

2nd International Meeting Biology of Nitric Oxide

30th September-2nd October 1991

London Hilton on Park Lane,
London, UK

Nitric oxide is now recognised as a transduction molecule in many biological systems and as an immunologically generated cytotoxic agent. This field of research is growing rapidly and its implications for our understanding of the cardiovascular system, central nervous system and host defence mechanisms are many. This meeting will discuss the roles of nitric oxide in physiology and pathophysiology and the potential for discovering novel therapeutic agents.

Organisers

S. Moncada M. A. Marletta J. B. Hibbs Jr

Attendance will be limited to 500. Prospective participants are asked to apply for further details from Georgina Mason, IBC Technical Services Ltd., Bath House, 56 Holborn Viaduct, London EC1A 2EX. Tel: 071-236 4080. Fax: 071-489 0849.

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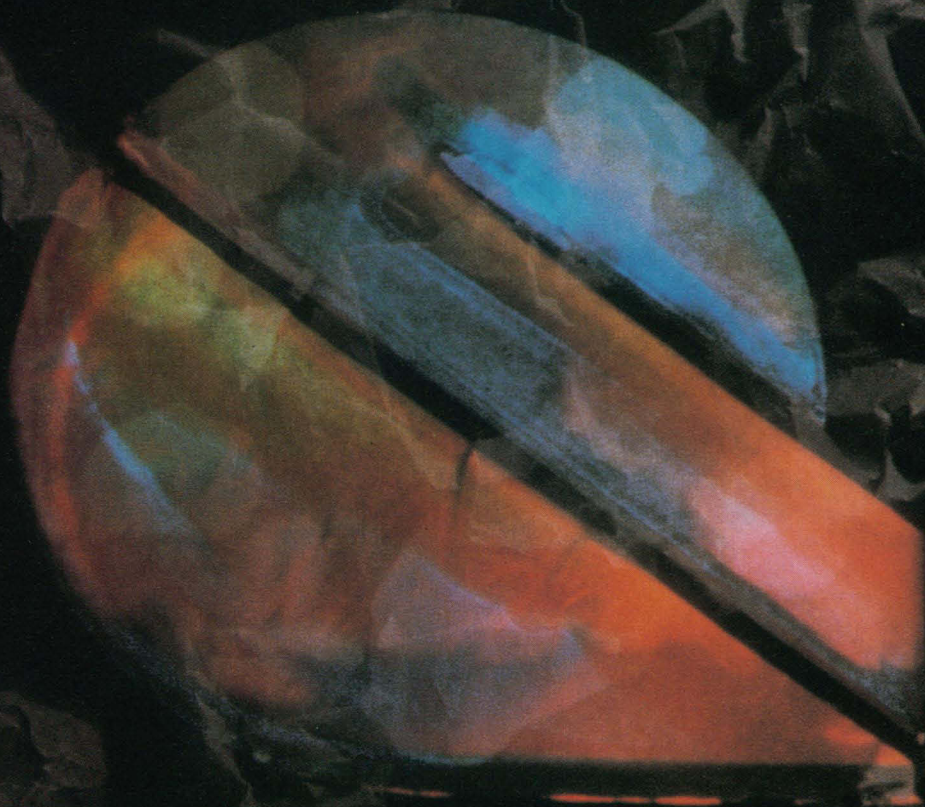
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Hereditary Tumors

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Scientific Organization:
G.D. Aurbach (USA) and U. Veronesi (I)

2nd Int. Conference on Research Policies and Quality Assurance

May 6-7 / Rome (I)

Scientific Organization:
A.E. Shamoo (USA)

Nutritional Aspects of Osteoporosis

May 16-18 / Lausanne (CH)

Scientific Organization:
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Biotechnology of Cell Regulation

June 20-22 / Siena (I)

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Y. Nishizuka (J) and I. Pastan (USA)

Stress and Reproduction

July 25-27 / Port Douglas (AUS)

Scientific Organization:
J. Funder (AUS)

Molecular and Cellular Biology of Reproduction

September 9-10 / Capri (I)

Scientific Organization:
W. Bardin (USA) and K.J. Catt (USA)

A Molecular View of Steroid Biosynthesis and Metabolism

October 14-16 / Jerusalem (IL)

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Notebook Computer

The ZEOS Notebook '286 weighs less than 7 pounds and has 1 megabyte of memory, a VGA display, a 20-megabyte hard disk, and a 1.44-megabyte floppy drive. The floppy drive makes it easy for users to load and transfer programs and files using standard 3.5-inch diskettes. A snap-in battery "quick charges" in an hour and "trickle charges" while the system is being used. The battery provides two or more hours of operation between charges. Other features include an 82-key keyboard and input-output ports for external devices such as printers and external monitors. Optional features include a modem, memory up to 5 megabytes, extra batteries, a battery charging station, and a carrying case. ZEOS International. Circle 442.

Cytocentrifuge Acquires New Features

The Shandon Cytospin, the cytocentrifuge that spins cells onto a microscope slide, now incorporates new features, including three acceleration speeds. The low speed preserves fragile cells and delicate cell morphology. The microchip memory has been expanded to accept up to nine routines. The instrument can also be used in cell block preparation, with Cytoblock kits containing a setting reagent and a gelling reagent. The kit eliminates the need for agar or thrombin techniques. Shandon. Circle 449.

Fluorescent DNA Fragment Analyzer

The GENE SCANNER Fluorescent Fragment Analyzer is an automated system for the analysis of DNA fragments. The system is based on the manufacturer's "four-dye, one-lane" gel scheme. Researchers use four different fluorescent dyes for the covalent labeling of individual samples. Up to

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four samples or three samples and an internal standard can then be run in a single gel lane. After the samples are loaded into the system's horizontal gel, the system performs everything from real-time fragment detection through final data presentation. Results can be displayed as a four-color, digitized gel; as individual sample electrophoretograms; and as tabular results showing fragment size, dye labeling, and the fluorescence peak area and height. Applied Biosystems. Circle 452.

Monoclonal Antibodies

Two new monoclonal antibodies detect microtubule-associated proteins (MAPs), which are involved in microtubule assembly, organization, function, and stability. Anti-MAP-2 (clone AP-20) identifies the MAP-2 antigen in neuronal cell bodies and dendrites; Anti-tau (clone tau-1) identifies the tau-1 antigen in axons. Both antibodies react with human, rat, avian, and bovine brain tissue. Boehringer-Mannheim Biochemicals. Circle 460.

A murine monoclonal antibody to P-glycoprotein reacts with an epitope that is strongly correlated with the degree of multi-drug-resistant cell lines, including those derived from lung, ovary, and B cell lymphomas. The JSB-1 antibody is provided as prediluted ascites in 1-ml (100 to 200 tests) and 5-ml (500 to 1000 tests) sizes ready for use in indirect immunoperoxidase staining techniques. Caltag Laboratories. Circle 461.

Thermocycler for PCR

The VARIUS V is a thermocycler with five heat blocks, each microprocessor-controlled separately in temperature and time. The instrument is specially designed for use in polymerase chain reaction procedures. Each block can hold four 0.5-ml reaction vessels. Temperatures change is rapid at 2°C per second. The temperature range is 1° to 99°C, with deviation of less than 1°C. Landgraf. Circle 462.

Glass Filter Housings

Glass filter housings are designed for filtration applications requiring nonmetallic contact of filtered fluids. Fabricated entirely of transparent, tempered borosilicate glass, these housings can be used with aggressive solutions. The GPTX Series consists of a housing held together by a flange, allowing access to the filter element. It can be plumbed directly into existing conical glass



pipelines. The GPTN Series consists of a ceramic element with a nipple-end adapter for suction hose connections. The filter element is enclosed in a borosilicate glass housing, which can also be connected to suction or pressure hoses. Osmonics. Circle 455.

Literature

Transfer Performance of Comparative Nitrocellulose Products compares the performance of nitrocellulose transfer products in immobilization studies on nucleic acids and protein. Sartorius. Circle 470.

Scripps 1991 Catalog features bulk human proteins and enzymes. The 108-page catalog introduces more than 25 new products and includes pituitary hormones, serum proteins, cancer tumor markers, viruses, noninfectious disease-state serum and plasma, and immunodiagnostic biochemicals. Scripps Laboratories. Circle 471.

Physiology Research Instruments is a catalog with many products, including micromanipulators, stereotaxic instruments, pipette pullers, microforges, and animal assessment instruments. Stoelting. Circle 473.

Perkin-Elmer Cetus Biotechnology Catalog incorporates a special eight-page new product supplement that highlights the latest GeneAmp polymerase chain reaction product introductions. Perkin-Elmer Cetus. Circle 465.

Facts About Glass Made Clear is a guide to the use of glass fiber filters in general filtration, radioimmunoassay, cell harvesting, protein sequencing, antibody immobilization, and animal cell growth. Schleicher & Schuell. Circle 475.

VWR BioUpdate is a new newsletter with technical information on life sciences. The first issue includes articles on isolation and analysis of RNA and highlights new product lines. VWR Scientific. Circle 476.

Capillary Electrophoresis: Automated and Manual Systems is a 12-page, color brochure that describes Model 3140 Electropherograph, a fully automated instrument with a 40-position autosampler, and Model 3850, an affordable "personal" instrument. Isco. Circle 479.

Personnel Placement

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DEADLINES: Ads are due by Thursday, 10 a.m., 2 weeks prior to the issue date. *Science* publishes each Friday, except the last Friday of the year. Advertisements must be submitted in writing.

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Remember, this is a rough estimate only. Allow for variation between estimated typewritten lines and ads when actually typeset for magazine. Therefore, purchase orders must allow additional funds for flexibility and/or adjustment. *Science* cannot provide proofs of typeset ads.

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POSITIONS OPEN

BIOLOGY, ASSISTANT PROFESSOR

The joint Biology Department of St. John's University and the College of St. Benedict invites applications for two sabbatical replacement positions at the assistant professor level. One of the two positions may be renewable for up to a maximum of 3 years.

Teaching responsibilities for both positions will include introductory biology for majors. In addition, one position could require the participation in environmental science or life science for nonmajors and an upper division course in ecology; the other, life science, human biology, anatomy/physiology for nonmajors, and upper division physiology. Specific teaching responsibilities will depend upon departmental needs. A normal teaching load is two courses with laboratories each full term and one course during January.

Both positions require a Ph.D., demonstrated interest and ability in teaching, and a strong undergraduate background in biology.

Send curriculum vitae, undergraduate and graduate transcripts, a statement of teaching and research interests, and three letters of recommendation to: **Director of Personnel, St. John's University, Collegeville, MN 56321.** Applications received after 22 February 1991 cannot be guaranteed consideration. *St. John's is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

MOLECULAR BIOLOGIST STANFORD UNIVERSITY

The Department of Biological Sciences at Stanford University invites applications for a tenure-track faculty position. Applications will be considered at the ASSISTANT PROFESSOR level. Research interests should include emphasis on biochemical, biophysical, and molecular approaches to the study of macromolecular interactions such as those involved in biological regulatory processes. The successful candidate should have a sincere interest in teaching and will be expected to participate in undergraduate and graduate courses. *Applications are encouraged from women and minority candidates.* Applicants should send curriculum vitae, a letter summarizing research and teaching goals, selected reprints, and the names and addresses of three to five references to: **Chair, Molecular Biology Search Committee, Department of Biological Sciences, Stanford University, Stanford, CA 94305-5020.** *Stanford University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR DEPARTMENT OF IMMUNOLOGY

The Department of Immunology at the University of Toronto invites applications for an assistant professor tenure-track position to begin 1 July 1991. This position requires the ability to establish an independent, competitive research program in molecular or cellular immunology and to undertake a light teaching load. Send résumé, including current and long-term research objectives, and the names and addresses of three referees to: **Dr. B. H. Barber, Acting Chair, Department of Immunology, Medical Sciences Building, University of Toronto, Toronto, Ontario, Canada M5S 1A8.** Applications must be received by 15 March 1991. *The University of Toronto is an Equal Opportunity Employer.*

ASSISTANT PROFESSOR POSITION

In molecular biology, available after 1 June 1991. The University of Texas (UT) M. D. Anderson Cancer Center, Science Park-Research Division, Smithville, Texas, is expanding into new laboratories and invites applications for a tenure-track position at the assistant professor level. Research at Science Park encompasses programs in mechanisms of multistage carcinogenesis, retrovirology, DNA damage and repair, and genetics. Successful applicants will be expected to establish high-quality, independent research programs. Preference will be given to applicants working in the area of molecular biology of cancer, emphasizing tumor suppressor genes, oncogenes, and/or cancer genetics. Consideration will also be given to strong applicants in other areas of molecular biology related to carcinogenesis. Submit curriculum vitae, two representative publications, brief outline of current and future research plans, and the names of three references by 15 March 1991 to: **Dr. M. C. MacLeod, UT M. D. Anderson Cancer Center, Science Park-Research Division, P.O. Box 389, Smithville, TX 78957.** *Equal Opportunity/Affirmative Action Employer and a smoke-free workplace.*

POSITIONS OPEN



ASSISTANT PROFESSOR OF PHARMACOLOGY

The Division of Pharmacology of The Ohio State University invites applications for a tenure-track position beginning 1 September 1991. Candidates should have a Ph.D. in pharmacology, toxicology, or related field; a commitment to quality research and teaching; and a willingness to work in a collaborative environment with nine other pharmacologists. Research areas of high priority include biochemical, molecular, or cellular studies involved in the pharmacological, toxicological, or immunological actions of drugs. Applicants should send curriculum vitae, proposed research program, and the names of three references to: **Dennis R. Feller, Ph.D., Chair, Search Committee, Division of Pharmacology, College of Pharmacy, The Ohio State University, 500 West 12th Avenue, Columbus, OH 43210-1291.** Review of candidates will begin 15 April 1991. *The Ohio State University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

ASSISTANT PROFESSOR. Tenure-track, organismal plant physiology/molecular biology. Postdoctoral experience preferred. Teaching and student-involved research expected. Curriculum vitae, statements of research and teaching goals, transcripts, and three letters of reference should be sent by 15 March 1991 to: **Dr. Michael Warnock, Search Committee Chair, Department of Biological Sciences, Sam Houston State University (SHSU), Huntsville, TX 77341.** *SHSU is an Affirmative Action/Equal Opportunity Employer.*

CHEMISTRY/PHYSICAL SCIENCES ASSISTANT PROFESSOR. Unity College, a small independence college in Maine specializing in sciences and social sciences related to the environment while retaining a basis in liberal arts, seeks instructor in introductory chemistry courses to support and interact with these specialties. One or more of the following desired: readiness to develop nonmajor courses in environmental pollution; ability to teach introductory physics and physical sciences; interest in other interdisciplinary courses/projects. Ph.D. preferred. Send curriculum vitae with names and telephone numbers of three references to: **Dean Donald Mortland, Unity College, Unity, ME 04988.** Telephone: 207-948-3131 by 1 March 1991. *Equal Opportunity Employer.*

TWO ASSISTANT PROFESSORS IN BIOLOGY. Starting 15 August 1991, tenure track. Ph.D. required by August 1991. Both appointees will teach in an introductory biology course, advise undergraduate and graduate (M.A. and Ph.D.) students, and establish a research program. **POPULATION ECOLOGIST/ECOTOXICOLOGIST:** Teach in ecology and environmental toxicology, biometrics, or other area of expertise. **PHYSIOLOGIST:** Teach endocrinology and participate in upper division courses in physiology. Submit curriculum vitae, transcripts, statement of research interests, three letters of recommendation, and the names, addresses, and telephone numbers for two additional references to: **Search, Biology Department, University of South Dakota, Vermillion, SD 57069.** Telephone: 605-677-5211. Screening begins 1 March 1991. *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR PHARMACOLOGY

The Department of Pharmacology and Toxicology at Michigan State University invites applications for a tenure-track position. Persons with research experience in any area of pharmacology are invited to apply although preference will be given to those with expertise in cardiovascular pharmacology, immunopharmacology, or molecular pharmacology. Applicants must have a Ph.D. in pharmacology or an M.D. with two or more years of relevant postdoctoral experience. The successful candidate will be expected to establish an independent research program and contribute to the teaching of graduate and medical students. Applicants should send curriculum vitae, a short summary of research plans, and the names of three references to: **Chairman, Search Committee, Department of Pharmacology/Toxicology, Michigan State University, B440 Life Sciences, East Lansing, MI 48824.** *MSU is an Affirmative Action/Equal Opportunity Institute.*

POSITIONS OPEN

ASSISTANT PROFESSOR MOLECULAR IMMUNOLOGISTS

A tenure-track position is available in the Department of Pathology and Laboratory Medicine, University of Pennsylvania. Candidates with interest in the molecular analysis of immune responses, with an emphasis on receptor function, are encouraged to apply, but all outstanding candidates will be considered. The successful applicant will be expected to develop a strong, externally funded research program and to participate in both the graduate and medical student training programs. Curriculum vitae, bibliography, a summary of research interests, and the names of three references should be sent to: **Dr. Helen Quill, Department of Pathology and Laboratory Medicine, University of Pennsylvania, School of Medicine, 36th and Hamilton Walk, Philadelphia, PA 19104-6082.** We are an Equal Opportunity/Affirmative Action Employer. Female and minority candidates are encouraged to apply.

ASSISTANT PROFESSORS, TENURE TRACK CELL/DEVELOPMENTAL/NEUROBIOLOGY

The Department of Anatomy and Cell Biology at the Uniformed Services University of the Health Sciences (USUHS) will fill two tenure-track positions at the assistant professor level. We expect to provide starting faculty members with a technician. They will also have access to internal research support and the use of state-of-the-art instrumentation, including a confocal microscope, ACAS laser work station, oligonucleotide and peptide synthesizers, and a laser microbeam apparatus. Teaching will be in neuro-, micro-, or gross anatomy. Candidates must have postdoctoral experience and be committed to an active research program. Send curriculum vitae, statement of research interests, and names and addresses of at least three references to: **Mark D. Rollag, Ph.D., Search Committee Chairman, c/o Civilian Personnel Office, USUHS, 4301 Jones Bridge Road, Bethesda, MD 20814-4799.** Equal Opportunity/Affirmative Action Employer.

TWO ASSISTANT PROFESSORSHIPS. The Department of Biochemistry and Molecular Biology at the University of Arkansas for Medical Sciences (UAMS) is committed to a major expansion of its faculty. The department will occupy expanded quarters in a new building in 1992. In 1991 we are soliciting applications for two new full-time (12-month) tenure-track assistant professorships in all areas of biochemistry/molecular biology. Positions are state-funded. Candidates should have a Ph.D. and/or M.D. degree, postdoctoral experience, and a demonstrated record of excellence in research. Successful candidates will be expected to develop a funded research program and contribute to teaching medical and graduate students. Applicants should submit curriculum vitae, a brief statement of proposed research, and the names and addresses of three references to: **Chair, Search Committee, Department of Biochemistry and Molecular Biology, Slot 516, College of Medicine, University of Arkansas for Medical Science, 4301 West Markham, Little Rock, AR 72205,** by 15 March 1991. UAMS is an Equal Opportunity/Affirmative Action Employer.

YALE UNIVERSITY SCHOOL OF MEDICINE

The Division of Environmental Health Sciences (EHS) of the Department of Epidemiology and Public Health at Yale University School of Medicine invites applications for two faculty positions in the areas of **ENVIRONMENTAL TOXICOLOGY, ENVIRONMENTAL EPIDEMIOLOGY,** and/or **EXPOSURE ASSESSMENT** at the **ASSISTANT OR ASSOCIATE PROFESSOR** level, beginning 1 July 1991 or 1 January 1992. Applicants should have a Ph.D. or M.D., a solid publication record, appropriate teaching experience, and a strong commitment to a growing doctoral program in environmental health sciences. Interested individuals should provide a letter of application, curriculum vitae, research interests, and names of at least three references. Applications must be received by 15 April 1991.

Send applications to: **Dr. Brian Leaderer, Head, EHS Division, Department of Epidemiology and Public Health, Yale School of Medicine, 60 College Street, P.O. Box 3333, New Haven, CT 06510.**

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We have two positions available, one for a PhD with 1-3 years experience, and another for an individual with an MS degree. Degrees must be in microbiology, biology, biochemistry or a related field. Background should encompass retrovirology or related lab discipline. Experience with HIV 1 infectivity assays preferred. Strict interpretation and compliance with sterile technique and biohazard containment a plus. Excellent communication skills essential.

LYOPHILIZATION/FORMULATION SCIENTIST (Dept. LD-LFS)

This position involves conducting research for developing new formulations for lyophilized products. Requirements include a BS with at least 5-7 years experience, or an MS with 3-5 years in the area of protein chemistry. Background and thorough understanding of the physical/chemical changes in protein solutions that occur during lyophilization is required. Working knowledge of the formulation of proteins is essential; full understanding of drug delivery systems is a plus.

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POSITIONS OPEN

ASSISTANT PROFESSOR, SECTION OF ENDOCRINOLOGY AND METABOLISM UNIVERSITY OF MINNESOTA MEDICAL SCHOOL

The Department of Medicine of the University of Minnesota is attempting to identify a suitable individual to fill a tenure-track position at the level of assistant professor in the Section of Endocrinology for a physician-scientist with a strong interest in the area of bone and mineral metabolism. Requirements include certification or eligibility for certification by the Subspecialty Boards of Endocrinology and Metabolism or comparable bodies outside of the United States. The applicant should also have sufficient training and experience in field of molecular and cellular biology to allow him or her to compete effectively for independent research funding at the national level. Start-up funds as well as protected research time will be provided. The faculty member will have a well-equipped laboratory with ready access to all equipment necessary for the conduct of standard cellular and molecular studies. Additional responsibilities will include patient care and the teaching of medical students and house staff. The faculty member will be situated in an intellectually stimulating environment and in a department deeply committed to maintaining the highest traditional academic standards.

Last date for receipt of applications is 1 April 1991.

Applications and nominations (include names and addresses of three references) should be sent to:

Jack H. Oppenheimer, M.D., F.A.C.P.
University of Minnesota Medical School
Box 91, UMHC
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The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

CENTER FOR MOLECULAR MEDICINE INSTITUTE OF BIOTECHNOLOGY DEPARTMENT OF CELLULAR AND STRUCTURAL BIOLOGY THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT SAN ANTONIO

The new Center for Molecular Medicine at The University of Texas Health Science Center at San Antonio invites applications for faculty positions at the ASSISTANT PROFESSOR TO PROFESSOR level. Individuals with a strong record of scientific accomplishment which complement the existing institutional strengths are being recruited. Applicants for junior positions should have a Ph.D. or M.D. degree with at least two but preferably three to four years of postdoctoral experience. Expertise in the following fields is desired: adhesion molecules, growth factors and receptors, signal transduction, and DNA replication and transcription factors in eukaryotic systems. The positions provide exceptionally competitive salaries, generous start-up funds, and laboratory space in the attractive, highly interactive and modern research environment provided by the center, which is housed in the newly constructed Institute of Biotechnology. The director designate of the Center is Dr. Wen-Hwa Lee.

Interested individuals should send curriculum vitae, a statement of research objectives, reprints of recent articles, and names of three references by 15 March 1991.

Application materials should be sent to: **Dr. Z. Dave Sharp, Deputy Director, Center for Molecular Medicine, Institute of Biotechnology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-6250.** *The University of Texas Health Science Center at San Antonio is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE/FULL PROFESSOR tenure-track faculty position in **ECOSYSTEM ECOLOGY** with strong research interest and experience in nutrient dynamics and productivity of coastal, near-shore, or estuarine systems. Teaching at the undergraduate and/or graduate level and the training of graduate students expected. Applications will be accepted until 1 April 1991, or until position is filled. Applications, including the names and addresses of five references, should be sent to: **Dr. Frederick Grassle, Institute of Marine and Coastal Sciences, Box 231, Rutgers University, New Brunswick, NJ 08903.** *Rutgers is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

VISITING ASSISTANT PROFESSOR, INVERTEBRATE ZOOLOGY AND GENETICS. The Connecticut College Department of Zoology invites applications for a 1-year, nontenure-track appointment. Visiting faculty teach six courses per year with laboratory sections counting as courses. Responsibilities include teaching invertebrate zoology and genetics, and involvement in general biology and general zoology. A Ph.D. is required.

Send curriculum vitae, reprints, a statement of teaching and research interests, and three letters of recommendation to: **Dr. Robert Askins, Chair, Department of Zoology, Box 5461, 270 Mohegan Avenue, New London, CT 06320-4196** by 15 March 1991. *Connecticut College is an Affirmative Action/Equal Opportunity Employer. Women and minorities are strongly encouraged to apply.*

DEVELOPMENTAL BIOLOGIST

The Division of Neonatology at the University of Maryland School of Medicine is seeking **ASSOCIATE/FULL PROFESSOR** to coordinate research efforts. Position available July 1991. Candidate's research should focus on fetal lung maturation, surfactant/phospholipid biochemistry. Requirements include Ph.D. and 5 years of faculty experience supervising and teaching trainees. Send curriculum vitae and names of three references by 15 March 1991 to: **Dr. Ira Gewolf, Division Chief, Neonatology, University of Maryland Hospital, 22 South Greene Street, Baltimore, MD 21201.** *An Equal Opportunity/Affirmative Action Employer.*

THE UNIVERSITY OF NEW MEXICO

A full-time (12-month) tenure-track **ASSISTANT OR ASSOCIATE PROFESSOR** faculty position is available at the University of New Mexico College of Pharmacy beginning 1 July 1991 for candidates with a Ph.D. in pharmacology, toxicology, or a related discipline. Preference will be given to candidates who demonstrate strong research potential and a commitment to undergraduate and graduate teaching in the areas of pharmacology and toxicology. Candidates with a B.S. in pharmacy or a Pharm.D. degree, and/or with teaching experience in pharmacology and toxicology are also preferred. *The University of New Mexico is an Affirmative Action/Equal Opportunity Employer. Women and minority candidates are encouraged to apply.* Applicants should send curriculum vitae, statement of career interests and goals, a research plan, and three letters of recommendation by 1 May 1991 to: **Scott W. Burchiel, Ph.D., Chair, Faculty Search Committee, College of Pharmacy, The University of New Mexico, Albuquerque, NM 87131.**

The Faculty of Communication, University of Tulsa, seeks to fill two tenure-track positions at the **ASSOCIATE OR ASSISTANT PROFESSOR** level beginning 20 August 1991. Review of applications will begin 1 March 1991, and continue until the positions are filled.

The department seeks candidates whose primary teaching and research interests include two of the following: interpersonal communication, quantitative research methods, intercultural and international communication, language and meaning in communication. Teaching would include courses in those areas plus introduction to communication, public communication, and small group communication as needed.

The department stresses liberal arts education. It participates in the university's general curriculum with seminars and other courses. The University of Tulsa is a private, independent institution that draws high-quality students from across the nation. It is committed to close student-teacher contact, excellent teaching and research. To encourage research, assistant professors are given reduced teaching assignments.

Communication facilities include a state-of-the-art computer lab with excellent desk-top publishing capability, two well-equipped television studios, a public radio station, and a campus newspaper. Students produce a weekly cable TV program broadcast in Tulsa. Internships are available to students meeting academic criteria. Salary is commensurate with qualifications and experience.

Candidates should have completed the Ph.D. or complete it prior to 15 August 1991. Send application, curriculum vitae including academic record, and three letters of recommendation to: **Robert J. Doolittle, Chair, Faculty of Communication, 600 South College Avenue, Tulsa, OK 74104.** *We especially encourage applications from female and minority candidates.*

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

POSITIONS OPEN

The Department of Biology at Morehouse College invites applications for a tenure-track position at the **ASSISTANT/ASSOCIATE PROFESSOR** level, to begin 21 August 1991, for a **CELL BIOLOGIST** whose expertise is either in the plant sciences or in developmental biology. The successful applicant must hold a Ph.D. degree and be proficient in the use of the electron microscope. Teaching responsibilities will be consistent with the training of the individual. Faculty members are expected to maintain an active research program which involves undergraduate and graduate students. Closing date: 18 March 1991, or until suitable candidates are found. Applicants should submit their curriculum vitae and a statement of teaching and research goals and arrange to have an official graduate school academic transcript and three letters of recommendation sent to: **Dr. J. K. Haynes, Chairman, Department of Biology, Morehouse College, 830 Westview Drive, S.W., Atlanta, GA 30314.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR

The Hormel Institute, University of Minnesota, invites applications for a section leader position at the level of assistant or associate professor to establish a program on trans-plasma membrane signaling. Requirements: Ph.D. and at least 8 years of research experience and publications on the regulation of lipid metabolism using radioisotope, cytochemical, and protein purification techniques with special emphasis on phospholipid turnover via phospholipases C and D, the intra-cellular translocation of protein kinase C, and the role of oncogenes and free radical-generating agents. Please submit curriculum vitae, publication list, a brief description of research interests, and the names of three references to: **Dr. Rhoderick E. Brown, Chairman of the Search Committee, The Hormel Institute, University of Minnesota, 801 16th Avenue, N.E., Austin, MN 55912.** Telephone: 507-437-9625. Application deadline is 28 February 1991. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

ASSISTANT/ASSOCIATE PROFESSOR

The Department of Environmental Health at the University of Cincinnati invites applications for a non-tenure-track assistant/associate professor with expertise in virology, molecular biology, and gene cloning. This individual should have the ability to conduct independent research with emphasis on expression of genes encoding drug-metabolizing enzymes and other genes relevant to environmental toxicology. This individual should be able to direct graduate students and postdoctoral fellows and have the ability to assist in the teaching of a molecular toxicology course at the graduate level. The candidate must have five or more years of experience in virology, molecular biology, gene cloning, and expression vectors. Candidates should submit a letter of application describing their research interests and future goals, current curriculum vitae, and the names and addresses of three references by 22 February 1991 to: **Dr. Dale R. Johnson, Chairman, Molecular Biology Search Committee, Department of Environmental Health, University of Cincinnati, Cincinnati, OH 45267-0056.** *The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.*

REPRODUCTIVE BIOLOGIST

Position available immediately for Ph.D.-level reproductive biologist. Exceptionally attractive academic position for a university faculty member at **ASSOCIATE PROFESSOR** level. The successful applicant will be skilled at embryonic micromanipulation, embryo tissue culture, and receptor and enzymatic biochemistry relevant to the preimplantation embryo. Would join a group of three fully trained reproductive endocrinologists in a division of a major Obstetrics and Gynecology Department with an approved fellowship program in reproductive endocrinology, ongoing NIH-funded research, a growing IVF program, and private practice. Apply to: **John E. Buster, M.D., Professor and Director, Division of Reproductive Endocrinology, Department of Obstetrics and Gynecology, The University of Tennessee, Memphis, 956 Court Avenue, Room D328, Memphis, TN 38163.**

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

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PUBLIC HEALTH SERVICE

FOOD AND DRUG ADMINISTRATION

CENTER FOR FOOD SAFETY AND APPLIED NUTRITION

The Center for Food Safety and Applied Nutrition conducts multidisciplinary basic and applied research and regulatory programs which assure the safety of the food supply and cosmetics. The Center is actively recruiting for all levels of research, regulatory and technical positions to manage and/or conduct research and regulatory/compliance programs in food safety (microbiology, packaging, engineering, genetics, toxicology), food labeling, diet and health interactions, risk assessment, seafood safety, food and color additive petition review, pesticides and chemical contaminants, natural toxins, etc. Specific disciplines sought include:

- Food microbiology, chemistry, biology, or biochemistry
- Food, chemical, agricultural, or mechanical engineering
- Food technology
- Nutrition
- Molecular biology
- Analytical or organic chemistry
- Pharmacokinetics
- Medicine
- Toxicology
- HACCP, particularly with commodity specialization
- Public health
- Economics
- Epidemiology
- Risk assessment
- Risk communication
- Social psychology
- Veterinary science

QUALIFICATIONS: Candidates must meet U.S. OPM qualifications requirements and must be U.S. citizens. Candidates for Staff Fellowships must have a Master's or Doctoral level degree and may be either U.S. citizens or resident aliens eligible for citizenship within four years. Degrees should be in the biological or chemical sciences, with emphasis on food sciences, food engineering, engineering, toxicology, risk assessment, nutrition, food microbiology, etc., or in appropriate medical or social sciences.

DURATION: Appointments will be to full-time, permanent positions or to Staff Fellowships with initial two-year appointments which may be extended up to a total of seven years.

LOCATION: Center facilities are located in Southwest Washington, DC; Beltsville, MD; Bedford Park, IL; Davisville, RI; and Dauphin Island, AL.

SALARY: Salaries for full-time, permanent appointments are from \$16,973, to \$80,138. Salary range for Staff Fellow appointments at the Master's level is \$25,717 to \$27,431 and at the Doctoral level is \$31,116 to \$47,304. Salary and level of responsibility are commensurate with education and experience.

TO APPLY: Candidates should send a current curriculum vitae and bibliography to:

Food and Drug Administration
Center for Food Safety and Applied Nutrition (HFF-11)
200 C Street, S.W.
Washington, D.C. 20204

Applications are accepted throughout the year and candidates should indicate when they will be available for employment. However, to receive full consideration under this announcement, applications must be received by March 15, 1991.

The Food and Drug Administration is Smoke Free

The Food and Drug Administration is an Equal Opportunity Employer

NMR Spectroscopy Specialists

Genentech, Inc., an internationally-recognized leader in the field of biotechnology, is seeking specialists in NMR spectroscopy to establish a structural NMR facility that will complement our existing protein crystallography and protein engineering efforts. The NMR group will also interact with peptide and medicinal chemistry groups.

The main focus of the group will be to apply and develop tools for the determination and analysis of protein structures. In addition, the group will undertake studies of biologically active peptides and small molecules with particular emphasis on determining their conformations when bound to solubilized receptors.

Research NMR Spectroscopists

You will conduct structural studies of proteins, peptides, and conformationally-restricted analogs, as well as non-protein natural products. Candidates should have experience in high-field NMR spectroscopy, with a minimum of 2 years' postdoctoral experience. Level will be commensurate with experience.

Hardware Engineer

You will supervise and maintain the facility. Background in instrumentation and experience in an NMR spectroscopy laboratory is essential.

Genentech, Inc. offers an excellent salary and benefits package, and ample opportunities for personal and professional growth within our research-oriented organization. If you are interested in making significant contributions to new approaches in pharmaceutical research and development, please send your resume to Yvonne Davino, Human Resources Department, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal employment opportunity.

Genentech, Inc.



Center for Molecular Biology

ASSOCIATE AND FULL PROFESSOR – Applications and nominations are invited for three tenured/tenure-track faculty positions at the associate professor or full professor level in the Center for Molecular Biology, an interdisciplinary program in the Division of Research and Graduate Studies. Research laboratories with excellent equipment and support facilities will be located in a new Biological Sciences Building on the main campus of the University in proximity to one of the largest medical centers in the United States. Substantial start-up funds are available for these positions. The Center currently has eight full-time and three half-time primary faculty and will be undergoing substantial expansion during the next few years. The successful candidates should be independent investigators with outstanding accomplishments in molecular biology and have demonstrated ability to obtain extramural research funding. Experience with promoting economic development through effective technology transfer is highly desirable. Applicants should send complete curriculum vitae, a brief description of current and future research interests (three to four pages), a bibliography and reprints of significant publications, and recommendations from at least three references to:

Dr. Robert H. Rownd, Director
Center for Molecular Biology
Wayne State University
2309 Scott Hall
540 East Canfield
Detroit, Michigan 48201

Wayne State University is an equal opportunity/affirmative action employer and invites applications from all qualified individuals.

University of Pittsburgh



ASSISTANT AND/OR ASSOCIATE PROFESSOR PHYSIOLOGICALLY-BASED PHARMACOKINETICS

The Department of Environmental and Occupational Health, Graduate School of Public Health, University of Pittsburgh, is a newly established department charged with providing mechanistic information necessary for the identification and assessment of health risks resulting from human, environmental and occupational exposures. In order to fulfill this mandate, the Department seeks to recruit at the Assistant Professor and/or Associate Professor level, two individuals with expertise in Physiologically-Based Pharmacokinetics.

The successful candidates are expected to develop high quality independent research programs as well as to interact with colleagues in related areas of research. Responsibilities will include the instruction of graduate and post-doctoral students. Starting Date: As soon as possible, Salary commensurate with experience.

The Department of Environmental and Occupational Health of the University of Pittsburgh is an expanding multi-disciplinary department with an emphasis on the mechanistic basis of exposure to toxicants.

Candidates with two or more years of post-doctoral experience and outstanding records of productivity are encouraged to submit a curriculum vitae, statement of interest and the names of at least three references to:

William Schell, Ph.D.
Chair, Search PBPK Committee
c/o Herbert S. Rosenkranz, Ph.D.
Chairman

Department of Environmental & Occupational Health
Graduate School of Public Health
University of Pittsburgh
130 DeSoto Street
Pittsburgh, PA 15261

THE UNIVERSITY OF PITTSBURGH IS AN AFFIRMATIVE ACTION/EQUAL OPPORTUNITY EMPLOYER

RESEARCH

Clinical Project Managers (Ph.D.)

Alpha Therapeutic Corporation is a leader in the manufacture and worldwide distribution of plasma derivatives and pharmaceutical products. Our reputation within the industry makes us a company you can count on for professional challenge, recognition and rewards. Current opportunities for Clinical Project Managers include responsibility for:

- **Coagulation Products**

Requires a Ph.D in Biological or Physical Sciences. A background in hematology/clotting studies is an advantage.

- **Cardiovascular Area**

Requires a Ph.D with background in Pharmacology or Physiology.

Clinical Project Managers are primarily responsible for designing and writing Clinical Protocols and managing clinical trials. Will also establish rapport and interact with clinical and pre-clinical investigators, analyze data and prepare reports for submission to the Food and Drug Administration.

Positions require excellent writing, interpersonal and communication skills. Familiarity with PC's and word processing also necessary. Positions involve approximately 25% travel.

We offer competitive salaries and benefits. For immediate consideration, please submit resume and salary history to **Nan Maaskamp, Manager of Human Resources** at: Alpha Therapeutic Corporation, 5555 Valley Blvd., Los Angeles, CA 90032. AA/EOE

alphaTM
THERAPEUTIC CORPORATION

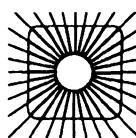
ADVANCE YOUR CAREER WHILE YOU ADVANCE SCIENCE

As one of California's most progressive pharmaceutical companies, Vical is focusing on new drug design strategies. Currently, we're developing new therapeutic products in a number of areas including antiviral therapeutics. We have an opening for a

Director of Organic Chemistry

Vical is seeking an experienced pharmaceutical chemist to direct scaleup, analytical and quality control of our novel lipid-conjugated antiviral agents. The ideal candidate will have a doctorate in organic chemistry and at least 10 years of experience in organic chemistry in the pharmaceutical industry.

Vical rewards your efforts with excellent benefits. Salary and equity commensurate with experience. For immediate consideration, please send resume to: **Human Resources Dept., Vical, Inc., 9373 Towne Center Drive, Suite 100, San Diego, CA 92121.**



VICAL^{INC.}
Equal Opportunity Employer

THE MR CENTER IN TRONDHEIM, NORWAY

is a research center funded by contract research, research grants and refund for medical services in Norway. The staff currently totals about 50. There are two whole-body medical MRI units (0.5 and 1.5 T) and five research NMR instruments operating at 10, 100, 200, 400 and 500 MHz, respectively. The main areas of applications are medical diagnosis and research, protein engineering, biotechnology and petroleum technology.



SINTEF
UNIMED

NMR Research Scientist

with experience in high resolution two- and three-dimensional NMR spectroscopy preferably applied to the study of three-dimensional structures of proteins and peptides. Candidates should have 5 years of relevant experience plus MS/PhD in Biochemistry or Chemistry. Candidates must be skilled in oral and written communications. They should be open minded and whilst no previ-

ous knowledge of the Norwegian language is expected, an enthusiasm to learn would be desirable. One of the first tasks will be to participate in the acquisition of a new high resolution instrument.

We can offer modern office and laboratory facilities with a Bruker AM 500 instrument and two Silicon Graphics IRIS stations. A Bruker X-32

computer, UNIX system, is available for the processing of NMR data. The salary is competitive and related to qualifications and experience. Women are encouraged to apply.

The application deadline is 1 March 1991 with anticipated start as soon as possible thereafter. Send curriculum vitae, bibliography and reprints of recent work in refereed journals to

Professor Steffen B. Petersen
The MR Center, Section for Natural Sciences

SINTEF UNIMED
N-7034 Trondheim
NORWAY

Phone no.: +477 99 77 00
Fax no.: +477 99 77 08.

The Tumour Biology Centre at the Albert-Ludwigs-Universität Freiburg, Germany, invites applications for the position of

DIRECTOR OF THE CANCER RESEARCH INSTITUTE

In collaboration with the State of Baden-Württemberg, the Albert-Ludwigs-Universität Freiburg, and a group of companies of the pharmaceutical industry, private investors are establishing a new, independent Tumour Biology Centre near the Freiburg University Hospital and Medical School. This joint project of private and state initiative will comprise a Cancer Therapy and Rehabilitation Hospital with 200 beds, focussing on developmental therapeutics, and a Cancer Research Institute. The Centre will be inaugurated by the end of 1992.

The Cancer Research Institute will be located in a research building adjacent to the Hospitals with 3.500 m² of laboratory space. The same building will house the Department of Clinical Pharmacology of the Centre and clinical research groups of the University of Freiburg. The Institute will be devoted to basic and clinical cancer research, particularly growth control through growth factors and hormones, the cellular processing of growth-stimulatory signals, the molecular basis of growth deregulation in transformed cells, and rational approaches to counteracting the growth of tumour cells. The research activities of the Institute will be linked to the main research projects of the Cancer Therapy and Rehabilitation Hospital. These processes include the development and testing of biologicals, prophylaxis, early diagnosis and therapy of tumours of endocrine origin, endocrine disorders in cancer, hormone resistance, bone metabolism in cancer and bone metastases.

The position will require an internationally recognized scientist with a strong background in biomedical sciences, preferably in the molecular biology and genetics of cancer, experience in the leadership and administration of research teams, and willingness to participate in the establishment of the Tumour Biology Centre. The Director will be responsible for bringing to life the scientific concept, and for the recruitment and selection of the group leaders and will supervise the day-to-day operations of the Institute. The Director will further be responsible for the integration of the Institute into the Tumour Biology Centre, i.e. the coordination of its basic scientific and clinical goals.

The position affords the opportunity to play a creative role in the establishment of a novel scientific and clinical institution, and the salary will be commensurate with these high aims.

Written applications and requests for further information should be addressed to:

Prof. Dr. med. G. A. Nagel, Klinik für Tumorbiologie
Attn Prof. H. zur Hausen, Chairman of the Search Committee
P.O. Box 1120
D-7800 Freiburg im Breisgau
Germany

POSITIONS OPEN

BOSTON BIOMEDICAL RESEARCH INSTITUTE AND HARVARD MEDICAL SCHOOL

Boston Biomedical Research Institute and Harvard Medical School are seeking a **PROFESSOR** of anatomy and cellular biology to serve as head of a research department located at the Boston Biomedical Research Institute. We are interested in identifying a candidate with a distinguished research record in cell, molecular, and/or developmental biology. Fields of particular interest are cell motility, cytoskeletal structure and function, cell-matrix interactions, and membrane structure and function. The successful candidate will be eligible to serve as executive director of the institute. The institute is an independent, nonprofit research organization funded primarily by NIH grants, with significant private and foundation support. The candidate's duties at Harvard Medical School will include participation in the teaching program of the Department of Anatomy and Cellular Biology and service on appropriate academic committees. Interested individuals should send a letter and curriculum vitae to: **Dr. Elkan R. Blout, Division of Biological Sciences, Harvard School of Public Health, 677 Huntington Avenue, Boston, MA 02115, or Dr. Elizabeth D. Hay, Department of Anatomy and Cellular Biology, Harvard Medical School, 220 Longwood Avenue, Boston, MA 02115.**

Harvard Medical School and Boston Biomedical Research Institute are Equal Opportunity/Affirmative Action Employers. Women and minority candidates are particularly encouraged to apply.

ENDOWED FACULTY CHAIR IN TOXICOLOGY

Applications are being accepted for the Kitty Degree Eminent Scholar's Chair in Toxicology in the School of Pharmacy at Northeast Louisiana University. This \$1-million endowment is designed to enhance existing educational and research activities in toxicology. Candidates for the chair should possess qualifications commensurate with the rank of professor including an earned doctorate, excellent academic credentials, and capabilities for publishing results of original toxicology research and receiving extramural funding. Application deadline is 1 March 1991 with anticipated starting date of fall 1991. Application, including curriculum vitae, names and addresses of four references, copies of five recent publications, and a brief proposal of research plans, should be sent to:

**Dr. Paul Ferguson, Head
Division of Pharmacology and Toxicology
School of Pharmacy
Northeast Louisiana University
Monroe, LA 71209**

Northeast Louisiana University is an Equal Opportunity Employer. Women are encouraged from women and members of minority groups.

FACULTY POSITION IN EXPERIMENTAL PARASITOLOGY

The Department of Pathology in the College of Veterinary Medicine and Biomedical Sciences at Colorado State University invites applications, nominations, and inquiries regarding a regular, full-time, tenure-track faculty position in parasitology. Candidates must have a Ph.D. degree in parasitology or a closely related field. An established investigator is preferred. Candidates should have demonstrable capability and research interests in the immunology of eukaryotic parasite infections. The primary responsibilities associated with this position include the development of a competitive extramurally funded research laboratory, including collaborative interactions with existing investigators, and the training of graduate and postdoctoral students. Additional responsibilities include nominal teaching assignments in the professional veterinary medical curriculum, and involvement in other course offerings at the discretion of the appointee. Academic rank and salary will be competitive and commensurate with the qualifications of the individual selected. Applicants should submit curriculum vitae, a letter outlining professional interests and goals, and the names of three references capable of evaluating the candidate's potential. Applications will be accepted through 1 April 1991. Search may be extended if a suitable candidate is not identified. Address all correspondence to: **Dr. Robert Grieve, Search Committee Chairman, Department of Pathology, Colorado State University, Fort Collins, CO 80523. Colorado State University is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

DEAN FOR FACULTY DEVELOPMENT. The National College of Chiropractic, Lombard, Illinois, offering D.C. and B.S. degrees, regionally and specialty accredited, enrolling 800 students, seeks a dean for faculty development who reports to the vice president for educational and clinical affairs and is responsible for all matters related to review, interpretation, development, operation, and evaluation of a faculty development plan. Applicants must possess a terminal academic or first professional degree; have demonstrated ability to develop, manage, and supervise faculty and support staff; be able to develop and conduct seminars for faculty training and assessment; be able to evaluate faculty performance and growth; and possess a diverse background of successful teaching and scholarship. Salary is competitive and commensurate with credentials and experience. Applications, curriculum vitae, and names, addresses, and telephone numbers of three referees must be received by 1 April 1991. Nominations and applications are to be mailed to: **Dr. Jacob Fisher, Chair of Search Committee, National College of Chiropractic, 200 East Roosevelt Road, Lombard, IL 60148.**

DEAN OF THE COLLEGE OF ENGINEERING THE OHIO STATE UNIVERSITY

The Ohio State University invites applications and nominations for the position of dean of the College of Engineering.

The dean will lead a distinguished 260-person faculty, serving 4500 undergraduate and 1400 graduate students in 16 academic units. The dean will administer a total budget of \$90,000,000, including the sixth largest engineering college research budget in the United States, and will have the support of 30,500 College of Engineering alumni. The candidate should be a recognized leader in administration, research, and teaching. The dean will be a key member of the university leadership and will be expected to contribute to the broad academic and cultural missions of the entire university.

The position will be available 1 July 1991. *The Ohio State University is an Equal Opportunity/Affirmative Action Employer*, and the candidate must be committed to these principles. The Search Committee will accept and review applications until the position is filled.

Send applications and nominations, including curriculum vitae and the names of three references, to: **Professor Leon Peters, Jr., Chair, Search Committee for the Dean of the College of Engineering, Department of Electrical Engineering, The Ohio State University, 2015 Neil Avenue, Columbus, OH 43210.**

DEPARTMENT HEAD/BIOLOGY

Nicholls State University (NSU) invites applications for department head position in Department of Biological Sciences. Record of effective teaching, research, publication, and administration expected. Application deadline: 15 March 1991. Send letter of application, curriculum vitae, transcript, and three letters of recommendation to: **Search Committee, Biological Sciences, Box 2057, NSU, Thibodaux, LA 70310. Affirmative Action/Equal Opportunity Employer.**

MARKETING SPECIALIST MOLECULAR BIOLOGY

If you are looking for a transition from the molecular biology laboratory to a stimulating business environment, Bio-Rad Laboratories can supply you with the challenges you want in your career.

We are looking for a highly motivated individual with a solid background in molecular biology and 2+ years of laboratory experience to join our marketing team. The marketing specialist applies technical expertise in supporting customers, training sales representatives, and assisting in product management. Excellent verbal and written communication skills and the freedom to travel are essential. B.S. in molecular biology or equivalent required. M.S. or Ph.D. preferred.

Please send your résumé to: **Bio-Rad Laboratories, Chemical Division, 3300 Regatta Boulevard, Richmond, CA 94804, Attention: Department #035. Equal Opportunity Employer, M/F/H.**

POSITIONS OPEN

ANATOMY FACULTY POSITION

Applications are invited for a tenure-track position at the level of **ASSISTANT PROFESSOR**. Candidates should have an earned doctorate in anatomy or equivalent. Teaching responsibilities will be in histology, neuroanatomy, and gross anatomy. Research opportunities are available. Send curriculum vitae and names of three references to: **Gerald D. Meetz, Ph.D., Chairman, Department of Anatomy, University of Osteopathic Medicine and Health Sciences, 3200 Grand Avenue, Des Moines, IA 50312. The University is an Equal Opportunity Employer.**

ANATOMISTS

Applications are being accepted for **TENURE-TRACK POSITIONS** in the discipline of anatomy, available 1 July 1991. Applicants should possess a Ph.D. degree in anatomy and the ability to teach gross anatomy and assist in the neuroanatomy and/or histology laboratories. Salary is competitive and commensurate with experience. *The college actively seeks applications from women and minorities for these positions.* Send curriculum vitae and three letters of recommendation to: **Dr. Gayle H. Nelson, Chairman, Anatomy Search Committee, College of Osteopathic Medicine of the Pacific, 309 East College Plaza, Pomona, CA 91766-1889.**

NEUROPHYSIOLOGIST FACULTY POSITION NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

The Department of Physiology has a full-time tenure-track faculty opening for a neurophysiologist working at the cellular or systems level, to join a highly interactive department with strengths in motor, autonomic, endocrine, and cellular physiology. Appointment will be as an **ASSISTANT or ASSOCIATE PROFESSOR**. Applicants should have postdoctoral training and be prepared to maintain a vigorous extramurally funded research program and participate in departmental teaching and administrative responsibilities. In order to ensure full consideration, application must be received by 15 April 1991. Applicants should send curriculum vitae, names and addresses of three referees, and a statement of research goals and interests to: **Dr. Jim Baker, Search Committee Chair, Physiology Department Ward 5, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611. Northwestern University is an Affirmative Action/Equal Opportunity Employer. Hiring is contingent upon eligibility to work in the United States.**

Full-time, permanent teaching opportunities starting 19 August 1991 for **WILDLIFE BIOLOGIST** and **BOTANIST/ECOLOGIST**. Duties include teaching and individual student education. Wildlife biologist with philosophy towards integrated wildlife, used to teaching wildlife techniques and management and courses in traditional biology. Botanist/ecologist to teach plant taxonomy, ecology, general biology, and advanced courses. Ph.D. and pertinent experience preferred. Send curriculum vitae with cover letter including names and telephone numbers of three references by 1 March 1991 to: **Professor Donald Mortland, Dean of Academic Affairs, Unity College, Unity, ME 04988. Telephone: 207-948-3131. Unity College is a small, growing, independent college in central Maine, emphasizing natural resource management and environmental studies, with a basis of liberal arts. Equal Opportunity Employer.**

ZOOLOGIST. TENURE-TRACK POSITION available beginning August 1991. Faculty rank negotiable. Ph.D. in zoological discipline with training in comparative vertebrate anatomy and embryology required. Candidates must provide evidence of teaching and research effectiveness. *Minorities and women are especially encouraged to apply.* The primary responsibility is teaching undergraduate courses in vertebrate anatomy and embryology/developmental biology for majors as well as courses for nonmajors including human anatomy and physiology. The successful candidates will establish an independent research program and will involve undergraduates in scholarly activity. Send letter of application, curriculum vitae, transcripts, a statement of long-term goals, and three letters of reference to: **Biology Department, Search Committee Chairperson, Slippery Rock University, Slippery Rock, PA 16057. To ensure consideration, application materials should be received by 22 March 1991. Slippery Rock University is an Affirmative Action/Equal Opportunity Employer.**



SAINT MICHAEL'S COLLEGE

ASSISTANT PROFESSOR BIOLOGY DEPARTMENT

Applications are invited for tenure track position for plant biochemist with strong background in genetics. Ph.D. required; undergraduate teaching experience desirable. Twelve hour per semester teaching load includes fall Biochemistry I course with lab, spring Genetics course with lab and other assignments such as non-majors lectures and labs. Responsibilities also include maintenance of ongoing research program and supervision of undergraduate research projects. Individual selected will share coordination of Biochemistry Program. Saint Michael's College is a small Catholic liberal arts and sciences college. Position begins September 1991. Send Curriculum Vitae, statements of teaching goals and objectives, research interests and needs, and three letters of reference and a brief outline for Biochemistry I and Genetics courses to:

Saint Michael's College
Chairman of Biology Dept.
Winooski Park
Colchester, VT 05439

Review of applications will begin February 15, 1991 and will continue until the position is filled.

An Equal Opportunity/Affirmative Action Employer

PHARMAGENESIS

Pharmagenesis, a young, dynamic, and growing drug discovery company, is seeking highly motivated individuals to join an expanding research program spanning from natural product drug screening to molecular biology. Pharmagenesis is developing programs in bone metabolism, haematology, immunology, and gene delivery.

BS/MS Scientists. If you have relevant laboratory experience and a strong theoretical knowledge, take advantage to join teams in one of the following areas:

Organic Chemistry Develop techniques for the extraction of drugs from natural product/plant sources.
Develop HPLC techniques for fractionation and identification of active substances.
Synthesize lead compounds and analogues.

Bioassay Systems Develop in vivo and in vitro bioassay systems involving automated enzyme and immunoassay methodologies.

Molecular Biology Initiate recombinant DNA laboratory designing animal viruses as gene delivery vehicles.

Ph.D. Senior Scientists and Group Leaders. Assume responsibility for direction and execution of drug discovery programs in osteoporosis and bone growth, anticoagulants and fibrinolytic agents, or immune system enhancement and suppression.

Pharmagenesis offers a competitive salary and a comprehensive benefits package. Our research facility, located in Stanford Research Park, in Palo Alto, CA provides an ideal setting for both career and lifestyle. Please send full resume to Dr. D. R. Henderson, Vice President, Research and Development, Pharmagenesis, 3183 Porter Dr., Palo Alto, CA 94304.

RESEARCH VETERINARY PATHOLOGISTS

The Upjohn Company, a leader in the research, manufacturing and marketing of pharmaceutical, chemical and agricultural products, has several positions available for qualified Veterinary Pathologists in our Drug Development Toxicology Group, located in Kalamazoo, Michigan. As part of multi-disciplinary teams, these research scientists support and enhance the drug development process in our human and animal health businesses, and will plan, facilitate and coordinate the execution of studies to support target animal and human food safety on a worldwide basis. These positions require a DVM, Ph.D. and ACVP certification with a minimum of two years of relevant experience in pathology and toxicology.

STAFF DRUG DEVELOPMENT VET. PATHOLOGIST-

Duties for this position include planning, conducting and facilitating studies to support safety and product registrations and maintaining an active drug safety laboratory for basic and applied research. Interest, knowledge and experience in toxicology pathology is highly desired. Specific research in cell biology, immunology or biotechnology is also preferred. Specialty code for this position: 5743-HA

VET. PATHOLOGIST-ANIMAL HEALTH BUSINESS-

This person will support and enhance drug development in our animal health business. Duties will include representation of Upjohn at scientific and regulatory meetings; planning, conducting and facilitating studies to support product registrations; assisting with strategic plans for products; and maintaining an active drug safety laboratory. Applicants should have a keen interest in developing both animal health products and business strategy from a safety perspective. Specialty code is 5742-HA.

Upjohn offers a highly competitive compensation and benefits program in addition to a stimulating, multi-disciplinary research environment. In 1990, Upjohn committed over \$400 million to research and development and is currently increasing its Kalamazoo research facilities by 50%. Qualified applicants are invited to forward their curriculum vitae and cover letters to: THE UPJOHN COMPANY, CORP. RECRUITING/VET. PATHOLOGY, 7000 PORTAGE ROAD, KALAMAZOO, MI 49009-0199. Refer to specialty code in your correspondence. An Equal Opportunity Employer M/F.

Our Commitment to Scientific Excellence
Continues...

Upjohn

POSITIONS OPEN

FACULTY POSITIONS IN STRUCTURAL BIOLOGY

The Division of Basic Sciences at Fred Hutchinson Cancer Research Center plans the development of a program in structural biology, to be housed in new laboratory facilities presently under construction. At this time, the division is seeking established independent investigators in biological structure for faculty positions in this new program. *Smoke-free environment.* Applications including curriculum vitae and a list of references should be sent to:

Structural Biology Committee
Division of Basic Sciences, M120
Fred Hutchinson Cancer Research Center
1124 Columbia Street
Seattle, WA 98104
An Equal Opportunity Employer.

BIOLOGY: VERTEBRATE ZOOLOGIST, broadly trained in the biological sciences. Applicants must have demonstrated a commitment to excellence in undergraduate education. A Ph.D. should be completed by the fall of 1991. Responsibilities will include lecture and laboratory assignments in general biology and advanced courses. This **TENURE-TRACK POSITION** is subject to administrative approval. Curriculum vitae and names of at least three references should be submitted to: **Dr. Richard Heller, Biology Department, Albright College, Reading, PA 19612-5234.** Review of applications will begin 1 March 1991. *Albright College encourages applications from women and minorities. Affirmative Action/Equal Opportunity Employer.*

EXPERIMENTAL BIOLOGIST

The Département de sciences biologiques, Faculté des arts et des sciences, Université de Montréal, invites applications for a **TENURE-TRACK POSITION** in animal physiology. Preference will be given to candidates with research interests likely to encourage collaboration with neurobiologists within the department. The candidate will be expected to teach courses, in French, which are complementary to those already being taught in the department at both the undergraduate and graduate levels, to supervise graduate students, and to carry on an active research program.

The position begins 1 September 1991 and the salary is based on current contract agreements. Interested applicants should submit curriculum vitae, two copies of five representative reprints or preprints, and three letters of reference by 15 April 1991 to:

Dr. Raymond McNeail, Directeur
Département de sciences biologiques
Université de Montréal
C.P. 6128, succursale A
Montréal, Quebec, Canada H3C 3J7

According to Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

FACULTY POSITIONS: BIOCHEMISTRY, MICROBIOLOGY. The Department of Biochemistry, Microbiology, and Molecular Biology at the University of Maine invites applications for two **ASSISTANT PROFESSOR**, tenure-track positions. Applicants will be expected to: teach at least a basic-level undergraduate course in biochemistry or microbiology and a graduate-level course in their field of expertise, establish an externally funded research program, and direct Ph.D. students. Applicants should have a Ph.D. and postdoctoral experience.

- **BIOCHEMISTRY** position: Preference will be given to applicants investigating cellular regulator mechanisms in eukaryotes including but not limited to transmembrane signaling pathways or nucleic acid binding proteins.

- **MICROBIOLOGY** position: Preference will be given to applicants using molecular approaches with prokaryotes in areas including but not limited to nitrogen metabolism, photosynthesis, cell signaling, or plant-bacterial interactions.

Applicants should send curriculum vitae, description of research interests, and three letters of reference to: **Dr. Bruce L. Nicholson, Chair, Department of Biochemistry, Microbiology, and Molecular Biology, University of Maine, Orono, ME 04469.** Consideration of applications will begin 1 March 1991. *The University of Maine is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

BIOCHEMISTRY FACULTY POSITION TEMPLE UNIVERSITY SCHOOL OF MEDICINE

Applications are invited for a tenure-track position at the **ASSISTANT PROFESSOR** level starting after 1 July 1991. The department seeks a scientist with outstanding potential who is investigating hormone action, signal transduction, or molecular mechanisms of development. This person will be required to contribute to the department's teaching program for medical, dental, and graduate students in areas of biochemical endocrinology and development and to develop a strong, externally-funded research program. The department is well equipped and all members are engaged in funded research projects. Applicants should submit before 15 March 1991, (i) curriculum vitae, (ii) a brief statement of research interests and plans, (iii) title pages with abstracts of recent publications, and (iv) the names, addresses, and FAX numbers of three references to: **Dr. J. Kenneth Hooper, Chair, Search Committee, Department of Biochemistry, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, PA 19140.** *Temple University is an Equal Opportunity/Affirmative Action Employer.*

THE UNIVERSITY OF MICHIGAN CENTER FOR HUMAN GROWTH AND DEVELOPMENT AND SCHOOL OF DENTISTRY

The Center for Human Growth and Development and School of Dentistry invite applications for tenure-track **FACULTY POSITIONS** in the area of biological development and growth. Particular interest lies in the areas of: (i) development and growth of the craniofacial complex; (ii) muscle and nerve development, growth, and function; and (iii) hormonal factors influencing development and growth. Applicants should have a Ph.D. with five or more years of postdoctoral experience and should exhibit evidence of an independent research program. A dental degree and specialty training are desirable but not requisite. Faculty will be appointed jointly between the Center for Human Growth and Development and an appropriate academic department in the School of Dentistry. The Center for Human Growth and Development is an interdisciplinary research center comprised of faculty from the Schools of Dentistry, Medicine, Education, and Literature, Science, and Arts whose primary focus is on the complex biological and social processes associated with development and growth (prenatal, perinatal, and postnatal) using human and animal models. Curriculum vitae and names of potential references should be sent to: **Dr. David S. Carlson, Center for Human Growth and Development, 300 North Ingalls Building, The University of Michigan, Ann Arbor, MI 48109. FAX: 313-747-4024.** Consideration of applications will begin 15 February 1991. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

BIOLOGY INSTRUCTOR CHEMISTRY INSTRUCTOR

Applications are invited for two tenure-track faculty positions, both starting 19 August 1991. The applicants must possess a California Community College credential which authorizes full-time teaching in the areas of biological science or chemistry or hold a master's degree in biological science or chemistry or the equivalent. Applicants must submit no later than the filing deadline the following: letter of interest, completed application, résumé, all collegiate transcripts (copies acceptable), and three current letters of recommendation. Deadlines: biology, 22 February 1991; chemistry, 1 March 1991. Contact: **Certificated Personnel Assistant, Bakersfield College, 1801 Panorama Drive, Bakersfield, CA 93305. Telephone: 805-395-4253.** *Equal Opportunity/Affirmative Action Employer.*

INSTRUCTOR POSITION. Available November 1990, Ph.D. with experience in cell biology and biochemistry of algae to study adenylcyclase in *Chlamydomonas*. Appointee should have experience in cell fractionation, membrane protein purification, and electron microscopy, as well as experience in teaching research methods to undergraduate and graduate students. Send curriculum vitae to: **William J. Snell, Department of Cell Biology and Neuroscience, University of Texas Southwestern, 5323 Harry Hines Boulevard, Dallas, TX 75235.** *University of Texas Southwestern is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITION IN DEVELOPMENTAL BIOLOGY CHILDREN'S HOSPITAL RESEARCH FOUNDATION (CHRF) CINCINNATI, OHIO

The Basic Sciences Division has an opening for an **ASSISTANT/ASSOCIATE PROFESSOR** (tenure track) in the University of Cincinnati to be filled in 1991 or 1992. The position will allow over 90% of time to be spent on research, with the remaining time spent in an active developmental biology graduate program. A new research building is nearing completion. Outstanding candidates with research interests in mammalian developmental genetics, neurobiology, transcription factors, or homeobox genes are encouraged to apply. Please send curriculum vitae, research plans, and the names and addresses of three references to:

Search Committee
Division of Basic Science Research, IDR 731
Children's Hospital Research Foundation
Elland and Bethesda Avenues
Cincinnati, OH 45229-2899

CHRF is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION. A position is available to study the mechanisms underlying the selective effects of carcinogen-induced DNA damage on gene transcription in vivo [*Mol. Carcinogen.* 2, 274-286 (1989)]. Experience in basic molecular biology techniques is required. Send curriculum vitae and three letters of reference to: **Dr. Joshua W. Hamilton, Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH 03756.** *Dartmouth College is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

A postdoctoral position is available starting in the summer of 1991 to study the regulation of gene expression in embryonic cells by retinoic acid [see *Nature* 342, 702 (1989)]. Ongoing studies include the characterization of transcription factors and the generation of transgenic animals with altered levels of retinoic acid responsive genes. Experience in recombinant DNA and/or protein purification techniques is essential. Please send curriculum vitae and names of three references to: **Dr. Lorraine J. Gudas, Chairman, Department of Pharmacology, Cornell University Medical College, 1300 York Avenue, New York, NY 10021.** *Equal Employment Opportunity/Affirmative Action, M/F/H/V.*

POSTDOCTORAL POSITION: NEURAL CONTROL OF CIRCULATION/RESPIRATION. Position available to study the integration of cardiovascular and respiratory afferent inputs within the central nervous system. The laboratory uses extracellular and intracellular recording techniques for analysis of synaptic inputs, correlational analyses, and immunohistochemistry. Electrophysiological and/or neuroanatomical experience would be helpful. Candidates should send curriculum vitae and names of three references to: **Steve Mifflin, Ph.D., Department of Pharmacology, University of Texas Health Science Center (UTHSC), 7703 Floyd Curl Drive, San Antonio, TX 78284-7764.** *The UTHSC at San Antonio is an Equal Opportunity/Affirmative Action Employer.*

UNIVERSITY OF CALIFORNIA LOS ANGELES (UCLA) POSTDOCTORAL POSITIONS MOLECULAR NEUROBIOLOGY

Two postdoctoral positions are available in a group studying the structure and function of *Shaker* potassium channels with a multidisciplinary approach including site-directed mutagenesis, electrophysiology, and biochemistry. For the first position, a background in biochemistry, particularly protein purification, is preferred. For the second position, electrophysiological experience, especially using patch clamp methods, is required. The positions are available immediately, with guaranteed funding. Please send curriculum vitae and the names and addresses of three references to:

Diane M. Papazian, Ph.D.
Department of Physiology
UCLA School of Medicine
Los Angeles, CA 90024-1751

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



PROFESSORSHIP OF PATHOLOGY

The electors intend to proceed to an election to the Professorship of Pathology, with effect from 1 October 1992. The stipend of the professorship is currently £35,231 per annum, which includes an allowance payable in respect of the professor's duties as head of the Sir William Dunn School of Pathology.

Applications (ten copies, or one from overseas candidates), naming three referees, should be received not later than 11 March 1991 by the Registrar, University Offices, Wellington Square, Oxford OX1 2JD England, from whom further particulars may be obtained.

The University is an Equal Opportunity Employer

Faculty Position in EUKARYOTIC MICROBIAL GENETICS Purdue University Department of Biological Sciences

Applications are invited for a tenure-track position in eukaryotic microbial genetics at the Assistant/Associate Professor level. Applications are encouraged from individuals employing combined genetic and molecular approaches to investigate fundamental problems in eukaryotic microbes (yeast, filamentous fungi, algae and protozoans) in areas such as cell-cell interactions, morphogenesis, membranes, cell cycle control, cytoskeleton, genome structure and evolution, metabolism, and photosynthesis. Candidates must have a Ph.D. degree or equivalent, relevant postdoctoral experience and demonstrated exceptional promise in research. Candidates are expected to develop a vigorous, extramurally funded research program, and to participate in the teaching program of the Department. The Department has strong research programs in molecular and cellular biology, microbiology, neurobiology, structural biology and ecology.

Applicants should send a *curriculum vitae*, a statement of research experience and goals, and names and addresses of at least three references to: **Dr. Laszlo N. Csonka, Eukaryotic Microbial Genetics Search, Department of Biological Sciences, 1392 Lilly Hall, Purdue University West Lafayette, IN 47907-1392.**

Applications will be accepted until March 21 or until the position is filled.

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BROOKHAVEN NATIONAL LABORATORY

Physiological Ecologist

The Global Change Program at Brookhaven National Laboratory (BNL) has an immediate opening for a scientist to participate in an integrated, multi-institutional program investigating the interaction between rising atmospheric CO₂ and terrestrial ecosystems. Candidates should have experience in the measurement of photosynthesis/respiration in the field, and an interest in the molecular mechanisms by which plants might adapt to long-term changes in CO₂ availability. Participation in the Free-Air CO₂ Enrichment (FACE) field experiment is expected. The successful candidate will contribute to the development of a global terrestrial carbon flux experiment centered on FACE experiments in several biomes of the world. Brookhaven's Global Change Program has developed out of long-standing programs in oceanography, atmospheric chemistry, applied mathematics, and plant effects research. Brookhaven has led in the development of complex equipment for the execution of ecological field experiments at sea, in the air and on land. The BNL FACE experiment has become a magnet for plant researchers from many institutions.

The appointment will be made at a level commensurate with the successful candidate's experience. Postdoctoral appointment is possible for new PhD's. Interested parties should submit a resume, a list of publications and the names of at least three references to: Dr. George R. Hendrey, Head, Biosystems and Process Sciences Division, Department of Applied Science, Building 318, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, NY 11973. Equal opportunity employer M/F.

bnl BROOKHAVEN
NATIONAL LABORATORY
ASSOCIATED UNIVERSITIES, INC

The University of Queensland Brisbane Australia

Equal Opportunity in Employment is University Policy

Foundation Chair of Pharmacology in the Department of Physiology & Pharmacology

The University is seeking a Professor of Pharmacology for the Foundation Chair of Pharmacology within the Department of Physiology and Pharmacology. Applicants should have an outstanding record of research achievement in any field of Pharmacology, as well as a distinguished record of teaching and evidence of a significant capacity for academic leadership. The Department seeks to appoint an individual who will bring a new direction to the Department's research by the introduction of an active research group which will complement existing activities. The activities of current academic staff in Pharmacology include research into the pharmacology of pulmonary and cardiovascular systems, epithelial transport and toxicological mechanisms.

The Department of Physiology and Pharmacology is the largest in the Biological Sciences Group at the University of Queensland. Within the Department are the Vision, Touch and Hearing Research Centre (an ARC Special Research Centre) directed by Professor J. D. Pettigrew, FRS., and the Equine Blood Typing Research Laboratory directed by Associate Professor T. K. Bell. Professor Stella O'Donnell holds a personal chair in the Department. As well as its high profile in research, it has teaching commitments in the Faculties of Medicine, Veterinary Science, Dentistry and Science, including courses for students of Pharmacy. It is expected that the new Professor will develop links with areas of Clinical Pharmacology and Therapeutics within the Faculties of Medicine and Veterinary Science. There is also opportunity for close interaction with the research activities of the Centre for Molecular Biology and Biotechnology (a newly awarded ARC Special Research Centre). Professor Elspeth McLachlan is the current Head of Department, but the appointee to the new Chair will be expected to take over this role within a few years.

The Department will expand into an adjacent building before the end of 1991, and it would be expected that the incoming Professor would be involved in the redeployment of a significant amount of this additional space.

Date of taking up duty. The successful applicant will be expected to take up duty from the 20 January 1992.

Salary A) \$67,812 p.a.

Further details may be obtained from Professor McLachlan (Brisbane) 365 3155. Closing date 30 March, 1991. Ref. No: 83690.

Please forward an original plus seven copies of application and resume to the Director, Personnel Services, The University of Queensland, Qld, 4072, Australia.

POSITIONS OPEN

POSTDOCTORAL POSITION. Available to study cognitive-neuromotor effects of psychotropic drugs. Involves assessment of relationship of pharmacodynamics to pharmacokinetics. Background in drug analysis desirable. Send curriculum vitae and names of three references to: **Everett H. Ellinwood, Jr., M.D., Box 3870, Duke University Medical Center, Durham, NC 27710.** *Duke University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION. Available immediately to study mechanisms of systemic and cellular/organ damage, mortality, and effects of anesthetics during hemorrhagic shock. Strong background in physiology and/or pharmacology desired. Interest in tissue ischemia and reperfusion helpful. Send curriculum vitae and three references to: **M. Dan McKirnan, Ph.D., Department of Pathology, 0612, University of California, San Diego, CA 92093-0612.** *An Affirmative Action/Equal Opportunity Employer.*

BIOCHEMISTRY/MICROBIOLOGY POSTDOCTORAL POSITION. To join interdisciplinary group working on the molecular basis of *E. coli* toxin/glycolipid binding and its involvement in the pathology of human disease. MRC funds available for up to 5 years. Applicants should send curriculum vitae including names of three referees to: **Dr. C. A. Lingwood, Department of Microbiology, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario M5G 1X8, Canada.**

POSTDOCTORAL POSITION

Available now to study membrane structure and function and the self-assembly of biomimetic supra-molecular structures. Studies involve protein and DNA modification and biotin/avidin chemistry. Salary: \$27,360 to \$31,212 per year. Send résumé and names and telephone numbers of three references to: **Roderick MacGregor, Biotechnology Program, University of California, San Francisco, CA 94143-0446.** FAX: 415-476-0688. *UCSF is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN MITOCHONDRIAL MOLECULAR BIOLOGY. A post-doctoral position is available immediately to study the initiation of protein synthesis in animal mitochondria. Specific projects include: characterization of mitochondrial initiation factor 2 which has recently been purified in this laboratory and molecular cloning of the gene for this factor, the use of recombinant DNA methods to investigate the features on mitochondrial mRNAs important for initiation complex formation, and the identification and characterization of additional initiation factors required in animal mitochondria. Interested persons with backgrounds in biochemistry or molecular biology are invited to apply. Forward curriculum vitae and three letters of recommendation to: **Dr. Linda L. Spemulli, Department of Chemistry, CB# 3290, University of North Carolina, Chapel Hill, NC 27599.** *The University of North Carolina is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS MOLECULAR VIROLOGY

Two positions are available to study the interaction of poliovirus with its host, including (i) the human cellular receptor for poliovirus, (ii) poliovirus neurovirulence and attenuation, and (iii) RNA-protein interactions in the poliovirus 5'-noncoding region. Send curriculum vitae and the names of three individuals who will provide references to: **Dr. Vincent Racaniello, Department of Microbiology, Columbia University College of Physicians and Surgeons, 701 West 168th Street, New York, NY 10032.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION for structure-function studies of coagulation factor VIII. Immediate opening of fully funded 2- to 3-year position for Ph.D. in molecular biology. The ideal candidate will have experience in cloning, plasmid construction, DNA sequencing, site-directed mutagenesis, immunoassays, and expression of recombinant proteins in mammalian cells. Starting salary range \$23,000 to \$33,000 depending on experience. Send curriculum vitae, including a summary of research accomplishments, and a list of three references to: **Dr. Dorothea Scandella, American Red Cross, 15601 Crabbs Branch Way, Rockville, MD 20855.** *Equal Opportunity Employer, M/F/V/H.*

POSITIONS OPEN

POSTDOCTORAL POSITION. Available to study protein prenylation or enzymology of phospholipase A₂. Background in protein chemistry and/or biological chemistry desirable. Send résumé and two to three reference letters to: **M. H. Gelb, Departments of Chemistry/Biochemistry, University of Washington, Seattle, WA 98195.**

POSTDOCTORAL POSITION. Available immediately to study mechanisms of growth signaling by neuropeptides using the cloned receptor for bombesin/gastrin-releasing peptide [*Mol. Endocrinol.* 4, 1956 (1990)]. Experience in protein biochemistry and/or cell biology preferred. Please send curriculum vitae and names of three references to: **Dr. Thomas P. Segerson, Vollum Institute, 3181 S.W. Sam Jackson Park Road L474, Portland, OR 97201-3098.**

An Equal Opportunity/Affirmative Action Employer.

TWO POSTDOCTORAL POSITIONS. Available to study the molecular basis of neuronal ACh receptor channel diversity. The laboratory integrates molecular and biophysical approaches to study the developmental regulation of neuronal AChR channel expression. Molecular biologists and/or biophysicists are encouraged to apply. Send curriculum vitae and references to: **Dr. L. Role, Columbia University College of Physicians and Surgeons, Department of Anatomy and Cell Biology in Center of Neurobiology, 630 West 168th Street, New York, NY 10032.**

POSTDOCTORAL POSITION IN MOLECULAR NEUROBIOLOGY. Experience in electrophysiological techniques and/or molecular biology is essential. Studies will include characterization of the molecular biology of single live neurons and glia. Starting date is approximately September 1991. Please send curriculum vitae to: **Dr. J. Eberwine, Department of Pharmacology, University of Pennsylvania Medical Center, 36th and Hamilton Walk, Philadelphia, PA 19104-6084.**

POSTDOCTORAL POSITION. Available to study the structure and function of electron transfer metallo-proteins using two- and three-dimensional NMR and site-directed mutagenesis. Ph.D. in chemistry essential and NMR experience desirable. Send curriculum vitae and three references to: **Dr. Kuntz, Department of Pharmaceutical Chemistry, University of California, San Francisco, CA 94143, or Dr. Waskell, VA Medical Center (129), University of California, 4150 Clement Street, San Francisco, CA 94121.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

Available immediately to study the subcellular mechanisms involved in platelet aggregation and related endothelial change in the cerebral microcirculation. Experience in the ultrastructural and/or physiological assessment of microvessels is desirable. The postdoctoral salary is competitive and U.S. citizens or permanent residents may be appointed to an NIH-sponsored training grant. Candidates interested in this position should send curriculum vitae, relevant reprints, and three letters of recommendation to: **Dr. John T. Povlishock, Department of Anatomy, Box 709 MCV Station, Richmond, VA 23298-0709.** *Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

POSTDOCTORAL RESEARCH ASSOCIATE

Position available in an NHLBI-funded research program to study fundamental mechanisms of molecular signaling in lung development, with emphasis on protein phosphorylation and dephosphorylation. The successful applicant will be given the opportunity to develop a multidisciplinary approach exploiting site-specific phosphorylation analysis, together with innovative techniques in cell and molecular biology, working in the Molecular Signaling Center directed by Dr. David Warburton in the new Smith Research Tower on the Hollywood campus. The initial appointment will be for 3 years with salary in the \$30,000 range, plus benefits. Deadline for applications is 15 March 1991. For consideration, submit curriculum vitae and names and addresses of three references to: **Personnel Office, Childrens Hospital Los Angeles, 4650 Sunset Boulevard, Los Angeles, CA 90027.** For informal inquiries, contact: **Dr. Warburton, telephone, 213-669-2101; FAX, 213-664-9758.** *Childrens Hospital Los Angeles is an Equal Opportunity Employer. Women and minorities are especially encouraged to apply.*

POSITIONS OPEN

POSTDOCTORAL FELLOWSHIPS UNIVERSITY OF MICHIGAN DIVISION OF PEDIATRIC HEMATOLOGY

Two positions available in the cellular and molecular biology of hematopoiesis. The first position involves characterization of cytoplasmic regulators of DNA synthesis in leukemic cells. Requirements include a Ph.D. in biochemistry with a strong background in protein purification and/or molecular biology. The second involves the role of extracellular matrix in hematopoiesis. Requirements include a Ph.D. in biology with a strong background in cellular development. Interested candidates should send their curriculum vitae and the names and addresses of three references to: **Dr. Michael W. Long, Room 7510A, MSRB-1, Box 0684, University of Michigan, 1150 West Medical Center Drive, Ann Arbor, MI 48109.**

POSTDOCTORAL FELLOWSHIP/CARDIOVASCULAR PHARMACOLOGY. The Department of Pharmacology at The University of Texas Health Science Center (UTHSC) at San Antonio has a postdoctoral position available to study the neural mechanisms involved in cardiovascular regulation. Background should be sufficient to conduct research as a collaborator/trainee in neurobiology and neurophysiology. Send résumé and names of three references to: **Vernon S. Bishop, Ph.D., Department of Pharmacology, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, TX 78284-7764.** *The UTHSC at San Antonio is an Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIP POSITION IMMUNOPATHOLOGY

The University of Arizona Department of Pathology invites applications for a clinical fellowship in immunopathology. This fellowship will combine experience with biopsies of renal and skin immune diseases as well as active referral service for tumor marker studies of lymphoreticular and solid neoplasms. Applicants must possess M.D. degree with at least 2 years of training in anatomic pathology required. Position available 1 July 1991. Submit curriculum vitae and three letters of reference to: **Dr. Raymond B. Nagle or Dr. Thomas M. Grogan, Department of Pathology, Arizona Health Sciences Center, Tucson, AZ 85724.** *The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer.*

INTERNATIONAL CANCER RESEARCH FELLOWSHIP

The Hayashibara Foundation, a nonprofit-making organization within the Hayashibara Group, announces a fellowship program. Fellowship will be taken at the Fujisaki Cell Center which is devoted to basic and applied research related to the problems in human cancer. The fellowship is normally made for 1 year and is renewable for up to 5 years. The fellowship will be expected to commence within 6 months of the announcement of the awards. No fixed deadline for application is set throughout the year. The awards are for high-quality research work in one of the three categories described below:

- Fundamental leukemia-lymphoma research
- Cytokine-lymphokine research
- Hematopoietic cell lines

Qualified person who is holding a Ph.D., M.D., or equivalent qualifications should make inquiry for additional information and application forms from: **Jun Minowada, M.D., Director, Fujisaki Cell Center, 675-1, Fujisaki, Okayama 702, Japan.**

JOHNS HOPKINS UNIVERSITY SCHOOL OF MEDICINE

Applications are invited for a research **POSTDOCTORAL FELLOWSHIP** in molecular and cell biology of intestinal ion transport. Research deals with exploring structural/function aspects of newly cloned epithelial Na/H exchangers using chimeras. Molecular and cell biologic techniques including fluorescent imaging will be used. Previous experience in molecular or cell biologic techniques is desirable. Candidates should send curriculum vitae and names of two referees to: **Mark Donowitz, M.D., Chief, GI Unit, Departments of Medicine and Physiology, Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, MD 21205.**

MOLECULAR BIOLOGY

BE AT THE FOREFRONT OF
IMPORTANT NEW DRUG DISCOVERIES

The Sandoz Research Institute is undergoing a major expansion of its research programs and is seeking outstanding Molecular Biologists to contribute to the discovery of novel therapeutic agents in diabetes and glucose regulation, lipoprotein metabolism and atherogenesis, monoclonal antibodies, and inflammation/mediators of immune function. The successful candidates will work closely with interdisciplinary teams of intramural scientists and collaborate with external laboratories.

Senior Scientists

Requires a Ph.D. in Molecular Biology or a closely related discipline and a minimum of 2 years of post-doctoral research experience in molecular biology, preferably with an emphasis on the regulation of eukaryotic gene expression; demonstrated ability to plan sound scientific projects, conduct independent research, and achieve research goals; a record of significant publications in major scientific journals; and excellent written and oral communication skills.

Positions at Sandoz offer personal satisfaction, professional opportunity/challenge, competitive salaries and an excellent benefits package. Our campus-like facilities are conveniently located in northern North Jersey. For prompt, confidential consideration, respond to Ad #747 by forwarding your resume and salary requirements, in confidence, to:

Staffing Department
SANDOZ RESEARCH INSTITUTE
Building 122/3
East Hanover, New Jersey 07936
An Equal Opportunity Employer M/F/H/V

Scientists

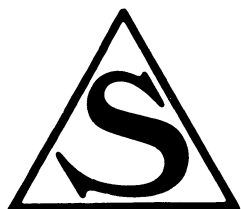
Requires a B.A./B.S. or M.S. in Biology, Biochemistry, Cell Biology, Molecular Biology or a related discipline; hands-on experience with recombinant DNA techniques; and excellent data handling skills.

Post-Doctoral Research Associate/Molecular Modeling

Requires a Ph.D. in Biochemistry, Molecular Biology, Bio-Organic Chemistry or a related discipline; experience with molecular biological and biochemical approaches to understanding structure/function relationships of enzymes; and familiarity with the use of computational chemistry for studying proteins and/or peptides.

Post-Doctoral Research Associate/Yeast Genetics

Requires a Ph.D. in Molecular Biology, Cell Biology, Genetics, or a related discipline and experience with techniques for expression and identification of mammalian proteins in yeast.



SANDOZ
bringing research to life

RESEARCH ASSOCIATE CELL BIOLOGY

Amgen has emerged as the recognized leader in the discovery and development of human therapeutic products through applications of recombinant DNA technology. As a result of our ongoing commitment to excellence in research, we have an immediate opportunity for an experienced Research Associate to contribute to our research efforts in stem cell biology.

Qualified candidates for this position must have a BS or MS in Biology or related discipline and a minimum of 1 to 2 years' experience in cell culture and *in vivo* studies. Familiarity with basic immunologic techniques is desirable but not essential.

Amgen offers a stimulating and challenging research environment where scientists have the resources and support to develop their full potential. In addition to an excellent compensation and benefits package, Amgen also offers an attractive location northwest of Los Angeles free from the concerns typically associated with major urban areas.

If you have the necessary skills and would like to be a part of a company that places the highest value on its human resources, please send a resume, in confidence, to:

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Recruitment, Dept. #570
Amgen Center
Thousand Oaks
CA 91320-1789

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AMGEN

Two faculty positions at the Assistant or Associate Professor level are available effective March 1, 1991 in several departments associated with the newly organized Division of Cellular and Molecular Medicine at the University of California School of Medicine at San Diego.

Areas of research interest include—but are not restricted to:

- 1) cell cycle and eukaryotic cell response to growth factors,
- 2) cytoskeleton and its interactions with cellular membranes,
- 3) control of protein and membrane traffic in eukaryotic cells,
- and 4) processing, packaging and transport of primary gene transcripts.

Other promising fields of research will also be considered.

Each applicant is expected to establish an active individual research program but interactions and collaborations with other faculty members of the Division or School will be welcome. Each applicant is also expected to participate actively in teaching and research training of medical and graduate students.

For candidates for an Assistant Professor position, an M.D., Ph.D., or M.D./Ph.D. degree, at least two years of postdoctoral training, and a strong record of well-organized research are expected. Candidates for an Associate Professor position are expected to have already achieved an outstanding record in their field of research.

Rank and salary will be determined by qualifications and UC pay scales. Applications supported by a curriculum vitae, a list of publications, a summary of research planned for the immediate future, and a list of 5 to 6 potential referees should be sent before April 15, 1991 to:

George E. Palade, M.D.
Dean for Scientific Affairs
UCSD School of Medicine (0602)
9500 Gilman Drive
La Jolla, CA 92093-0602

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Cellcor Therapies, Inc. is a Biotech/Biocrine company devoted to the development and delivery of proprietary in vitro immunotherapies. Based on extensive multi-site clinical trials our company has launched the commercialization of its Autolymphocyte Treatment for renal cell carcinoma.

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Our expanding research programs in cancer, infectious and autoimmune diseases has immediate openings for high quality and motivated Research Scientists (Ph.D. or M.D. with 2-5+ years' post-doc experience) and Research Associates (B.S. or M.S. with 3+ years' experience). All individuals should be familiar with human lymphocyte culture methodologies including T-cell cloning, cell proliferation and cytotoxic assays. Previous work in an industrial setting and in the area of memory T-cell activation would be a plus.

Please forward your resume including salary history to: Human Resources, Cellcor Therapies, Inc., 200 Wells Ave., Newton, MA 02159. We are an equal opportunity employer.

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POSTDOCTORAL/RESEARCH ASSOCIATE POSITION. Available to study mechanisms of action of antivirals and regulation of expression of eukaryotic enzymes involved in nucleotide metabolism. Candidates with Ph.D. should have experience in molecular biology and/or virology of herpes or HIV. Salary: \$23,000 to \$26,000 per year. Send inquiries and curriculum vitae to: Dr. Arnold Fridland, Department of Pharmacology, P.O. Box 318, St. Jude Children's Research Hospital, Memphis, TN 38101. An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL/RESEARCH ASSOCIATE DANA-FARBER CANCER INSTITUTE CELLULAR ULTRASTRUCTURE

We are seeking an individual with a strong background in contemporary morphological techniques, with emphasis on TEM/SEM and EM immunocytochemistry to assist in direction and operation of our central EM laboratory and to participate in interdepartmental collaboration including tumor biology and hemostasis. Experience in cell and tissue electron microscopy and Ph.D. in cell biology or related are required.

Please send curriculum vitae with three references to: M. Langlois, JFB GO9, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115. Equal Opportunity/Affirmative Action Employer.

ACADEMIC PHARMACOLOGIST OR PHYSIOLOGIST

The Center for Imaging and Pharmaceutical Research has been established in the Department of Radiology, Massachusetts General Hospital, to use modern imaging technology (computed tomography, ultrasound, PET, and magnetic resonance) to facilitate drug development from discovery through animal studies to pre- and post-approval clinical documentation. Both contrast agents and therapeutic drugs are our focus and we seek to develop expertise in quantitative imaging, novel administration protocols, and pharmacokinetic modeling. Applicants should have skills in these areas and seek collaborative research in an academic-industrial environment with assured long-term funding. *Applications from women and minority candidates are encouraged.* Please send resume and list of references to: Director, Center for Imaging, MGH-East, Building 149, 13th Street, Charlestown, MA 02129.

SYSTEMATIC BOTANISTS

The Department of Botany, National Museum of Natural History, Smithsonian Institution, is recruiting for **TWO RESEARCH CURATORIAL POSITIONS** in systematics of angiosperms and/or lichens. Research emphasis for the angiosperm position(s) is New or Old World tropics, and priority will be given to specialists in species-rich, woody plant families. Applicants must have an active, self-motivated research program in monographic and floristic botany documented by publications and presentations. The successful candidates will be expected to enhance the U.S. National Herbarium by field work and curation. Research opportunities include use of a worldwide herbarium and associated libraries and possibility of interdisciplinary collaboration. The Smithsonian's fellowship programs as well as cooperative programs with universities offers the prospect for teaching and interaction with students. Salary will be at the GS-11, 12, or 13 level (\$31,116 to \$44,348). Send statement of general research goals, curriculum vitae, Application for Federal Employment (SF-171), the names of three references, and a set of reprints to: Office of Human Resources, Branch 2, P.O. Box 23293, Washington, DC 20026-3293, Attention: MPA 91-2030 Lichenologist; or MPA 91-2029 Tropical Angiosperm Systematist (MPA number must be included in application for each position). For information you may call: Warren L. Wagner at: 202-786-2517. Applications must be received in the Office of Human Resources no later than 31 March 1991. An Equal Opportunity Employer.

RESEARCH ASSOCIATES. Two positions available immediately to study the regulation of pyruvate dehydrogenase complex concerning (i) the structure-function relationship of the component proteins using site-directed mutagenesis and (ii) transcriptional regulation of the genes. Some experience with molecular biology methods is desirable. Send curriculum vitae and names of three references to: Dr. M. S. Patel, Department of Biochemistry, Case Western Reserve University School of Medicine, Cleveland, OH 44106.

POSITIONS OPEN



Agricultural Research Service
United States Department of Agriculture

MICROBIOLOGIST PHYSIOPATHOLOGY RESEARCH UNIT NATIONAL ANIMAL DISEASE CENTER AMES, IOWA

ARS is seeking a scientist to participate in its research program on swine dysentery. This individual will be a member of a team whose primary objectives of this project are to understand the pathogenesis of swine dysentery and to apply molecular biology to develop improved diagnostic procedures and vaccination strategies for control of swine dysentery.

The candidate must have research experience with a background in anaerobic microbiology, protein purification, molecular biology, and microbial physiology.

Ph.D. is desirable. *Must be U.S. citizen.* Salary is commensurate with experience (\$31,116 to \$68,112). For information on the position, contact: **Dr. Shannon C. Whipp, Research Leader, Physiopathology Research Unit, NADC, or 515-239-8242.** For information on application procedures/forms, contact: **Janie E. Carr, 301-344-4569.** Applications in response to this advertisement should be marked **IN020.**

Applications must be postmarked by 29 March 1991. Mailing address:

USDA, ARS, Personnel Operations Branch
Room 325
6305 Ivy Lane
Greenbelt, MD 20770

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ASSISTANT RESEARCH SCIENTIST

POSTDOCTORAL RESEARCH POSITION.

Available in the laboratory of Dr. Arnold Stern, Department of Pharmacology, to participate in studies on the cellular regulatory and toxic role of oxygen. Excellent salary and benefits package. Please send curriculum vitae and references to: **Ms. Singh, Personnel Department, New York University Medical Center, 550 First Avenue, New York, NY 10016.** *An Equal Opportunity Employer, M/F.*

RESEARCH ASSOCIATE/POSTDOCTORAL

A position is currently available to study genotoxic stress responses in mammalian cells. Emphasis will be given to a recently isolated group of novel DNA-damage-inducible genes that play a role(s) in negative growth control. Studies will also focus on the regulation of HIV-1 expression by genotoxic stress and on HIV-1 regulatory features shared with cellular stress-response genes. Experience in molecular biology and/or protein biochemistry, such as the purification and characterization of DNA-binding proteins, is desirable. Salary for a postdoctoral fellow (less than 3 years of experience) or a research associate (up to 5 years of postdoctoral experience) is commensurate with experience. Send curriculum vitae and names of three references to: **Dr. A. J. Fornace, Laboratory of Molecular Pharmacology, Building 37, Room 5C09, National Institutes of Health, Bethesda, MD 20892.** email: fornace@fcfrvl.ncifcrf.gov.

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APPLIED MATHEMATICIAN, QUANTITATIVE FISHERY MANAGEMENT. Three RESEARCH ASSOCIATE positions are immediately available for applied mathematician (specialty in population dynamics or fishstock assessment) with an emphasis in statistics. We are actively engaged in quantitative fishery management, population dynamics, and related research with a global orientation in tropical and temperate systems which includes a large Chesapeake Bay component. Our emphasis is on developing long-term sampling programs and model development for fishery stock assessment, and on adapting expert systems technology, optimization and control theory, and systems science to fishery management settings. Screening of applications will continue until positions are filled. Inquiries with a letter of interest, curriculum vitae, and three references should be directed to: **Dr. Jerald S. Ault, Chesapeake Biological Laboratory, University of Maryland System, P.O. Box 38, Solomons, MD 20688.** FAX: 301-326-6987. *The University of Maryland System is an Affirmative Action/Equal Opportunity Employer.*

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8 FEBRUARY 1991

Postdoctoral Research Staff Members

Lawrence Livermore National Laboratory, one of the nation's premier research and development organizations, is seeking biomedical scientists for postdoctoral appointments in the following areas:

Chromatin Organization: Research involves the study of the organization of closely spaced DNA sequences in interphase, (pro)metaphase, and replicating chromatin and development of fluorescence *in situ* hybridization as a tool for genome mapping. Particular focus will be on the human chromosome X. Experience in cytogenetics, recombinant DNA technology and/or flow cytometry desirable. **Contact: Dr. Barbara Trask (415) 422-5706.**

Human Germinal Mutation and Genetic Variation: Research focuses on identification and molecular analysis of variation at both functional gene and hypervariable loci in human populations. Other projects involve characterization of functionally significant mutations at glycolytic enzyme loci and the identification of mutagen specific fingerprints. Experience in molecular techniques is required. **Contact: Dr. Harvey Mohrenweiser (415) 423-0534.**

Molecular/Cellular Biology: Research will focus on the production of transgenic mouse models for biomedical studies of DNA repair, metabolism, and mutagenesis. The experimental approach will include the use of gene targeting in embryonic stem cells. Experience in mammalian cell culture and/or recombinant DNA technology is desirable. **Contact: Dr. Christine Weber (415) 423-8155.**

Human DNA Repair Gene Cloning and Characterization: Research will be performed with the aim of understanding the biochemical functions of the repair proteins. Goals include studying the relationships between repair and recombinations (e.g. sister chromatid exchange) and constructing repair-deficient transgenic mice. Experience in molecular biology or biochemistry required. **Contact: Dr. Larry Thompson (415) 422-5658.**

Human Germinal Mutations: The objectives of the research are to detect 1) aneuploid sperm using chromosome-specific DNA probes and fluorescence *in situ* hybridization, 2) sperm carrying gene mutations using preselection based on protein phenotype, and 3) sperm carrying other DNA lesions using the polymerase chain reaction. A well equipped laboratory for experiments in molecular and cell biology is provided including computerized image analysis and multi-beam flow cytometry for the detection of mutant cells. Experience in molecular biology, germinal or somatic mutagenesis, fluorescence *in situ* hybridization, and/or cell biology is desirable. **Contact: Dr. Andrew Wyrobek (415) 422-6296.**

Hemopoiesis: Research will focus on the use of DNA-based detection strategies (fluorescence *in situ* hybridization and the polymerase chain reaction), progenitor assays and multivariate flow cytometric analysis in one or more of several projects to 1) measure the *in vivo* proliferation of purified transgenic hemopoietic stem cells transplanted into rodents, 2) determine the effects of cytokines on proliferation of transplanted stem cells, 3) *in utero* transplantation of murine and human stem cells into rodent fetuses and 4) evaluate the use of the hemopoietic system for biological dosimetry. Experience in handling small animals, flow cytometry, and experimental hemopoiesis is desirable. **Contact: Dr. Maria Pallavicini (415) 422-5651.**

Lawrence Livermore National Laboratory offers a highly competitive benefits package including three weeks vacation during your first year of employment. Interested applicants should send their curriculum vitae to: **Phil Harding, Professional Employment Division, Lawrence Livermore National Laboratory, P.O. Box 808, L-725, Dept. A91081, Livermore, CA 94550.** An equal opportunity employer.

University of California

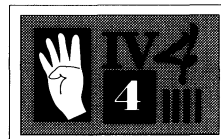
**Lawrence Livermore
National Laboratory**

Protein Sequencing Applications Specialist

Hewlett-Packard's Scientific Instruments Division develops, manufactures and supports a wide variety of analytical systems including instruments for protein analysis.

Located in the mid-Atlantic area, you'll have a combination of applications support, technical support, and sales/marketing responsibilities including: discussing protein chemistry applications with prospective customers; providing applications support to protein sequencer users; providing first-line hardware and software support for installed instruments. Laboratory experience in protein chemistry including hands-on HPLC experience and 2+ years of protein sequencing required. Marketing/Sales experience helpful. BS in Chemistry, Biochemistry, or relevant biological science field is prerequisite, advanced degree desirable.

Please send your resume to: Hewlett-Packard Company, Scientific Instruments Division, Position #1005, 1601 California Ave., Palo Alto, CA 94304. Hewlett-Packard Company is an equal opportunity/affirmative action employer.



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The National Center for Human Genome Research seeks outstanding candidates with a Ph.D./M.D. or equivalent and research experience in human genetics, molecular biology, or genetics to work with the Human Genome Program at NIH in Bethesda, Maryland. Candidates should have at least one year of postdoctoral training and significant scientific experience beyond the postdoctoral level. The duties of the positions will include administration of a portfolio of research, center, and/or training grants relating to the subject area, maintaining a thorough knowledge of ongoing genome projects in that subject area, and advising the Center Director on policy development regarding genome issues. The salary range is \$37,294 to \$68,129, or may be negotiable commensurate with qualifications and experience. Interested candidates should submit curriculum vitae and names of three references to:

Dr. Jane Peterson
National Institutes of Health
Building 38A, Room 612
9000 Rockville Pike
Bethesda, MD 20892
(301) 496-7531



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1991 AAAS Environmental Science & Engineering Fellowship Program

Fellows work as special research consultants with the Office of Research and Development (ORD) of the U.S. Environmental Protection Agency for ten weeks in the summer. The detailed, future-oriented research assists ORD in assessing the significance of long-range environmental problems. The stipend is \$850 a week. Applicants must be postdoctoral to midcareer professionals, show exceptional competence in a relevant professional area, and be permanent residents of the United States. Persons may apply from any physical, biological, or social science and any field of engineering. Ten Fellows will be selected. The application deadline is March 1, 1991.

**For additional program information and
application instructions, contact:**

Environmental Science & Engineering
Fellowship Program
Directorate for Science and Policy Programs
American Association for the Advancement of Science
1333 H Street, NW, Washington, DC 20005
202/326-6600

Associate Director Macromolecular Structure and Dynamics Program

Battelle, Pacific Northwest Laboratories

Battelle, Pacific Northwest Laboratories (PNL) is seeking a senior scientist to head a new multiuser center for research on macromolecular structure and dynamics (MSD). The MSD program is one component of the new Molecular Science Research Center (MSRC) at PNL, and will initially focus on structural analysis of biological macromolecules using advanced NMR, mass spectrometry and other spectroscopic techniques. Several ultrahigh-resolution instruments, including a 1000-MHz NMR spectrometer and a 14-Tesla ion cyclotron resonance mass spectrometer are currently under development as part of the MSD program. The program leader will hold the rank of Associate Director within the MSRC, and will be responsible for operation of the MSD program as a national user center containing a core PNL staff of approximately 40 scientists, technical specialists, and students.

PNL 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 3,000 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, addresses, and telephone numbers of 4 references to: **Dr. T.S. Tenforde, Chief Scientist, Life Sciences Center (K1-50), Battelle, Pacific Northwest Laboratories, P.O. Box 999, Richland, Washington 99352.** Deadline for receipt of applications is March 1, 1991. An Affirmative Action, Equal Opportunity Employer.



Battelle

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Post Doctoral Research Position(s)

Two positions are available with guaranteed funding for three years, to develop new approaches to massive genomic analysis using advanced biological and physical systems. The applicant's background can be quite diverse: molecular biology, biochemistry, cell biology, engineering, optics, computer science, organic chemistry, physical chemistry, etc. Our laboratory needs individuals with a diversity of skills to build interdisciplinary approaches to genomic analysis using radically new methodologies. Excellent benefits. Send application and full curriculum vitae to: **Dr. David C. Schwartz, Department of Chemistry, (Dept. of Biochemistry, NYU Medical Center), New York University, 4 Washington Place, Room 514, New York, New York 10003.**

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Rhone-Poulenc Inc. is a rapidly growing subsidiary of the eighth largest chemical company and the fourth largest agrochemical company in the world. The Toxicology Department located at our Research Triangle Park, North Carolina campus is expanding to meet the increasing challenges of our diverse businesses. We have three openings for Toxicologists. These positions are available immediately.

MAMMALIAN TOXICOLOGIST

The successful candidate will assist in establishing and maintaining mammalian toxicology programs on new and existing products of our agricultural chemical company. Responsibilities include protocol design, monitoring of contracted studies, consultation with business groups and interaction with State and Federal regulatory groups. A Ph.D. in Toxicology or a related discipline is required with 0-5 years of contract laboratory, industrial, or regulatory experience desirable. Effective oral and written communication skills are essential.

AQUATIC TOXICOLOGIST

The successful candidate will assist in establishing and maintaining aquatic toxicology programs for U.S. products; provide technical expertise to business groups; assist in the design, monitoring and reporting of contracted laboratory and field studies; and assist in preparation of regulatory-compliance documentation. A Ph.D. in Aquatic or Environmental Toxicology or a related discipline is required with 0-5 years of related experience. Knowledge of Environmental Risk Assessment, Biomonitoring/NPDES Permitting, and Environmental Fate Chemistry is also desirable.

WILDLIFE TOXICOLOGIST

The successful candidate will assist in establishing and maintaining wildlife toxicology programs for U.S. products; provide technical expertise to business groups; assist in the design, monitoring and reporting of contracted laboratory and field studies; and assist in preparation of regulatory-compliance documentation. A Ph.D. in Wildlife or Environmental Toxicology or a related discipline is required with 0-5 years of related experience. Knowledge of Environmental Risk Assessment, Mammalian Toxicology, and Environmental Fate Chemistry are desirable.

We offer a competitive salary, attractive benefits and a chance to join a growing and dynamic organization in a position with opportunities for career growth. Please send resume, including salary history and requirements, to:

**Dr. Jeffrey M. Charles
Manager, Ag Toxicology**

**Rhone-Poulenc
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Research Triangle Park, N.C. 27709**

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THE AARON DIAMOND FOUNDATION POSTDOCTORAL RESEARCH FELLOWSHIPS IN THE BIOMEDICAL AND SOCIAL SCIENCES

The Aaron Diamond Foundation in New York City announces the establishment of 25 postdoctoral research fellowships in the biomedical and social sciences focusing on AIDS or drug abuse. The purpose of the fellowships is to attract promising investigators to academic and research institutions in New York City and to encourage increased research into understanding and solving two of today's most pressing public health problems.

Fellows are paid annual stipends beginning at \$36,000. Each fellowship is for two years, with an option for a third year. Applicants must have an M.D. or Ph.D. in the biomedical or social sciences. M.D.s should have completed at least two years of clinical training and received their degrees no earlier than 1984. Ph.D.s are eligible immediately after graduation. The fellowships are open to all U.S. citizens and qualified foreign applicants who have applied for U.S. citizenship. Women and members of minority groups are encouraged to apply. Applications are accepted through mentors at New York City institutions who have agreed to sponsor a particular applicant. Mentors participating in the fellowship program are listed in the application materials. The mentor's institution receives \$30,000 to cover the fellow's fringe benefits, travel and research costs.

For further information and application forms contact: New York State Health Research Council, Office for the Aaron Diamond Foundation Postdoctoral Research Fellowships, 5 Penn Plaza, Room 308, New York, NY 10001; (212) 613-2525.

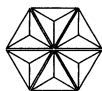
POSTDOCTORAL FELLOWSHIP

in Cellular & Molecular Immunology

Bristol-Myers Squibb Company is a worldwide leader in the development and marketing of sophisticated pharmaceutical, medical care consumer and nutritional products.

We currently have a Postdoctoral Fellowship available to study the regulations of signal transduction in lymphocytes or macrophages. Experience in enzyme and membrane protein isolation and characterization is required. Training in the study of signal transduction mechanisms in mammalian systems using biochemical and molecular biological techniques are preferred.

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POST-DOCTORAL RESEARCH ASSOCIATE POSITIONS DEPARTMENT OF MOLECULAR GENETICS

Post-doctoral research associate positions are available in the Department of Molecular Genetics at Hoffmann-La Roche Inc., in Nutley, NJ, USA. Applications are invited from individuals with Ph.D. or M.D. degrees. Publications and interactions with outside investigators are strongly encouraged. Applicants may choose from multiple research projects involving cell and molecular biology, including:

- Hematopoietic gene transfer—model for gene therapy.
- Role of oncogenes (fos, myc, jun, ras) in growth factor induced differentiation in neuronal and epithelial cell system.
- Role of transforming growth factors in cell proliferation and differentiation.
- Tumor suppressor genes.
- Antisense RNA and regulation of gene expression.

The Roche Research Center is located in a suburban setting about 10 miles from New York City. Starting salary is \$31,500 with health benefits. Interested candidates please send C.V. and names of two references to Dr. R. Narayanan, Department of Molecular Genetics, Hoffmann-La Roche Inc., 340 Kingsland Street, Nutley, NJ 07110 USA. Telephone 201-235-4695, Fax 201-235-7617.

POSTDOCTORAL POSITION

Applications are invited for a postdoctoral position in the Department of Auto-immune Diseases Research within the Division of Immunology and Inflammation Research. The successful candidate will study mechanisms of antigen processing, transport of peptides within cellular compartments and the association of peptides with MHC class I molecules. This position will provide an excellent opportunity for interdisciplinary research involving other members of the Division as well as members of the Departments of molecular immunology, molecular cell biology and biophysics. A suitable candidate should have a strong background in areas such as biochemistry, cell biology and molecular biology. The postdoctoral appointment will be for at least two years. Candidates may have one or two years previous postdoctoral experience.

Merck Sharp & Dohme Laboratories is located in Rahway, New Jersey, approximately 25 miles from New York City. Our salaries, benefits and growth potential are excellent. For consideration, send your resume and the names of three references to: **Human Resources Manager, Merck Sharp & Dohme Laboratories, Attn: Ad #60, P.O. Box 2000, Rahway, NJ 07065.**

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Applicants are invited for tenure-track staff scientist positions from candidates with a broad knowledge of molecular genetics and microbiology. They will be expected to develop a strong, independent basic research program. Two positions are available:

● **MOLECULAR PATHOGENESIS.** To investigate the molecular pathogenesis of bacteria or other microorganisms using molecular genetic approaches.

● **MYCOBACTERIOLOGY.** To study the pathogenesis of mycobacteria or intracellular pathogens using molecular genetic approaches. Individual will also be in charge of directing a Mycobacteriology diagnostic and reference laboratory. Experience with mycobacteria or other intracellular pathogens is required.

Candidates must possess a Ph.D. or equivalent degree and have a minimum of three years of post-doctoral experience. Salaries are competitive and commensurate with experience.

The Wadsworth Center for Laboratories and Research provides a stimulating research environment, combining excellent facilities with multidisciplinary and interactive programs in Molecular Microbiology and Genetics. This unique research facility houses the graduate program of the School of Public Health of the State University of New York at Albany. The Molecular Genetics Program is a new entity within the Center.

Send curriculum vitae, a statement of future research interests and the names, addresses and phone numbers of three references to:

Dr. Lorraine Flaherty
Chairman, Search Committee
Molecular Genetics Program
Wadsworth Center for Labs and Res.
P.O. Box 509
Albany, NY 12201-0509

The positions are funded by Health Research Inc., an EEO/AA employer.

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Positions are available for BS/MS Chemists with an interest in synthetic organic chemistry in such areas as discovery and process research, product development, and technical services. Candidates should have synthetic organic research experience, as well as excellent organizational and problem-solving skills.

BIOCHEMISTRY

A position is also available for an associate Biochemist in our Macromolecular X-Ray Crystallography laboratory. Candidates should have a Master's degree or a Bachelor's degree with equivalent experience. A background in protein chemistry and a strong interest in protein structure determination is essential. Some knowledge of computer programming or molecular graphics is desirable. Our laboratories for macromolecular studies contain state-of-the-art equipment for crystallization and diffraction studies.

Positions also exist for BS/MS biochemists with experience in protein chemistry, including the purification and characterization of proteins using a number of chromatographic, spectroscopic, and electrophoretic techniques.

These positions require legal authorization to work full-time in the U.S. for other than practical training. To inquire, please send a resume to: **Kristin Roehr, Scientific Recruitment, Eli Lilly and Company, Lilly Corporate Center, Indianapolis, IN 46285.** Equal Opportunity Employer.



Commitment to Excellence

POSITIONS OPEN

MICROBIOLOGISTS

Yukong Ltd., a member of the Sunkyoung Group and the leading Korean petroleum and chemical company, has openings for qualified microbiologists at its Korean and United States laboratories.

We are looking for Ph.D. scientists with backgrounds in cell biology, microbial genetics, or biochemistry. The work involves biological transformation of various organic materials.

We offer an excellent benefits package, relocation assistance, and competitive salary commensurate with experience. Qualified candidates are invited to send résumé with a letter of application indicating geographic preference to: **Ms. R. Avoletta, Yukong Ltd., R&D Laboratories in U.S.A., P.O. Box 400, Naugatuck, CT 06770.**

YUKONG LIMITED

NEUROSCIENTIST. Position available immediately for Ph.D. or M.D. applicant with immunology or pathology or biochemistry or pharmacology expertise related to brain tumor to complement ongoing research in interferon, blood-brain-barrier, and glioma. Level of faculty appointment and salary (\$30,000 to \$42,000) negotiable. Send curriculum vitae, a brief statement of current and future research interests, and three letters of reference to: **Marzena Wiranowska, Ph.D., Department of Neurology, University of South Florida, College of Medicine, MDC Box 55, Tampa, FL 33612.** The University of South Florida is an Equal Opportunity/Affirmative Action Employer.

The Medical College of Wisconsin, Department of Ophthalmology, invites applications for a full-time, tenure-track **RESEARCH POSITION.** Requires Ph.D. with a minimum of 2 years of postdoctoral research experience and NIH-RO1 support. Candidates should have training in one of the following areas: cell biology, molecular biology (genetics), or immunology and an interest in working on clinically relevant problems. Excellent laboratory space available. Department will help to equip. Send curriculum vitae, summary of research interests, and names of three references to: **Richard O. Schultz, M.D., Chairman, Department of Ophthalmology, Medical College of Wisconsin, 8700 West Wisconsin Avenue, Milwaukee, WI 53226.** Affirmative Action/Equal Opportunity Employer, M/F/V/H.

MOLECULAR BIOLOGY

Roche Biomedical Laboratories Center for Molecular Biology is seeking a **SCIENTIST** for our Molecular Products Department in Research Triangle Park, North Carolina. The qualified candidate will supervise a laboratory which produces and maintains quality assurance of the primers, buffers, and controls for use in PCR-based clinical testing.

This position requires an M.S./B.S. with experience in automated DNA synthesis and HPLC purification of oligonucleotides. Also necessary is experience with various molecular biology techniques including plasmid preparation, Southern blots, PCR, and electrophoresis of DNA fragments. Other desirable abilities include tissue culture and technical writing. Contact the HR Department, Monday to Friday, 9 a.m. to 5 p.m. for an application. Résumés alone not acceptable. **Roche Biomedical Laboratories, Inc., 1912 Alexander Drive, Research Triangle Park, NC 27709. Telephone: 1-800-533-0567; 919-361-7700.** Equal Opportunity Employer, M/F/V/H.

MATERIALS SCIENTIST. To conduct research in magnetic recording technology. Design of new components in disk drive, construct apparatus to analyze materials in accelerated life test, propose and evaluate solutions to existing materials/chemistry problems, and establish test techniques and procedures. Requires Ph.D. in polymer science and engineering. Possess thorough knowledge in coating technology, materials science polymer processing and chemistry, physical properties of polymers with emphasis on polymer degradation; research and publication background in polymer compatibility. Knowledge in FTIR, DSC/TGA, GC, NMR, GPC/HPLC, and UV plus 3 months in job offered or 3 months of industrial experience in polymer interaction. Salary: \$50,000 per year; 40 hours a week. Job site/interview: San Diego, California. Send ad and résumé to: **Job # BW 9016, P.O. Box 9560, Sacramento, CA 95823-0560** no later than 23 February 1991.

POSITIONS OPEN

RESEARCH SCIENTIST, BIOPHYSICS. Conduct scientific research in the field of anti-oxidant and anti-ulcer drugs. Study physical principles of living cells; investigate dynamics and study damage to cells caused by internal and external stimuli which evoke free radical reactions. Research and develop anti-oxidant and anti-ulcer drugs which inhibit such free radical reactions and allay cell and tissue damage. Study spatial configuration of lipids and proteins using x-ray microscope to analyze effects of oxidation and transformation of substances in cells. Market anti-oxidant and anti-ulcer drugs to Soviet Union's pharmaceutical industry. Salary: \$800 per week. Requirements: Ph.D. in biophysics/biological sciences; 4 years of experience; detailed knowledge of scientific research related to anti-oxidant and anti-ulcer drugs; knowledge of Soviet pharmaceutical industry and practices. Submit résumé or curriculum vitae to: **The Philadelphia Job Bank, 444 North 3rd Street, 3rd Floor, Philadelphia, PA 19123, Job Order Number 4346231.**

MOLECULAR BIOLOGIST/IMMUNOLOGIST. Full-time **RESEARCH POSITION** available immediately for a well-trained, highly motivated scientist to join the NIH/ACS-support Human Immunology and Cancer Program in the Department of Medicine, University of Tennessee Medical Center at Knoxville (UTMC/K). The successful candidate will work in a newly established, fully equipped molecular biology laboratory. Additional programmatic resources include hybridoma/mAb flow cytometry, protein and peptide chemistry, immunochemistry, and computer laboratories. Position requires a minimum of 2 years of postdoctoral research experience. Excellent compensation (including fringe benefits) and academic rank commensurate with education and experience. The Knoxville area offers the scientific resources of the University of Tennessee and the Oak Ridge National Laboratory, recreational opportunities provided by the surrounding Great Smokey and Cumberland Mountains and extensive TVA lake system, and cultural amenities including a symphony and chamber orchestra, a major fine arts museum, opera, and theater. Letter of application, curriculum vitae, and names and addresses of three reference sources should be sent to: **Alan Solomon, M.D., Professor of Medicine and Head, Human Immunology and Cancer Program, University of Tennessee Medical Center/Knoxville, 1924 Alcoa Highway, Knoxville, TN 37920.** The University of Tennessee is an Affirmative Action/Title IX/Section 504 Employer.

COURSES AND TRAINING

DOCTORAL PROGRAM IN MOLECULAR/CELLULAR BIOLOGY AND PATHOBIOLOGY

Interdisciplinary program seeks qualified candidates interested in fundamental molecular and cellular biology and its application to disease. Stipends of \$10,000 to \$15,000 available on a competitive basis. Contact: **Director, MCBP Program, College of Graduate Studies, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.**

POSTDOCTORAL TRAINING PROGRAM IN THE CELLULAR/MOLECULAR BIOLOGY OF AGING

Postdoctoral (Ph.D. or M.D.) positions are available for 2 years of specialized training in the methods and models of research on aging. This program is directed by a consortium which includes The Wistar Institute (Drs. D. Kritchevsky and E. Levine), Temple University (Drs. R. Baserga and N. Duker), the Medical College of Pennsylvania (Drs. V. J. Cristofalo, E. Friedman, P. Phillips, and J. Roberts), and Merck Sharp and Dohme Research Laboratories (Drs. M. Bradley and W. Nichols). Research emphases include: cell cycle kinetics/dynamics, growth factor regulatory mechanisms, growth/senescence regulatory genes, cellular transformation and immortalization, regulation of gene expression, DNA repair, cytogenetic aspects of cell senescence/immortalization, nutrition and aging, caloric restriction, vascular cell physiology, and cardiovascular physiology/pharmacology. *Minority candidates are especially encouraged to apply.* Address applications (curriculum vitae, three letters of recommendation, and graduate school transcript) to: **Vincent J. Cristofalo, Ph.D., Audrey Meyer Mars Professor and Director, Center for Gerontological Research, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, PA 19129.**

POSITIONS OPEN

SECTION HEAD CHEMIST, LIQUID RESINS DEVELOPMENT. Duties: To supervise the industrial resin product development and technical services activity for liquid urea formaldehyde and phenol formaldehyde resins serving the glass fiber bonding, industrial and decorative laminate, paper impregnation, and related markets. To supervise development, laboratory evaluation, and scale-up of resins for thermal insulation and filtration; to work with manufacturing and quality assurance or process development/improvement projects; to provide technical support to prospective and current customers in selection and use of resins; to provide activity reports, review technical reports, assist in preparation of Records of Invention, and work with patent counsel and inventors in preparation of patent applications. Requires: Bachelor of Science degree in chemistry.

In performing the job offered or the related occupation, applicant must have 8 years of experience in polymer synthesis and phenolic resins and 4 years of experience in product development, providing technical services to customers in the use and application of chemical products, preparation of patent applications and records of invention, and providing technical expertise to patent lawyers in registering and protecting chemical product patents. Forty-hour work week. Hours: 8:30 a.m. to 5:00 p.m. Salary: \$50,000 per year. Qualified applicants should send résumés to: **Mr. E. L. VanArsdale, Department for Employment Services, 600 West Cedar Street, Louisville, KY 40202-2396.** Reference Job Order #229649. Equal Opportunity Employer.

MEETINGS

**CALL FOR PAPERS
FIRST INTERNATIONAL
OCEAN POLLUTION SYMPOSIUM
AT UNIVERSITY OF PUERTO RICO
MAYAGUEZ, PUERTO RICO
28 APRIL TO 2 MAY 1991
AND
CALL FOR PROPOSALS TO HOST
SECOND INTERNATIONAL
OCEAN POLLUTION SYMPOSIUM, 1993**

The First International Ocean Pollution Symposium (IOPS, previously the International Ocean Disposal Symposia) is expected to take place in Puerto Rico and this is a first call for abstracts and inquiries. The Second IOPS is being planned now and the organizing committee is requesting that interested countries submit a pre-proposal expressing interest in hosting 2IOPS. The objective of the IOPS series is to provide a forum for the exchange of ideas and information among scientists involved in marine pollution and ocean disposal research. Send 250-word abstract or inquiries related to either 1IOPS or 2IOPS to:

**Professor Iver W. Duedall
Organizing Committee Co-Chairman
International Ocean Pollution Symposia Series
Department of Oceanography
and Ocean Engineering
Florida Institute of Technology
Melbourne, FL 32901
FAX: 1-407-984-8461**

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NEW ENGLAND BIOLABS

Molecular Biology and Biotechnology

Summer Workshop

WHEN:

Session I: June 2-June 15, 1991
Session II: June 20-July 3, 1991

WHERE:

Clark Science Center
Smith College
Northampton, MA

FACULTY:

Dr. Steven A. Williams
Dept. of Biological Sciences, Smith College,
Northampton, MA, and Program in
Molecular and Cellular Biology, University
of Massachusetts

Dr. Molly Fitzgerald-Hayes
Dept. of Biochemistry and Program in
Molecular and Cellular Biology, University
of Massachusetts

Dr. John McCarrey
Dept. of Genetics, Southwest
Foundation for Biomedical Research

Dr. Barton Slatko
New England Biolabs, Inc.

TO APPLY

for this workshop, please submit a recent
curriculum vitae and a one page statement
of motivation to:

Dr. Steven A. Williams
Dept. of Biological Sciences
Smith College
Northampton, MA 01063

We are pleased to announce the sixth annual New England Biolabs' Molecular Biology and Biotechnology Summer Workshops held at Smith College, Northampton, MA.

INTENSIVE BENCH EXPERIENCE: This intensive, two-week course emphasizes hands-on molecular biology laboratory work. About eight hours each day will be spent working at the bench. All of the work is hands-on; there are no demonstrations.

EXPERIMENTS WILL INCLUDE: Purification of DNA, restriction enzyme digestion, gel electrophoresis, construction of recombinant DNA molecules, cloning in plasmid and phage vectors, cloning strategies, bacterial transformation and transfection, Southern and Northern transfer and hybridization, radioactive and nonradioactive labeling of DNA, polymerase chain reaction, RNA pCR, in situ hybridization, and DNA sequencing. All of these techniques are woven into a cohesive research project carried out by each participant during the two-week session. Lectures and discussion sessions (at least three hours each day) will deal with all of the above topics and how these methods are applied in molecular biology research.

INTENDED FOR BEGINNERS IN MOLECULAR BIOLOGY. No previous experience in molecular biology is required or expected. Thirty participants will be selected from a variety of disciplines and academic backgrounds. Last year's participants included principal investigators, directors of programs, postdoctoral fellows and research assistants. Their fields of research included biochemistry, medical physiology, immunology, microbiology, plant biology and others. They came from large universities, small colleges, hospitals, industry, and private foundations.

FEE: \$2500 per participant includes lab manual, use of all equipment and supplies, and room and board (all rooms are singles). Fee includes the use of the libraries and all campus athletic facilities including indoor and outdoor tennis courts, pool, weight room, track, etc.

APPLICATIONS MUST BE RECEIVED BY March 1, 1991. Notification of acceptance, wait-list, or rejection will be mailed by March 6, 1991. Payment in full will be due by April 15, 1991. Your application should include a C.V. and a one page statement of motivation. Please specify the session to which you are applying and indicate if you wish to be considered for the other session as a second choice. Women and minorities are especially encouraged to apply. **For additional information, please contact Dr. Steven A. Williams at (413) 585-3826.**

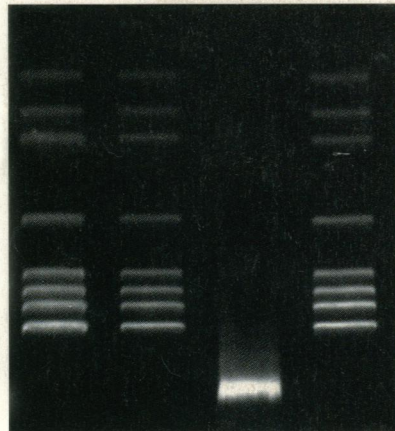


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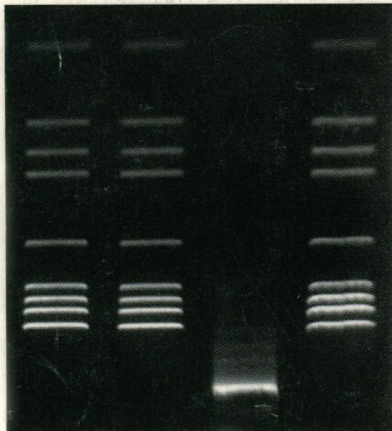
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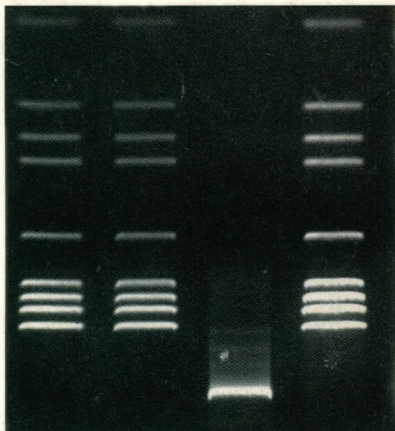
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nate expensive and time-consuming sourcing and ordering paperwork.

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For additional information, please contact IBI Technical Resources at (800) 243-2555 or your local VWR Sales Office. Outside of the U.S., contact the IBI International Sales Department at (203) 786-5600 for the name of the distributor nearest you.



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† Lane 1: Kpn I cut Adenovirus Type 2 DNA; 5 Units/µg DNA; Lane 2: ligated product; Lane 3: ligated product recut with 5 U Kpn I/µg DNA; Lane 4: overdigest, 30 U/µg DNA. If you would like to review the specifics of these assays or know which companies were involved, contact one of the numbers listed.