California, San Diego and other major scientific centers. Please submit a cover letter, cv, reprints of relevant publications, and names and telephone numbers of references to: Dr. David J. Ecker (Biology positions) or Dr. P. Dan Cook (Chemistry positions), ISIS Pharmaceuticals, 2280 Faraday Avenue, Carlsbad, CA 92008. An Equal Opportunity Employer.

## ISIS PHARMACEUTICALS

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### MANAGER MONOCLONAL ANTIBODY DEVELOPMENT GROUP

Directing the activities of our Monoclonal Antibody Development Group, the selected candidate will be a technical resource responsible for the design, development, and purification of new monoclonal antibodies. This position involves coordinating the Group's activities with a variety of R&D and Manufacturing areas as well as budgetary and managerial responsibilities. Qualifications include a Ph.D. in Molecular Biology, Immunology or related area, plus experience with monoclonal antibodies including hybridoma production, tissue culture and antibody purification. Experience with molecular biological techniques is a definite plus. Proven success in a management capacity is also required, as are exceptional interpersonal, written, and verbal communication skills.

We offer competitive compensation and benefits including profit sharing and a stock retirement plan. We are located in an attractive suburban area approximately 30 miles north of Chicago. For consideration, please send your resume to: **Shannon O'Harra, Job #33910, Corporate Placement, Abbott Laboratories, One Abbott Park Road, Abbott Park, IL 60064.** (To facilitate the handling of your resume, please indicate the job number on your cover letter or resume). Abbott is an Affirmative Action Employer.

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### Peptide Synthesis Research Associate

An opportunity is currently available within our Organic Chemistry lab for an individual with a BS or MS degree in Biochemistry or Chemistry.

This individual will be responsible for preparing synthetic peptides as part of our effort to generate leads for new therapeutic products.

The ideal candidate will have 1-2 years experience in automated peptide synthesis, cleavage and state-of-the-art purification and characterization of peptides.

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### **REGISTER OF CANADIANS STUDYING ABROAD**

The Natural Sciences and Engineering Research Council of Canada (NSERC) administers a Register of Canadian citizens and permanent residents who are currently enrolled in a postgraduate degree program or holding a postdoctoral appointment at a non-Canadian university or institute. The purpose of the Register is to facilitate their return to Canada by providing a means of contact with potential Canadian employers in industries, universities, and government departments. This service is offered free of charge to all participants.

**Operation:** In response to requests by participating Canadian employers, NSERC will provide the names, addresses, and relevant data of registrants with specified qualifications. Contact with selected registrants may then be initiated at the discretion of the employer.

**Registration:** Eligible Canadian students and fellows, and interested employers in Canada, who wish further information and/or registration forms should contact:

**Administrator, Register of Canadians Studying Abroad,  
Natural Sciences and Engineering Research Council  
of Canada, 200 Kent Street, Ottawa, Ontario Canada  
K1A 1H5 Telephone: (613) 995-6060.**

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## **Hitchings-Elion Fellowships**

in the Biomedical and Behavioral Sciences

The Hitchings-Elion Fellowships will provide support for junior U.S. scientists (U.S. citizens or permanent residents) who have held their last doctoral degree less than ten years. The purpose of the fellowship is to promote scientific collaboration in basic or clinical research between British and American scientists. They will be awarded to support two years of collaborative research at the sponsor's laboratory in the United Kingdom and a third year at a sponsor's laboratory in the U.S.A. The Wellcome Trust will provide the financial support (between £12,792 and £19,613 annually depending on experience) for the first two years, £5,000 per year for research expenses in the U.K. and round trip economy class air fare for the fellow and up to three dependents. The Wellcome Trust also will provide an equivalent stipend in U.S. dollars for the third year. The Burroughs-Wellcome Fund will provide \$7,500 for research expenses in the U.S.A. The application deadline each year is January 10, beginning in 1991. Applications will be received at the National Institutes of Health where the initial review process will be conducted. Funding decisions will be announced by the Wellcome Trust approximately six months from the application receipt date.

Those interested in obtaining more information on this new program, the scientific review process or an application kit may contact:

**International Research and Awards Branch  
Fogarty International Center  
Building 31, Room B2C21  
National Institutes of Health  
Bethesda, Maryland 20892  
Telephone: (301) 496-1653  
Fax: (301) 402-0779**

Those having questions regarding the Fellowship in the United Kingdom should contact:

**Hitchings-Elion Fellowships  
The Wellcome Trust  
One Park Square West  
London NW1 4LJ  
United Kingdom  
Telephone: 071-486-4902  
Fax: 071-487-4915**

Those having questions regarding the fellowship in the United States should contact:

**The Burroughs-Wellcome Fund  
3030 Corwallis Road  
Research Triangle Park, NC 27709  
Telephone: (919) 248-4136  
Fax: (919) 248-3052**

## POSITIONS OPEN

### THE UNIVERSITY OF ARIZONA DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY AND THE ARIZONA CANCER CENTER FACULTY POSITION IMMUNOLOGY/CANCER BIOLOGY

Applications are invited for a tenure-track position in the field of immunology as broadly related to cancer. The applicant will lead the research effort in immunology within the Arizona Cancer Center. Research in the areas of tumor immunology related to the regulation of proliferation and differentiation, cell-cell recognition, cell surface receptors, immunogenetics, lymphokines, and growth factors are of special interest. Skills in molecular immunology are important, however, outstanding scientists with other special skills will also be considered. Candidates for this position should have at least 2 years of pertinent postdoctoral experience. The successful candidate will be expected to develop a nationally recognized independent research program and participate in related departmental teaching. A wide variety of interactions with our faculty are possible in many areas of immunology, biochemistry, molecular and cellular biology, and clinical cancer research (including a recently established bone marrow transplant program). We provide excellent physical facilities, a stimulating research environment, and competitive salary and benefits. The recently completed Arizona Cancer Center facility and the Biotechnology Division as well as new scientific leadership in microbiology and immunology add to the many scientific resources available at the University of Arizona. Applicants should provide curriculum vitae, two copies of recent representative publications, and a detailed description of research goals. The applicant should also arrange for three letters of recommendation to be sent directly to us. The search committee will begin reviewing applications on 15 October 1990 and will continue to accept applications until the position is filled.

Submit applications to: **Evan M. Hersh, M.D., Chairman, Search Committee, Professor of Microbiology and Immunology and Medicine, Arizona Cancer Center, 1501 North Campbell Avenue, Tucson, AZ 85724.**

*The University of Arizona is an Equal Opportunity/Affirmative Action Employer and applications from female and minority group members are strongly encouraged.*

### BIOCHEMISTRY/MOLECULAR BIOLOGY TEXAS A&M UNIVERSITY

The Department of Biochemistry and Biophysics is seeking applications for **FACULTY POSITIONS**. These are 12-month, tenure-track positions to be filled by September 1991. Academic rank is open and dependent upon experience and qualifications. Outstanding individuals having research interests dealing with the molecular aspects of regulation, structure, mechanism, or function in microbial, animal, or plant systems are sought. In addition to research, participation in the department's undergraduate and graduate teaching programs will be required. A Ph.D. in either biochemistry or a related field, plus appropriate postdoctoral experience, is required.

Applicants should send curriculum vitae, list of publications, a brief description of current and future research directions, and have three letters of reference sent to: **Dr. Robert D. Wells, Department of Biochemistry and Biophysics, Texas A&M University, College Station, TX 77843-2128.**

*The Texas A&M University System is an Affirmative Action/Equal Opportunity Employer.*

### MOLECULAR BIOLOGY TECHNOLOGIST BERKSHIRE MEDICAL CENTER

Full-time position available for a technologist skilled in molecular biology techniques to take charge of molecular pathology laboratory of a progressive university-affiliated medical center. Experience required in Southern and Northern blotting, the polymerase chain reaction, the use of in situ probes, and oligonucleotide synthesis. Ideal candidate will have at least a bachelor's degree, and preferably a master's, in molecular biology. The medical center is located in a year around vacation area close to Tanglewood and other music festivals.

Send curriculum vitae to: **Mary Bernard, Recruiter, Berkshire Health Systems, 725 North Street, Pittsfield, MA 01201. Telephone: 613-447-2784; outside Massachusetts, call toll free, 1-800-648-1036. An Equal Opportunity Employer.**

## POSITIONS OPEN

**FACULTY POSITION IN BIOLOGICAL CHEMISTRY.** At University of Health Sciences (UHS)/Chicago Medical School. Two tenure-track positions are available in the broad area of structure and function studies of proteins. Areas of interest include but are not limited to physical biochemistry, spectroscopy, mechanisms, folding, or mutagenesis of biologically important proteins such as membrane receptors, nucleic acid binding proteins, cytoskeletal proteins, or enzymes. Outstanding and experienced candidates at the **ASSISTANT PROFESSOR** level as well as more senior level investigators are invited to apply. The successful applicants will be expected to establish their own active research program and to interact with other investigators in the exciting research environment and modern facilities of the school, located in a pleasant North Shore suburb 30 miles north of the loop. Send letter of application, curriculum vitae, names of references, and description of research to: **Dr. K. E. Neet, Chairman, Department of Biological Chemistry, UHS/Chicago Medical School, 3333 Green Bay Road, North Chicago, IL 60064. An Equal Opportunity/Affirmative Action Employer.**

**BIOCHEMISTRY FACULTY POSITION.** Chemistry Department, Pomona College. Tenure-track position at the **ASSISTANT PROFESSOR** level starting July 1991 to teach introductory and advanced courses in biochemistry and to work closely with members of the Biology Department in the administration of a joint program in biochemistry and molecular biology. The successful candidates must have a Ph.D. and a commitment to undergraduate teaching and research. There are excellent library, computing, and laboratory facilities including a H-P GC/MS system and a 300-MHz NMR spectrometer and ample space for research. Start-up funds for faculty research are available. Pomona College, the founding member of The Claremont College, is among the nation's most selective undergraduate institutions. To apply, submit a letter of interest, a résumé, transcripts, a description of research interests, and three letters of reference by 29 October 1990 to: **Professor Wayne E. Steinmentz, Chemistry Department, Pomona College, Claremont, CA 91711-6338. Pomona College is an Affirmative Action/Equal Opportunity Employer and especially invites applications from women and minorities.**

### FACULTY POSITIONS ASSISTANT/ASSOCIATE/FULL PROFESSOR DEPARTMENT OF BIOCHEMISTRY UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE

Applications and nominations are invited for tenure-track faculty positions for September 1991. We are seeking candidates who are using contemporary approaches to investigate problems in the general area of growth factor-signal transduction regulation of cell growth control and differentiation. Applicants should have a Ph.D., postdoctoral experience, a strong record of research accomplishments, and demonstrable potential for the development of an independent research program. At the tenured level, applicants must have a strong record of research accomplishment. The Department of Biochemistry consists of 20 full-time faculty and has hired several new faculty in the areas of gene expression and membrane biology in recent years. The department and college are well equipped and have research support facilities that include nucleic acid and protein synthesis and sequencing. Applications should include curriculum vitae, a summary of current and future research plans, and the names of at least three individuals for references. Application deadline is 31 December 1990. Send applications or nominations to: **Chairman, Faculty Search Committee, Department of Biochemistry (M/C 536), University of Illinois College of Medicine at Chicago, 1853 West Polk Street, Chicago, IL 60612. Affirmative Action/Equal Opportunity Employer.**

### POSTDOCTORAL POSITION

Available October 1990. The goals of this project are to identify the genes and proteins that enable the green alga *Chlamydomonas reinhardtii* to grow photosynthetically on very low CO<sub>2</sub> concentrations. A Ph.D. is required. Individuals with experience in molecular biology, biochemistry, or transport processes should send curriculum vitae and three letters of reference to: **Dr. James V. Moroney, Department of Botany, Louisiana State University (LSU), Baton Rouge, LA 70803-1705. LSU is an Equal Opportunity Employer.**

## POSITIONS OPEN

**FACULTY POSITION, MOLECULAR VIROLOGY/DNA VIRUSES.** The Division of Molecular Virology at Baylor College of Medicine invites applications for a tenure-track position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. An innovative scientist is sought with research interests involving DNA viruses; appropriate topics include molecular biology of viral replication, cell transformation, persistent infections, and receptor interactions. Applicants should have a Ph.D. or M.D./Ph.D., postdoctoral experience in molecular virology, and demonstrated research productivity. The successful applicant is expected to establish an independent research program and to participate in graduate training. This appointment offers an excellent opportunity to join an expanding academic department with newly renovated laboratories and well-equipped support facilities. Current faculty research activities focus on the molecular basis of viral replication, viral gene expression, viral oncogenes, viral pathogenesis, and disease prevention. Send curriculum vitae, names and addresses of at least three references, a statement of current research activities, and a description of future plans by 1 December 1990 to: **Dr. Mary Estes, Faculty Recruitment Committee, Division of Molecular Virology, Baylor College of Medicine, Houston, TX 77030.**

*An Equal Opportunity/Affirmative Action Employer.*

### MASS SPECTROMETRIST (MS)

Immediate opening in neurochemistry group for an experienced mass spectrometrists, to become part of an active research team and be in charge of MS core laboratory facility. Research projects include retinal degeneration, cerebral ischemia-reperfusion damage, experimental epilepsy, mediators of inflammation, and neural cell signal transduction. The successful applicant will have a Ph.D. in organic or analytical chemistry and 1 to 3 years of experience with MS of biological metabolites, including arachidonic acid cascade, lipoxins, leukotrienes and platelet-activating factor. The successful applicant will be equally comfortable with other methods of instrumental analysis of trace metabolites, including but not limited to HPLC and GC/MS. Applications, including curriculum vitae, and names and addresses of three references should be sent to: **Mass Spectrometrists, c/o Nicolas G. Bazan, M.D., Ph.D., Louisiana State University (LSU) Eye Center and Neuroscience Center, 2020 Gravier Street, Suite B, New Orleans, LA 70112. LSUMC is an Affirmative Action/Equal Opportunity Employer.**

### MOLECULAR BACTERIOLOGY/ GENE EXPRESSION

Individuals with experience in development of gene expression and secretion systems for Gram-negative bacteria are being recruited to join a strong collaborative group developing bacterial vaccines. Applicants should have at least 2 years of postdoctoral experience in the construction of bacterial expression vectors and an interest in mechanisms of protein secretion.

Successful applicants will be expected to collaborate with others in the fields of molecular biology (bacteriology and virology) and immunology.

For consideration, please forward your curriculum vitae and names of referees to:

**Dr. Lorne A. Babiuk  
Associate Director (Research)  
Veterinary Infectious Disease Organization  
124 Veterinary Road  
Saskatoon, Saskatchewan, Canada S7N 0W0**

### PROTEIN BIOCHEMIST

Scientist position for structure-function studies on human coagulation factors in nonprofit research organization. Ph.D. with experience in protein purification (immunoaffinity, FPLC, HPLC, conventional) and assay. Salary: \$29,000 and up, commensurate with experience. Send résumé with list of references to: **Jerry Roberts (DS/PD), American Red Cross, Holland Laboratory, 15601 Crabbs Branch Way, Rockville, MD 20855. Equal Opportunity Employer, M/F/H/V.**

Two **POSTDOCTORAL POSITIONS.** Experience in structure and function of proteins, glycoproteins, and membranes receptors. Available immediately. Send curriculum vitae to: **Dr. O. P. Bahl, 347 Cooke Hall, State University of New York (SUNY), at Buffalo, Buffalo, NY 14260. SUNY is an Affirmative Action/Equal Opportunity Employer.**

# *proteus*

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## Software Development Manager and Scientific Programmers

Several positions are available for Protein and Drug Molecular Modellers at both junior and senior levels. There is also an opening for a Software Development Manager and for at least three new positions as general scientific programmers. Staff will be concerned with the BioEngine™ project, developing new design technologies, or using it to design new chemical products, either in-house or by joint collaboration with external organisations. The project demands willingness to work with exciting new approaches to molecular modelling and simulation, and a wide range of established methods. Software technologies include the GLOBAL™ high level language for chemists and molecular biologists, accessing the PROMETHEUS™ expert system for molecular modelling, and novel types of dynamics and neural net technologies. Hardware includes a Convex 220, Silicon Graphics, IBM and transputer equipment with linked access to Cray and IBM supercomputers. Excellent opportunities exist for R&D collaboration with major European universities and American hardware and biotechnology companies. Participation in basic research and scientific publication is encouraged.

Applications with C.V. to Mr John K Pool, Managing Director, PROTEUS INTERNATIONAL plc, PROTEUS HOUSE, 48 Stockport Road, Marple Cheshire, SK6 6AB. Telephone (061) 464 0191, Fax (01) 426 0192.

### THE ROYAL SOCIETY ROYAL SOCIETY RESEARCH PROFESSORSHIPS

The Royal Society invites applications for four Royal Society Research Professorships tenable from 1 October 1991 for research in the physical sciences (including mathematics, engineering and technology). Salaries will be well above the prevailing professorial minimum and include superannuation. Research professors may bid for annual research expenses of £13 500 or higher and for support for research or technical assistants, and there will be start-up grants of up to £35 000. Assistance will be given with removal expenses for successful applicants from overseas.

Appointments, which are tenable from 1 October 1991 and are open only to British citizens, are normally held at universities in the United Kingdom, and are for five years in the first instance. Details of tenure will be decided later but it is expected that one of the four vacancies will be renewable until retirement and the other three for one further five-year period after the initial five years.

Application details are available from Mrs U.M.A. Tokle, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG. (Fax 071-930 2170). The closing date for applications is 16 November 1990; no applications arriving after 4 p.m. on that date will be considered.

## POST DOCTORAL FELLOWSHIP Applied Dielectrics

\$A32,471-\$A34,887

CSIRO DIVISION OF APPLIED PHYSICS

National Measurement Laboratory, Lindfield NSW

**General:** The Division of Applied Physics applies the methods of physics and measurement science to the solution of problems of importance to Australian industry and the Australian community. An Electricity Supply Technology Project is supported within the Division's Applied Electricity and Magnetism Program. This project has significant interaction with electricity generation and distribution authorities and with associated manufacturing industry. The Division has a staff of some 280 and is principally located in a modern laboratory in the northern suburbs of Sydney.

The Division has initiated a core research project in Applied Dielectrics to focus research on the mechanisms of insulation behaviour and to apply this knowledge to new diagnostic techniques and to the production of new insulating systems. It is envisaged that the study will examine both new and currently used insulating materials.

**Duties:** Participate in applied experimental research related to fundamental aspects of electrical insulation used in high-voltage systems. Develop a theoretical understanding of observed dielectric deterioration mechanisms in general and examine the phenomenon of Electrostatic Charging Tendency in liquids in particular.

**Qualifications:** A PhD degree or equivalent in physics, chemistry or engineering, about to be awarded or awarded within the last two years, with a thesis subject related to electrical insulation or dielectric phenomena.

Proven ability to plan, perform and analyse experiments on dielectric materials.

**Desirable:** Some familiarity with high-voltage systems and electrical measurements.

**Tenure:** A fixed-term appointment of 3 years with Australian Government Superannuation benefits available.

**Further details:** Selection criteria can be obtained by contacting Vivien Nissim on (02) 413 7452 and further details of the position can be obtained by telephoning Dr B. D. Inglis or Dr J. Rungis on (02) 413 7211.

**Application:** Applications, including a full curriculum vitae and the names and addresses of three referees, should be addressed to:

**The Chief,  
CSIRO Division of Applied Physics  
PO Box 218, Lindfield, NSW 2070,  
AUSTRALIA**

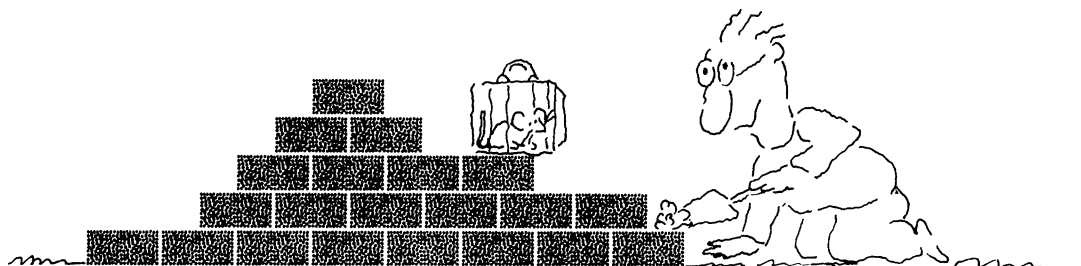
**Closing date for applications:** 28 September 1990.



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**Deadline January 15, 1991**

## BRANCH CHIEF

### Human Interface Research Branch

#### Aerospace Human Factors Research Div.

We seek an exceptional individual who will thrive on management challenges & extraordinary opportunities for high-impact research & technology development. This individual will manage a large, vigorous branch with a wide range of basic & applied research in human perception & cognition & development of visual & auditory displays & virtual environment technology. The mission of the branch is to improve the safety & effectiveness of aviation & space operations. The branch is housed in a modern laboratory building with first-rate research equipment & access to facilities such as high-fidelity flight simulators. Branch scientists collaborate extensively with colleagues in NASA, universities, & industry. Requirements: Solid accomplishments as a research manager, broad knowledge of experimental psychology & human factors, strong interest in aviation & space applications, first-rate management & speaking skills. A Ph.D. is preferred. This is a civil service position with salary currently in the range of \$50,342 - \$76,982. US citizenship is required.

*Please send a c.v. and a letter describing your experience & interests to: Dr. M.G. Shafto, NASA Ames Research Center MS262-1, Moffett Field, CA 94035.*



NASA is an Equal  
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National Aeronautics and Space Administration

## Postdoctoral Scientist Growth Regulation

One of only three bio-pharmaceutical companies to show a profit in 1989, Biogen, Inc., is beginning its next growth stage as it becomes a fully integrated pharmaceutical company. Products are targeted for use in the AIDS therapeutics, cardiovascular, anti-inflammation, and selected cancer markets.

We presently have a Postdoctoral position available in the laboratory of Dr. Richard L. Cate, Biogen, Inc. The successful candidate will join on-going research on Mullerian inhibiting substance (MIS), a member of the TGF- $\beta$  family involved in male sexual development [Cate *et al.*, Cell 45, 685 (1986)]. The research involves studying the biosynthesis and proteolytic processing of MIS, and investigating additional biological activities, including potential antiproliferative effects. Candidates will also have the opportunity to work on other aspects of growth regulation. Applicants should have a Ph.D. and/or M.D. degree and research experience in the area of growth regulation. Experience with primary cell culture and protein biochemistry is desirable.

**Our compensation and benefits package is one of the best in the industry, and is designed to attract and retain the finest talent available. Applicants should send curriculum vitae (and names of three references) to: Biogen, Inc., Ref. SCI914, 14 Cambridge Center, Cambridge, MA 02142. Biogen is an Equal Opportunity Employer.**

BIOGEN

## St. Lawrence University

### African Studies: Environment and Resource Use

St. Lawrence University, with the support of a major grant from the Ford Foundation, seeks to fill a tenure-track position with a broadly trained individual in environmental issues and resource use. This position, which may be filled at the Assistant or Associate Professor level, will complement our nationally recognized undergraduate program in African Studies which includes a field component in Kenya. The home for this position will be determined by the professional background of the successful candidate. Possibilities include, but are not limited to, Environmental Studies, Biology, Sociology and Economics. The appointment will begin in Fall 1991.

We seek a person with expertise in ecological issues/natural resource use in the Third World, with a primary emphasis on Africa. Candidates should demonstrate interest in teaching in a liberal arts college setting, and show evidence or promise of productive scholarship. A completed Ph.D. is strongly preferred but advanced ABD candidates will be considered. In addition to teaching, this person will promote dialogue among faculty and students, both in the human and natural sciences, about issues of African development and the fragile ecosystems of the continent.

Applications, c.v. and three letters of recommendation should be submitted to:

Dr. David Lloyd  
Department of History  
St. Lawrence University  
Canton, New York 13617

Review of applications will begin on November 30, 1990.

St. Lawrence University is an independent liberal arts institution in upstate New York with a student body of approximately 2000 undergraduates. The University is strongly committed to excellence in teaching, scholarship and faculty development, including support for faculty research and professional travel.

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

## THE ROYAL SOCIETY

### NAPIER RESEARCH PROFESSORSHIP

The Royal Society invites applications for the Napier Research Professorship, tenable from 1 October 1991, for research into the causes of cancer including any corresponding or allied disease and the means of its prevention, cure and alleviation. The salary will be on the prevailing UFC professorial minimum plus 40% and include superannuation. The Napier Research Professor may bid for annual research expenses of £13 500 or higher and for support for a research or technical assistant, and there will be a start-up grant of up to £35 000. A successful applicant from overseas will receive assistance with removal expenses.

The appointment must be held in an appropriate higher educational or research institution in the UK. There is no restriction as to citizenship of candidates. The tenure is for five years in the first instance and is then renewable until retirement.

Application details are available from Mrs U.M.A. Tople, The Royal Society, 6 Carlton House Terrace, London SW1Y 5AG (Fax 071-930 2170). The closing date for applications is 16 November 1990; no applications arriving after 4 p.m. on that date will be considered.

## Provost

Carnegie Mellon University, a private, co-educational institution with 7,500 students, seeks a Provost to serve as its chief academic officer in a new administration. The Provost has principal responsibility for educational and research policy, planning and budgets for the University. He/she also serves as Deputy President. Candidates must have an outstanding record in academic life and administration, as well as earned doctor's degree. Salary based on experience and qualifications.

Resume and names of three references to: Provost Search, Carnegie Mellon University, Warner Hall, Room 602, Pittsburgh, PA 15213, Attn: Karen Proietti. Deadline for applications is November 1, 1990.

**Carnegie Mellon**

An Affirmative Action/EOE

## POSITIONS OPEN

### MOLECULAR RADIOBIOLOGIST

The Department of Radiation Oncology at the University of North Carolina (UNC) in Chapel Hill invites applications for a tenure-track position, rank dependent on qualifications. We are seeking a candidate who will develop a strong research program with a specific emphasis on the application of modern molecular biological techniques to the study of cellular and tissue response to free radical damage. Preference will be given to candidates who have relevant postdoctoral experience and whose research program complements existing programs in nucleic acid radiation chemistry and in cellular and tumor radiation biology. Applications, including curriculum vitae and the names and addresses of three academic referees, should be sent by 31 October 1990 to: **Dr. James A. Raleigh, Department of Radiation Oncology, North Carolina Memorial Hospital, Chapel Hill, NC 27514.**

UNC is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to identify themselves voluntarily in their applications.

**POSTDOCTORAL POSITION.** Available to study the regulation of gene expression by yeast mating pheromones and the similarity of this system to the regulation of the *c-fos* protooncogene by growth factors in mammals. Candidates should have a Ph.D. and a background in yeast genetics and molecular biology. Send curriculum vitae and names of three references to: **Dr. Brent H. Cochran, E17-517, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139.**

**POSTDOCTORAL POSITION.** Available for research on mapping the antigenic and functional domains of human cytomegalovirus glycoproteins. Work includes gene cloning, transient expression in eukaryotic cells, construction of mutant viruses, and transformed cell lines. Preference will be given to applicants with a background in molecular biology. Interested candidates should submit curriculum vitae and three letters of reference to: **Dr. Lenore Pereira, School of Dentistry, Division of Oral Biology, University of California San Francisco, HSW-604, San Francisco, CA 94143. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION.** Available immediately to participate in studies on structure, biochemistry, and function of low molecular weight G proteins in phagocytic cells. Salary: \$25,000 to \$28,000. Send curriculum vitae and names of three references to: **Daniel Rotrosen, M.D., Laboratory of Clinical Investigation, National Institute of Allergy and Infectious Diseases, Building 10, Room 11N112, National Institutes of Health, Bethesda, MD 20892.**

Contact: **Daniel Rotrosen, M.D., telephone: 301-496-1343; Building 10, Room 11N112.**

U.S. citizenship required.

NIH is an Equal Opportunity Employer.

**POSTDOCTORAL POSITION IN MICROBIOLOGY/BIOCHEMISTRY.** Available to study bacterial degradation of organic pollutants found in groundwater. Emphasis is on development and study of strains able to degrade substituted aromatic compounds. Background in microbial physiology, molecular biology, and strain construction helpful. Position is at Tyndall Air Force Base, Panama City, Florida. Annual stipend range is \$29,150 to \$41,400. Doctoral degree received within 3 years of starting date required, as is U.S. citizenship or PRA status. Contact: **Postgraduate Research/Tyndall, Science/Engineering Education Division, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3456.**

### HARVARD MEDICAL SCHOOL POSTDOCTORAL POSITION

Position available immediately to study the role of cyclic GMP in signal transduction and cellular function. Research involves role of cGMP in platelet and smooth muscle cell signaling pathways, and isolation and characterization of unique substrates for cGMP-dependent protein kinase. Ph.D. in molecular biology with additional expertise in protein biochemistry preferred. Ability to work independently necessary. Send curriculum vitae and names/telephone numbers of three references to: **Dr. Michael E. Mendelsohn, Department of Medicine, 75 Francis Street, Boston, MA 02115.**

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## POSITIONS OPEN

**POSTDOCTORAL POSITION.** Available in biochemistry and immunology to study effects of toxic chemicals on immune cells: emphasizing T cell function and also the interactions and organization of proteins in the nuclear matrix. Position funded for 3 years. Send curriculum vitae and three references to: **Dr. C. R. Verret, Department of Chemistry, Tulane University, New Orleans, LA 70118.**

**POSTDOCTORAL POSITION.** Ph.D. (physiology, animal science, nutrition, or related area) for work in NIH-funded study of the effects of parenteral nutrition on intestinal growth and development in neonatal swine. Experience in intestinal function (e.g., transport, morphology, enzyme analysis, etc.) and experience handling experimental animals is preferred. Send curriculum vitae and three letters of recommendation to: **Mark G. Clemens, Ph.D., Pediatric Surgical Laboratory, Johns Hopkins University, School of Medicine, Department of Surgery, CMSC 7-116, 600 North Wolfe Street, Baltimore, MD 21205.**

### POSTDOCTORAL POSITION MOLECULAR PATHOGENESIS

A postdoctoral position is available to study interactions between *Clostridium perfringens* enterotoxin and mammalian membranes. Experience in receptor purification or cloning, hybridoma production, or membrane biochemistry helpful, but not essential. Excellent research environment; growing department located in new laboratories with modern core facilities. Send curriculum vitae and the names of at least two references to: **Dr. Bruce A. McClane, E1240 Biomedical Science Tower, Department of Molecular Genetics and Biochemistry, University of Pittsburgh School of Medicine, Pittsburgh, PA 15261.**

**POSTDOCTORAL POSITIONS IN MOLECULAR NEUROBIOLOGY.** Exciting opportunities to do postdoctoral research in a well-established laboratory studying nicotinic acetylcholine receptors and related proteins and the autoimmune response to muscle nicotinic receptors. Candidates must have a Ph.D. or M.D. with experience in molecular genetics or monoclonal antibodies and protein chemistry. Molecular genetics projects involve the use of cDNA cloning, mutagenesis, and expression in *Xenopus* oocytes, transfected cell lines, and baculovirus infected cells. Protein chemistry projects closely integrated with the molecular genetics projects involve making monoclonal antibodies, immunoaffinity purification of receptors, and their characterization. Send curriculum vitae and names, addresses, and telephone numbers of three references to: **Jon Lindstrom, University of Pennsylvania School of Medicine, 503 Clinical Research Building, 422 Curie Boulevard, Philadelphia, PA 19104-6140. FAX: 215-573-2028. Equal Opportunity/Affirmative Action Employer.**

### UNIVERSITY OF SASKATCHEWAN DEPARTMENT OF BIOLOGY POSTDOCTORAL POSITION

(Readvertisement: Previous applicants need not apply.)

Applications are invited for a postdoctoral position in insect reproductive physiology. Candidates should have expertise in modern biochemical techniques, and some knowledge of insect tissue culture would be advantageous. The successful applicant will participate in an ongoing study of the regulation and functions of reproductive activity in the male insect. Salary will be in accord with NSERC Canada guidelines (current range: Canadian \$22,000 to \$26,500 per annum). Please send curriculum vitae and names and addresses of three references to:

**Professor C. Gillott**

**Department of Biology**

**University of Saskatchewan**

**Saskatoon, SK S7N 0W0, Canada**

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## HOWARD HUGHES MEDICAL INSTITUTE

# 1991

# PREDOCTORAL FELLOWSHIPS IN BIOLOGICAL SCIENCES

66 Fellowships will be awarded by the Howard Hughes Medical Institute for study toward a Ph.D. or Sc.D. degree in the biological sciences listed below. Awards, based on an international competition each year, focus on research directed to an understanding of basic biological processes and disease mechanisms. Fellowships may be held at any academic or research institution with appropriate degree programs.

- **Fellowship Terms**
- Full-time study toward the Ph.D. or Sc.D.
  - Up to five years of support possible
  - \$13,500 annual stipend, effective June 1991
  - \$11,700 annual cost-of-education allowance

- **Fields of Study**
- Continuing as eligible fields:

biochemistry	immunology	pharmacology
biophysics	microbiology	physiology
cell biology	molecular biology	structural biology
developmental biology	neuroscience	virology
genetics		
  - New eligible fields:

biostatistics	epidemiology	mathematical biology
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- **Eligibility**
- Beginning graduate study (prior study toward an M.P.H. or a medical degree does not rule out eligibility)
    - college seniors
    - first year graduate students
    - medical students and physicians (M.D., D.O., D.D.S., or D.V.M.) not past the first year of a Ph.D. or Sc.D. degree program
  - Not in a funded M.D./Ph.D. program
  - No citizenship requirements: U.S. citizens may study abroad, but others must study in the United States

- **Schedule**
- Application deadline: November 9, 1990
  - Awards announced: early April 1991
  - Fellowships start: June 1991 - January 1992

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### For 1991 Program Announcements, Eligibility Guidelines, and Applications

Hughes Fellowship Program • The Fellowship Office  
National Research Council • 2101 Constitution Avenue, N.W.  
Washington, D.C. 20418 • United States of America  
Telephone (202) 334-2872

The Howard Hughes Medical Institute welcomes applications from all qualified candidates and encourages women and members of minority groups to apply.

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## POSITIONS OPEN

**POSTDOCTORAL POSITIONS.** Available immediately for the study of protein folding mechanisms using NMR, site-directed mutagenesis, and kinetic methods [Nature 335, 700-704 (1988)]. Experience in protein chemistry or molecular biology is desirable, knowledge of NMR is preferable but not essential. Send curriculum vitae and the names of three references to: **Dr. Heinrich Roder, Department of Biochemistry and Biophysics, University of Pennsylvania, Philadelphia, PA 19104-6059.** The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.

### POSTDOCTORAL-NEUROSECRETION

Available immediately to study receptors, calcium signaling, and secretory mechanisms in the adrenal chromaffin cell. Experience desirable in: cell calcium measurement, microspectrofluorimetry, cell permeabilization, radioligand binding, inositol polyphosphate assay, and patch clamp electrophysiology. Send curriculum vitae, bibliography, and names of three references to: **Dr. Allan Schneider, Department of Pharmacology, Albany Medical College, Albany, NY 12208.**

**POSTDOCTORAL POSITION.** Available to study the cellular and molecular aspects of peptide hormone action and structure-function of membrane receptors. Strong background in one or more of the following areas: intracellular signaling and second messengers protein chemistry, molecular cloning, and gene expression is highly desirable. Send curriculum vitae and two references to: **Dr. Kailash N. Pandey, Department of Cell and Molecular Biology, Medical College of Georgia, School of Medicine, Augusta, GA 30912-2100. Telephone: 404-721-3361.** An Equal Opportunity/Affirmative Action Employer. Females/minorities are encouraged to apply.

**POSTDOCTORAL TRAINING POSITION, NEUROBIOLOGY OF AGING.** The University of California, Irvine, anticipates filling several NIH training grant research positions in the area of successful aging and age-related dementias, particularly Alzheimer's disease, by 31 August 1991. Positions available in a wide variety of research areas, including synaptic plasticity, neurotrophic factors, amyloid precursor protein function, protease and protease inhibitor regulation, and excitatory amino acid receptors. Participating faculty include Carl Cotman, Rachael Neve, Dennis Cunningham, Gary Lynch, James Fallon, Edward Jones, Ralph Bradshaw, Mary-Louise Kean, Michael Leon, Ira Lott, John Marshall, James McGaugh, and Arnold Starr. Salaries for training positions are commensurate with education and experience. Applicants must possess Ph.D. (proof of final degree required) and must be U.S. citizens or permanent residents. Address inquiries and curriculum vitae to: **Carl W. Cotman, Ph.D., Director, Postdoctoral Training Grant, Department of Psychobiology, University of California, Irvine, CA 92717.** The University of California is an Equal Opportunity/Affirmative Action Employer. The department encourages female and minority applicants.

**CELLULAR BIOLOGY OF THE HEART: POSTDOCTORAL TRAINING.** NIH-funded postdoctoral positions for training in cellular biology of the heart are available in the Department of Cellular and Molecular Physiology at the College of Medicine of Pennsylvania State University. A multidisciplinary program is offered to provide a background in the cell biology, molecular biology, biochemistry, and physiology of cardiac disorders, in addition to specific laboratory training. The research interests of the training faculty, who are members of the Departments of Physiology and Medicine, include the role of polyamines, the extracellular matrix and other regulatory factors in control of cellular growth and differentiation, regulation of protein and RNA synthesis and degradation, transmembrane signaling mechanisms, receptor-ligand interactions, control of cellular transport, regulatory mechanisms in excitation-contraction coupling, and mechanisms of neural regulation of vascular function. Highly qualified U.S. citizens, who hold a Ph.D. or M.D. may apply by submitting their curriculum vitae, a statement of career goals, and the names of three references to: **D. Eugene Rannels, Ph.D., Program Director, Department of Cellular and Molecular Physiology, The Milton S. Hershey Medical Center, Pennsylvania State University, P.O. Box 850, Hershey, PA 17033.** Pennsylvania State University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

## POSITIONS OPEN

**POSTDOCTORAL POSITION.** To study fungal degradation of munitions waste using radiorespirometric techniques. Position available immediately. Contact: **Dr. J. W. Bennett, Department of Cell and Molecular Biology, Tulane University, New Orleans, LA 70118. Telephone: 504-865-5546.** Tulane University is an Affirmative Action/Equal Opportunity Employer, and applications from qualified women and minority group members are especially encouraged.

**POSTDOCTORAL POSITION** available to study regulation of glucocorticoid receptor gene expression. Experience in recombinant DNA techniques is desirable. Send curriculum vitae, including bibliography, and have three letters of reference sent to: **Dr. Wayne Vedeckis, Department of Biochemistry and Molecular Biology, LSU Medical Center (LSUMC), 1901 Perdido Street, New Orleans, LA 70112.**

LSUMC is an Affirmative Action Equal Opportunity Employer.

### POSTDOCTORAL FELLOW

Position available on NIH 5-year grant, salary: \$20,000 plus fringe benefits, to study hormonal regulation of steroid receptors and growth factors in the female reproductive tract of rhesus monkeys. Approaches will include PCR blot, solution, and in situ hybridization techniques to detect steroid receptor and growth factor mRNAs under different hormonal conditions. Familiarity with the above techniques as well as Western blotting, sucrose gradient analysis, and steroid receptor assays is desirable.

Please send curriculum vitae, reprints, and names of three references to:

**Robert M. Brenner, Ph.D., Division Head  
Reproductive Biology and Behavior  
Oregon Regional Primate Research Center  
505 N.W. 185th Avenue  
Beaverton, OR 97006**

The Oregon Regional Primate Research Center is an Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL FELLOW/RESEARCHER

Postdoctoral fellow needed for a study of free radicals and cytochrome P450-dependent pathways of pulmonary benzo(a)pyrene metabolism. Experience in reversed-phase HPLC is required. Familiarity with cell isolation techniques and tissue culture methods is desirable. Opportunity for learning molecular biology available. Stipend negotiable. Interested parties should send curriculum vitae to: **Yutaka Kikkawa, M.D., Professor and Chair, Department of Pathology, University of California, Irvine, CCM, Medical Science I, D440, Irvine, CA 92717.** The University of California, Irvine, is an Affirmative Action/Equal Opportunity Employer and specifically invites and encourages applications from women and minorities.

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position available to study the biochemistry and molecular biology of plasmid-mediated arsenical resistance and transport. Individuals with a Ph.D. in enzymology, membrane biochemistry, or molecular biology can send curriculum vitae and the names of three references to: **Dr. Barry P. Rosen, Chairman, Department of Biochemistry, Wayne State University School of Medicine, Scott Hall of Basic Medical Sciences, 540 East Canfield, Detroit, MI 48201.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL RESEARCH ASSOCIATE IN GENE EXPRESSION

The named position is available immediately to study muscle gene expression in *Drosophila*. We are studying cis- and trans-regulation of transcription and splicing of tropomyosin and other contractile protein genes in vitro and in transgenic flies. Applicants must have a Ph.D. and experience in recombinant DNA methods is desirable. Starting salary is competitive. Send curriculum vitae and names of three references to: **Dr. Robert V. Storti, Department of Biochemistry (MC/536), University of Illinois College of Medicine, 1853 West Polk Street, Chicago, IL 60612.** Affirmative Action/Equal Opportunity Employer.

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## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE

Position available immediately to join a group characterizing developmental markers for transformation and regression of congenital melanoma in inbred swine. Experience with basic molecular techniques in immunogenetics essential. Send curriculum vitae and names of three references to: **Craig W. Beattie, Ph.D., Division of Surgical Oncology, University of Illinois, 840 South Wood Street (m/c 820), Chicago, IL 60612.**

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

### COLUMBIA UNIVERSITY POSTDOCTORAL RESEARCH ASSOCIATE

A position is available to study the structure and function of HIV-1 genome. Emphasis on the mechanism of action and genetic determinants of low-cytopathic HIV-1 isolate and its effects on cellular gene expression and cell functions. Candidates should have a Ph.D. or equivalent and a strong background in virology and molecular biology. Applicants should submit curriculum vitae with a list of publications, a statement of research interests, and names of three references to: **Dr. D. J. Volsky, Molecular Virology Laboratory, College of Physicians and Surgeons, St. Luke's/Roosevelt Hospital Center, 432 West 58th Street, New York, NY 10019.**

An Equal Opportunity/Affirmative Action Employer.

The Laboratory for Nitrogen Fixation Research invites applications for a **RESEARCH ASSOCIATE** to investigate the molecular properties of ammonia monooxygenase. Experience in microbiology and synthesis of radioisotopically labeled compounds is also required. The position requires some teaching at the graduate level. Salary will be commensurate with experience. Application deadline: 5 October 1990. Send application including curriculum vitae, list of publications, and names of three references to: **Daniel J. Arp, Department of Botany and Plant Pathology, Cordley Hall 2082, Oregon State University, Corvallis, OR 97331-2902.** Oregon State University is an Affirmative Action/Equal Opportunity Employer and has a policy of being responsive to dual-career couples.

### RESEARCH ASSOCIATE SPECTROSCOPIST

Conduct advanced research of muscle energy metabolism and function using nuclear magnetic resonance spectroscopy and physiological recording techniques on human subjects and parallel studies on animal models. Ph.D. in physiology. Two-plus years of postdoctoral research in magnetic resonance spectroscopy applications in muscle research. Experience must include research in the biology of muscle contraction, including physiology, biochemistry, neurophysiology and electrophysiology, muscle disease, fatigue, and nuclear magnetic resonance spectroscopy; also requires experience investigating mechanical/electrical properties of animal and human muscle tissue in vitro and in vivo, and using phosphorous nuclear magnetic resonance spectroscopy, physiological recording techniques, isometric and isotonic recording techniques, and computerized data analysis methods. Salary: \$28,000 per year; 40 hours per week. Place of employment and interview: San Francisco, California. If offered employment, must show legal right to work. Clip ad and send with résumé to: **Job No. BLW18036, P.O. Box 9560, Sacramento, CA 95823-0560** not later than 29 September 1990.

### APPLICATIONS SCIENTIST/ENGINEER

Leading manufacturer/distributor of electronic instruments and computer-based systems for research in neurosciences and cell biology seeks friendly, outgoing, "live wire" to assist customers with the use of its products. Candidates should have a minimum of a bachelor's degree (advanced degree helpful), electronics and software knowledge, excellent command of English (spoken and written), and a minimum of 3 years of experience: technical product selling, research laboratory, or engineering. Excellent opportunity with a growing 30-year-old company. Send cover letter, résumé, and salary history to:

**Medical Systems Corporation  
One Plaza Road  
Greenvale, NY 11548**

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

*This amends the previous announcement for this position by extending the closing date to October 1, 1990. Applicants who applied under the previous announcement need not reapply.*

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

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

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

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

Additional information about the position and qualifications requirements may be obtained by contacting Ms. Lynn E. Brooks-Smith, (301) 443-5030. An SF 171 (Application for Federal Employment) accompanied by a current curriculum vitae and bibliography should be submitted to Ms. Brooks-Smith at the Division of Personnel Management, ADAMHA, Room 15C-26, 5600 Fishers Lane, Rockville, Maryland 20857. Complete application material (including SF 171) **must be postmarked** by the closing date of October 1, 1990. **Resumes are not acceptable for entrance into the Senior Executive Service.**

Applications from women and minority group members are solicited.  
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AAAS is seeking a bench scientist—one who is up-to-date on the hottest life science developments—who would like to put on scientific meetings. This could be a part-time endeavor or it could be the beginning of a new career. Required in addition to familiarity with breaking developments in life science are extraordinary people skills, a talent at organization, facility at developing business plans, and entrepreneurial drive. If you feel you might qualify, please mail a copy of your resume along with a cover letter explaining your qualifications for the job and a list of 5 topics for outstanding scientific colloquia.

Reply to:

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**1333 H Street N.W., Suite 854**  
**Washington, DC 20005**

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- **APPLICATION INFORMATION:** Lady Davis Graduate and Post-Doctoral Fellows are selected on the basis of demonstrated excellence in their studies and promise of distinction in their chosen fields of specialization.
- Graduate applicants may apply during their senior undergraduate year or after they have undertaken study in a graduate school. Post-doctoral applicants to the Hebrew University may apply not later than 3 years after completion of their doctoral dissertation.
- The Fellowships are tenable for one academic year and may be extended for another year. The grant covers travel, tuition fees and reasonable living expenses.
- **VISITING PROFESSORSHIPS** are intended for candidates with the rank of Full or Associate Professor at their own institution. They are tenable for one semester to a full academic year. The grant includes a professorial salary and travel.
- **Deadline:** November 30, 1990.  
Requests from applicants (including Israelis) indicating category of Fellowship should be sent to P.O. Box 1255, Jerusalem 91904, ISRAEL. Tel/Fax 972-2-663848.

## POSITIONS OPEN

**RESEARCH ASSOCIATES** (B.S., M.S., or Ph.D.) with at least 2 years of laboratory experience in sterile mammalian cell culture techniques. Will be part of a team involved in mammalian cell isolation and tissue culture in preclinical and clinical islet cellular transplant trials. Send résumés to: **CEO, Cell Biotech, Inc., 9911 West Pico Boulevard, Suite 200, Los Angeles, CA 90035** or FAX: 213-557-8429.

### RESEARCH ASSOCIATE DEPARTMENT OF PHYSIOLOGY FACULTY OF MEDICINE

Effective date: 1 January 1991.

Salary: \$24,000 to \$36,000 per annum.

One position will be available 1 January 1991 for an individual to actively participate in research and to supervise the scientific program of a team consisting of over 40 members. A Ph.D. in biomedical sciences is required, and supervisory/administrative experience is desirable. Four major areas of investigation include: comparative vertebrate physiology, cellular calcium physiology, hypertension, and herbal medicine. Expertise in all areas is preferred.

Please send curriculum vitae and two letters of reference before 31 October 1990 to: **Dr. Peter K. T. Pang, Professor and Chairman, Department of Physiology, University of Alberta, Edmonton, Alberta T6G 2H7, Canada.**

*The University of Alberta is committed to the principle of Equity in Employment. The university encourages applications from aboriginal persons, disabled persons, members of visible minorities, and women. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

**RESEARCH ASSOCIATE.** To perform advanced residue analysis of agricultural products, including method development using chromatography of spectrophotometers, gas chromatography, high-performance liquid chromatography, thin-layer chromatography, electroanalytical technique, and infrared and mass spectrometry. Lead project teams of one to five analysts and train new analysts on laboratory technique and instrumentation. Master of science in analytical chemistry. Three years of academic research study using electrochemical methods including amperometry, cyclic voltammetry and potentiometry, Fourier transform infrared spectrophotometry, mass spectrometry, and computer applications of word processing and spreadsheet programs. Two years of teaching experience of laboratory techniques and theory of instrumentation. Three years of experience in residue analysis of agricultural products using GC, LC, TLC, spectrophotometry, flame photometry, and wet chemistry methods. No less than 3.50 out of 4.0 graduate grade point average in chemistry; \$13.90 per hour, 40 hours per week; overtime as needed paid at same rate. Send résumé to: **Job Service, 206 North Broom, Box 7163, Madison, WI 53707. Employer-paid ad.**

**RESEARCH SCIENTIST.** Require Ph.D. in applied mathematics/engineering. Job duties require research background in ocean hydrodynamics and wave scattering, mathematical modeling, signal processing, data analysis, and computer simulation. Annual salary: \$40,000. Job site and interviews in Pasadena, California. Send this ad and your résumé or letter of qualification to: **Job #CP17723, P.O. Box 9560, Sacramento, CA 95823-0560** no later than 28 September 1990.

**RESEARCH SCIENTIST.** Madison, Wisconsin, pharmaceutical firm seeks a motivated and articulate scientist to expand its R&D program in the area of thrombosis, hemostasis, and thrombolysis. Ph.D. with 3 to 5 years of experience or equivalent required. You must have a thorough knowledge of coagulation biochemistry and protein extraction, characterization, and assay techniques. Aseptic processing and GMP experience in the pharmaceutical industry a plus. Submit résumé with salary history/requirements to: **Ms. R. Quinn, GenTrac, Inc., 2228 Evergreen Road, Middleton, WI 53562.**

**ASSOCIATE RESEARCH SCIENTIST.** Position available to study biochemical basis for antiviral activity of compounds developed in our laboratory. Experience in enzymology, nucleic acid biochemistry, virology, and cell culture is desirable. Salary negotiable. Send résumé and three letters of reference to: **Dr. W. Prusoff, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### SENIOR RESEARCH ASSOCIATE

You will provide statistical analysis of data from our clinical centers. In addition, you'll generate timely reports for FDA/NIH submissions as well as handle graphical presentations for medical and scientific journals.

To qualify, you must have an M.S. in biostatistics plus a B.S. in biology or chemistry, or equivalent. Three years of data analysis experience in the medical device and drug industries is also required. You must additionally have knowledge of PC software. Familiarity with cardiovascular and cardiac medical research preferred.

At Novacor, you will find the salaries attractive and the benefits employee-oriented. Our superb waterfront location in the Oakland Airport Business Park is just part of our outstanding environment. Send résumé to: **Marian Sticht, Director, Personnel, 7799 Pardee Lane, Oakland, CA 94621. Telephone: 415-568-8338. Equal Opportunity Employer.**

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### THE HOSPITAL FOR SICK CHILDREN DEPARTMENT OF GENETICS AND RESEARCH INSTITUTE SCIENTIST MOLECULAR/DEVELOPMENTAL BIOLOGY

The Department of Genetics and the Research Institute at The Hospital for Sick Children seek a scientist with a background in mammalian molecular and developmental biology. The successful candidate will be expected to carry out an independent research program. The Research Institute at The Hospital for Sick Children is one of the largest institutes in the world devoted to basic and clinical research in areas related to child development and disease. The Department of Genetics, a component of the Department of Molecular and Medical Genetics at the University of Toronto, has strong expertise in molecular human genetics and is seeking to expand programs in developmental biology. The university department provides a stimulating and interactive environment with research programs in areas including gene regulation (prokaryotic and eukaryotic), developmental biology, cancer, genetic disease, and fundamental genetic mechanisms. A cross appointment at the level of **ASSISTANT PROFESSOR** in the University of Toronto department will also be available.

It is expected that this position will start on 1 July 1991. Please write and send three letters of reference to: **Dr. M. Buchwald, Department of Genetics, Hospital for Sick Children, 555 University Avenue, Toronto, Ontario M5G 1X8, Canada. FAX: 416-591-4931.**

## COURSES AND TRAINING

### GRADUATE STUDIES IN PHYSIOLOGY TULANE UNIVERSITY SCHOOL OF MEDICINE

Excellent fellowships (\$10,000 to \$15,000) and tuition scholarships are available for either spring or fall of 1991. Research facilities are available for organismal, tissue, cell, and molecular approaches to problems in renal hemodynamics, microcirculation, hypertension, calcium regulation, hormone receptors and signal transduction, neurophysiology (cerebral metabolism, electrophysiology, and patch clamp), ion channels (muscle and nerve), and immunophysiology. Contact: **Dr. Marian R. Walters, Director of Graduate Studies, Department of Physiology, Tulane University School of Medicine, New Orleans, LA 70112.**

## MEETINGS

### REGISTRANTS AND EXHIBITORS BIOPHYSICAL SOCIETY MEETING 24-28 FEBRUARY 1991 MOSCOW CENTER, SAN FRANCISCO

Papers will be presented on: biophysical chemistry and molecular biology; structural biophysics; lipid bilayers and other model studies of membranes; neurobiophysics and electrical excitability; biophysics of motility; bioenergetics and photobiology; instrumentation, analysis, and applications; nuclear magnetic resonance; fluorescence spectroscopy; and computational methods in biophysics.

For details, contact: **Biophysical Society, 9650 Rockville Pike, Bethesda, MD 20814. Telephone: 301-530-7114; FAX: 301-530-7133.**

## SITUATIONS WANTED

**IMMUNOASSAYS.** Ph.D. Developed numerous immunoassays. Years of experience, industry and universities. Patents, languages, computer programming. Seeks challenging position in R&D. **Box 102, SCIENCE.**

**Ph.D.** Experience in molecular biology, molecular cytogenetics, cytogenetics. Wants research position in Canada/Europe. Academic or industry. **Box 100, SCIENCE.**

**SCIENTIFIC ILLUSTRATOR.** B.S. in biology and B.S. in studio arts; 3 years of experience in scientific/medical illustration. Seeking full-time position. **Lisa J. Allen, 707 7th Street, S.E., Washington, DC 20003. Telephone: 202-544-2669.**

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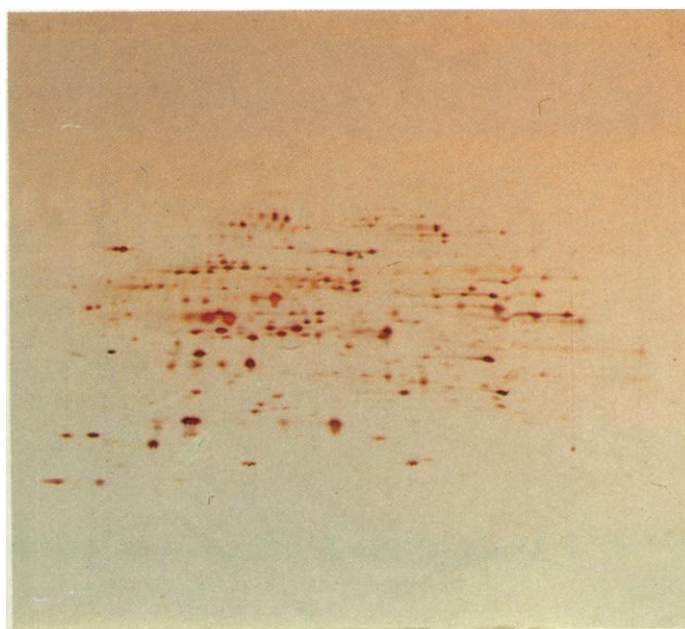


Fig. 1. 2-D electrophoresis separation of proteins from *Escherichia Coli*.

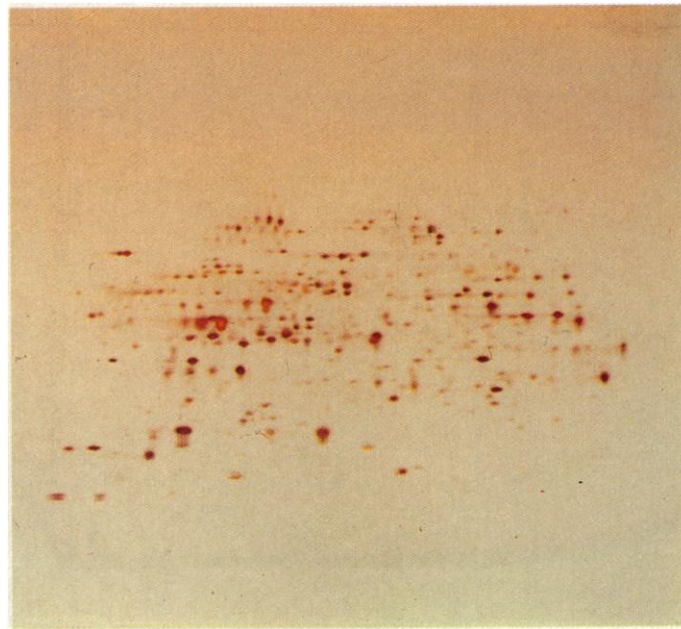


Fig. 2. Same as fig. 1.

# Which run was done on a sunny day?

Both. But since the method is so reproducible, it doesn't really matter who did them or when they were done. They were produced by a new procedure that enables 2-D electrophoresis to be performed reproducibly and without any special expertise.

To eliminate one of the major sources of problems with 2-D, we developed Immobiline® DryStrip pre-cast gel for high resolution isoelectric focusing for the first dimension. With DryStrip™ gels, samples are easy to apply, pH gradients are extremely stable and overlay reproducibility is ensured. You don't need to worry about breaking, shrinking or swelling tube gels.

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highly reproducible SDS-PAGE electrophoresis. The gel is convenient, time-saving and easy to handle. Because it's thin it gives rapid run times and is easy to blot. It's also perfect for scanning and storage.



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Japan Tel 03-492-9481 Norway Tel (02) 54 90 95 People's Republic of China Tel 852 814 84 21 Tel 256 33 88 Republic of Korea Tel 02 5110801 Spain Tel 34 (9)3-675 44 11 Sweden Tel 08 799 80 00  
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- Recovery of active proteins
- Corrosion resistant instrumentation
- Choice of separation modes

**HIV regulatory protein**

The protein, a regulatory protein of the human immunodeficiency virus, contains 84 amino acids, including a Cys-rich cluster and a highly basic region. The fusion protein CII-tat was expressed in *E. coli* and isolated from the soluble cell lysate by cation exchange chromatography at 4°C.

Iginate was loaded through the pump into the column. The acidic proteins, the majority of the material, were washed through the column followed by gradient elution of the strongly basic CII-tat. The collected fraction was further purified by reverse phase chromatography. Sequencing of the first 20 N-terminal amino acids confirmed the identity of the product.

**Fast micropurification**

Non-porous resin (NPR) column materials offer the possibility of extremely fast and efficient separation of protein mixtures. The purification of cytochrome c from *R. viridis* required only sonication, centrifugation, and ion exchange chromatography of the crude supernatant.

Previously the cytochrome had been prepared using low pressure ion exchange chromatography followed by chromatofocusing, requiring more than a full day. The NPR column allowed isolation of 0.5 µg of pure protein in less than 30 minutes.

**Enzyme purification**

Aspartate aminotransferase (AspAT) is a dimeric protein, molecular weight 87,000 and pI 4.6, with pyridoxal phosphate as coenzyme. The enzyme was purified from strain of *E. coli* containing a multi-copy plasmid with the gene for AspAT, which results in 100% overexpression of the enzyme.

Cells were sonicated, centrifuged, and the insoluble cell debris removed by centrifugation. The supernatant was applied to a strong anion exchange column. Absorption by the coenzyme at 360 nm is used for identifying AspAT during this single chromatography purification step. Recovered active protein 95% pure by the  $A_{360}/A_{280}$  ratio.

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