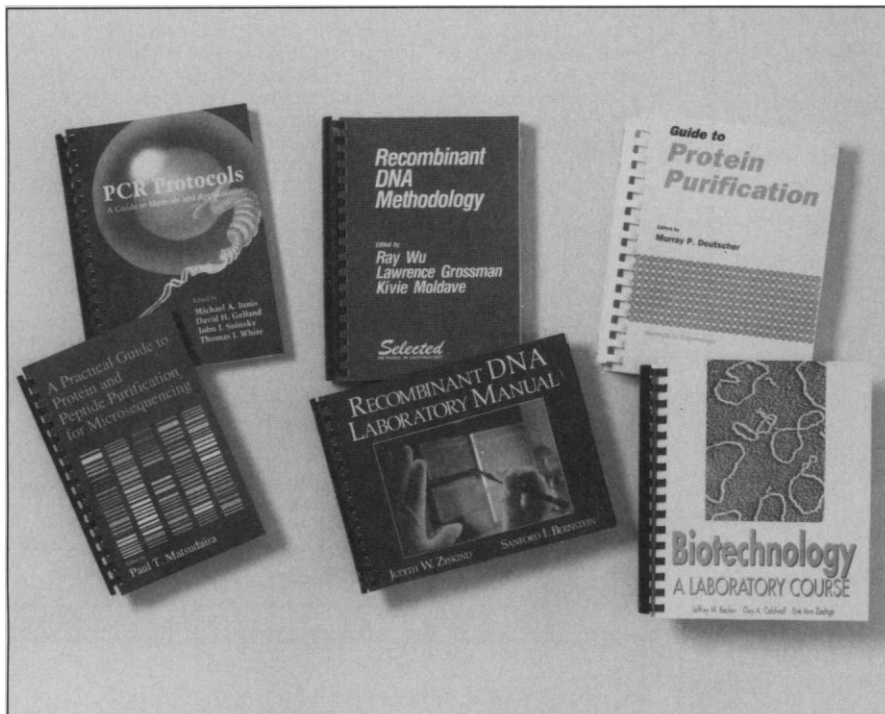


Keep up with the latest bench-top techniques and applications.



PCR Protocols

A Guide to Methods and Applications

edited by

Michael A. Innis, David H. Gelfand, John J. Sninsky, and Thomas J. White

The correct procedures you need for *frustration-free* PCR methods and applications are contained in this complete, step-by-step, inexpensive manual.

Comb Bound: \$39.95/ISBN: 0-12-372181-4
Casebound: \$69.50/ISBN: 0-12-372180-6
December 1989, 482 pages

A Practical Guide to Protein and Peptide Purification for Microsequencing

edited by

Paul T. Matsudaira

Do you need some practical answers to the question, "How can I obtain N-terminal sequence?" This new handbook will provide them for you.

Comb Bound: \$24.95/ISBN: 0-12-480280-X
November 1989, 131 pages

Recombinant DNA Methodology

edited by

Ray Wu, Lawrence Grossman, and Kivie Moldave

A Volume in the SELECTED METHODS IN ENZYMOLOGY Series

This volume gives you essential and widely used procedures in one source, at an affordable price and will be an invaluable aid to the graduate student and the researcher.

Comb Bound: \$49.95/ISBN: 0-12-765560-3
1989, 760 pages

Recombinant DNA Laboratory Manual

Judith W. Zyskind and Sanford I. Bernstein

Affordable and easy-to-follow, this text is specifically designed to lead students or technicians from the basic skills of growing and maintaining bacterial colonies through plasmid DNA isolation, cloning, DNA sequencing, and hybrid detection.

Comb Bound: \$24.95/ISBN: 0-12-784400-7
1989, 195 pages

Guide to Protein Purification

edited by

Murray P. Deutscher

Volume 182 of METHODS IN ENZYMOLOGY

Guide to Protein Purification is designed to serve the needs of the student, experienced researcher, and newcomer to the field. This comprehensive manual will give you all the up-to-date procedures necessary for purifying, characterizing, and handling proteins and enzymes.

Comb Bound: \$49.95/ISBN: 0-12-213585-7
Casebound: \$95.00/ISBN: 0-12-182083-1
February 1990, c. 818 pages

Biotechnology

A Laboratory Course

Jeffrey M. Becker, Guy A. Caldwell, and Eve Ann Zachgo

Biotechnology: A Laboratory Course integrates basic molecular biology and protein biochemistry through a series of experiments with a common theme. The book is designed to provide students with experience in and an understanding of selected methods, techniques, and instrumentation in modern biotechnology.

Comb Bound: \$29.95/ISBN: 0-12-084560-1
February 1990, c. 215 pages

Order from your local bookseller
or directly from



ACADEMIC PRESS

Harcourt Brace Jovanovich, Publishers
Book Marketing Department #23010
1250 Sixth Avenue, San Diego, CA 92101

CALL TOLL FREE

1-800-321-5068

FAX: (314) 528-5001

Quote this reference number for *free postage and handling* on your prepaid order ➤ **23010**

Prices subject to change without notice. ©1990 by Academic Press, Inc.
All Rights Reserved. MC/KR — 23010.

Naturally Occurring Radionuclides In Agricultural Products

— a symposium —

May 29 - June 1 • Orlando, Florida

Keynote speakers and panelists will address the latest information concerning naturally occurring radionuclides — both uranium and thorium decay series — and their impact on the safety of agricultural products. Topics will include:

- Natural sources of radionuclides in geologic strata and soils
- Effects of man's activities, such as mineral extraction and processing on naturally occurring radionuclides
- Factors affecting uptake and accumulation in plants
- Human and animal food chains
- Ingestion, transport and excretion processes
- Dose assessment
- Health risk evaluation and management

— Corporate sponsors and vendor inquiries welcome —



For registration, accommodations, and vendor information contact:

**IFAS Office of
Conferences and Institutes**
University of Florida
IFAS 0551
Gainesville, FL 32611
904/392-5930

*Announcing a New Section in
the Acclaimed Pergamon Journal*

■ LIFE SCIENCES ■

The International Refereed Journal
for the Rapid Review and Publication
of Communications in the Life Sciences. Now Featuring:

■ PHARMACOLOGY LETTERS ■

offering

■ Shorter papers (4 to 6 pages) to accommodate even faster review and faster publication

■ Fast-track reports of preliminary research data

Pharmacology Letters provides the rapid review and publication of original research involving rigorous experimental studies of immediate interest on any aspect of pharmacology. Clinical studies will be included that have a direct bearing on the mechanism of drug action. Also featured are commentaries, new methodologies and pharmacologic theory (either conceptual or mathematical). Articles are limited to 4-6 pp. with a maximum figure-+ -table combination of 4; no more than 20 references are to be included.

Pharmacology Letters Co-Editors: **Robert B. Raffa, PhD**, Janssen Research Foundation, Spring House, PA; **Frank Porreca, PhD**, Department of Pharmacology, College of Medicine, University of Arizona Health Sciences Center, Tucson, AZ

Subscription Information

ISSN: 0024-3205	Volumes 46 & 47, 1990	52 issues per annum
One-Year Institutional Rate (1990)		US\$1385.00
Two-Year Institutional Rate (1990/91)		US\$2631.50
Individual Rate (1990)*		US\$ 150.00

*Available only to those whose libraries subscribe

Free Sample Copy Available Upon Request

Prices quoted are subject to change without notice. US Dollar prices quoted are valid for all customers in North, Central and South America. Prices include postage and insurance.



Pergamon Press

Member of Maxwell Macmillan Pergamon Publishing Corporation
US: Maxwell House, Fairview Park, Elmsford, NY 10523
UK: Headington Hill Hall, Oxford, OX3 0BW, UK

Circle No. 18 on Readers' Service Card

CONGRESSIONAL SCIENTIST FELLOWSHIP PROGRAM

1990-1991

THE AMERICAN PHYSICAL SOCIETY

Seventeenth Annual Competition

PURPOSE: Fellows will spend one year as a member of the staff of a Congressman or of a Congressional committee, thereby contributing an assessment of the technical aspects of public policy issues to the political process.

QUALITIES SOUGHT IN APPLICANTS: Prospective Fellows are expected to have demonstrated competence in some area of physics, have a background in science and technology, and have a strong interest and some experience in applying scientific knowledge toward the solution of social problems. Candidates are expected to be articulate and literate, willing to work on a variety of problems with a variety of people and to have some experience in or be willing to learn the governmental process.

TERM OF APPOINTMENT: Fellows serve for one year, beginning 1 September 1990. APS Fellows will join the Fellows selected by other scientific and engineering societies in Washington in September for a two-week orientation program organized by the American Association for the Advancement of Science. During the orientation, Fellows meet Senators, Representatives, and Congressional committee staff members, visit a number of government agencies, and receive detailed information about opportunities in Congressional offices. The choice of an assignment is unrestricted and reserved to the Fellows.

STIPEND ALLOWANCES: The maximum fellowship stipend is \$40,000. An appropriate allowance is made for vouchers relocation expenses and for vouchers travel expenses incurred during the fellowship year.

APPLICATION PROCEDURE: Applicants should submit a letter of intent and a resume and arrange to have three letters of reference sent directly to the program administrator. Candidates should include in the letter of intent a statement which tells why they have applied to the program and a brief description of their public service experience. Letters of reference should be solicited from people who can discuss not only the candidate's competence as a physicist but also the candidate's education and experience which would make the candidate particularly qualified to serve in a Congressional office.

Completed applications, including all letters of reference, must be received by 16 February 1990.

FOR FURTHER INFORMATION: Please contact **Dr. Mary L. Shoaf, Administrator, Congressional Scientist Fellowship Program, The American Physical Society, 335 East 45 Street, New York, New York 10017, (215) 793-1629 or (212) 682-7341.**

SPECIAL AAAS PRE-MEETING WORKSHOP

Environmental Risk Reporting: The Science and the Coverage

Thursday, February 15, 1990

8:30 a.m. to 5:30 p.m.

Hilton Hotel, Elmwood Room
New Orleans, LA

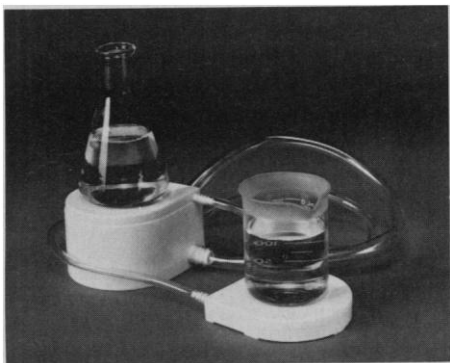
This workshop is specially designed to assist journalists and others in dealing with environmental risk issues. It will explore such topics as understanding chemical risks for communities, comprehending environmental risk statistics and finding hidden environmental stories. Case studies also will be presented. Speakers include leading experts in risk communication and environmental coverage. Admission is free and 10 travel fellowships for journalists are available. For further information about the workshop or fellowships contact Carol Rogers, Office of Communications, American Association for the Advancement of Science, 1333 H St. NW, Washington, D.C. 20005, 202-326-6440.

Partial funding is being provided by the Environmental Protection Agency, ILSI Risk Science Institute, the International Food Information Council and the Council for the Advancement of Science Writing.

Products & Materials

Magnetic Stirrer for Hazardous Areas

The Scienceware Water or Air Turbine Magnetic Stirrer is nonelectric and explosion-proof for safe magnetic stirring of liquids in hazardous areas. It can be placed



directly on a table or workbench and connected to an air line or water pump. It operates on pressure as little as 3 psi. Bel-Art Products. Circle 478.

Factory-Formatted Disks for the Macintosh

Verbatim Corp. has introduced two products factory-formatted for the Macintosh: Datalife double-density microdisks and Datalife high-density microdisks. The products join a line that includes formatted disks for IBM PS/2 and compatible computers. Verbatim Corp. Circle 485.

Corrosion Database

The National Association of Corrosion Engineers and the National Institute of Standards and Technology have released COR•DATA PLUS, a database for use on personal computers by corrosion engineers and scientists. The database allows users to search according to parameters such as material (by class, subclass, or common name), environment (including corrosive mixtures),

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines 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.

exposure conditions (including pH, temperature, and concentration), test type, process, and application. The initial release is designed for users to establish their own databases, using a series of menu-driven screens. Minimum system requirements include IBM PC-XT compatible computer, 640K base random access memory plus 1 Mbyte of extended random access memory, hard disk with 9 Mbyte of available storage, MS-DOS 3.0 or higher, and Oracle Database Management System 5.1a or above. National Association of Corrosion Engineers. Circle 483.

HPLC Chemistry for Protein Purification

MRPH Gel NPR is a nonporous, pH-stable, high-performance liquid chromatography (HPLC) chemistry for fast isolation and purification of proteins, peptides, and other large organic molecules. It is a reversed-phase packing material formulated to withstand exposure to crude samples and acidic or basic chemicals that lets the user skip common sample preparation techniques. It can be run in most HPLC solvent or buffer systems, including detergents. Because of its small particle size and moderately hydrophobic nature, the user can analyze virtually any size molecule with high resolution. The Nest Group. Circle 482.

Software for Unit Conversion

S.I. Plus is a software program for conversion of units of measure. With a few keystrokes on an IBM PC or compatible, scientists and engineers can convert units from one system to another (such as meters to feet, pascals to pounds per square inch, curies to rutherford). More than 70,000 different conversions can be performed in 80 classes of units. A free demonstration diskette is available. GEOCOMP Corp. Circle 481.

Time-Saving Crosslinker

The Hoefer Ultraviolet (UV) Crosslinker (UVC 1000) saves hours of time when crosslinking DNA and RNA. The UV Crosslinker can be used to crosslink DNA or RNA to nitrocellulose, nylon, or nylon-reinforced nitrocellulose membranes for multiple probing of Southern (DNA), Northern (RNA), dot, or slot blots. It is equipped with a monitoring device that can be set to register either energy in micro-

joules or time in minutes. When set to measure energy, the UV Crosslinker automatically deactivates the UV light after the appropriate energy level has been reached. It can accommodate a wide variety of membrane sizes, including blots made from DNA sequencing gels. Hoefer Scientific Instruments. Circle 480.

Measuring Through Microscope or Macro Lenses

New video-based micro scalers enable the user to make precise measurements of lengths and distances through a microscope or macro lens. The image viewed by a video camera is displayed on the video monitor. Vertical and horizontal lines are superim-



posed on the images. The lines are moved to the desired measurement positions by a rotary control or by an optional joystick. For model 100, an illuminated front panel displays a four-digit measurement that can be calibrated by panel controls to correspond to measurements in metric or English units. Models 200 and 300 provide a five-digit display on the front panel and on the monitor. Olympus. Circle 488.

Literature

Chemical Research Supplies Catalog contains 196 pages of capillary columns and accessories, autosampler vials, analytical standards, and valves. Also included are many new products for gas chromatography. Chemical Research Supplies. Circle 495.

MSL Series—Technical Description is a full-color brochure on the enhanced MSL (multipurpose solids and liquids) nuclear magnetic resonance (NMR) spectrometer product line. The MSL is designed to perform the widest possible range of NMR experiments on virtually any nucleus. Bruker Instruments. Circle 508.

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 issue in which ad appears.

CLASSIFICATION: **SCIENCE** publishes line classified ads under the following headings: **Positions Open, Employment Agencies, Fellowships, 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. No cash discount. Prepayment required for all foreign ads. Purchase orders required for all other advertising.

To **ESTIMATE** ad cost, structure ad copy on a 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.)

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 box 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

MARKETPLACE AND DISPLAY PERSONNEL ADVERTISEMENTS

For rates, deadlines, and other 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, nondiscrimination 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

ANATOMY/NEUROMUSCULAR PHYSIOLOGY

The Department of Anatomy at Indiana University School of Medicine (Indianapolis) is seeking applications for a tenure-track faculty position to be filled at any level by 1 July 1990. Candidates should have a minimum of 2 years of postdoctoral experience and have an active research program with emphasis on skeletal muscle fatigue, physiology of the neuromuscular junction, or electromyography. The candidate should be willing to collaborate with an interdisciplinary program in skeletal biology. Teaching experience in gross anatomy or histology required. Submit curriculum vitae and names of three referees to: **Chairman, Search Committee (Skeletal Biology), Department of Anatomy, Indiana University School of Medicine, 635 Barnhill Drive, M.S. 258, Indianapolis, IN 46202-5120.** Please use **Position Number 2206** in correspondence. Application deadline is 1 March 1990. *Affirmative Action/Equal Opportunity Employer, M/F.*

ANIMAL NUTRITION AND HEALTH

The National Research Council (NRC) is seeking a **PROGRAM OFFICER** to support the Committee on Animal Nutrition which has a 50-year history in preparing authoritative reports on nutritional requirements of agriculturally important species. Will organize committee activities and arrange preparation and publication of reports in the animal nutrient requirement series. Also, opportunity exists to establish project on science and policy issues related to animal health and nutrition. Ph.D. or equivalent, experience in animal nutrition, and demonstrated background in other areas of animal science required. Salary commensurate with experience. Please send letter of application, curriculum vitae, and names of three references in confidence to: **NRC/BA (HA 394-JT), 2101 Constitution Avenue, N.W., Washington, DC 20418.** *Equal Opportunity Employer.*

ASSISTANT/ASSOCIATE/FULL COOPERATIVE EXTENSION SPECIALIST AND VEGETABLE CROPPING SYSTEMS HORTICULTURIST. An 11-month, career-track extension/experiment station (70%/30%) position. Appointee will develop and implement an extension and applied research program with integrated approaches to pest, soil, water, and nutrient management to evaluate relevant production practices and develop innovative crop management systems for warm-season vegetables that optimize resource use and minimize adverse environmental impact. Appointee will provide leadership in the extension activities of the department, including statewide program development, and interact with educational organizations, industry groups, state and other governmental agencies, and cooperative extension personnel. Farm adviser training and advising is expected. Appointee will have the opportunity to participate in departmental teaching and in directing undergraduate and graduate research. *Affirmative Action* responsibilities include the development of programs that encourage greater participation of minorities, women, and other underrepresented clientele. A Ph.D. in horticulture, agronomy, crop ecology, or related plant science discipline is required as is experience commensurate with the appointment level. Send curriculum vitae, extension and research interest, representative documentation of extension research and teaching, official transcripts, and names and addresses of at least three references by 31 March 1990 to: **Dr. V. E. Rubatzky, Search Committee Chair, Department of Vegetable Crops, 152 Hunt Hall, University of California, Davis, CA 95616.** Telephone: 916-752-0516. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

DEPARTMENT OF BIOLOGY ASSISTANT PROFESSOR POSITION

The Department of Biology, University of Wisconsin Center System, invites applications for a full-time, tenure-track position at the **ASSISTANT PROFESSOR** level on the Rock County Campus, Janesville, beginning fall 1990. A doctorate is required with strengths in genetics and botany and ability to teach introductory microbiology, botany, and genetics. Salary commensurate with experience. Send curriculum vitae and three letters of reference to: **Dr. Koby Crabtree, Chair, Department of Biology, University of Wisconsin Center-Marathon, 518 South 7th Avenue, Wausau, WI 54401,** by 1 March 1990. *The University of Wisconsin is an Affirmative Action/Equal Opportunity Institution.*

POSITIONS OPEN

ASSISTANT PROFESSORS. Two tenure-track positions open for fall 1990: (i) **ANATOMIST**, to teach human anatomy and physiology plus one or more courses such as comparative anatomy, neurobiology, or biology of human aging; (ii) **EVOLUTIONARY ZOOLOGIST**, to teach a course in evolution plus introductory courses for majors and nonmajors. Successful candidates will be expected to develop a high-quality teaching program, seek funding, and involve undergraduates in research. Preference given to candidates with a strong background in statistics or science and society. Send curriculum vitae, a statement of teaching and research interests, and three letters of recommendation to: **W. Newman, Chair, Department of Biological Sciences, State University of New York (SUNY) at Cortland, Cortland, NY 13045,** by 1 February 1990. *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF MICROBIOLOGY

Applications are invited for a 12-month tenure-track position at the rank of assistant professor in the Department of Pathobiology at the University of Pennsylvania, School of Veterinary Medicine. The appointment will be made in the Laboratory of Microbiology, Division of Pathobiology, starting in July 1990. The successful candidate will be expected to have expertise in and conduct research in the area of the molecular and/or cellular basis of bacterial pathogenesis. Teaching responsibilities involve participation in a team-taught core microbiology course for veterinary students. In addition, the candidate will have the opportunity to participate in a joint graduate education program administered by the combined biomedical faculty of the University of Pennsylvania. Applicants must have a Ph.D., D.V.M., or M.D. degree and should have a demonstrated record of research productivity as well as a strong potential to develop an externally funded research program. Applications will be reviewed as of 1 March 1990 and thereafter until the position is filled. Please send curriculum vitae, a statement of research interests, and the names, addresses, and telephone numbers of three referees to: **Dr. Leonard J. Bello, Chairman, Microbiology Search Committee, Department of Pathobiology, University of Pennsylvania, School of Veterinary Medicine, 3800 Spruce Street, Philadelphia, PA 19104.** *An Equal Opportunity, Affirmative Action Employer.*

ASSISTANT PROFESSOR. Medical technology, tenure track; academic year to begin September 1990. Ph.D. preferred; strong master's candidate considered. MT (ASCP) and/or CLS certification and experience in medical technology education required. Responsibilities include: teaching mycology and parasitology, coordinate course in laboratory management, advise current students and recruit new students into major, actively participate in research and service activities, communicate with and assist adjunct faculty teaching in clinical component of the program in area of clinical microbiology. Send cover letter and résumé (noncitizens must include current visa status) by 15 February 1990 to: **Karol LaCroix, Ph.D., Chairperson, 207 Hewitt Hall, Medical Technology Department, University of New Hampshire (UNH), Durham, NH 03824.** *UNH is an Affirmative Action/Equal Opportunity Employer.*

The Department of Pathology is seeking applications for a tenure-track position, preferably at the rank of **ASSISTANT OR ASSOCIATE PROFESSOR.** We are looking for a person who will develop a high-quality, independent research program applying morphological, biochemical, and molecular approaches to the study of specific disease processes. The position also entails a strong commitment to graduate education in cellular and molecular pathology and shared responsibility for D.V.M. and resident teaching. Successful candidates will have both D.V.M. and Ph.D. degrees (or equivalent degrees). Board certification by the ACVP is desirable but not essential. Applications should include curriculum vitae, description of career goals and future research plans, copies of the candidate's most significant publications, and the names of at least three individuals willing to write letters of recommendation. Application materials should be sent by 15 March 1990 to: **Dr. Donald Schlafer, Chairman, Pathology Search Committee, Room E205, Schurman Hall, College of Veterinary Medicine, Cornell University, Ithaca, NY 14853-6401.**

Cornell University is an Equal Opportunity/Affirmative Action Employer/Educator.

POSITIONS OPEN

ASSISTANT PROFESSOR. Ph.D. or M.D. to participate in a multifaceted research program on heart failure with emphasis on structure and function of cardiac connective tissue. Expertise in both cardiovascular physiology and electron microscopy required. Experience in coronary circulation and myocardial ischemia desirable. No patient care involved. Salary: \$30,000 to \$35,000 per year. Send curriculum vitae and three references to: **Dr. Edmund Sonnenblick, Chief, Cardiology Division, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461.**

ASSISTANT/ASSOCIATE PROFESSOR OF BIOLOGY

Applications are invited for a tenure-track position at the level of **ASSISTANT/ASSOCIATE PROFESSOR** in the Department of Biology at Carthage College to begin in the fall 1990. Teaching responsibilities will include a combination of physiology/anatomy, general biology, and supervision of student research projects. The successful applicant will have a strong commitment to teaching and involvement of students in research projects. Applicants should send curriculum vitae and transcripts, and have three letters of recommendation sent by 1 February 1990, to:

Dr. Thomas A. Brawner
Department of Biology
Carthage College
Kenosha, WI 53141

ASSISTANT PROFESSOR OF BIOLOGY

Tenure-track position, to teach introductory physiology and develop a viable research program in neurochemistry or molecular neurobiology. Ph.D. required, post-doctoral experience preferred. Research specialty must be compatible with existing Ph.D. programs in molecular biology and neurobiology. Appointment effective September 1990 or January 1991. Send application, curriculum vitae, transcripts, and names, addresses, and telephone numbers of at least three references to: **Dr. Fritz Schwalm, Department of Biology, Texas Woman's University, P.O. Box 23971, Denton, TX 76204.** Screening of applications will begin 15 February 1990 and continue until position is filled.

Texas Woman's University is a state-supported university and is an Equal Opportunity Employer.

NEW CANCER RESEARCH GROUP IN MOLECULAR MECHANISMS OF GROWTH CONTROL UNIVERSITY OF ALBERTA, EDMONTON

Applications are invited for four faculty positions at the **ASSISTANT/ASSOCIATE PROFESSOR** level in the Faculty of Medicine to join a new group devoted to the study of eukaryotic growth control. Applicants should have a strong background in eukaryotic molecular biology and will be expected to develop a research program that will complement and contribute to the overall research efforts of the group. The research focus of the new group will be a multidisciplinary approach to eukaryotic cell replication: polypeptide growth factors and their receptors, intracellular signaling mechanisms, transcriptional regulation during mitogenesis, and oncogenes are of particular interest. The new group will be housed in the McEachern Cancer Research facility, which includes over 10,000 square feet of developed research space. Appointees will be eligible for tenure and the positions will be initially funded by a Terry Fox Team Development award from the National Cancer Institute of Canada. Applicants should forward curriculum vitae, list of publications, and the names of three references before 1 March 1990 to: **Dr. Grant McFadden, Chairman, Search and Selection Committee, Department of Biochemistry, University of Alberta, Edmonton, Alberta, Canada, T6G 2H7.**

The University of Alberta is committed to the principle of Equity in Employment.

VISITING ASSISTANT PROFESSOR. The Department of Biomedical Engineering at The University of Akron has an immediate opening for a visiting assistant professor in the fields of image and neurophysiological signal processing. Ability to both teach and work on a research team in the above fields and perform administrative assignments are required. The deadline for receipt of applications is 5 February 1990. Send résumé to: **Dr. K. Mudry, Head, Department of Biomedical Engineering, The University of Akron, Akron, OH 44325. FAX: 216-374-8834.** *The University of Akron is an Equal Education and Employment Institution.*

Schering

Senior Research Scientists

*If pioneering drug development
through biotechnology
is what you have in mind,
come to Schering-Plough Research.*

Internationally renowned as a top research-intensive force in the healthcare industry, Schering-Plough is expanding its Biotechnology department to maintain its lead. If you have the technical expertise and the communication abilities necessary to direct the research of others, then we invite you to explore one of these highly visible career challenges.

We have recently created these positions in the physical biochemistry group to define the three-dimensional structure of various cytokines, lymphokines and their receptors and for using that structural information to design novel therapeutic agents. All positions require a PhD in Biochemistry coupled with 0-3 years of relevant post-doctoral training.

Synthetic Peptide Biochemist

To qualify, you must have hands-on experience with automated solid phase peptide synthesis and HPLC isolation/characterization techniques. In addition, knowledge of molecular modeling methods and physical techniques such as circular dichroism, mass spectrometry, or NMR is desirable.

Biochemist

The successful candidate will have experience with HPLC and a working knowledge of automated protein sequencing and amino acid analysis. Candidates with limited experience and a desire to master these technologies are encouraged to apply. A background in the generation and isolation of peptide fragments would be a definite plus.

Biochemist

This position requires a background working with mass spectrometry techniques for the structural analysis of oligosaccharides on glycoproteins and glycopeptides. A background in the use of glycosidases and NMR methods to define oligosaccharide structures would prove useful.

As a diversified Fortune 200 leader, we are able to offer an excellent salary/benefits package and an environment conducive to professional growth. For prompt consideration, please send your resume, indicating position of interest to: **Mr. R. Blackburn, Schering-Plough Research, 60 Orange Street, Bloomfield, NJ 07003.** We are an equal opportunity employer.

What you have in mind, we put in action.



Schering-Plough

MOLECULAR BIOLOGIST PROGRAM DIRECTOR

The City College of New York is seeking applicants or nominations for the position of Professor of Biology and Director of its Center for the Study of the Cellular and Molecular Basis of Development funded by the NIH through its Research Centers in Minority Institutions (RCMI) Program. Our program is a growing research enterprise in the areas of biomolecular structure and function, gene expression and regulation, cellular and organismic function and neurobiology. Twenty five faculty members conduct funded research in these areas and train students for the doctorate in biology, biochemistry, chemistry and physics.

The candidate should be an established scientist with a distinguished record of research, preferably in regulation of gene expression. The candidate is also expected to have a broad view of the field of molecular biology and to interact with researchers in related interdisciplinary areas.

Nine months salary range is from \$55,179 to \$66,310. Candidates with exceptional qualifications will be considered for appointment as Distinguished Professor. Applications will be examined starting 1/22/90. Letters of application or nomination should be addressed to Professor Linda Mantel, Chair of the Search Committee, Department of Biology,

CITY COLLEGE OF CUNY

138th Street
and Convent Avenue
New York, NY 10031
Applications from minorities and
women are encouraged.
An AA/EEO Employer M/F



FACULTY POSITION DEPARTMENT OF PHYSICAL THERAPY FACULTY OF REHABILITATION MEDICINE UNIVERSITY OF ALBERTA

Applications are invited for a full-time appointment in the area of orthopedics/manual therapy or geriatrics in the Department of Physical Therapy, University of Alberta. The University of Alberta offers BSc and MSc degrees in Physical Therapy. Qualified candidates must be physical therapists who possess at least a masters degree and have advanced clinical training and experience in the area of Orthopedics/Manual Therapy or Geriatrics.

Salary will be commensurate with qualifications and experience. (Assistant Professor: \$34,970 - 51,434).

Responsibilities include undergraduate and graduate teaching, clinical practice or research, and administrative duties such as curriculum development for a clinical masters program. A strong clinical background is a requirement. For the orthopedic/manual therapy position, preference will be given to candidates who have passed the CPA Orthopedic Division's A and/or B Examinations.

Qualified applicants should send a curriculum vitae, clinical experience record and state their teaching interests in addition to orthopedics/manual therapy or geriatrics together with the names of three referees to:

Dr. Martha C. Piper, Dean
Faculty of Rehabilitation Medicine
3103 UAH Education and Development Centre
University of Alberta
Edmonton, Alberta
T6G 2G4

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

The deadline for receipt of applications is May 30, 1990.

POSITIONS OPEN

AQUATIC ECOLOGIST, ASSISTANT PROFESSOR to teach courses in aquatic biology and applied ecology for majors, general biology and ecological principles for nonmajors. Tenure-track position to begin September 1990. Ph.D. required. Send a letter of application and curriculum vitae and arrange for three letters of recommendation to: **Dean Arne Selbyg, Biology Search Committee, Augustana College, Rock Island, IL 61201** by 1 March 1990. *Women and minorities encouraged to apply.*

THE CLARE BOOTHE LUCE FACULTY CHAIR IN THE SCIENCES AT CREIGHTON UNIVERSITY

In keeping with Creighton University's Equal Opportunity/Affirmative Action plan, the university invites applications from outstanding women candidates for appointment to the Clare Boothe Luce Faculty Chair in the Sciences, possibly in the Department of Biology.

Candidates are expected to be excellent scholar/teachers who will serve as mentors and role models for undergraduate women interested in careers in scientific research. Candidates are expected to be interdisciplinary in approach, and committed to a productive research program. The successful candidate will be expected to teach in both the undergraduate and graduate program in her area of specialization, and to develop an active research program involving undergraduate and graduate students. This tenure-track appointment, at the **ASSISTANT PROFESSOR** level, is renewable annually up to a total of 5 years. Compensation is commensurate with the capabilities of an outstanding scholar/teacher.

The Biology Department currently has eight faculty members, with existing strengths in the areas of cell/molecular biology and ecology/animal behavior.

Interested women should send a letter of intent, curriculum vitae, a statement of current research interests and achievements, and information on teaching experience and success, and arrange to have sent official transcripts and three letters of reference. Materials should be mailed to meet a 15 March 1990 deadline. Please address inquiries and applications to: **The Search Committee, Dean's Office, College of Arts and Sciences, Creighton University, California at 24th Street, Omaha, NE 68178.**

Creighton University is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR OF ACADEMIC COMPUTING

The University of Texas Health Science Center at Houston (UTHSCH) is seeking a director to provide leadership in the development of academic computing within the six schools of the Health Science Center. The director will be concerned with the education of students and faculty in the uses of computers, the introduction and support of computer applications in the classroom and laboratory, and the administration of the UTHSCH academic computing network.

We are especially interested in people with a background in teaching and research who have technical competence in computing and experience in providing computer services to academic users. Send résumés to: **Dr. Paul E. Darlington, Chair, Search Committee, UTHSCH, P.O. Box 20334, Houston, TX 77225.** *UTHSCH is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

MARKEY DEVELOPMENT BIOLOGY PROGRAM

Applications are solicited for the **DIRECTOR** of the newly established Markey Developmental Biology Program at Northwestern University Medical School. The successful candidate should be an internationally recognized developmental biologist who can provide scientific leadership for the program. Candidates must qualify for a senior faculty appointment with tenure in the university. Core laboratories for the Markey Developmental Biology Program will be housed in the newly constructed Tarry Research and Education Building on the Chicago campus. Generous funds and additional junior faculty positions are available. Review of applications will begin after 15 February 1990. Send applications to: **Guenther Albrecht-Buehler, Ph.D., Chairman of Search Committee, Morton 4-656, 303 East Chicago Avenue, Chicago, IL 60611-3008.** *Northwestern University is an Equal Opportunity/Affirmative Action Employer and Employer. Employment verification required upon hire.*

POSITIONS OPEN

THE UNIVERSITY OF MICHIGAN, CHAIR OF PHARMACOLOGY. The University of Michigan Medical School is seeking an academic leader to direct the research, teaching, and service programs of its Department of Pharmacology. Qualifications include: a Ph.D. (or M.D., or both) in pharmacology or related field, national stature as a researcher in an area of pharmacology, commitment to teaching, and administrative ability. The position includes an instructional tenure-track faculty appointment. Please respond by 15 February 1990 to: **Anne B. Young, M.D., Ph.D., Chair, Pharmacology Search Committee, c/o Ms. Susan E. Blackwell, Medical Administration Staff Assistant, The University of Michigan, M7325A Medical Science I Building, Ann Arbor, MI 48109-0624.** *The University of Michigan is a nondiscriminatory Affirmative Action Employer.*



DEAN, SCHOOL OF NATURAL SCIENCE AND MATHEMATICS CALIFORNIA STATE UNIVERSITY FULLERTON (CSUF)

The dean is the chief academic officer of the school and reports directly to the Vice President for Academic Affairs. The dean provides administrative and intellectual leadership, represents the school, and interacts with the community. Qualifications include a Ph.D., academic credentials for appointments at the rank of full professor in one of the departments, 5 years of successful collegiate teaching, a record of scholarly/creative activity, and three or more years of related professional administrative experience involving responsibility for a major organization. A proven record of success in securing private and governmental support is required. Strong interpersonal communication skills are required. A demonstrated commitment to Affirmative Action is essential. The dean is expected to promote excellence in teaching and research, and foster ongoing outreach programs in science and mathematics education and in-service training programs for K-12 science and mathematics teachers.

Comprised of the Departments of Biology, Chemistry and Biochemistry, Geological Sciences, Mathematics, and Physics and the Science Education Program, the school has approximately 120 faculty and enrolls some 1250 undergraduate and 150 master's level students. The current science facility will be expanded by a \$23-million addition. CSUF has 25,000 students and seven schools.

The effective date of the appointment is preferably 25 June 1990, but not later than 1 August 1990. Excellent salary and benefits.

Deadline for applications and nominations is 1 March 1990, or until the position is filled. Letters of interest with statements of qualifications, résumé, and names, addresses, and telephone numbers of five references should be sent to: **Dr. Maria C. Linder, Chair, Search Committee for Dean of the School of Natural Science and Mathematics, Office of the Vice President, Academic Affairs MH-133, California State University, Fullerton, P.O. Box 34080, Fullerton, CA 92634-9480.**

CSUF is an Affirmative Action/Equal Opportunity/Title IX Employer.

DIRECTOR MAGNETIC RESONANCE RESEARCH (MR)

The University of Pittsburgh Department of Radiology is seeking a director of MR research. The candidate must have substantial experience in MR imaging and/or MR spectroscopy with a record of successfully funded research; administrative experience is desirable. The director will supervise and coordinate MR research activities performed on a variety of mid- and high-field imaging and spectroscopy units, and will be an integral part of a large multidisciplinary research effort. The faculty appointment will be within the Department of Radiology, but joint or secondary appointments are encouraged as appropriate. The successful candidate will direct a large and rapidly expanding MR research program with an eager clinical staff interested in MR research. Faculty rank is expected to be at the **ASSOCIATE OR FULL PROFESSOR** level according to qualifications; salary and fringe benefits are very competitive. Curriculum vitae should be sent to: **Michael P. Federle, M.D., Department of Diagnostic Radiology, Presbyterian-University Hospital, DeSoto at O'Hara Streets, Pittsburgh, PA 15213.** *University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer.*

DEAN COLLEGE OF GRADUATE STUDIES

The Medical University of South Carolina, an expanding health science campus, invites applications and nominations for the position of Dean of the College of Graduate Studies.

The Dean will report to the Vice President for Academic Affairs and will be responsible for the quality and development of all aspects of graduate degree programs involving research training. Responsibilities include:

Developing creative recruitment programs for augmenting the quality and number of graduate students.

Participating in the university-wide recruitment of 70 new investigators.

Providing leadership for the development of new research training programs.

Coordinating graduate research training programs with the activities and goals of the five other colleges and centers at the Medical University.

Maximizing financial resources for predoctoral and postdoctoral training and providing leadership in the use of these resources for the advancement of academic excellence on campus.

Candidates for the position must have a Ph.D. or equivalent doctoral degree, a strong background in research and graduate education, and a commitment to academic excellence.

Nominations and applications, including a curriculum vitae, should be sent by March 15, 1990 to:

Jim D. Karam, Ph.D., Chairman
Search Committee for Dean of the
College of Graduate Studies
Department of Biochemistry and Molecular Biology
Medical University of South Carolina
171 Ashley Avenue
Charleston, South Carolina 29425

The Medical University of South Carolina is an equal opportunity, affirmative action employer.



Forsyth Dental Center DIRECTOR

Nominations and applications are invited for the position of Director of Forsyth Dental Center. The Director is the chief executive officer with responsibility for managing all aspects of the Center, and reports to the Board of Trustees. The position may include a tenured appointment in an appropriate basic science or clinical department.

Forsyth is an internationally recognized non-profit center of dental research and dental hygiene education located in Boston. The major divisions are the Research Institute, devoted to biomedical research related to diseases of the oral cavity, the School of Dental Hygiene, and the Clinical Division encompassing patient care and other activities in support of research endeavors. Forsyth has an annual operating budget of over \$9 million and an endowment of more than \$25 million.

Forsyth seeks a Director with a long-range vision for the scientific and educational future of the field of oral health. The Director must have a history of dynamic and innovative leadership and be committed to develop the human and capital resources of Forsyth. The Director should possess an understanding of scientific research, preferably obtained through experience. Knowledge of the dental research community is also highly desirable.

Nominations and expressions of interest with a curriculum vitae should be sent by 15 March 1990 to: Mr. Stephen E. Moore, Search Committee Chair, Forsyth Dental Center, 140 The Fenway, Boston, Massachusetts, 02115. U.S.A.

The Search Committee anticipates reaching a decision in early Summer, 1990.

Forsyth is an equal opportunity employer and encourages applications from minority and women candidates.

The **GSF** is a national research center with 1700 employees, funded by the Federal Republic of Germany and the State of Bavaria. Its activities concentrate on the protection of man and his environment from hazardous effects, and on the improvement of health care.

An internationally recognized scientist is invited to apply for the position of

Director of the Institute of Epidemiology

The institute shall continue the previous epidemiological work of the Institute for Medical Informatics and Health Services Research (medis), in close cooperation with the clinical and experimental research groups of the GSF, and it shall start new especially environment-oriented activities. A joint appointment with the medical school of Technical University of Munich on the level of full professor is envisaged.

The payment corresponds to salary class C4 (equivalent to that of a full professor in the Federal Republic of Germany).

Applicants should send their documents (curriculum vitae, certificates, list of publications) not later than February 28, 1990, to the Scientific Director, Prof. Dr. H.W. Levi.



**Gesellschaft für
Strahlen- und
Umweltforschung mbH
München**

Ingolstädter Landstraße 1
D-8042 Neuherberg

POSITIONS OPEN

DIRECTOR OF THE DEVELOPMENTAL BIOLOGY PROGRAM INSTITUTE OF HUMAN GENETICS DEPARTMENT OF PEDIATRICS

The University of Minnesota is seeking a nationally recognized molecular biologist for the director of the developmental biology program in the Institute of Human Genetics and the Department of Pediatrics, and the recipient of the Martin Lenz Harrison Chair of Molecular/Developmental Biology. This joint appointment includes laboratory facilities and resources in the institute and an opportunity to participate in an active interdisciplinary genetics graduate program. The candidate will recruit and direct a team of investigators with interest in biochemical and molecular genetics, cytogenetics, clinical genetics, and metabolism in one of the largest research-oriented pediatrics programs in North America. The holder of this chair will have a joint appointment in the Department of Cell Biology and Neuroanatomy and will participate in the recruitment of other developmental biologists.

Minimum criteria: This position will be a tenured **ASSOCIATE OR PROFESSOR**. Rank will be commensurate with years of experience and accomplishments. Candidate must be approved by the promotions committee of the Department of Pediatrics and the medical school. The candidate must have a doctoral degree, and have demonstrated professional distinction in research and writing, and have an active ongoing research program which has attracted national external funding. This person must also have demonstrated effectiveness in teaching and advising.

Last date for receipt of application: 2 February 1990.
Earliest start date: 1 July 1990.

Direct inquiries and curriculum vitae to:

Dr. William G. Woods
Search Committee Chairperson
Box 454 UMHC
University of Minnesota
Minneapolis, MN 55455

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

CLINICAL EPIDEMIOLOGIST

The Department of Family and Community Medicine, University of Illinois College of Medicine at Rockford, is extending its search for a clinical epidemiologist. Appointment will be at the **ASSISTANT OR ASSOCIATE PROFESSOR** level, depending upon qualifications and experience. Candidates should have a doctorate or master's degree in epidemiology or public health. Experience in protocol development and an interest in longitudinal studies, geriatrics, and morbidity is highly desirable. For fullest consideration, submit applications prior to 1 May 1990. Applicants should submit curriculum vitae and a list of at least three references to:

William H. Langewisch, M.D.
Chairman, Search Committee
University of Illinois
College of Medicine at Rockford
1601 Parkview Avenue
Rockford, IL 61107

The university is an Affirmative Action/Equal Opportunity Employer.

CRYSTALLOGRAPHER TENURE-TRACK FACULTY POSITION SCHOOL OF MEDICINE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

The Department of Biochemistry invites applications from macromolecular x-ray crystallographers. Appointment rank to be determined by experience. Equipment available includes an area detector system as well as access to supercomputing and computer graphics. Generous start-up funds are available. Successful applicants will be expected to develop an active research program in structural molecular biology and to participate in departmental teaching. Interested crystallographers should send résumé with statement of research goals, names of at least three references, and two reprints to: **Dr. Mary Ellen Jones, Search Chair, Department of Biochemistry, School of Medicine, University of North Carolina, Chapel Hill, NC 27599-7260**. Review of applications will start on 15 February 1990. *Minority and female scientists are encouraged to apply. Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

DEVELOPMENTAL BIOLOGISTS

The Department of Anatomy, University of Wisconsin-Madison, invites applications for two 12-month, tenure-track **ASSISTANT PROFESSOR** positions. Applicants must have a doctoral degree and postdoctoral training. The department is seeking candidates with experience in developmental biology, including developmental neuroscience. We are especially interested in attracting applicants with experience in cellular and molecular approaches to developmental questions.

Each successful candidate will be expected to establish an independent research program and participate in the teaching of medical histology. Opportunities are available to participate in one of the interdepartmental graduate training programs. Send curriculum vitae, list of publications, three letters of recommendation, and a summary of research interests to: **Dr. John K. Harting, Chairman, Department of Anatomy, Room 325 SMI, University of Wisconsin, 1300 University Avenue, Madison, WI 53706**. The deadline for applications is 1 April 1990. *The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ECOLOGY AND ENVIRONMENTAL SCIENCE

SUMMER TEACHING POSITIONS: Bard College Graduate School of Environmental Studies. Positions may be available for the following courses: history and principles of ecology; conservation biology and restoration ecology; environmental engineering; field botany. Two summer sessions: 24 June to 20 July and 30 July to 24 August 1990. Please send résumé to: **William Bleisch, Director, Graduate School of Environmental Studies, Bard College, Annandale-on-Hudson, NY 12504**. *Bard College is an Affirmative Action/Equal Opportunity Employer.*

ENVIRONMENTAL HEALTH ASSISTANT PROFESSORSHIP (tenure track). East Carolina University, Greenville, North Carolina. Teaching, advising, research, and service in a comprehensive graduate and undergraduate environmental health program. Teaching duties may include water resources, institutional hygiene, and health program administration and law. Open June 1990. Doctorate in appropriate discipline, experience in environmental health program, and college teaching desired. Send curriculum vitae, official transcripts, and three letters of reference to: **Dr. Y. J. Lao, School of Allied Health Sciences, East Carolina University, Greenville, NC 27858**. *Affirmative Action/Equal Opportunity Employer. Federal law requires proper documentation of identity and employability at the time of employment. Applications will be reviewed beginning 15 March 1990 until the vacancy is filled. Telephone: 919-757-4429, or write, for detailed announcement.*

ENVIRONMENTAL POLICY

ASSISTANT PROFESSOR, tenure track, academic year. Graduate and undergraduate teaching, and interdisciplinary funded research. Doctorate, or substantial completion, and graduate coursework in environmental science and applied social science required. Submit letter of application, career objectives, curriculum vitae, graduate transcript, and three letters of reference by 5 March 1990 to: **John Felleman, Environmental Studies, State University of New York (SUNY)-E.S.F., Syracuse, NY 13210**. Telephone: 315-470-6636. *SUNY is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.*

MOLECULAR AND CELL BIOLOGIST

The Hematology Branch of the National Heart, Lung, and Blood Institute is recruiting for a molecular and cell biologist to perform basic research investigation. Experience in the design and construction of retroviral vectors for gene transfer is required. Needed, also, is experience in working with concentrated preparations of human immunodeficiency virus (AIDS). The environment is extremely stimulating and exciting. *U.S. citizenship is required.* Annual starting salary ranges from \$35,000 to \$45,000. To apply, submit an Application for Federal Employment (SF-171), official transcript, and letters of recommendation to: **Clinical Hematology Branch, National Heart, Lung, and Blood Institute, Building 10, Room 7C103, 9000 Rockville Pike, Bethesda, MD 20892**.

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITION. Biologist, Ph.D. Teaching responsibilities include introductory biology, cell biology, and microbiology in a 4-year, Christian, liberal arts college in the Presbyterian tradition. Send curriculum vitae and statement of teaching and research interests to: **Dr. Gregory D. Jordan, Acting Dean of the Faculty, King College, Bristol, TN 37620**. *King College is an Equal Opportunity Employer.*

FACULTY POSITIONS MEMORIAL SLOAN-KETTERING CANCER CENTER CELL BIOLOGY AND GENETICS PROGRAM

The Memorial Sloan-Kettering Cancer Center invites applications for several tenure-track junior and senior faculty positions in the Cell Biology and Genetics Program. This research program is one of four in the institute, and is expanding in the areas of cell cycle control, differentiation, cell structure, intercellular recognition, and morphogenesis. The Cell Biology and Genetics Program is located in a new research building which also houses advanced facilities for protein and nucleic acid microchemistry, transgenic mice, and automated mammalian cell micromanipulation. The members of the Cell Biology and Genetics Program faculty are affiliated with the Cell Biology Graduate Program at Cornell University Medical College. The positions offered are highly competitive with regard to start-up funds, laboratory space, salary, and housing.

Eligible candidates should have a doctoral degree, postdoctoral experience, and demonstrate potential and ability to develop an independent, imaginative research program. Formal applications are invited from junior as well as established investigators. Applications should include curriculum vitae, a list of publications, a summary of research activities and research plan, and three letters of recommendation. Applications should be addressed to: **Dr. Joan Massague, c/o Christine Brohme, Box #135, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021**.

Equal Opportunity/Affirmative Action Employer.

MICROBIOLOGY FACULTY POSITION AVAILABLE

The Philadelphia College of Pharmacy and Science invites applications for a tenure-track position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level. The position is effective 15 August 1990.

The successful candidate will be expected to teach introductory microbiology, advanced microbiology, applied (industrial) microbiology, and will have the opportunity to teach an elective course in area of expertise; all at the undergraduate level. The individual will also advise biology and microbiology majors and interview prospective students.

The successful candidate will be expected to develop and maintain a research program in which undergraduates can participate. Opportunity may also exist for participation in the graduate program. Individuals with strong interests in biotechnological applications are encouraged to apply.

Applicants should submit the following: (i) a letter of application addressing the above criteria, (ii) a complete résumé including a current transcript, and (iii) names, addresses, and telephone numbers of three references. All applications should be submitted as soon as possible to: **Dr. Gilbert L. Zink, Chairman, Department of Biological Sciences, Philadelphia College of Pharmacy and Science, Woodland Avenue at 43rd Street, Philadelphia, PA 19104**. *An Equal Opportunity/Affirmative Action Employer.*

INSTRUCTOR/ASSISTANT PROFESSOR. Position open immediately for instructor/assistant professor in the Department of Radiology at The University of Texas Southwestern Medical Center at Dallas. Position includes research in NMR microscopy (both imaging and spectroscopy) of experimental and human tumors. Qualifications include an M.D. or Ph.D. degree and advanced training and work experience in the biological effects of radiation and in clinical cancer research. The successful candidate should have an extensive background in pathology. Salary range \$30,000 to \$35,000. Curriculum vitae required. Contact: **Peter Antich, Ph.D., The University of Texas Southwestern Medical Center, Radiology, 5323 Harry Hines Boulevard, Dallas, TX 75235-9058**. *An Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

FISHERIES MANAGEMENT. ASSISTANT PROFESSOR, tenure track. Available 1 September 1990. Ph.D. required. Expertise in fisheries management and research preferred. Postgraduate experience in university or agency setting desirable. Successful candidate will be expected to develop a research program with extramural funding, supervise graduate students, and teach fisheries management and other aquatic-related courses, preferably aquatic invertebrates and/or ichthyology. Applicants should send a description of current and future research plans, copy of publications, curriculum vitae, and names and addresses of three referees to:

Dee Topp, Secretary
Department of Biology Search Committee
Montana State University (MSU)
Bozeman, MT 59717

Review of applications will begin 1 February 1990 and will continue until a suitable candidate is hired. MSU provides preference in employment to eligible veterans. For information, contact: **HR/AA, 210-C MH, MSU, Bozeman, MT 59715.** MSU is an Affirmative Action/Equal Opportunity Employer.

MAMMALIAN CELL MOLECULAR GENETICISTS

The newly reorganized Department of Microbiology and Molecular Genetics at the University of Vermont is continuing to expand its research base in molecular biology. Tenure-track positions at the **ASSISTANT AND/OR ASSOCIATE PROFESSOR** level are available in areas of molecular genetics related to mammalian cells and viruses. Areas of interest include, but are not limited to, (i) molecular virology; (ii) fundamental mechanisms of DNA replication, recombination, gene expression, or protein synthesis; and (iii) mechanisms of cell growth and differentiation. The candidate should be trained in genetics and molecular biology, and utilize modern approaches to problems of eukaryotic cell biology at the molecular level. A Ph.D. and postdoctoral experience are required. The expanded department will occupy three floors in a new Microbiology Center. Start-up funds and interim renovated space are available. Faculty members hold appointments in both the College of Agriculture and Life Sciences and the College of Medicine. The department's primary emphasis is on research; teaching responsibilities are to undergraduate, graduate, and medical students. Research interests of the department center on basic problems in molecular genetics with several groups focusing on cell and molecular biology of mammalian cells.

Send nominations and applications with curriculum vitae, present and future research plans, and at least three letters of reference to:

Search Committee
Department of Microbiology and Molecular Genetics
Given Building
University of Vermont
Burlington, VT 05405

Review of applications will begin immediately and continue until the positions are filled. *Women and minorities are encouraged to apply. The University of Vermont is an Equal Opportunity/Affirmative Action Employer.*

NEUROBIOLOGY

Applications are invited for a position at the tenured, or tenure-track, **ASSISTANT TO FULL PROFESSOR** level. Available 1 July 1990. Salary will be commensurate with qualifications. Candidates should have a Ph.D., M.D., or equivalent degree, and have demonstrated ability to conduct independent research and attract extramural funding. Preference will be given to applicants experienced in manipulating gene expression in mammalian cells, especially relating to neurotransmitters or receptors and/or cytoskeletal elements. Applicants interested in synaptic plasticity, neuroendocrine regulation, or the cellular basis of behavior are also encouraged to apply. Teaching experience in neuroanatomy is desirable. For fullest consideration, applicants should submit curriculum vitae, a brief statement of research interests, representative reprints, and names of three references by 31 March 1990 to: **Dr. Conwell Anderson, Chairman, Search Committee, Department of Anatomy and Cell Biology, University of Illinois, College of Medicine at Chicago, P.O. Box 6998 (M/C 512), Chicago, IL 60680.** The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

POSITIONS OPEN

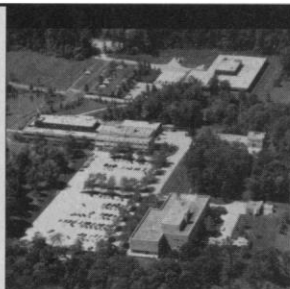
FACULTY POSITION

MOLECULAR BIOLOGY IN CARDIOVASCULAR MEDICINE. The Department of Internal Medicine and the Division of Cardiology of the University of Texas Medical School of Houston wish to recruit a full-time faculty member on the tenure track with the task to develop a basic research laboratory in molecular biology as it applies to the cardiovascular system. Specific interest, training, and expertise in the areas of growth factors, intracellular signals, G-proteins, and/or the regulation of gene expression are expected. The position provides an excellent opportunity for an investigator to develop independence as a leader and scientist in a lively and supportive academic environment. Please send information, including curriculum vitae, research interests, and the names of three references, to: **James T. Willerson, M.D., Chairman, Department of Internal Medicine, University of Texas Medical School at Houston, 6431 Fannin Street, Houston, TX 77030.** The University of Texas is an Equal Opportunity/Affirmative Action Employer. *Women and minorities are encouraged to apply.*

POSITIONS OPEN

INSTITUTE FOR HORMONE AND FERTILITY RESEARCH, HAMBURG OVARIAN PHYSIOLOGIST

A full-time research position in mammalian reproduction, at **GROUP LEADER** level, is available from spring 1990. At least 6 years of experience is required in studies on ovarian physiology, of which a minimum of 2 years should be at postdoctoral level. The candidate will be expected to evolve an independent research program and to be able to attract grant support. Experience in cell biology and morphology will be of added advantage. Besides an attractive salary, laboratory facilities and a starting contingency grant will be provided. Apply before 15 February 1990, enclosing curriculum vitae, list of publications, reprints of the most relevant papers, and the names and addresses of two referees to: **Professor F. A. Leidenberger, Institute for Hormone and Fertility Research, Grandweg 64, D-2000 Hamburg 54, West Germany.** For interim enquiries, contact: **Dr. A. Mukhopadhyay** at the above address. Telephone: 49-40 56 19 08-0, FAX: 49-40 56 19 08-64.



If you seek a challenging position in a rapidly growing company that will involve substantial and diverse interaction with other professionals, consider Ricerca.

Internationally known for its standards of excellence, Ricerca is a research and development company with more than 250 scientists, engineers and support personnel. Broad-based technical services are provided on a contract basis to clients in the agricultural chemical, specialty chemical and pharmaceutical industries.

Ricerca's 260,000 S.F. of facilities are on an 80-acre campus in Concord Township, Ohio, an attractive Cleveland suburb. Competitive salaries and an excellent Employee Benefits Program are offered. Qualified candidates are encouraged to submit resumes to: Human Resources Department.

SCIENTISTS

... continued growth at Ricerca has created the following open positions:

METABOLIC CHEMIST 代謝専攻

to design, supervise and conduct studies on the environmental fate of pesticides. Candidates should have a Ph.D. in Biochemistry or Bioorganic Chemistry and 0-5 years experience. Candidates with bilingual fluency in Japanese and English are preferred. 日本語と英語にも流暢な方を望みます

METABOLIC CHEMIST

to design, supervise and conduct animal metabolism and pharmacokinetic studies. Candidates should have a Ph.D. in Biochemistry, Bioorganic Chemistry, Biochemical Toxicology or a related field and 0-5 years experience.

TOXICOLOGIST

to design, conduct and report on animal toxicology studies. Candidates should have a Ph.D. in Toxicology or a closely-related discipline and 0-3 years experience.

ENTOMOLOGIST

with a broad perspective on insect control and ecology to conduct research in a wide variety of areas. Candidates should have a Ph.D. with 0-5 years experience or an M.S. with extensive experience in insect control technology and insect rearing.

CHEMISTS AND BIOLOGISTS to fill entry-level positions.

Ricerca, Inc.

THE TECHNOLOGY COMPANY

P.O. Box 1000 • Painesville, Ohio 44077-1000 • An equal opportunity employer

POSTDOCTORAL POSITIONS

NATIONAL INSTITUTES OF HEALTH PHOENIX, ARIZONA

Positions are available now and in spring or fall of a 1990 for recent Ph.D.s or M.D.s to participate in studies of the molecular biology and genetics of insulin resistance in a diabetes-prone human population. These molecular studies focus on several PROTEIN KINASES and PROTEIN PHOSPHATASES that are regulated abnormally by insulin in skeletal muscle of insulin-resistant subjects. Expertise in cDNA library construction and screening, oligonucleotide probe design, polymerase chain reaction, restriction mapping and DNA sequencing is essential.

Curriculum vitae, letter of application, and names, addresses, and telephone numbers of three references should be sent to either:

Dr. Clifton Bogardus

or

Dr. James Sommercorn
National Institutes of Health
4212 North 16th Street
Room 541
Phoenix, Arizona
85016



U.S. citizenship is required
NIH IS AN EQUAL OPPORTUNITY EMPLOYER

THE SAMUEL ROBERTS NOBLE FOUNDATION, INC.

Postdoctoral Positions in Plant Molecular Biology/ Virology

Applications are invited for postdoctoral positions in the Plant Biology Division. The positions will be for 2 or 3 years, and will be available from January 1990. We are looking for highly motivated applicants with strong backgrounds in:

- molecular biology and/or virology, to work in Dr. Richard Nelson's group on the molecular analysis of cDNA clones of tobacco mosaic virus, and
- biochemistry/molecular biology/plant transformation, to work in Dr. Rick Dixon's group on analysis of defense response genes/enzymes in alfalfa.

Please send resume and 3 letters of recommendation to either Dr. Richard Nelson (Head, Applied Molecular Biology Section) or Dr. Rick Dixon (Director), Plant Biology Division, S.R. Noble Foundation, P.O. Box 2180, Ardmore, Oklahoma 73402.

Telephone (405) 223-5810

Equal Opportunity Employer

POSITIONS OPEN

FACULTY POSITION IN UROLOGY at ASSISTANT PROFESSOR level available April 1990. Candidate must be Board-certified/eligible urologist with fellowship or special training in erectile dysfunction, prosthetics, lower urinary tract dysfunction, reconstruction. Position requires a substantial clinical and teaching commitment, and capability to carry on basic research in erectile physiology/pharmacology. Please send curriculum vitae, list of publications, and two letters of recommendation to: **Alan J. Wein, M.D., Professor and Chairman, Division of Urology, Hospital of the University of Pennsylvania, 3400 Spruce Street-5 Silverstein, Philadelphia, PA 19104. An Equal Opportunity/Affirmative Action Employer.**

HEALTH SCIENCES POLICY, PROGRAM OFFICER. The Institute of Medicine of the National Academy of Sciences is seeking a program officer. Assists the study director of a congressionally mandated study of the co-administration of certain service/research programs of the National Institutes of Health and the Alcohol, Drug Abuse, and Mental Health Administration. Will prepare and obtain background materials for committee and panels, analyze and synthesize materials, and assist in data collection, policy analysis, and preparation of final report. Ph.D. preferable; M.S. or equivalent with four or more years of experience will be considered. Knowledge of basic neuroscience or behavioral science highly desirable; basic research experience necessary. Must have demonstrated research, technical, and/or policy analysis capability and excellent oral and written communication skills. Demonstrated abilities in management or project planning and budget management are also necessary. Must have ability to do literature searches and library research. Send résumé to: **RB, TOM 2133-325 (RB), 2101 Constitution Avenue, N.W., Washington, DC 20418. Equal Opportunity Employer.**

MOLECULAR BIOLOGIST/INFORMATION SPECIALIST. The National Library of Medicine (NLM), National Institutes of Health, Public Health Service, has a full-time permanent opening for a technical information specialist to analyze published gene sequence data from international medical journals as part of its indexing operation. Qualifications at GS-9 (starting at \$24,705): graduate degree in a biomedical science (molecular biology preferred), or B.S. degree plus 2 years of professional experience. Qualifications at GS-11 (starting at \$29,891): graduate degree in molecular biology and 1 year of professional experience, or B.S. degree plus 3 years of professional experience in scientific information. Reading knowledge of at least one foreign language is desirable. U.S. citizenship required. For application package, contact: **Ms. Apolito, NLM, Building 38, Room 2N17, 8600 Rockville Pike, Bethesda, MD 20894. Telephone: 301-496-4943. NLM is an Equal Opportunity Employer.**

PHYSIOLOGIST. The Program in Ecology, Evolution, and Behavior of the Biology Department at Princeton University invites applications for a position in animal physiology, rank open. The current faculty in the program are Andy Dobson, Jim Gould, Peter Grant, Henry Horn, Steve Hubbell, Marty Kreitman, Naomi Pierce, Dan Rubenstein, Don Stratton, and Ted Sullivan. The closing date for applications is 16 March 1990. Applicants should send curriculum vitae and brief statement of research interests and plans, and arrange for three letters of reference to be sent to: **Dr. Henry Horn, Search Committee, Program in Ecology, Evolution, and Behavior, Guyot Hall, Princeton University, Princeton, NJ 08544-1003.**

Princeton University is an Equal Opportunity/Affirmative Action Employer.

PSYCHOPHARMACOLOGIST

The Laboratory of Clinical Studies, National Institute on Alcohol Abuse and Alcoholism, Public Health Service, invites applications for one psychopharmacologist to carry out studies in laboratory animals and humans investigating the brain mechanisms underlying the behavioral effects of alcohol. This position is offered, depending on the experience of the applicant, at a salary range of \$28,000 to \$45,234. Applicants must have a Ph.D. or M.D. Submit curriculum vitae and names of three references to: **Dr. M. J. Eckardt, Laboratory of Clinical Studies, NIAAA, NIH, Building 10, Room 3C102, 9000 Rockville Pike, Bethesda, MD 20892.** The position is available now and the deadline for receipt of materials is 16 February 1990. NIH is an Equal Opportunity Employer.

POSITIONS OPEN

NEUROBIOLOGIST. The Department of Neurobiology and Behavior of the State University of New York (SUNY) Stony Brook is seeking candidates for an assistant professor position which is tenure track and state-funded beginning academic year 1990 to 1991. Two years of postdoctoral experience. Preference will be given to candidates with demonstrated ability in teaching animal physiology, neurobiology, and the use of computers in physiology. The successful applicant will be expected to teach one-semester laboratory course in physiology and to develop a neurobiology laboratory course for majors in the biological sciences. Candidates will be expected to develop an independent research which will integrate well within the major research thrust of the department. Applicants should submit curriculum vitae, statement of research interests, and names and addresses of three references, some of whom can comment on teaching ability, to: **Dr. Albert D. Carlson, Chair, Physiology Search Committee, Department of Neurobiology and Behavior, SUNY Stony Brook, Stony Brook, NY 11794-5230. SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer. AK2.**

NEUROBIOLOGY OF AGING AND ALZHEIMER'S DISEASE POSITIONS for M.D.'s and Ph.D.'s. Several positions, supported by the National Institute on Aging, will be available in 1990 for postresidency M.D.'s and Ph.D.'s who are interested in research training in the neurobiology of aging and/or Alzheimer's disease. Positions available as **POSTDOCTORAL FELLOWS, RESEARCH ASSOCIATES, AND JUNIOR FACULTY** (nontenure track). We encourage applicants with diverse backgrounds who wish to apply their past training to problems of the aging CNS. We are particularly interested in persons with prior training in molecular biology, cell culture, protein chemistry, neuropathology, immunocytochemistry, or neurology. The training program offers an intense research apprenticeship in fundamental research, contact with a variety of laboratories, seminars, and clinical activities. Twenty potential preceptors are in the Departments of Neurology, Neurobiology and Anatomy, Medicine, Biochemistry, and Psychology. The University of Rochester is notable for its absence of barriers among laboratories, facilities, and departments, so work in facilities outside the formal preceptor list is also possible. There are over 70 laboratories devoted to the study of the nervous system. Molecular biology is another area of strength at the University of Rochester. U.S. citizens or permanent U.S. residents only. Apply to: **Dr. Paul D. Coleman, Department of Neurobiology and Anatomy, University of Rochester Medical Center, Rochester, NY 14642.**

ORNITHOLOGIST

The Department of Systematics and Ecology and the Museum of Natural History, University of Kansas, invite applications for a tenure-track position as **ASSISTANT PROFESSOR AND CURATOR OF ORNITHOLOGY**, starting date: 1 January 1991. Duties: research in avian systematic and evolutionary biology, graduate education, teaching in specialty and undergraduate biology, curation of ornithological collections. Salary: \$35,000 per year. Required: Ph.D. in appropriate field, evidence of research productivity (viz., publications, grants, fieldwork), curatorial experience, commitment to teaching. Applicants should request the complete position description. Send letter of application; statement of professional goals, research, and teaching interests; curriculum vitae; reprints of recent publications; and three letters of recommendation to: **Ornithology Search, Museum of Natural History, 602 Dyche Hall, University of Kansas, Lawrence, KS 66045-2454. Telephone: 913-864-4540. Application deadline: 28 February 1990 (postmarked). Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL OR RESEARCH ASSOCIATE to study DNA variation of Pacific salmon. Training in molecular genetics required; Expertise in application of molecular (DNA) techniques to population genetics desired. Position is term-funded. Send application, résumé, and names and telephone numbers of two references by 21 February 1990 to: **Dr. A. J. Gharrett, University of Alaska, 11120 Glacier Highway, Juneau, AK 99801. The University is an Affirmative Action/Equal Opportunity Employer and Educational Institution.**

POSITIONS OPEN

POSTDOCTORAL POSITION in Departments of Surgery and Biochemistry is available 1 April 1990 to study the interactions between heparin, von Willebrand factor, and other plasma proteins. Techniques will include CD, fluorescence polarization, peptide synthesis, and protein degradations and purification. Experience in carbohydrate chemistry also valuable. Send curriculum vitae and names of three references to: **Dr. Michael Sobel, Medical College of Virginia, Box 108, MCV Station, Richmond, VA 23298.**

POSTDOCTORAL POSITIONS HARVARD UNIVERSITY

Two postdoctoral positions are available to study the response of prokaryotic and eukaryotic cells to DNA alkylation damage. Our aim is to understand mechanisms of mutation and toxicity and to understand how the expression of DNA repair genes is regulated. Our approaches combine cell and molecular biology, genetics, and biochemistry. To apply, send curriculum vitae, the names of three references, and a statement of research interests to: **Dr. Leona Samson, Laboratory of Toxicology, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION to examine either: (i) mechanisms and effects of herbivore-induced chemical responses in cucurbits, experience with natural products chemistry or plant physiology required (contact: **D. W. Tallamy**); or (ii) cellular immune response of insects to infective stages of fungal pathogens and determinants of pathogen host range, familiarity with techniques of insect physiology, biochemistry, or pathology (contact: **C. B. Keil**). Available immediately; position ends 30 June 1991. Send curriculum vitae, statement of research interests, and three letters of reference to: **Department of Entomology and Applied Ecology, University of Delaware, Newark, DE 19717-1303. Telephone: 302-451-2526.** Screening of applicants will begin 8 February 1990 and will continue until position filled. *An Equal Opportunity/Affirmative Action Employer. We especially invite women and minorities to apply.*

POSTDOCTORAL POSITIONS IN FLUORESCENCE IMAGING

The Section on Neuronal Secretory Systems has postdoctoral opportunities in the areas of neuronal secretion and its regulation. The section is involved in exciting studies on fluorescence video microscopic imaging to measure intracellular ion transients in neuronal and glial cells, and studies on the mechanism of secretion and its modulation in isolated nerve terminal systems. The position is offered depending on the experience of the applicants. Candidates should have interest in either quantitative fluorescence microscopy and real-time image processing or cell biology of neuronal secretion. Send curriculum vitae and names of three references to:

**James T. Russell
Laboratory of Developmental Neurobiology
NICHD, NIH, Building 36, Room B-316
9000 Rockville Pike
Bethesda, MD 20892**

*U.S. citizenship is not required.
NICHD is an Equal Opportunity Employer.*

CAREER CHANGE OPPORTUNITY

The School of Oceanography of the University of Washington is proud to announce, through the generosity of the Office of Naval Research's Ocean Science Educator Program, the immediate availability of a 3-year **POSTDOCTORAL PROGRAM** for a **STATISTICIAN** interested in applying his or her skills to oceanography on a long-term basis. Specialists in other non-oceanographic disciplines (e.g., physics or applied mathematics) may also be considered. Funding includes both salary (\$32,000 per year) and research support (\$25,000 per year). Topics of particular interest include, but are not limited to, intelligent use of sparse and gappy data sets, objective mapping, non-stationary Kriging, multivariate spatial statistics, and Lagrangian statistics. Please forward a statement of interest, curriculum vitae, selected reprints, and a list of three or more references to: **Peter A. Jumars, School of Oceanography, WB-10, University of Washington, Seattle, WA 98195.** All applications received before 1 April 1990 will be considered, but the position may remain open longer for particularly promising candidates.

RESEARCH SCIENTISTS PROTEIN CHEMISTRY

Amgen is a recognized leader in the discovery and development of human therapeutic products through applied biotechnology. We are expanding our program on the interactions of protein ligands with cell surface receptors with emphasis on the role of carbohydrate structure in these interactions. As a result, we have opportunities available for **Ph.D. scientists** to contribute to the development of this program.

Qualified candidates for this program must have a unique background covering a variety of disciplines including a general knowledge of protein and glycoprotein purification and structure/function relationships. Experience in characterization of membrane-associated receptors which bind protein ligands is highly desirable. A Ph.D. in Biochemistry or a related field and a minimum of two years' postdoctoral experience are required.

Amgen offers an excellent compensation and benefits package and the unique opportunity to contribute to significant research programs on the leading edge of biotechnology. If you have the necessary skills and qualifications and would like to be a part of a company that places a high priority on its human resources, please send a complete C.V., in confidence, to:

**AMGEN, INC.
Recruitment, Dept. #502
Amgen Center
Thousand Oaks
CA 91320-1789**

Equal Opportunity Employer

AMGEN

Landscape Ecologist

\$44,500 – \$54,100 (Cdn.)

Pursue this opportunity with the Ontario **Ministry of Natural Resources**, forest resources group. As part of a dynamic, applied science and technology team, you will originate and participate in programs emphasizing an ecosystem approach to forest-resource management, including: long-term forest productivity relationships; ecological modelling; ecosystem response to disturbance and nutrient dynamics; topical issues in integrated resource planning and policy. **Location: Sault Ste. Marie.**

Qualifications: Undergraduate, M.Sc. and/or PhD training in forestry, ecology or related biological field; proven forestry/ecology experience, with emphasis on ecosystem analysis and forest-ecosystem research and education; solid background in statistics, modelling and computer applications; excellent organization and communication skills; ability to conduct field work.

Application/resume must be received by Feb. 28, 1990. Quoting file NR-2085/89, send to: Human Resources Section, Ministry of Natural Resources, P.O. Box 310, 747 Queen Street East, Sault Ste. Marie, Ontario, Canada, P6A 5L8.



**Ontario
Public Service**

Dedicated to Employment Equity

POSITIONS OPEN

A POSTDOCTORAL POSITION IN CELLULAR DEVELOPMENTAL NEUROBIOLOGY is available immediately to study the structure, function, development, and plasticity of the neuromuscular junction, with emphasis on the active zone and the extracellular matrix. Experience in intracellular recording, freeze-fracture, electron microscopy, immunocytochemistry, and/or biochemistry is highly desirable. Please send curriculum vitae and three references to: **Dr. C. P. Ko, Neurobiology Section, Department of Biological Sciences, University of Southern California, Los Angeles, CA 90089-2520.**

MOLECULAR BIOLOGY/VIROLOGY. POSTDOCTORAL POSITION available to study the molecular biology of baculoviruses. Research opportunities in regulation of gene expression, expression vector system and cell culture. Experience in recombinant DNA techniques required. Previous experience in insect or virus research not necessary. Send curriculum vitae and names of three references to: **Dr. H. Alan Wood, Boyce Thompson Institute at Cornell University, Tower Road, Ithaca, NY 14853. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS

Immediate openings for postdoctoral fellows with strong backgrounds in molecular and/or cellular biology to study the molecular pathogenesis of muscular dystrophy, excitation-contraction coupling in skeletal and cardiac muscle, or the molecular biology of Ca^{2+} channels in excitable cells. Current research projects involve structural and functional studies of dystrophin and dystrophin-associated glycoproteins, expression and molecular role of the various subunits of the dihydropyridine receptor in skeletal muscle, structural and functional studies of the junctional sarcoplasmic reticulum proteins involved in the regulation of Ca^{2+} release, and the purification and cDNA cloning of surface and intracellular Ca^{2+} channels in neuronal cells. Send curriculum vitae and three letters of recommendation to:

Dr. Kevin P. Campbell
Howard Hughes Medical Institute, 400 EMRB
Department of Physiology and Biophysics
University of Iowa College of Medicine
Iowa City, IA 52242

Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL/RESEARCH ASSOCIATE IN GENE EXPRESSION

The named position is available immediately or by the fall to study muscle gene expression in *Drosophila*. We are studying promoter and splicing function of contractile protein genes in transgenic flies and protein binding studies in *in vitro* cell-free systems. 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, University of Illinois College of Medicine, 1853 West Polk Street, Chicago, IL 60612. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE

Physiological study of synaptic reorganization after hippocampal lesions and following neural grafts. Techniques include *in vitro* intracellular recording, intracellular dye staining, and *in vivo* behavioral assessment. Background in cellular neurophysiology desirable, but other interests will be considered. Available immediately. Apply to: **D. A. Turner, Neurosurgery, Box 3807, Duke University Medical Center, Durham, NC 27710. Telephone: 919-684-6706. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITION available immediately for molecular studies on assembly, structure, and functions of basement membrane collagen, laminin, and proteoglycans. Projects include (i) biochemistry of self-assembly, (ii) molecular genetic analysis of laminin interactions, and (iii) molecular architecture. Salary negotiable. Send résumé and names of references to: **Dr. Peter Yurchenco, Pathology Department (S), University of Medicine and Dentistry of New Jersey (UMDNJ), Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854-5635. The UMDNJ is an Affirmative Action/Equal Employment Opportunity Employer, M/F/H/V.**

POSITIONS OPEN

POSTDOCTORAL POSITION. We have a position open in the Division of Urology, University of Pennsylvania School of Medicine. The successful candidate will study the molecular properties and pharmacology of potassium and calcium channel modulators in vascular and non-vascular smooth muscles. Experience with tracer flux measurement techniques is required. Although this is an academic position within the University of Pennsylvania, the research will be conducted in the laboratory of a nearby pharmaceutical company. The salary range for this unique academic-pharmaceutical postdoctoral position is \$25,000 to \$34,000. Funds are available for relocation. All interested individuals should send their résumé and the names and addresses of three references to: **Dr. Robert M. Levin, Director of Basic Research, Division of Urology, University of Pennsylvania Hospital, 3006 Ravdin Courtyard, 3400 Spruce Street, Philadelphia, PA 19104.**

POSTDOCTORAL RESEARCH POSITION. Funded by an NIH training grant in immunology. Available immediately for studies on oncogene products involved with signal transduction during lymphocyte activation and neoplastic transformation. Applicants with some experience in immunology and molecular biology or protein purification are particularly encouraged. Send résumé and names of three references to: **Dr. Nancy S. Magnuson, Department of Microbiology, Washington State University (WSU), Pullman, WA 99164-4340. Grantor (NIH) restricts employment to citizens, non-citizen nationals, or permanent residents at time of appointment. All new employees must show employment eligibility verification as required by the U.S. Immigration and Naturalization Service. WSU is an Equal Opportunity/Affirmative Action Employer and Employer. Protected group members are encouraged to apply.**

RESEARCH ASSOCIATE INDUSTRIAL POSTDOCTORAL POSITION

LipoGen, Inc., is currently seeking an innovative research scientist with a Ph.D. in cell biology to investigate endocytosis and intracellular trafficking of lipid vesicles. LipoGen, located in the East Tennessee technology corridor, is a rapidly growing biotechnology company engaged in the development of novel, liposome-based immunodiagnostic and therapeutic products. Please reply in confidence to: **Dr. S. E. Wright, LipoGen, Inc., 10515 Research Drive, Knoxville, TN 37932.**

RESEARCH ASSOCIATE. Ph.D. in organic chemistry. Position requires minimum of 1 year of postdoctoral experience in classical carbohydrate manipulation and in organic synthetic methodologies relating to complex molecules. Must be familiar with the use of analytical procedures, such as proton and carbon NMR, UV, IR, GC/MS, LC, TLC, computer-assisted molecular modeling for structure determination of complex natural products. Publication record showing independent research needed. Salary: \$19,600 per 40 hours. *If not a U.S. citizen, state current visa status.* Apply to: **Employment Security Commission, 516 North Mangum Street, Durham, NC 27702** or your local Job Service Office. Refer to: **DOT Code 990.227-010, Job Order Number NC 3091304.**

RESEARCH APPOINTMENTS at the Bureau of Engraving and Printing in Washington, D.C. Several positions available for postgraduates, faculty, and graduate students to participate in research projects involving physical sciences, engineering, computer sciences, and artificial intelligence. Contact: **Research Participation Program/BEP, Science/Engineering Education Division, Oak Ridge Associated Universities, Box 117, Oak Ridge, TN 37831-0117. Telephone: 615-576-3190.** Please indicate if interested in postgraduate, faculty, and/or student program.

RESEARCH VIROLOGISTS

Positions in the field of veterinary virology and immunology available immediately with a rapidly growing biotechnology company located just outside Des Moines, Iowa. Will consider candidates with B.A./B.S. or M.A./M.S. degree, preferably with at least 2 to 5 years of work experience. Skills required include: cell culture manipulation, virus and antibody assays, experimental design and evaluation of veterinary vaccines utilizing latest virological and immunological technology. Please send résumé to: **Human Resources, Ambico, Inc., Box 522, Dallas Center, IA 50063.**

POSITIONS OPEN

RESEARCH ASSOCIATE. To design and perform biochemical studies on biological lipids in regulation of renal and cardiovascular hemodynamics and related areas. Ph.D. in physiology or pharmacology required. Special requirements: Period of education and/or experience must include each of the following (may be concurrent): (i) performance of hemodynamic experiments in renal and cardiovascular physiology and pharmacology requiring blood pressure and flow measurement techniques (3 years); (ii) separation, purification, and bioassay of biologically active lipids (3 years); (iii) computer acquisition and statistical analysis of experimental data (3 years). Salary: \$22,000 per year. Send résumés to: **Rose Saldivar, #0379210, Wisconsin Department of Industry, Labor, and Human Relations, 201 East Washington Avenue, P.O. Box 7903, Madison, WI 53707.**

SENIOR RESEARCH SCIENTIST. To study conformational changes in the Na,K-ATPase from outer medulla of dog kidney through use of fluorescence stopped-flow technique, these kinetics to be studied under various conditions (drugs, salt concentrations, pH, and different substrates), to be analyzed in context of various models. Ph.D. in biophysics and 3 years of experience or 3 years of experience as researcher-physiologist are required, including experience in fluorescence spectroscopy, mathematical modeling, and stopped-flow technique. Requires published background. Five-day, 40-hour week; \$26,000 per year. Send résumé to: **New York State Department of Labor, 677 South Salina Street, Syracuse, NY 13202. Job Order Number NY0000897.**

UNIVERSITY OF KENTUCKY RESEARCH AND GRADUATE STUDIES ELECTRON MICROSCOPE MAINTENANCE SPECIALIST

Responsibilities include installation, maintenance, routine service, emergency service, and repair of electron microscopes and ancillary equipment as well as training for users on routine operation of electron microscopes. Will consult with faculty and staff on the design of experiments in order to optimize the potential of the equipment.

Minimum requirements are an associate degree and 5 years of relative professional experience or the equivalent combination of education and experience. Deadline for receipt of letter of application, résumé, and minimum acceptable salary is 9 February 1990, but may be extended if additional applicants are necessary. Send to: **Patricia Butler, Attention: #8849, University of Kentucky, Employment Services, East Maxwell Street, Lexington, KY 40506-0314.**

SWISS INSTITUTE FOR EXPERIMENTAL CANCER RESEARCH STAFF MEMBER

Applications are invited for a position at the junior or senior level in the field of oncogenes and antioncogenes. We expect candidates to develop an independent and competitive research program and to interact productively with existing research groups. The future group leader will be able to start his activity in the beginning of 1991. Applications, including curriculum vitae and bibliography as well as the names and addresses of three referees, should be submitted by 30 April 1990 to: **Dr. Peter K. Wellauer, Swiss Institute for Experimental Cancer Research, Chemin des Boveresses, CH-1066 Epalinges s/Lausanne, Switzerland.**

WILDLIFE TOXICOLOGIST

Exxon Biomedical Sciences, Inc., has an immediate opening for a qualified individual specializing in wildlife toxicology. The successful candidate will have an M.S. or Ph.D. and 1 to 3 years of experience in wildlife/vertebrate ecology or wildlife management, with a focus on effects of environmental pollutants on wild bird and mammalian populations. In addition, the applicant should have a knowledge/familiarity of analytical chemistry techniques and toxicity of industrial chemicals. Please forward résumé to:

Christine Ramos, Human Resources
Exxon Biomedical Sciences, Inc.
Mettlers Road, CN 2350
East Millstone, NJ 08875-2350
Equal Opportunity Employer, M/F/H/V.

KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH

Kuwait Institute for Scientific Research (KISR) is a nonprofit organization with a staff of more than one thousand employees engaged in applied research in the fields of environmental and earth sciences; water resources; food resources; engineering; petroleum, petrochemicals and materials and techno-economics.

KISR has a vacancy in the following field:

PLANT BREEDING

● Major Duties:

- Breeding of vegetables (primarily tomatoes, cucumber and egg plant, etc.) for salt and heat tolerance.
- Establishing and standardizing of techniques for selecting desired genes or germplasm.
- Establishing of capability to enhance breeding activities in biosaline research.
- Selecting of salt and heat tolerance genotypes at cellular level (somaclonal variation) and utilizing of other tissue culture techniques.

● Qualifications:

Applicants should have a Ph.D. in Plant Breeding (Horticulture) plus 5 to 10 years experience. Tissue culture experience is also necessary.

KISR offers attractive tax free salaries commensurate with qualifications and experience and generous benefits that include gratuity, free furnished air-conditioned accommodation, school tuition fees for children, contribution to a savings plan, six weeks annual paid vacation, air tickets, free medical care and life insurance.

Interested applicants are requested to send their Curriculum Vitae with supporting information not later than one month from the date of this publication, to:

Director General
Kuwait Institute for Scientific Research
P.O. Box 24885 Safat
13109 Safat — KUWAIT.

Respiratory Pharmacologist

The Procter & Gamble Company has an immediate entry level opening for a Ph.D. respiratory pharmacologist or physiologist. Postdoctoral research experience would be desirable. Requirements include an understanding of the *in vivo* and *in vitro* techniques used to investigate the pharmacological regulation of pulmonary function in normal and diseased states. Research experience in allergic airway disease would be an advantage. The successful candidate will be expected to design preclinical research strategies to evaluate novel approaches to treat airway diseases. Applicants must be U.S. citizens or permanent residents. Send resume and publication list to:

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

An Equal Opportunity Employer

Procter & Gamble

Be at the Heart of the Pharmaceutical Industry in Central New Jersey.

At ISI, Applied Research has four primary areas of concentration: molecular biology, immunology, cell biology and protein chemistry. Within these disciplines, ISI scientists work in a coordinated program to develop biopharmaceutical technology and products with significant market potential.

• MOLECULAR GENETICS

Molecular biologists with experience in dot blot hybridization, PCR, DNA sequencing, vector construction, cDNA cloning, gene expression and yeast fermentation (RD901).

• CELL BIOLOGY/IMMUNOCHEMISTRY

Biologists with experience in mammalian cell culture, cytokine biological assay, immunoassay, and production and purification of monoclonal and polyclonal antibodies (RD902).

• PROTEIN BIOCHEMISTRY

Biochemists with experience in purification and characterization of proteins, affinity chromatography, and HPLC (RD903).

• ANALYTICAL BIOCHEMISTRY

Protein chemists with experience in protein sequencing, amino acid composition analysis, peptide synthesis and peptide mapping (RD904).

• PROCESS DEVELOPMENT and IMPROVEMENT

Protein biochemists with experience in large scale protein purification and process development (RD905).

• FORMULATION

Protein pharmacologists with experience in oral, topical, parenteral formulation, and stability studies (RD906).

Send resume, with position code to: Personnel Dept.,
Attn: S. Walker, Interferon Sciences, Inc.,
783 Jersey Avenue, New Brunswick, NJ 08901
An Equal Opportunity Employer M/F



INTERFERON SCIENCES INC.

MOLECULAR BIOLOGIST / GENETICIST

Cellmark Diagnostics is a Maryland based company engaged in DNA probe analysis for identification testing. We are currently seeking two Molecular Biologist/Geneticists to perform analyses and to testify as expert witnesses in court on their findings.

The qualified candidates will have a Ph.D. in the biological sciences and extensive background in Southern blot analysis. Additionally applicants must have demonstrated organizational and communication skills. The responsibilities of these positions include:

- Analysis of forensic and paternity samples with DNA probes.
- Providing expert testimony in civil and criminal trials.
- Developing technology enhancements.

Located in the greater metropolitan Washington, D.C. area. Cellmark Diagnostics offers a stimulating work environment, modern and well equipped facilities and a competitive compensation package. For immediate consideration, please send your resume to:

**Cellmark Diagnostics
Personnel Coordinator
20271 Goldenrod Lane
Germantown, MD 20874**

Cellmark Diagnostics is an equal opportunity employer.

NMR Program Head

Battelle, Pacific Northwest Laboratories

Battelle, Pacific Northwest Laboratories is seeking a senior scientist to head a new multiuser NMR facility that is part of its Molecular Science Research Center. The NMR facility will contain 300- and 500-MHz spectrometers with capabilities for 2-D NMR on solids and liquids. A new spectrometer operating in the frequency range of 800 to 1000 MHz will also be developed as part of the long-range plans for structural studies on macromolecules, including nucleic acids, proteins and polymers.

The Pacific Northwest Laboratory is one of five national multiprogram energy laboratories, and is operated by the Battelle Memorial Institute under a contract with the U.S. Department of Energy. The Laboratory has a staff of approximately 3000 personnel conducting research in physics, chemistry, materials, engineering, mathematics and computer science, earth and environmental sciences, and the life sciences.

Applicants should send a resume, reprints of 3-5 recent publications, and the names and telephone numbers of 4 references to: **Dr. T.S. Tenforde, Chief Scientist, Life Sciences Center (KI-50), Battelle, Pacific Northwest Laboratories, P.O. Box 999, Richland, Washington 99352.** Deadline for receipt of application is **April 13, 1990.** An Affirmative Action, Equal Opportunity Employer.



Battelle

Pacific Northwest Laboratories

THE SCIENCE RECRUITMENT "FOUR DAY CLOSE"

NOW YOU CAN SEE YOUR AD IN SCIENCE
FOUR DAYS AFTER SUBMISSION

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

Film (right-reading, emulsion face down) or full camera ready art and insertion order must reach: SCIENCE, Short Close Desk, 1515 Broadway, New York, NY 10036 by NOON Mondays (except for legal holidays when material must reach New York by Noon Fridays). Because space is limited, the four-day close page will be reserved on a first-come, first-served basis, at a 15% premium. 1/4 and 1/2 page ads only.

Now you don't have to wait to find the researchers you need immediately, nor must you advertise in a Sunday paper that pans a lot of sand, but not much gold. Scientific employers know that SCIENCE ads fill the job better. Now they fill it faster too.

You can call it "INSTANT RECRUITMENT."

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

CURRENT DISTRIBUTION 160,000



Safety Evaluation Studies
Associate Director
Toxicology/Pathology Laboratory

CIBA-GEIGY Pharmaceuticals Division has won world-renown for its scientific research and development of health-protecting and life-enhancing products. This challenging position is located at our 100-acre headquarters complex in Summit, New Jersey.

You will direct a clinical laboratory responsible for conducting the clinical tests required in safety evaluation studies. Will review protocols and recommend appropriate tests for specific studies—ensuring that methodologies are state-of-the-art—then evaluate and interpret test results and correlate with histo-pathology.

The successful candidate will have a PhD/DVM in Clinical Pathology and be board-certified or eligible. Must have minimum 3-5 years experience in evaluating and interpreting clinical lab data from nonclinical safety evaluation studies using a wide variety of experimental laboratory animals.

CIBA-GEIGY offers a competitive salary, excellent benefits and state-of-the-art facilities. Please send resume with salary history and requirements to: **Al Aronson, Staffing Center, CIBA-GEIGY Corporation, Pharmaceuticals Division, Dept 319, 556 Morris Avenue, Summit, New Jersey 07901.** We Are An Equal Opportunity Employer M/F/H/V.

Science Serving Mankind

CIBA—GEIGY

Postdoctoral Positions

Wyeth-Ayerst Laboratories is a leading developer and producer of prescription drugs, biologicals, and infant nutritionals. We currently have two postdoctoral opportunities in the Research Department in our Radnor, PA facility.

Both positions require a background in virology and recombinant DNA technology. Research will be aimed at the development of recombinant adenovirus vaccines. Publications are encouraged, and you will be part of a collaborative effort involving leading research laboratories.

Wyeth-Ayerst offers a competitive salary and comprehensive company benefits. For consideration, forward your resume to: **Wyeth-Ayerst Research, Personnel Department, Position #TE9-001/002, P.O. Box 8299, Philadelphia, PA 19101.** An equal opportunity employer, M/F/H/V responses encouraged.



**WYETH
AYERST**

RESEARCH SCIENTIST MAMMALIAN EXPRESSION SYSTEMS

Amgen is a recognized leader in the discovery and development of human pharmaceutical and diagnostic products through applied biotechnology. Our continued growth has created an immediate need for a Research Scientist in our diagnostics group in Boulder, Colorado.

Candidates for this position must have a Ph.D. in an appropriate discipline and greater than 2 years' experience in cloning and expression of proteins in mammalian expression systems, development of mammalian expression vectors, and host cell culturing and development. A strong background in cell biology is highly desirable.

Amgen offers an excellent compensation and benefits package as well as the unique opportunity to contribute to significant research programs on the leading edge of biotechnology. If you have the necessary skills and qualifications and would like to be a part of a company that places a high priority on its human resources, please send a resume or C.V., in confidence, to:

AMGEN BOULDER, INC.
Personnel Dept.
2045 32nd Street
Boulder
CO 80301

Equal
Opportunity
Employer

AMGEN

Senior Staff Pathologist

Genentech, Inc., a leader in the field of biotechnology, has an opening for a Sr. Staff Pathologist in our Safety Evaluation department.

Reporting directly to the Associate Director, the individual will be responsible for performance of directed as well as independent studies related to investigation of real and potential pathological conditions which occur naturally or are induced. These will include preclinical investigative studies as well as GLP toxicology studies. Requirements include DVM/VMD, ACVP Board Certification, with a minimum of two years' experience in toxicology or comparative laboratory animal pathology.

Genentech, Inc., offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For consideration, please send your C.V. to Human Resources Department 7019, 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

Genentech, Inc.
Genentech, Inc.
Genentech, Inc.
Genentech, Inc.
Genentech, Inc.

POSITIONS OPEN

VERTEBRATE ECOLOGIST. The University of Arkansas at Little Rock, Department of Biology, invites applications for a tenure-track **ASSISTANT PROFESSOR** position in vertebrate ecology beginning August 1990. Candidates must hold the Ph.D. degree and postdoctoral experience is desirable. Teaching duties will include wildlife management techniques, ornithology, and participation in lower level courses. Preference is for a candidate with strengths in statistics and experimental design. Development of a research program, commitment to teaching, and interaction with other faculty in the area are expected. Send a letter of application, curriculum vitae, selected reprints, unofficial transcripts, and three letters of recommendation to: **Dr. Robert L. Watson, Department of Biology, University of Arkansas at Little Rock, 2801 South University, Little Rock, AR 72204.** To be assured of full consideration, applications should be received by 1 March 1990. Applications will be subject to inspection under the Arkansas Freedom of Information Act:

The University of Arkansas at Little Rock is an Affirmative Action/Equal Opportunity Employer and actively seeks the candidacy of minorities and women.

FELLOWSHIPS

POSTDOCTORAL FELLOW. Conduct biochemical research to determine the role of estrogens in cancer. Isolate and analyze DNA from laboratory animals and human samples. Analyze for DNA adducts by ³²P-postlabeling assay. Identify adducts by HPLC analysis and comparison with synthetic analogs. Requirements: Ph.D. or equivalent degree, at least 2 years of demonstrated experience with ³²P-postlabeling analyses and HPLC chromatography. Must be able to synthesize modified nucleotides for adduct analysis. Salary: \$24,000 per year for 40 hours per week. Send résumé and two letters of recommendation to: **Joachim G. Liehr, Department of Pharmacology, University of Texas Medical Branch (UTMB), Galveston, TX 77550.** UTMB is an Equal Opportunity/Affirmative Action Employer, M/F/H/V. UTMB hires only individuals authorized to work in the United States.

FELLOWSHIPS

M.D./Ph.D. FELLOWSHIPS

The Medical University of South Carolina (MUSC), offers \$9000 stipends for studies leading to combined M.D./Ph.D. degrees in each of the basic biomedical sciences and molecular and cellular biology/medicine. Contact: **Director, Medical Scientist Training Program, College of Graduate Studies, MUSC, 171 Ashley Avenue, Charleston, SC 29425.**

TWO POSTDOCTORAL FELLOWSHIPS

(NIDCD-funded) in the Department of Otolaryngology-Head and Neck Surgery at The Johns Hopkins University School of Medicine are open immediately. One position is for an otolaryngologist physician-scientist, approximately 2/3 of the training period is to be spent in the laboratory and the remainder in clinical activities. The other position is a full-time appointment in the laboratory. M.D.'s and Ph.D.'s are invited to apply. Departmental laboratories investigate allergy, cochlear transduction, central auditory anatomy and physiology, head and neck cancer, olfaction, vestibular and oculomotor control at the molecular, cellular, and organ level. These appointments are for up to 3 years and are only available to U.S. citizens. Please send inquiries, curriculum vitae, and three letters of recommendation to: **W. E. Brownell, Director of Research, Department of Otolaryngology-Head and Neck Surgery, Room 424, Traylor Research Building, The Johns Hopkins Medical Institutions, Baltimore, MD 21205-2195.**

Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITION. Available from the summer or fall of 1990 for a recent graduate with a Ph.D. in molecular biology, cell biology, or biochemistry interested in malignant transformation and cellular differentiation. Expertise in one or more of the following areas is desirable: molecular genetics, virology, or protein chemistry. Send curriculum vitae and names of three references to: **Mark A. Israel, M.D., University of California, Department of Neurosurgery, Brain Tumor Research Center, HSW-783, Parnassus Avenue, San Francisco, CA 94143.** *Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

POSTDOCTORAL FELLOW. Position in molecular neurobiology, supported by a training grant and other sources. Projects include analysis of gene regulation in the hippocampus during Alzheimer's disease, in responses to stress, and in association with long-term potentiation. Please send curriculum vitae and three letters of reference to: **Dr. Caleb E. Finch, University of Southern California, Ethel Percy Andrus Gerontology Center and Program in Neural Information Behavioral Systems, 3715 McClintock Avenue, Los Angeles, CA 90089-0191.**

COURSES AND TRAINING

COMPACT FREEZE-DRYING COURSE: Fundamental Aspects of the Preservation of Sensitive Biologicals.

A 3-day international course covering the principal issues involving the freezing and freeze-drying of pharmaceuticals, biological cultures (viruses, bacteria, cells, etc.) and derivative biological materials (vitamins, antibodies, enzymes, etc.).

Presented by the American Type Culture Collection and the Merieux Foundation, 2 to 4 April 1990; Mayflower Hotel, Washington, D.C. Contact: **ATCC Workshops, 12301 Parklawn Drive, Rockville, MD 20852.** Telephone: 301-231-5566. FAX: 301-770-2587.

NASA PLANETARY BIOLOGY INTERNSHIPS. The Marine Biological Laboratory, Woods Hole, Massachusetts, invites applications from graduate students and seniors accepted to graduate programs for awards of \$2000 plus travel to participate in research at NASA centers and collaborating institutions for approximately 8 weeks. Typical intern programs include: global ecology, remote sensing, microbial ecology, biomineralization, and origin and early evolution of life. Application deadline: 1 March 1990. For information/applications, contact: **Greg Hinkle, Planetary Biology Intern Program, Department of Botany, University of Massachusetts, Amherst, MA 01003.** *An Equal Opportunity/Affirmative Action Institution.*

RESEARCH OPPORTUNITIES

THE JACKSON LABORATORY, located on the coast of Maine on the fringe of Acadia National Park, is a world renowned center and resource for mammalian biology and genetics.

- **Dr. Benjamin Taylor** is seeking to fill three openings in his murine genetics research program. Program includes insertional mutagenesis, RFLP mapping, and analysis of developmental mutations.
 - **Professional Assistant:** BS or MS with experience in molecular biology and strong interest in genetics.
 - **Research Assistant:** BS in biology and demonstrated aptitude for research.
 - **Postdoctoral Fellow:** PhD with background in molecular biology and strong interest in mammalian genetics.
- **Dr. Gordon Watson** has an immediate opening for a Professional Assistant with a BS and experience in molecular biology. The program involves molecular biology, genetics and evolution of gene expression in response to hormones. The primary experimental model is the B-glucuronidase gene in mouse kidney.

Interested individuals, please contact:



The Jackson Laboratory

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

EOE/Affirmative Action Employer

OSTEOPOROSIS RESEARCH OPPORTUNITIES

Join the Wyeth-Ayerst Research team in their continuing commitment to bone metabolism research as a Ph.D. Scientist. Here, you will have the opportunity to direct projects that will complement our current antiosteoporotic drug discovery efforts. Wyeth-Ayerst Laboratories is a division of Fortune 100 American Home Products Corporation, and one of the world's most highly respected pharmaceutical research, development and manufacturing companies.

Our ideal candidate will have advanced training in bone cell biology or bone histopathology and, preferably, post doctoral experience with histomorphometric methods of bone analysis.

Wyeth-Ayerst offers competitive salaries, excellent benefits and opportunities for professional growth. Our modern research laboratory is located in South Brunswick, New Jersey, minutes north of Princeton and convenient to many cultural, educational and leisure activities.

Interested candidates should forward their curriculum vitae with salary history/requirements to: **Personnel Manager, Wyeth-Ayerst Research, CN 8000, Dept. 2781, Princeton, NJ 08543-8000.** *An Equal Opportunity Employer.*



Program of Excellence in Molecular Biology of the Heart and Lung

Postdoctoral Positions

We are initiating a second round of recruitment for postdoctorals to enter our "Program of Excellence in Molecular Biology" under the auspices of a grant from the National Heart, Lung and Blood Institute of NIH. The goals of the Program are to provide skills development and research opportunities in the molecular biology of heart and lung. Individuals being at the postdoctoral level and may progress to junior faculty status within three years. New investigators will work closely with the sponsor but in the final years will develop a research problem separate from that of the sponsor. During this period, they may apply for independent funding.

The Program is open to Ph.D.s or M.D.s with a strong background in molecular genetics who wish to apply their skills to significant problems of heart or lung or to individuals with strong backgrounds in heart and lung who wish to develop molecular genetic tools for continued study of these problems. We are particularly interested in recruiting minorities to the Program. Stipends begin at \$25,000 per year and move to \$37,000 in the final years. The faculty are:

1. Jerry Lingrel – Studies of the Na, K-ATPase genes and RFLP analysis of diseases such as familial hypertension.
2. Jeffrey Whitsett – Characterization of lung surfactant proteins and genes.
3. Winston Kao – Collagen gene expression in the lung.
4. Gary Shull – Structure-function relationships and genetic regulation of Ca-transporting ATPases of intracellular and plasma membranes.
5. Jeffrey Robbins – Study and targeting of cardiac contractile genes and the developmental control of muscle proteins.
6. Donal Luse – Transcriptional analysis of lung surfactant protein gene promoters.
7. Steve Potter – Insertional mutagenesis for identifying critical genes in heart and lung development.
8. Arnold Schwartz – Structure and function of Ca^{++} channel proteins and gene regulation; isolation of receptors for calcium antagonists.
9. Judith Harmony – Role of apolipoproteins in development; the regulation of cell proliferation and differentiation by apolipoproteins.
10. Thomas Doetschman – Gene targeting in ES cells using homologous recombination. Focus will be on vasculogenesis, angiogenesis and cardiogenesis.

Applicants should submit a C.V. and the names of three references to Jerry B Lingrel, Ph.D., Director, Program of Excellence in Molecular Biology, Department of Molecular Genetics, Biochemistry and Microbiology, University of Cincinnati College of Medicine, Cincinnati, Ohio 45267-0524.

Affirmative Action/Equal Opportunity Employer

PUBLIC HEALTH SERVICE NATIONAL INSTITUTES OF HEALTH NATIONAL CANCER INSTITUTE

A Senior Executive Service Vacancy

ASSOCIATE DIRECTOR

Cancer Prevention Research Program Division Of Cancer Prevention And Control

Location: Rockville, Maryland

The Associate Director, Cancer Prevention Research Program, will be responsible for the overall planning, coordination and monitoring of a worldwide Cancer Prevention Program designed to provide prompt evaluation of new leads in cancer prevention. The Cancer Prevention Research Program has a staff of approximately 46 who administer a large intramural and extramural program with a budget of approximately \$36 million annually.

This is a Civil Service position in the Senior Executive Service (SES) with an annual salary compensation between ES-1 through ES-4 (currently \$68,700 to \$76,400 per annum). In addition, physicians may be eligible for a Physician's Comparability Allowance up to \$20,000 per year. (Applicants alternatively may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.) The individual selected, if not presently in SES, must serve a one-year probationary period.

Applicants must meet the minimum educational requirements for Medical Officer, GS-602. Applicants must further meet established mandatory professional/technical and managerial/executive requirements. Applicants will be further evaluated on the degree to which they possess additional desirable qualifications in the areas of professional/technical qualifications, managerial/executive qualifications, scientific reputation/peer recognition, training and education, and honors and awards. A copy of the requirements may be obtained by contacting Ms. Dolores Guido in the Personnel Management Branch, NCI, at (301) 496-8182.

Applications for Federal Employment (SF-171), are to be sent to the above individual at:

**The National Cancer Institute
Personnel Management Branch
9000 Rockville Pike
Building 31, Room 3A19
Bethesda, Maryland 20892**



A current curriculum vitae and bibliography must accompany all applications for entrance into the SES. Resumes are not acceptable applications for entrance into the SES. Public Health Service Commissioned Officers wishing to enter the SES must follow the above procedures. Officers interested in performing the duties of the position *within the Commissioned Corps* may submit a resume to the above address.

Applications must be received by February 2, 1990.

SELECTION FOR THIS POSITION WILL BE BASED SOLELY ON MERIT, WITH NO DISCRIMINATION FOR NON-MERIT REASONS SUCH AS RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN, POLITICS, MARITAL STATUS, PHYSICAL HANDICAP, AGE, OR MEMBERSHIP OR NON-MEMBERSHIP IN AN EMPLOYEE ORGANIZATION.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

SITUATIONS WANTED

Ph.D. (1986). Experience in molecular biology, protein purification, and enzymology. Seeking research position in industry or academia, Box 2, SCIENCE.

COURSES AND TRAINING

MOLECULAR ENDOCRINOLOGY AND TECHNIQUES FOR HORMONE ACTION 18 to 22 February 1990

This COURSE will consist of lectures in methodology with comprehensive syllabus covering receptors, gene transcription, mRNA and protein synthesis, recombinant DNA, protein hormones, and cyclic nucleotides.

Co-directors: **M. R. Hughes and B. W. O'Malley**

Fee: \$365 (\$245: fellows and students)

For further information contact:

Bonnie Cuthbert
Department of Cell Biology
Baylor College of Medicine
Telephone: 713-798-6200

Deadline: 2 February 1990

GRADUATE STUDIES IN BIOCHEMISTRY AND MOLECULAR BIOLOGY DEPARTMENT OF BIOCHEMISTRY UNIVERSITY OF ILLINOIS AT CHICAGO

Graduate fellowships or assistantships are provided for all students in the program. Research interests include molecular biology and genetics (development and differentiation); signal transduction (hormone action, vision, protein kinases); protein engineering (enzyme active sites and modification); and molecular medicine (heart disease, cancer, muscular dystrophy). For further information and applications, please write or call: **Graduate Committee Chair, Department of Biochemistry (M/C536), University of Illinois College of Medicine, 1853 West Polk Street, Chicago, IL 60612.** Telephone: 312-996-7670.

COURSES AND TRAINING

ASSISTANTSHIPS GRADUATE PROGRAM IN NEUROSCIENCE

The Neuroscience Program in the College of Medicine at the Milton S. Hershey Medical Center of the Pennsylvania State University has assistantships available in August 1990. This interdepartmental program is designed to confer a Ph.D. degree with a major in neuroscience. Participating faculty have established research programs in molecular biology of the nervous system, neurophysiology, neuroendocrinology, behavioral science, neuropharmacology, neurovirology, and cerebral blood flow and metabolism. Interested candidates are invited to apply to: **Dr. Robert B. Page, Director, Neuroscience Program, P.O. Box 850, Hershey, PA 17033.** An Equal Opportunity/Affirmative Action Employer.

NEW INTEGRATED Ph.D. TRAINING PROGRAM with full cross-campus access to faculty in anatomy, biochemistry, cell biology, developmental biology, environmental health science, genetics, molecular biology and microbiology, neuroscience, nutrition, pathology/immunology, and pharmacology. Contact: **Bio-medical Sciences Training Program, W452s, Case Western Reserve University (CWRU) School of Medicine, Cleveland, OH 44106.** CWRU is an Equal Opportunity Employer.

MARKETPLACE

**CUSTOM
DNA SEQUENCING**

\$.99 a base *

Rapid turn around

1-800-332-0265

*certain restrictions apply

Circle No. 90 on Readers' Service Card

MARKETPLACE

Custom DNA Purified and Delivered in 48 hours.

\$10.00 a base for the first 15 bases, \$7.50 for each additional base. No additional charges.

Research Genetics

1-800-533-4363

Circle No. 68 on Readers' Service Card

SYNTHETIC DNA Operon Technologies, Inc.

Operon Technologies is a leading manufacturer of synthetic DNA, serving over 500 laboratories worldwide. Let us meet your DNA needs with economical pricing, rapid turnaround and an unconditional guarantee.

Custom synthesized DNA: 1 umole scale at \$5 per base. \$25 set-up fee per sequence. Economical prices for purification and larger scales. Stock primers and linkers at \$50 for 100.

1000 Atlantic Ave., Suite 108, Alameda, CA 94501
1-800-688-2248 Tel 415 865-8644 Fax 415 865-5255

Circle No. 131 on Readers' Service Card

NEED DNA FAST?

Custom Sequencing Primers in 26 hours*

Redundancies. Methylphosphonates. Phosphorothioates. 5'-Phosphorylation. HPLC or Gel purification • High Quality & Low Prices

*1-800-247-8766 The Midland Certified Reagent Co.
FAX 915-694-2387 31124 W. Cuthbert, Midland, TX 79701

BUILDING A NEW LAB?

LET THE SCIENCE FREE PRODUCT INFORMATION SERVICE PUT YOU IN TOUCH WITH THE VENDORS WHOSE PRODUCTS YOU WILL NEED.

SIMPLY WRITE US A LETTER STATING THE SPECIFICS ABOUT YOUR PROPOSED LAB AND WE WILL DO THE REST.

WRITE TO:

**SCIENCE MAGAZINE
NEW LAB SERVICE DEPT.
1515 BROADWAY
NEW YORK, N.Y. 10036**



Center for Microbial Ecology
AN NSF SCIENCE AND TECHNOLOGY CENTER
MICHIGAN STATE UNIVERSITY

hosts a meeting of

MATHEMATICAL ASPECTS OF MICROBIAL ECOLOGY

FOR FACULTY, RESEARCHERS AND GRADUATE STUDENTS

May 21-23, 1990

**The Kellogg Center for Continuing Education
East Lansing, Michigan**

Presentations by: **Lee Baldwin, Douglas Caldwell, Robert Christian, Arnold Fredrickson, Willi Jager, Douglas Lauffenburger, Bruce Levin, Joseph Robinson, Lone Simonson, Hal Smith, Betty Tang, Julian Wimpenny**

Poster and special problem seminars will be organized. Limited funds for graduate student participation and application information available with registration material.

Registration - \$50.00 **REGISTRATION DEADLINE - 4/15/90**

Individual hotel and dorm style lodging arranged separately.

Early registration recommended due to meeting size limit.

For registration materials please contact:

Rebecca Murthum Phone: 517/355-1715
College of Natural Science Fax: 517/355-9581
Michigan State University
103 Natural Science Bldg.
East Lansing, MI 48824.

Save hours of time and improve results by automating solid phase extraction with the new ASPEC system

Automate all conditioning, sample application, washing and elution steps

Solid phase extraction is a time-consuming, manually intensive job. Depending on the protocol, it can take several hours a day. By automating the procedure, ASPEC (Automatic Sample Preparation with Extraction Columns) frees you for more productive work. Ideal for most GC and HPLC applications, ASPEC automates sample preparation for GC and both sample preparation and injection for HPLC.

Extraction steps automated by ASPEC

Pre-stored software for...

- three column conditioning steps
- sample application to 108 columns
- washing with up to three solvents
- application of up to three elution solvents
- on-line HPLC injection

Programmable steps for...

- addition of internal standards
- extra column conditioning, washing or elution
- variable drying time
- sample derivatization or dilution

ASPEC treats every column identically to assure reproducible results

Automation with ASPEC also assures better results. ASPEC treats every column identically—and with accuracy—by eliminating errors that could

occur in manual liquid handling. The ASPEC pipettor/dilutor picks up and delivers sample or solvent with up to 99.5% accuracy and a 0.05% CV.

Built-in software turns programming into an easy step-by-step process

Automation sometimes means complication. But not with ASPEC. Three built-in files prompt you for basic parameters such as column size and liquid volumes. Once the parameters are entered, you can store them for future use. And when you need to change parameters, ASPEC makes that easy, too. You go right to the parameter you need to change without re-entering every one.

Pipettor/dilutor assures accurate liquid volumes

Unmatched value: no costly add-ons or consumables; multiple uses

ASPEC is compatible with all standard syringe barrel disposable extraction columns. So there's no need to pay a premium for special columns. And ASPEC comes complete. So there's no need for special supplies such as vacuum pumps or extra modules. What's more, when you're not performing solid phase extractions, ASPEC works as an auto sampler/injector to perform dilutions, add internal standards, mix reagents and inject samples.

To learn more, write for our free brochure

You can learn more about ASPEC by requesting a free copy of our new brochure. And then, if you'd like, we'll arrange for a no-obligation demonstration.

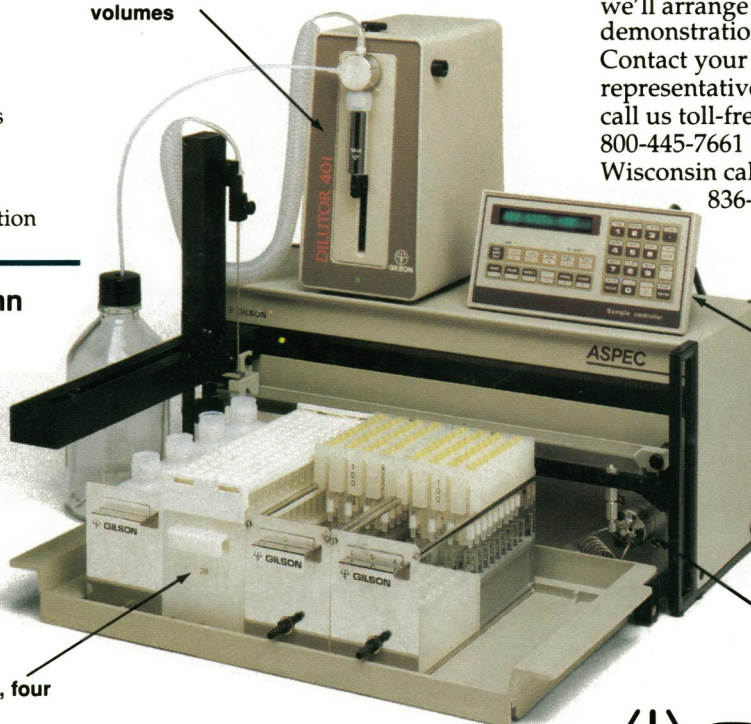
Contact your Gilson representative. Or call us toll-free at 800-445-7661 (In Wisconsin call 608-836-1551).



Keypad and pre-stored software simplify programming

Injection valve provides for automatic on-line HPLC injection

Racks hold up to 108 samples, four solvents and 108 columns



GILSON®

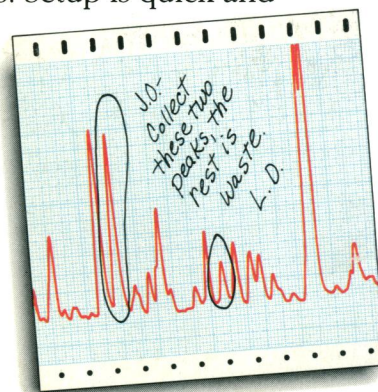
Discover new solutions

Foxy 200:

the new expert fraction collector for prep LC

Now it's easier than ever before to collect the right fractions —Foxy® 200 sizes and sorts them exactly the way you want.

- ◆ Easy-to-follow menus. Setup is quick and intuitive for any HPLC or prep LC protocol.
- ◆ Collect only the peaks you want. Peak detection by slope, height, and/or time windows is built in.
- ◆ Change LC scale easily from drops to liters/min. Collect in anything from microcentrifuge tubes to off-deck containers.



Phone today, (800)228-4250.



Isco, Inc.
Box 5347,
Lincoln NE 68505



Circle No. 63 on Readers' Service Card