

large males. The proportion of eggs fertilized is highest if the male matches the female in size. As most breeding females are larger than males, most females should benefit from choosing a larger than average male.

Why do males not always include the chuck, which should increase their attractiveness to females? Two decades ago, Rand began to suspect that male túngara frogs are threatened by some predator that uses the chuck to locate them. He based his suggestion on a comparison with the structure of alarm and mobbing calls of certain birds. Rand ventured this prediction although no predators were known to orient to frog calls.

This conjecture has now been confirmed to an astonishing degree through the work of Ryan, Rand, Merlin Tuttle, and their colleagues. Whodunit? A frog-eating bat, *Trachops cirrhosus*, turned out to be a major predator of the males (see the cover of *Science*, no. 4521, 1981)—another reminder for anyone who might still think of evolutionary biology as an entirely historical and nonpredictive science. Observations and playback experiments showed that the bat is attracted more by calls containing whine plus chuck than by whines alone, perhaps because chucks are more easily located as Rand suggested. At any rate, predation by bats seems to explain why males do not always include the chuck in their calls. This example provides a nice corroboration of the Darwin-Fisher idea that sexual selection for a trait may be opposed by counteracting natural selection, leading to a balance between the two.

While presenting an exemplary study of sexual selection in a natural population, this book also shows the difficulties of such an approach. Ryan is the first to admit that the evidence often does not permit a clear separation between alternative explanations. For instance, although it seems that the chuck has evolved in part owing to sexual selection through female choice, it is not clear why the female preference itself has evolved. Four possibilities are: (i) the preference is an effect of properties of the female's auditory system that evolved for reasons unrelated to mate choice; (ii) it has evolved because it makes the female mate with males providing superior nongenetic benefits, improving her reproductive success; (iii) it makes the female mate with genetically superior males, giving her offspring heritable above-average survivorship; (iv) the sons of females showing the preference inherit the preferred trait and hence have higher than average mating success.

The data do not permit exclusion of any of these four alternatives. There is evidence that the preference for large males leads to a higher proportion of eggs fertilized. In addition,

comparison with related species suggests that the chuck component has evolved under sexual selection for lowered fundamental frequency, perhaps owing to joint evolution of male call and female preference. Mechanisms (ii) and (iv) hence may have been involved, but the two others have not been excluded. The issue is not easily resolved; sexual selection will probably continue to offer challenging problems for years to come. Nevertheless, this book gives a stimulating account of some steps that have been taken and others that remain on the way toward understanding of the importance of sexual selection and its various mechanisms. As usual, there are points on which one might disagree with the analysis or interpretations, but on the whole this is a careful, creative, and informative study that is likely to become a classic of its kind.

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Books Received

Advances in Materials Characterization II.

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Image Processing

The ImageWorks card gives the Apple II series computers a full gray-scale display for graphics and image processing. The image is displayed on the Apple monitor and overlaid on the regular Apple text or graphic display. ImageWorks stores an image of 256 lines by 256 columns with 256 levels of gray. A 192-line-by-256-column part of the ImageWorks display aligns perfectly with the Apple video. None of the Apple's RAM is used; the card has 64 Kbyte of RAM of its own. The card comes with a reference manual, a demonstration program, four digitized pictures, and a 6502 machine code library for picture manipulation. Source code for all programs is included. Redshift Limited. Circle 535.

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The Microsyn-1500 automates the rapid, efficient production of oligonucleotides. The system is menu-driven. A color monitor displays menus, sequences, and graphic representations of flow paths. The standard phosphite method produces coupling yields of 98 percent per step or better at a cycle time of less than 10 minutes per step. Reagent consumption is minimized. Protocol may be modified or stored in permanent memory. A factory-set "default" protocol may be recalled at any time. Microsyn-1500 comes with on-site installation and training in synthesis for the operator. Systec. Circle 537.

Scientific Software for PC's

Assystant Ready-to-Run Scientific Software is a menu-driven package. Assystant offers data reduction, analysis, and presentation graphics capabilities; Assystant+ adds data acquisition. Both versions offer ease of learning. Data reduction includes fast Fourier transform; smoothing; integration/differentiation; data set averaging; polynomial scaling; rise time, peak width, area under curve, and envelope detection; interactive

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Laboratory Automation for Chromatography

The CALS Phase-1 and Phase-2 are modular systems for the automation of gas or liquid chromatography. The MK5 Digi-metry instrument interface coupler interfaces the chromatograph to the computer. These analog-to-digital converters minimize noise by being situated close to the detector. An autoranging feature automatically equates the full-scale input range of the coupler with the detector's output signal (or peak height) to reduce nonlinearity errors of conversion to less than 0.02 percent. The



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Peptide and Protein Separation

Model 130A is designed for the isolation, purification, and analysis of peptides and proteins. Microbore technology allows samples to be collected in a small volume versus usual HPLC methods. Samples in some cases may be collected directly on filter disks. The 130A system is available with a wide range of narrow-bore (2.1 mm inside diameter) and microbore (1.0 mm inside diameter) columns optimized for reverse phase, ion exchange and hydrophobic interaction chromatography. Existing HPLC isolation protocols may also be transferred to the model 130A with little or no modification. Use of small samples increases sensitivity and minimizes dilution and sample handling. The system is designed for ease of maintenance as well. Applied Biosystems. Circle 541.

Literature

Electromagnetic Instruments in the range of 100 kHz to 1.1 GHz are featured in a new product catalog. A primer on pulsed RF, ultrasonic, and NMR/NQR measurements is included. Matec Instruments. Circle 542.

Electronic Materials offers Cermet conductors, special conductors, dielectrics, glazes, resistors, polymeric products, and other materials for the design and packaging of electronic circuitry. Electro-Science Laboratories. Circle 543.

Biomedical Research features peptides, steroids, lipids, absolute grade reagents, and other materials for the scientist. Research Plus. Circle 544.

Hard Copy Printer/Plotter describes Spectrum, an 11-inch electrostatic accessory for opaque, translucent, and vellum papers or clear and matte-back films. Versatec. Circle 545.

Ultraviolet Fiber Optics are offered in optical and industrial grades and transmittance curves are provided. Dolan-Jenner Industries. Circle 550.

Affinity Chromatography describes how to plan a fast affinity chromatography separation. Graphics explain the technique and results. Beckman Instruments, Altex Scientific Division. Circle 551.

Spectrophotometers is devoted to the Spectronic 20 and 20D instruments for educational applications. Milton Roy, Analytical Products Division. Circle 552.

Eicosanoid Measurement includes radioimmunoassay kits and reagents and the Eicosanoid Biosynthetic Pathways chart. Seragen. Circle 553.

Homogeneous Catalysis with Compounds of Rhodium and Iridium. Ronald S. Dickson. Reidel, Dordrecht, 1985. (U.S. distributor, Kluwer, Hingham, MA). xvi, 278 pp., illus. \$44.50. Catalysis by Metal Complexes.

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The Commission for the Conservation of Antarctic Marine Living Resources (CCAMLR) invites applications for the position of data manager to be responsible for the development and operation of the commission's computing and data facilities and the provision of data handling and analyses in support of the scientific committee and its various expert groups. Applicants should have university qualifications in computing or biological sciences and experience in the operation and programming of advanced scientific data facilities and their application in the handling of marine biological and fisheries data. Knowledge of population dynamics and stock assessment an advantage.

Fluency in more than one of the official languages, English, French, Spanish, Russian, is desirable.

The salary is based on the United Nations (UN) scales and will be in the range of U.S. \$33,000 to U.S. \$43,000 per annum net. Allowances are based on the UN system and include removal, installation and repatriation allowances, and a home leave allowance every 2 years.

Address applications by 30 April to: The Executive Secretary, CCAMLR, 25 Old Wharf, Hobart, Tasmania, Australia 7000.

BIOCHEMIST

Ph.D., research scientist, to study mechanism of action of neuropeptides in normal and malignant cells. Expertise with receptor characterization and purification, second messenger assays, monoclonal antibody production, and tissue culture desirable. Minimum of 2 to 5 years of research and/or college-level teaching in this field required. Send curriculum vitae and names of three references by 15 April 1986 to: Dr. Terry Moody, Department of Biochemistry, George Washington University Medical School, Washington, DC 20037. An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR STANFORD UNIVERSITY Department of Applied Physics and Stanford Synchrotron Radiation Laboratory (SSRL)

Applications are invited for a tenure-track faculty position. The applicant's principal research experience should be in the application of x-ray techniques to the study of problems in condensed-matter science.

The appointment will be 50 percent with the Department of Applied Physics, involving a regular faculty teaching commitment, and 50 percent with SSRL, where the faculty member will be expected to participate in the development and exploitation of x-ray facilities at the SPEAR and PEP storage rings.

Send curriculum vitae, bibliography, and names and addresses of three references to: Dr. S. Doniach, Chairman, Search Committee, Department of Applied Physics, Stanford University, Stanford, CA 94305. Application deadline: 15 April 1986.

Stanford University is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to reply.

The Office of Agricultural Entomology, Illinois Experiment Station, University of Illinois at Urbana/Champaign, is seeking an ASSISTANT OR ASSOCIATE PROFESSOR (tenure-track) with training or experience in molecular biology and entomology. Candidates must have a Ph.D. degree and be capable of developing a strong research program using the tools and approaches of molecular biology relevant to agricultural entomology. Salary open. Anticipated starting date is fall 1986. Applications should be received by 15 April 1986, to receive full consideration. Send curriculum vitae, reprints, statement of research interests, and names of three references to: Dr. J. V. Maddox, Illinois Natural History Survey, 607 East Peabody Drive, Champaign, IL 61820. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.

THE UNIVERSITY OF BRITISH COLUMBIA Department of Zoology

Applications are invited for the position of a tenure-track ASSISTANT PROFESSOR in the Department of Zoology, University of British Columbia. The successful applicant will be expected to teach and to undertake a strong experimental research program at the molecular level. Preference will be given to a newly graduated Ph.D. with postdoctoral research experience, demonstrated excellence, and who can complement present strengths in the department. Salary maximum: \$35,000 per annum. Curriculum vitae and the names of three referees should be submitted to: Dr. G. G. E. Scudder, Head, Department of Zoology, University of British Columbia, Number 2354-6270 University Boulevard, Vancouver, B.C. Canada V6T 2A9. The expected date of appointment is 1 July 1986, subject to final budgetary approval. Closing date for application is 30 April 1986.

In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Equal Opportunity for Employment is offered to male and female applicants.

ASSISTANT PROFESSOR—MICROBIOLOGY— BIOCHEMISTRY

The Department of Animal and Dairy Science, University of Georgia, invites applications for a full-time, tenure-track position at the assistant professor level. The successful candidate must have a Ph.D. in microbiology with training and/or experience in biochemistry. Experience or training in recombinant DNA methodologies is required. The appointment will be 75 percent research and 25 percent teaching with a 25 percent joint appointment in the College of Arts and Sciences. The successful candidate will be responsible for developing an independent research thrust in cellular and molecular biology in studying microbiological functions impacting nutrient digestibility and metabolism of farm animals. Applications must be received by 1 May 1986. Send completed curriculum vitae and have four letters of reference sent directly to:

Dr. David G. Spruill, Head
Animal and Dairy Science Department
Livestock-Poultry Building
University of Georgia
Athens, GA 30602

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSORS OF ANATOMY AND CELL BIOLOGY

The Department of Anatomy and Cell Biology at the State University of New York (SUNY), Health Science Center at Syracuse (formerly Upstate Medical Center), is seeking exceptional candidates to fill two tenure-track positions. Applicants should have a Ph.D. or M.D. (or equivalent) degree and a minimum of 2 years of postdoctoral research experience. The successful candidates will be expected to pursue vigorous research programs capable of attracting extramural funding and to participate in the teaching of a major medical school course. While the specific area of research is not as important as excellence, preference will be given to candidates who use the most modern methods to analyze structure, function, or differentiation at the cellular and/or molecular levels. The position provides a very competitive salary, as well as generous setup funds. Individuals interested in being considered as a candidate for one of these positions should send a copy of their curriculum vitae, recent reprints/preprints, and three letters of reference by 1 May 1986, to: Dr. Larry F. Lemanski, Chairman, Department of Anatomy and Cell Biology, SUNY Health Science Center at Syracuse, 766 Irving Avenue, Syracuse, New York 13210.

The State University of New York Health Science Center at Syracuse is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT/ASSOCIATE PROFESSOR, DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY. The Department of Pharmacology and Toxicology of Virginia Commonwealth University is seeking applicants for a tenure-track appointment at the level of assistant or associate professor. We are seeking candidates with a strong research record in the area of mechanisms of action of drugs or xenobiotics at the cellular or molecular level. The department has strong programs in neuropharmacology, toxicology, cellular, and biochemical pharmacology. Successful candidates will be judged on their ability or potential to develop a superior research program complementary to those already existing in the department. A strong commitment to teaching at the graduate and professional school level is also expected. A doctoral degree and at least 2 years of postdoctoral experience in pharmacology or a related biomedical science is required. Candidates should submit curriculum vitae, list of publications, a short description of their research plans, and names of three references. Applications should be sent before 1 June 1986 to:

Louis S. Harris, Ph.D., Chairman
Department of Pharmacology and Toxicology
Box 27, Medical College of Virginia
Virginia Commonwealth University
Richmond, VA 23298-0001

An Affirmative Action/Equal Opportunity Employer.

ASSOCIATE to direct the Iowa Pesticide Hazard Assessment Project, a research and public education program on population exposure and the environmental distribution of pesticides and environmental chemical contaminants, functional and administrative supervision to be exercised over laboratory and field personnel. A doctoral degree or equivalent academic training is required in the areas of analytical and organic chemistry. Five years of experience in laboratory supervision and research administration is desirable. Please respond to: Ginni Hebert, Department of Preventive Medicine and Environmental Health, University of Iowa, AMRF, Iowa City, Iowa 52242. The University of Iowa is an Equal Opportunity/Affirmative Action Employer.

BIOLOGY LABORATORY COORDINATOR

The Department of Biology of Trinity College invites applications for a full-time position as laboratory teacher and coordinator for the introductory biology course, beginning June 1986. Master's degree in biology and broad knowledge of the field required. Teaching experience, demonstrated skills, and an enthusiastic and cheerful disposition preferred. Responsibilities include teaching all laboratory sections, working with the faculty members in developing and revising laboratory exercises, supervising undergraduate teaching assistants, preparation and maintenance of laboratory materials. Curriculum vitae, transcripts, and three letters of reference should be sent before 31 March to: Dr. Richard B. Crawford, Chairman, Department of Biology, Trinity College, Hartford, Connecticut 06106. Trinity College is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR NUTRIENT PARTITIONING AND GROWTH

The Department of Animal and Dairy Science, University of Georgia, invites applications for a full-time, tenure-track position at the assistant professor level. The successful candidate must have a Ph.D. in biochemistry and/or physiology or equivalent. Experience in a successful molecular biology and/or experimental nutrition program is required. The appointment will be 75 percent research and 25 percent teaching with a 25 percent joint appointment in the College of Arts and Sciences. The successful candidate will be responsible for developing an independent and innovative research thrust in metabolic regulatory mechanisms of farm animals. Applications must be received by 1 May 1986. Send completed curriculum vitae and have four letters of reference sent directly to:

Dr. David G. Spruill, Head
Animal and Dairy Science Department
Livestock-Poultry Building
University of Georgia
Athens, GA 30602

COLBY-SAWYER COLLEGE DEPARTMENT OF NATURAL SCIENCES

BIOLOGIST—Assistant professor, tenure-track. Ph.D. required, evidence of college level teaching experience is desirable. Primary teaching responsibility in human anatomy and physiology but successful candidates will have the ability to teach other biology courses at the introductory and advanced level.

PHYSICAL SCIENTIST—Assistant professor, tenure-track. Ph.D. required; evidence of college level teaching experience is desirable. Responsible for courses in Introductory Physics and college level mathematics, but successful candidates will have the ability to teach other physical sciences courses in the departmental curriculum. Send letter of application, curriculum vitae, and the names of three current references by 1 April to:

Douglas Atkins
Assistant to the Vice-President
for Administration and Finance
Colby-Sawyer College
New London, New Hampshire 03257

CYSTIC FIBROSIS (CF)—ASSISTANT PROFESSOR OF PEDIATRICS IN RESIDENCE to direct Pediatric CF Clinic and conduct CF-related basic research. Clinical pediatrics and basic biomedical research training are essential. Send curriculum vitae and names of three references to: Charles J. Epstein, M.D., Department of Pediatrics, 650 M. University of California, San Francisco, CA 94143. UCSF is an Equal Opportunity/Affirmative Action Employer.

DEVELOPMENT SCIENTIST—DIAGNOSTICS. The Research and Development Department of Sero Diagnostics, Inc., seeks a qualified individual to develop monoclonal-based ELISA assays for the detection of antigens of selected infectious disease agents. The developmental scientist will direct three technologists in a joint U.S.-U.K. R&D project to develop a battery of automated ELISA assays for a worldwide market. The position requires a Ph.D. in biochemistry, immunology, or related field with 2 years clinical or industrial experience. A working knowledge of immunoassay techniques, immunology, protein chemistry, and instrumentation is a must. Experience in the performance and evaluation of monoclonal-based ELISA technology is also required. Sero Diagnostics, Inc., offers a competitive salary, excellent benefits, and professional advancement opportunities. Qualified candidates should send résumé to: Sero Diagnostics, Inc., Department: DS, 280 Pond Street, Randolph, MA 02368.

DIRECTOR, ROCKY MOUNTAIN BIOLOGICAL LABORATORY. Independent, high-altitude field station seeks a full-time director to oversee research and teaching programs, grant proposal preparation, administration, and public relations. Administrative or fund-raising experience preferred. Three-year term beginning fall 1986. Salary about \$24,000, depending on experience. Request additional information and application instructions by 10 May 1986 from: Dr. David Inouye, Department of Zoology, University of Maryland, College Park, MD 20742. RMBL is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

BIOLOGY—ASSISTANT PROFESSOR. Salary \$19,978.73—WEST CHESTER UNIVERSITY is seeking qualified applicants to fill two tenure-track faculty positions in the Department of Biology. Duties include teaching graduate and undergraduate courses, curriculum development, student advisement, active research and publication in the areas of specialization, and active participation in normal departmental activities. College teaching experience and postdoctoral work is desirable. The positions are: (i) Anatomist: Requires Ph.D. in zoology. Strong experience in evolutionary morphology. Ultrastructure or animal development is desired. (ii) Mammalian physiologist/parasitologist: Requires Ph.D. in animal physiology or parasitology with teaching competency in the alternate discipline. Positions expected to be available in September 1986. Please send curriculum vitae, all college transcripts and at least three letters of reference to: Search Committee, Department of Biology, WEST CHESTER UNIVERSITY, West Chester, PA 19383, postmarked not later than 4 April 1986. West Chester University is an Affirmative Action/Equal Opportunity Employer and encourages women and minorities to apply.

CHAIRMAN, DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS LOUISIANA STATE UNIVERSITY MEDICAL CENTER, SHREVEPORT

The School of Medicine invites nominations and applications for the chairmanship of an expanding Department of Pharmacology and Therapeutics. Candidates must have an outstanding record of research, strong commitment to medical and graduate education, and the vision and experience to lead a department of excellence. Applicants must provide curriculum vitae, names of three references, and a statement of research interests by 15 April 1986 to:

Dr. Richard J. Courtney, Chairman
Pharmacology Search Committee
Louisiana State University Medical Center
1501 Kings Highway
Shreveport, LA 71130-3932
Affirmative Action/Equal Opportunity Employer

DIAGNOSTICS DEVELOPMENT, MANAGER—B.S. or M.S. in microbiology, chemistry, or related field; minimum 5 years of experience in practical immunochemistry required. Applied experience in composition, standardization, and formulation of immunodiagnostics preferred. Development begins with completed laboratory assay. Work for biotechnology firm emphasizing agriculture and animal health; associated with major universities. Send inquiry and résumé to: Personnel Director, 620 Leshar Place, Lansing, MI 48912-1509.

EXPERIMENTAL POSTDOCTORAL RESEARCH FELLOWS AND SENIOR RESEARCH FACULTY Gravitational Wave Detection California Institute of Technology

The Caltech research group in experimental gravity has several openings for postdoctoral research fellows, senior research faculty, and senior research staff to participate in the development of techniques related to the detection of gravitational radiation. Current efforts center on the use of long-baseline laser interferometers. In the next few years, construction is expected to begin on multi-kilometer scale detectors designed to carry out searches and observations for gravitational waves in a sensitivity range where waves of astrophysical origin may be expected.

There are diverse opportunities within the group for dedicated experimental physicists and engineers. Experience in lasers and laser optics, servo systems, instrumentation, large vacuum systems, or high-sensitivity measurement of mechanical motions would be helpful.

Applicants should be interested and take delight in experimental techniques, many of which may be extending the boundaries of current technology in this research.

Applications—including curriculum vitae, publication lists, and three letters of recommendation sent independently—should be sent to: Professor R. W. P. Drever, c/o: B. Melton, Administrator, Caltech, 130-33, Pasadena, California 91125. Caltech is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

DIRECTOR Chesapeake Bay Institute The Johns Hopkins University

The Johns Hopkins University seeks an established scientist to become director of Chesapeake Bay Institute (CBI). The institute has a long history of outstanding research in estuarine and marine processes. Recent additions to the staff have provided a nucleus of talented investigators specializing in biochemistry and physiology, biological oceanography, cellular and molecular biology, physical oceanography, aquatic toxicology, and marine microbiology. The institute operates a UNOLS Vessel (R/V *Warfield*) and several small boats. Candidates for director should possess a strong record of scholarly achievement and administrative experience. Curriculum vitae, names and addresses of four references, and any other pertinent information or inquiries should be addressed to: Dr. Dennis A. Powers, Acting Director, Chesapeake Bay Institute, 4800 Atwell Road, Shady Side, Maryland 20764. Applications should be received by 1 May 1986. The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

ENVIRONMENTAL SCIENTIST: The Institute of Environmental Studies seeks qualified applicants for a full-time lecturer position (nontenured, renewable). The successful applicant will have a Ph.D. in the natural sciences with ecological orientation and applications to natural resources management. The primary responsibility is teaching undergraduate and graduate environmental studies courses, but active participation in research is expected and will be supported. Send inquiries and applications to: Dr. Dudley J. Burton, CSB Box 402, Baylor University, Waco, Texas 76798, postmarked by 28 March 1986. Telephone 817-755-3405. Baylor University is an Equal Opportunity Employer seeking to offer higher education within a Christian context.

EXERCISE PHYSIOLOGIST

Applications and nominations are invited for a tenure-assistant or associate professor exercise physiology/biomechanics position in physical education. Starting date for the position is August 1986. Primary responsibilities are in the teaching of graduate and undergraduate exercise physiology (major emphasis) and biomechanics (minor emphasis) lecture and laboratory courses. Direction of the laboratory, grant writing, and research activities are expected. Some activity course teaching may be required. Competitive salary. Submit a letter indicating qualifications related to the position: curriculum vitae, transcripts, name, address and telephone number of three references. Send letter to:

Dr. Jack H. Schiltz, Ed.D.
Chair, Search Committee
Division of Health and Physical Education
School of Education
Virginia Commonwealth University
817 West Franklin Street, Room 62
Richmond, VA 23284
Application deadline: 28 March 1986.

EXERCISE PHYSIOLOGY: Assistant professor, preferably with postdoctoral experience and expertise in human exercise metabolism and endocrinology. Must be mechanistic-oriented and capable of securing grants. Teaching ability essential. Submit letter of application, curriculum vitae, three reprints, and have three letters of recommendation sent to: Charles M. Tipton, Ph.D., Head, Department of Exercise and Sport Sciences, University of Arizona, Tucson, AZ 85721. Application deadline 23 April 1986. An Affirmative Action/Equal Opportunity Employer.

SENIOR LEVEL FACULTY MEMBER IN BIOENGINEERING—The College of Engineering of the University of Michigan seeks a senior level faculty member in the area of bioengineering. The foremost recruitment criteria are established excellence in bioengineering research and a commitment to maintain that excellence. Candidates are asked also to consider chairing the university's interdisciplinary Bioengineering Program. To apply, please submit a résumé to: Professor A. B. Schultz, Department of Mechanical Engineering and Applied Mechanics, 3112 G. G. Brown, University of Michigan, Ann Arbor, MI 48109-2125.

The University of Michigan is a nondiscriminatory, Affirmative Action Employer.

**NATIONAL INSTITUTES OF HEALTH, PUBLIC HEALTH SERVICE
NATIONAL CANCER INSTITUTE
DIVISION OF CANCER TREATMENT
DEVELOPMENTAL THERAPEUTICS PROGRAM
OFFICE OF THE ASSOCIATE DIRECTOR**

Position Title: Deputy Associate Director

Grade: GM-15

Salary Range: \$52,262-\$67,940 depending upon qualifications. Physician may be eligible for a Physician's Comparability Allowance paying up to an additional \$10,000. (Candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service)

Location of Position: Landow Building, National Institutes of Health, Bethesda, Maryland.

Qualifications: Research with credentials in tumor biology, *in vivo* and *in vitro* tumor model development, tumor characterization and tumor immunology, as they relate to clinical and laboratory applications of cancer chemotherapy. Candidates must have a M.D., Ph.D. or the equivalent background in biochemistry or pharmacology and a minimum of five years experience in directing and providing leadership for a large multidisciplinary research program.

Responsibilities include the development and administration of the above research program to generate basic information about *in vivo* and *in vitro* tumor models in the pre-clinical application of cancer chemotherapy, in order to contribute to the improvement of both cancer treatment and the management of the NCI's pre-clinical drug development efforts.

Point of contact for further information:

Dr. Michael R. Boyd
Associate Division Director for
Developmental Therapeutics
Division of Cancer Treatment
National Cancer Institute
National Institutes of Health
9000 Rockville Pike
Bethesda, Maryland 20892
Telephone: (301) 496-8720

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

CSL—MELBOURNE, AUSTRALIA

This leading research-based manufacturer of biologicals is seeking a

SENIOR MOLECULAR BIOLOGIST

to lead an R & D recombinant DNA team.

Prime emphasis will be placed on the development of genetically engineered products for medical, veterinary and diagnostic markets. Other significant duties include corporate advice on product development and collaboration with universities and other research institutions.

The ideal applicant will be a person with post doctoral experience in gene cloning in both prokaryote and eukaryote systems together with some appreciation of the pharmaceutical/vaccine industry.

Excellent conditions apply and the term of appointment is flexible. CSL is prepared to equally consider those interested in a minimum 12 month appointment or a longer term career opportunity. Fares and expenses to and from Melbourne will be paid. Initial interviews will be held in appropriate overseas locations.

Please send CV, description of scientific experience and the names of two referees to the Manpower Manager, Commonwealth Serum Laboratories, 45 Poplar Road, Parkville Vic. 3052 Australia within one month of this publication.

CSL COMMONWEALTH
SERUM
LABORATORIES

**BIOTECHNOLOGY
RESEARCH**

The Upjohn Company has an opening in its Biopolymer Chemistry/Biotechnology Unit for a qualified research associate in the area of protein purification/molecular biology. Qualified candidates will have a B.S. or M.S. degree in Biochemistry or Molecular Biology with at least 3 years of research experience in protein purification techniques and recombinant DNA technology, including expression of cloned genes. Successful candidate must have skills in state-of-the-art techniques in these areas, and will be expected to conduct basic and applied research of high quality under the supervision of a scientist. Publication of research work in reputable journals will be encouraged. Included among the skills in the Biopolymer Chemistry Unit available for collaborative interaction are microsequencing, peptide synthesis and oligonucleotide synthesis.

Upjohn offers a stimulating research environment, opportunity for career growth, competitive salary, comprehensive benefits, and relocation assistance. Kalamazoo, a mid-sized Michigan community, provides a rich mix of cultural, educational and recreational pursuits.

For confidential consideration, please call from outside of Michigan toll-free 1/800/253-8600, ext. 3-6767, (inside Michigan call collect 616/323-6767) to request an employment application be sent to you immediately. Please refer to ad number 1704-A when calling.

Upjohn

A century of caring

An Equal Employment Opportunity Employer M/F

POSITIONS OPEN

EXECUTIVE DIRECTOR

Harold and Helen McMaster Leadership Institute

Bowling Green State University is now accepting applications for the position of executive director of the newly established Harold and Helen McMaster Institute for Scientific and Technical Industry.

The institute will focus primarily on the ways in which entrepreneurial firms in scientific and technical industry can maintain and enhance their creative energies, activities, and opportunities in a rapidly changing society. To accomplish its goals, the institute will hold major focused conferences and a series of specially designed workshops, and disseminate the outcomes to the scientific and technical business community.

The executive director will report to a board of directors composed of leaders in the scientific business community and representatives of the university and will be responsible for the organization and implementation of the institute's program and activities.

We are seeking an individual who can interact comfortably with professionals and academics in the field and who has managerial experience in the scientific and technical industry.

To apply or request additional information, please contact:

Diane D. Regan
Executive Assistant to the Dean
College of Arts and Sciences
Bowling Green State University
Bowling Green, OH 43403

Equal Opportunity/Affirmative Action Employer

FACULTY POSITION—FOOD MICROBIOLOGY AND BIOTECHNOLOGY. The Department of Food Science and Nutrition invites applications for a tenure-track, 12-month position at the assistant or associate professor level starting 1 September 1986. Responsibilities include: research in food science with emphasis on microbiology/biotechnology; teach graduate and undergraduate courses; and seek outside research support. Earned doctorate in microbiology, food microbiology, food science, or closely related field with evidence of appropriate preparation in microbial genetics/biotechnology. Send complete résumé; official college transcripts; and names of three references to: **Dr. E. M. Mikolajcik, Department of Food Science and Nutrition, The Ohio State University, 2121 Fyffe Road, Columbus, OH 43210.** Applications will be reviewed beginning 1 April 1986, until suitable candidate is found.

Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION

The Department of Nutrition, Faculty of Medicine, invites applications for a faculty position in nutritional biochemistry or metabolism. The level of appointment is commensurate with experience. Candidates should have a strong background in intermediary metabolism and will be expected to establish an independent research program. A working knowledge of French is required within 2 years of appointment. **Closing date: 15 April 1986. Position available: 1 September 1986.** Send curriculum vitae, a description of future research plans, and a list of three references to: **Dr. Eugenio Rasio, Chairman, Department of Nutrition, Université de Montréal, P.O. Box 6128, Station A, Montreal (Quebec), CANADA, H3C 3J7.** In accordance with Canadian immigration requirements, this advertising is directed in priority to Canadian citizens and permanent residents.

FACULTY POSITION IN IMMUNOLOGY—The Department of Microbiology of Jefferson Medical College, Thomas Jefferson University, is seeking a full-time, assistant professor with research interests and background in cellular immunology. The candidate must have at least 2 years of postdoctoral experience and demonstrated research achievement in immunology. Responsibilities include establishing an active grant supported independent research program, supervision of Ph.D. student training, participating in immunology courses for M.D. and Ph.D. students. Submit a letter outlining research interests and goals, curriculum vitae, and names and addresses of three references to: **Catherine E. Calkins, Ph.D., Chairman, Faculty Search Committee, Department of Microbiology, Thomas Jefferson University, 1020 Locust Street, Philadelphia, PA 19107.** An Equal Opportunity/Affirmative Action Employer. Minorities and women are encouraged to apply.

POSITIONS OPEN

FACULTY POSITION AVAILABLE

Department of Pediatrics, Washington University School of Medicine. For M.D. with training and demonstrated skills in molecular and cellular biology to study regulation of synthesis of acute phase plasma proteins, especially those involved in amyloidosis. Necessary skills include recombinant library construction and screening, techniques of DNA, RNA, and protein analysis. Experience with tissue culture is required. In addition, applicant should have experience in clinical pediatrics. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae to: **Harvey R. Colten, M.D., Department of Pediatrics, Washington University School of Medicine, P.O. Box 14871, St. Louis, Missouri 63178.**

TENURE-TRACK FACULTY POSITION—BIOCHEMISTRY/ORGANIC: Assistant professor, beginning August 1986. Ph.D. in biochemistry required, with strong background in organic chemistry. Postdoctoral research and teaching experience required. Successful applicant will carry a standard load of 60 percent teaching, 20 percent research, and 20 percent service; instructional duties will involve teaching three 3-hour courses (or equivalent) per semester; supervision of undergraduate research will be expected. The Chemistry Department consists of four full-time faculty with a wide range of research interests, and currently offers a bachelor's degree in chemistry, with a biochemistry option. Plans are being developed to begin a master's degree program in chemistry in the near future; currently the faculty work with some of the graduate students in the biology program who pursue advanced chemistry courses. Besides the degree program, the department supports a growing Engineering School, and a School of Nursing and Health Sciences.

Send curriculum vitae, statement of teaching and research goals, and arrange for three letters of recommendation, plus graduate transcripts to be sent to: **Personnel Services, University of Alaska, Anchorage (UAA), 3211 Providence Drive, Anchorage, Alaska 99508.** Closing Date, 31 March 1986.

UAA is an Equal Opportunity/Affirmative Action Employer and educational institution.

FACULTY POSITIONS IN NEUROSCIENCE

Applications are invited for five full-time positions (tenure-track) with specializations in the areas of neuroendocrinology, somatosensory neurophysiology, reflex motor physiology, neuroimmunology, and molecular neurobiology to complement an existing neuroscience group. Exceptional candidates in other areas of neuroscience will also be considered. Applicants must have a relevant Ph.D. degree (or equivalent) with postdoctoral experience, the potential for developing a vigorous and productive research program in their area of interest, and the ability for obtaining extramural funding. Responsibilities will include teaching in both medical and dental curricula, participation in the department's graduate training efforts, and productive research. Generous start-up support is available and continuing research support for the second and third years can be provided. Applicants should send curriculum vitae, description of research interest, and the names and addresses of three references to: **Dr. James G. Townsel, Chairman, Department of Physiology, Meharry Medical College, 1005 D. B. Todd Boulevard, Nashville, TN 37208.** Three positions are available immediately and the two remaining positions will be filled by 1 October 1986. *Meharry Medical College is an Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT HEAD AUDIOLOGY AND SPEECH SCIENCES PURDUE UNIVERSITY

The position, at the rank of full professor, requires demonstrated leadership and national recognition in an area of expertise compatible with any area represented in the department: Speech and hearing sciences, speech-language pathology, linguistics, audiology. Applications received prior to 1 April 1986 will be given preferential consideration. Curriculum vitae, and three letters of recommendation should be sent to: **Richard G. Schwartz, Ph.D., Search Committee, Audiology and Speech Sciences, Heavilon Hall, Purdue University, West Lafayette, IN 47907.** *Purdue University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

Ph.D. FIELD BIOLOGIST/ETHNOLOGIST for tenure-track assistant professorship beginning 15 August 1986. Candidate should be broadly educated in vertebrate biology. Teaching duties will include ethnology, ecology, and courses in the individual's specialty. Send résumé, a brief statement of professional goals, and the names and telephone numbers of three references by 4 April 1986. **Secretary, Biology Search Committee, Sangamon State University, Springfield, IL 62708.** *Sangamon State is a senior level/master's university and an Equal Opportunity Employer.*

GENETIC ENGINEER: FACULTY POSITION.

The Faculty of the Department of Biological Sciences, School of Sciences, **SOUTHERN ILLINOIS UNIVERSITY AT EDWARDSVILLE (SIUE)**, anticipates an appointment at the assistant professor level, available September 1986. Duties will include teaching undergraduate and graduate courses in gene cloning. Candidates will be expected to carry out an active research program and to seek outside research funding. Qualifications include a doctoral degree and postdoctoral experience in recombinant DNA technology. Teaching experience will be considered valuable. Closing date for applications is 15 April 1986. Please submit curriculum vitae, three letters of recommendation, copies of recent publications, and a summary of future research plans to:

**Chairman, Genetic Engineer Search Committee
Faculty of Biological Sciences
Box 1651**

**Southern Illinois University at Edwardsville
Edwardsville, IL 62026-1001**

Southern Illinois University at Edwardsville is located in a rural setting, 25 minutes from downtown St. Louis. The campus occupies 2,600 acres and has an enrollment of about 10,000 students. The Department of Biological Sciences has a faculty of 15 members and confers bachelor's and master's degrees. *As an Affirmative Action Employer, SIUE offers Equal Employment Opportunity without regard to race, color, creed or religion, age, sex, national origin, or handicap.*

INSECT SYSTEMATIST. Assistant professor, 12-month, tenure-track research/teaching, available 1 September 1986. Conduct research in insect systematics, primarily on aquatic taxa. Teach insect taxonomy and insect morphology annually, and third course in specialty area alternate years. Advise and train graduate students. Administer insect museum and support departmental identification needs. Minimum qualifications: Ph.D. or equivalent doctorate in entomology or related zoological discipline by time of appointment with course work in morphology and systematics of insects, dissertation research or postdoctoral work in insect systematics, and experience lecturing or preparing teaching laboratories. Statement of professional goals, curriculum vitae, college transcripts, three letters of recommendation, and reprints should be sent by 15 April 1986 to: **Dr. R. L. Jones, Department of Entomology, University of Minnesota, St. Paul, MN 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

MOLECULAR BIOLOGIST IN PLANT PATHOLOGY at the University of Massachusetts at Amherst invites applications for a molecular biologist with research interests in plant pathology at the assistant or associate professor level (tenure-track). The areas of research interest may include: organization and expression of genes involved in disease resistance in plants; development of methods for transferring such genes into important agronomic plant species; development of methodologies for modifying specific genetic traits for disease resistance; and genetic modification of microorganisms so they can be used in biological management of plant diseases. A Ph.D. is required. Postdoctoral experience is desirable. Teaching responsibilities will include a graduate course related to the expertise of the applicant. Salary commensurate with experience. Applications will be accepted postmarked before 15 April 1986. Please send a letter of application stating research interests, curriculum vitae, transcripts, and the names of four persons to be contacted as references to: **Dr. George N. Agrios, Search Chairman, Department of Plant Pathology, Fernald Hall, University of Massachusetts, Amherst, MA 01003.** *An Affirmative Action/Equal Opportunity Employer.*

ASSOCIATE RESEARCH SCIENTIST

Antitumor Immunology

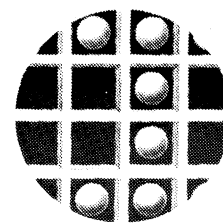
The Bristol-Myers Pharmaceutical Research and Development Division has an excellent career opportunity in its Antitumor Immunology Department for an Associate Research Scientist. The successful candidate will join this group at our new state-of-the-art research facility in Wallingford, Connecticut and will participate in a research program aimed at isolating and characterizing growth regulatory factors and their receptors.

Applicants should possess a BS/MS degree in the Biological Sciences combined with 3-5 years experience in membrane protein isolation and characterization, gel electrophoresis and establishment/maintenance of new cell lines. Experience with growth factor binding assays and preparation of polyclonal and monoclonal antibodies is desirable.

We offer a competitive compensation package and comprehensive benefit program. Interested candidates should submit a resume including salary history in confidence, to: SENIOR PERSONNEL REPRESENTATIVE



**BRISTOL-MYERS COMPANY
RESEARCH AND
DEVELOPMENT DIVISION**
P.O. Box 4755, Syracuse, New York 13221
An equal opportunity employer, M/F/H/V



INVITRON

ELECTROPHORESIS ENGINEER

A unique career opportunity exists for an innovative individual as an Electrophoresis Engineer. This person would be responsible for original and ingenious application of basic physical principles to the design and production of leading technology equipment.

The successful candidate will have training in chemical engineering (nucleic acid chemistry training desired), 3-5 years industrial experience in electrophoresis equipment design and function, and have a thorough knowledge of electrophoretic and heat transfer principles. Hands-on experience in the area of power supply design and manufacturing is a plus. Good communicative and management skills are desired to meet the challenge and diversity of start-up situation.

Competitive salary and equity participation offered. Qualified candidates should submit a detailed resume, including any inventions, patents and/or publications that demonstrate design capability. Address attn: Nancy Kaplan, Invitron Corporation, 8000 Maryland Ave., Suite 860, Clayton, MO 63105.

NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

Opening Date: March 1, 1986 / Closing Date: March 31, 1986
(All applications must be postmarked before closing date)

DIRECTOR, NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES

The National Institutes of Health invites nominations and applications for the position of Director, National Institute of Diabetes and Digestive and Kidney Diseases, (NIDDK). This Institute conducts, fosters, and supports research and research training on the prevention, management, and cure of diabetes and related endocrine and metabolic diseases; kidney, urologic and blood diseases; and digestive diseases. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental diabetes, digestive and kidney disorders.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$61,296 to \$68,700 per annum depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

The mandatory qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601, or equivalent combination of experience and training, which demonstrates a broad knowledge and understanding of major public health problems; and (2) have research experience and knowledge of research programs in one or more areas related to diabetes, digestive and kidney disorders. In addition, candidates must meet the following managerial/executive qualifications: experience in the leadership/management of a basic or clinical research program, demonstrating competence to assume leadership responsibilities in: (1) assuring that national and agency goals and priorities are considered in carrying out

the functions and responsibilities of the organization; (2) establishing and maintaining relationships with key individuals and groups outside the organization; (3) directing and guiding programs and projects, including long-term and short-term planning and establishing objectives and priorities; (4) establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; (5) developing processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO/Affirmative Action objectives; (6) developing and implementing procedures for monitoring program performances, including periodic analysis and evaluation.

Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: additional managerial/executive qualifications; scientific reputation/peer recognition; training and education; honors and awards; and communications and interpersonal skills.

Applications (Personal Qualifications Statement, SF-171) are to be sent to Helen C. Stafford, Executive Secretary, Search Committee for Director, NIDDK, National Institutes of Health, Building 1, Room 19, Bethesda, Maryland 20892. For further information, contact her on (301) 496-4197. A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER.

Project Director Science Education Policy Studies

The American Association for the Advancement of Science (AAAS) seeks a director for its National Forum for School Science project. This project monitors the status and development of science education in grades K-12 and encourages the dissemination of analyses and practices that adapt school science to the nation's needs.

The Forum director will have direct responsibility for planning, developing, and conducting annual reviews of a particular aspect of school science. (In 1985, for example, the Forum focused on the supply, demand, and quality issues for science teachers). She or he will oversee the collection and assessment of current research and policy statements, the identification of important issues, the development and execution of a major national meeting to discuss these issues, and the publication in professional and popular presses of major findings, conclusions, and recommendations.

The successful candidate will have substantial knowledge and understanding of the research and policy issues attending precollege science education, together with experience managing a project of national scope. She or he must have a demonstrated ability to: direct an analytical program of substantial complexity; work with governmental agencies, other professional organizations, scientists, and science educators; plan and direct programmatic aspects of an annual meeting of several hundred participants; produce clear and cogent analyses, reports, and articles; supervise staff; and manage a project budget. The position requires an advanced degree in a relevant discipline, additional research experience, science teaching experience, and at least 2 years of experience in project management.

This position is a 2-year appointment with the possibility of continuation based on internal and external funding.

The AAAS is an Equal Opportunity, Affirmative Action Employer.

Please submit letter of application, résumé and salary requirements to:

Carolyn Bell
Personnel Office
American Association for the Advancement of Science
1333 H Street, NW
Washington, DC 20005

WESTERN RESEARCH INSTITUTE

Environmental Opportunities

ENVIRONMENTAL ORGANIC CHEMIST Advanced degree in organic chemistry or closely related field. Must be familiar with adsorption, transport, and geochemistry of organic chemical substances. A working knowledge of RCRA and TSCA is preferred. Geochemical modeling and industrial experience are desirable.

RESEARCH SCIENTIST-MICROBIOLOGIST A PhD microbiologist or soil microbiologist to investigate microbial degradation of organic substances in the environment. Prefer experience with potentially hazardous wastes in soils or groundwater and industrial experience.

ENVIRONMENTAL ENGINEER (2 POSITIONS) MS/PhD civil or environmental engineer or related field to perform water contamination research and mitigation services. Experience with water treatment unit operations or solid waste treatment is required. A hazardous waste background and industrial experience are preferred.

Analytical Opportunities

HIGH RESOLUTION MASS SPECTROMETRIST MS/PhD Chemist with experience in routine and nonroutine HRMS analytical services and methods development. Experience with VG-ZAB HRMS and DEC and Finnegan data system preferred.

METALS ANALYST BS/MS Chemist with experience in metals analysis to coordinate and perform ICP/AA EPA inorganic CLP protocol procedures. Prefer experience with PE-5000 AA spectrometer and routine/nonroutine sample preparation. Desire good communication skills.

GC/MS OPERATOR Minimum 1 to 3 years experience in operation, maintenance, and troubleshooting of Hewlett-Packard GC/MS systems. Experience with RTE-6/VM or AQUARIUS software and EPA CLP VOA or BNA protocols preferred.

Asphalt Chemistry

ASPHALT CHEMIST PhD Organic Chemist with minimum 5 years experience or BS/MS with 8 to 10 years experience. Must have had significant involvement in asphalt chemistry and physics. Familiarity with AASHTO, NCHRP, ASTM, and AAPT procedures and specifications is desired.

* * * * *

WRI offers career growth through contributions to basic and applied research. We are also an EPA CLP facility. We offer a comprehensive salary/benefit package including relocation assistance, liberal vacation, and educational opportunities. Our location offers an excellent quality of life in a university, small community atmosphere surrounded by abundant Rocky Mountain outdoor recreation. Send resume with salary expectations to **Human Resources Division, WESTERN RESEARCH INSTITUTE, University of Wyoming Research Corporation, P.O. Box 3395, University Station, Laramie, WY 82071**. WRI is an equal opportunity employer.

NATIONAL SCIENCE FOUNDATION (NSF)

NSF's *Divisions* of Cellular and Molecular Biosciences are seeking qualified applicants for several positions under the provisions of NSF's Rotator Program or Intergovernmental Personnel Act. In Cellular Biosciences, the openings include: (1) Program Director, Cell Biology; (2) Program Director, Developmental Biology; (3) Assistant/Associate Program Director, Eukaryotic Genetics. In Molecular Biosciences, the openings are: (1) Program Director, Biochemistry; (2) Assistant/Associate Program Director, Prokaryotic Genetics; (3) Assistant/Associate Program Director Biological Instrumentation. Applicants should have a Ph.D. and at least six years of independent research experience. The per annum salary ranges from \$35,000-\$68,700 depending upon the level of responsibility. Since responsibilities include research proposal evaluation, budget development and scientific planning, broad knowledge and specific research accomplishment are key experiential factors. These positions become available periodically and are filled on a one- to two-year rotational basis, beginning in the fall, 1986. Applicants should send resumes indicating current salary to: **National Science Foundation, Personnel Administration Branch, Room 212, 1800 G Street NW, Washington, DC 20550, Attn: Catherine Handle. For further information, call Dr. Bruce L. Uminger, Cellular Biosciences (202) 357-7905 or Dr. James H. Brown, Molecular Biosciences (202) 357-9400. Hearing impaired individuals should call 202/357-7492.** NSF is an Equal Opportunity Employer.

DEAN

College of Mathematical and Physical Sciences

The Ohio State University invites nominations and applications for the position of Dean of the College of Mathematical and Physical Sciences. The College consists of seven departments: Astronomy, Chemistry, Geodetic Science and Surveying, Geology and Mineralogy, Mathematics, Physics, and Statistics. Undergraduate, masters, and doctoral degree programs are offered in each department. Included in the College is an undergraduate program in computer and information science in cooperation with the Department of Computer and Information Science (College of Engineering), an interdisciplinary major in mathematical sciences, a major in actuarial science, and a major in Engineering Physics. The Materials Research Laboratory is an interdisciplinary program at the graduate level which involves Physics, Chemistry, Metallurgical Engineering, and Ceramic Engineering.

The College has a faculty of 230 FTE and teaches over 9,000 students FTE per year. Several of its departments are among the most distinguished in the University.

The Dean provides leadership as the chief executive of the College and promotes the goals of the College, departments and programs; the Dean reports to the Provost of the University. Qualifications for the position include a distinguished scholarly record in research and teaching plus demonstrated leadership and administrative ability. Candidates must qualify for a tenured appointment in one of the departments of the College at the level of Professor. The deanship is a twelve-month position.

The position is available July 1, 1986. Salary is negotiable and commensurate with background and experience. Nominations or letters of application, curricula vitae, and names, addresses, and telephone numbers of four references are required.

The Search Committee will begin to review dossiers on February 1 and will continue to receive nominations and applications until the Dean is selected.

Applications and nominations should be addressed to:

Professor Richard H. Rapp
Chairperson, Search Committee for a
Dean of the College of Mathematical
and Physical Sciences
Office of Academic Affairs
203 Bricker Hall
190 North Oval Mall
Columbus, Ohio 43210
Telephone: (614) 422-5881

NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

Opening Date: March 1, 1986 / Closing Date: March 31, 1986
(All applications must be postmarked before closing date)

DIRECTOR, NATIONAL INSTITUTE OF ARTHRITIS AND MUSCULOSKELETAL AND SKIN DISEASES

The National Institutes of Health invites nominations and applications for the position of Director, National Institute of Arthritis and Musculoskeletal and Skin Diseases, (NIAMS). This Institute conducts, fosters, and supports research and research training on the prevention, management, and cure of arthritis, musculoskeletal and skin diseases. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental arthritis and musculoskeletal and skin diseases.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$61,296 to \$68,700 per annum depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

The mandatory qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601, or equivalent combination of experience and training, which demonstrates a broad knowledge and understanding of major public health problems; and (2) have research experience of research programs in one or more areas related to diabetes, digestive and kidney disorders. In addition, candidates must meet the following managerial/executive qualifications: experience in the leadership/management of a basic or clinical research program, demonstrating competence to assume leadership responsibilities in: (1) assuring the national and agency goals and priorities are considered in carrying out the functions

and responsibilities of the organization; (2) establishing and maintaining relationships with key individuals and groups outside the organization; (3) directing and guiding programs and projects, including long-term and short-term planning and establishing objectives and priorities; (4) establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; (5) developing processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO/Affirmative Action objectives; (6) developing and implementing procedures for monitoring program performances, including periodic analysis and evaluation.

Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: additional managerial/executive qualifications; scientific reputation/peer recognition; training and education; honors and awards; and communications and interpersonal skills.

Applications (Personal Qualifications Statement, SF-171) are to be sent to **Helen C. Stafford, Executive Secretary, Search Committee for Director, NIAMS, National Institutes of Health, Building 1, Room 19, Bethesda, Maryland 20892.** For further information, contact her on (301) 496-4197. A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

PHARMACOLOGISTS

Drug Discovery

Growth at Stuart Pharmaceuticals, the U.S. subsidiary of a world leader in pharmaceutical Research and Development, has created the following opportunities at our modern laboratories located 25 miles south of Philadelphia.

RENAL

PhD in Renal Biochemistry or Pharmacology with knowledge of the mechanisms of electrolyte and solute transport in blood cells and renal tissues. Work in the discovery of novel diuretic/anti-hypertensive agents. A demonstrated competence in enzymatic and radio-isotope techniques and radio immuno assay would be a decided plus.

PULMONARY

PhD Pulmonary Pharmacologist to evaluate the effect of novel chemical agents on the pulmonary system in large and small animals. Training and/or experience should include pulmonary physiology and pharmacology. Scientific achievement evidenced by exceptional publication record. Supervisory experience advantageous. Effective teamwork essential.

SUPPORT

In addition we have openings at the BS/MS support level in the behavioral and neurochemical areas. *In vivo* methodology advantageous.

In addition to a competitive salary and comprehensive benefits package, you'll participate in our unique investment plan. Please submit your CV in confidence. Principals only.

Charles T. Brodigan
Associate Employment Manager



STUART PHARMACEUTICALS

Division of ICI Americas Inc.
Wilmington, DE 19897

An Equal Opportunity Employer

BIOCHEMIST

The Upjohn Company is actively seeking an associate with a strong biochemistry background to join the ongoing biotechnology research effort in the Control Division, located in Kalamazoo, Michigan. This person will be expected to formulate *in vitro* tests of pharmaceutically important proteins to assist product monitoring and related research. Specific responsibilities include the culturing of established and primary cell lines and the development of radio- and non-radiometric receptor assays.

Applicants must have a B.S. or M.S. in biochemistry or a related discipline, and previous experience in cell culture techniques. Experience with *in vitro* assay techniques, or methods of protein analysis (HPLC, electrophoresis, etc.) would be desirable. The ability to file written reports and collaborate with scientists in related fields is required.

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits including numerous lakes and a four-season climate. Upjohn offers a very competitive salary, commensurate with experience and a comprehensive benefits program.

For confidential consideration, please call from outside of Michigan toll free 1-800-253-8600, ext. 3-6767, (inside Michigan call collect 616-323-6767) to request an employment application be sent to you immediately. Please refer to ad number 1826-A when calling.

Upjohn

A century of caring

An Equal Employment Opportunity Employer M/F

RESEARCH SCIENTISTS

Southern Research Institute is seeking qualified professionals in the following areas:

Biochemistry

Position requires PhD with background in metabolism or mechanism of action of purine/pyrimidine analogs. Research involves participation in team effort to develop more effective anticancer agents.

Pharmacology

Position requires PhD in pharmacology, biochemistry or other appropriate field. Candidate should have good understanding of physiological and physical chemical mechanisms that govern absorption, distribution, metabolism, and excretion of drugs, and good analytical techniques in the analysis of biological fluids. Research involves drug disposition and determination of pharmacokinetics in animals.

Drug-Delivery Formulations

Position requires a PhD in pharmacy, biophysics, or polymer chemistry; familiarity with physical chemistry, biochemistry or immunology desirable. Research involves novel drug formulations, controlled release, microencapsulation, and physical chemistry.

All positions provide opportunity to collaborate with scientists in other groups on conception, development, and execution of new research groups. Postdoctoral experience is not required.

Located in a 20-acre complex and with a staff of over 700, Southern Research Institute is a diversified contract research organization in its fifth decade of operation. The Birmingham area, with a population of one million, offers a mild four-season climate, lower-than-average cost of living, diverse recreational and cultural opportunities and a variety of convenient housing alternatives. To apply, contact Denise Johnson, Personnel Administrator:



SOUTHERN RESEARCH INSTITUTE
Personnel Office, Dept. B-111
P.O. Box 55305
Birmingham, AL 35255-5305

An Affirmative Action/Equal Opportunity Employer

FACULTY POSITIONS

Department Of Applied Biological Sciences

MIT is seeking applicants for tenure-track faculty positions in Applied Biological Sciences. Candidates should have doctoral training in basic biological and chemical sciences together with postdoctoral experience that provides evidence of potential for independent research. Research interests should involve applications of biological or chemical sciences at molecular or cellular levels to biotechnology or pharmacology. Examples of areas of interest are bioorganic chemistry, studies of cell receptors, and novel approaches to drug development. Appointees will be expected to contribute to the development of undergraduate and graduate educational programs.

Applicants should send curriculum vitae, brief description of research interests and names of references, to: Gerald N. Wogan, Head, Department of Applied Biological Sciences, Massachusetts Institute of Technology, Room 16-333, Cambridge, MA 02139.

MIT is an equal
opportunity/ affirmative
action employer.

MIT

Applications are invited for a

FACULTY POSITION IN AGRONOMY

at the Swiss Federal Institute of Technology in Zurich.

The new professor will be responsible for teaching the basics to all students of agriculture and the specific courses in agronomy. Teaching and research should concentrate on the bases of the production of field crops.

Applicants should have a Ph.D., several years of experience as well as talent and willingness to teach at all university levels. A close cooperation with the colleagues of the Institute for Plant Sciences is expected.

Applications with c.v. and list of publications should be submitted before March 31, 1986, to the **President of the ETH Zurich, Prof. H. Ursprung, ETH-Zentrum, CH-8092 Zurich.**

SPECIAL ASSISTANT FOR BIOTECHNOLOGY

Senior Executive Service

Salary Range: \$61,296 to \$72,300

**US Army Medical Research
and Development Command
Fort Detrick**

Frederick, Maryland 21701-5012

Position: Special Assistant for Biotechnology to the US Army Surgeon General. Responsible for research and development program management relating to biotechnology. Develops policy recommendations and assessments in planning and programming resource requirements. Evaluates biotechnology applications in research and development programs and provides technical leadership.

Requirements: State-of-the-art knowledge of biotechnology techniques applicable to research and development acquisition requirements, both medical and non-medical. Advanced degree in Biomedical Science with emphasis in microbiology, medicine or biochemistry preferred.

Contact: **Mr. Joseph B. Hise, (301) 663-2950, for application procedures.**

Equal Opportunity Employer

ASSISTANT PROFESSOR NEUROSCIENCE

Tenure track in Neuroscience position available in the College of Medicine of the University of Cincinnati. Specialty in neurochemistry as related to clinical and/or preclinical biological psychiatry. Applicants should have Ph.D. or equivalent; two or more years post-doctoral experience preferred. Successful candidate expected to collaborate in ongoing research projects and establish his/her own research program in well equipped laboratory. Send vita to:

David L. Garver, M.D.
Professor of Psychiatry
Pharmacology and Cell
Biophysics
University of Cincinnati
College of Medicine (ML 559)
231 Bethesda Avenue
Cincinnati, Ohio 45267-0559
(513/872-5400)



*Affirmative Action/Equal Opportunity
Employer*

GENE SYNTHESIS SCIENTIST

The Pharmaceutical Research and Development Division of The Upjohn Company, located in Kalamazoo, Michigan has an opening in its Biopolymer Chemistry/Biotechnology Unit for a Ph.D. Gene Synthesis Scientist.

The scientist will be responsible for supervising a state-of-the-art oligonucleotide chemistry laboratory. In addition to experience in methods of oligonucleotide synthesis, the successful candidate will have experience in the design and chemoenzymatic synthesis of entire genes. A strong independent research effort is expected as well as the ability and willingness to work in collaboration with researchers in molecular biology, protein chemistry and therapeutic discovery departments. The candidate's individual research interest may be in any area of biotechnology but preference will be given to candidates with interest in protein engineering. A demonstrated level of excellence in research is expected as evidenced by an outstanding publication record commensurate with the level of experience. Minimum requirements are two years of experience beyond the receipt of the Ph.D. in chemistry, biochemistry, molecular biology or a closely related field. Appointment will be to a level appropriate for level of experience.

Kalamazoo is a mid-sized Southwestern Michigan community offering an excellent mix of cultural/recreational opportunities including lakes, nearby colleges, and a four-season climate. The Upjohn Company offers an excellent salary, benefits, and relocation plan.

For confidential consideration, please call from outside Michigan toll free 1-800-253-8600 extension 3-6767; or inside Michigan collect (616) 323-6767 to request a specialized employment application be sent to you immediately. Please refer to Ad Number 18935-B when calling.



A Century
of Caring
1886-1986

Toxicologist

International Technology Corporation, a leader in the environmental management field, is expanding its Health Risk Assessment business. We are recruiting a Toxicologist to provide internal/external consultation including conducting health risk assessments.

Requires a PhD in Toxicology with 5+ years post-doctorate experience. Board certification and computer literacy are needed. Risk assessment experience desired. Position is based in Knoxville, TX and involves 20% travel.

We offer a salary commensurate with qualifications as well as an attractive benefits program. Forward resume and salary history, in confidence to: **International Technology Corporation, Human Resources Division (TOX), 312 Directors Drive, Knoxville, TN 37923. EOE M/F.**



**INTERNATIONAL
TECHNOLOGY
CORPORATION**

Creating a safer tomorrow.

POSITIONS OPEN

LABORATORY ASSOCIATE in the in vitro fertilization laboratories of the University of Chicago Program at Michael Reese Hospital to work with laboratory director and independently on all aspects of human IVF. Responsibilities include embryo culture, cryopreservation, and quality control. Candidate will also be active in the andrology laboratories and basic research. M.S. in reproductive or cell biology (or equivalent) with 2 years of related laboratory experience required. Experience in an IVF laboratory or with tissue culture and a working knowledge of andrology techniques desired. Send résumé and names of three references to: **G. Prins, Ph.D., Department of Obstetrics/Gynecology, Michael Reese Medical Center, Lake Shore Drive at 31st Street, Chicago, IL 60616.**

MICROBIOLOGIST: Applications are invited for an entry-level tenure-track position in microbiology. The position will be at the assistant professor level. The Ph.D. is required. Duties will include teaching an introductory course in microbiology and upper-level courses in the area of specialty. The successful candidate will be expected to establish an active research program, direct graduate students, and seek outside funding for research. Salary will be commensurate with education and experience. The starting date is 1 August 1986. Please submit curriculum vitae, transcripts, and three letters of reference by 1 April 1986 to: **Dr. James Stuart, Department of Biology, Murray State University, Murray, KY 42071. Murray State University is an Affirmative Action/Equal Opportunity Employer.**

MOLECULAR BIOLOGIST, DEPARTMENT OF PATHOLOGY NORTHWESTERN UNIVERSITY MEDICAL SCHOOL

Applications are invited for a tenure-track position at the assistant or associate professor level with the possibility of a secondary appointment in the Department of Molecular Biology. Candidates must have a Ph.D. or M.D. degree and at least 2 years of postdoctoral experience. Preference will be given to candidates having research interests and experience in the molecular biology of differentiation of mammalian cells or the modulation of gene expression during chemical carcinogenesis including oncogene activation, and the demonstrated ability to develop a creative research program. The successful applicant will be expected to participate in graduate teaching, and training of graduate students and postdoctoral fellows, and will have the opportunity to interact with a large and active group involved in chemical carcinogenesis research. Please send curriculum vitae and names of at least three references by 30 April 1986 to: **Dr. D. G. Scarpelli, Department of Pathology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611.**

Northwestern University is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

TEMPLE UNIVERSITY DEPARTMENT OF BIOLOGY Molecular Biology—Genetics

The Department of Biology is expanding its program in molecular biology and genetics. We invite applications for a tenure-track academic appointment at the assistant professor level to begin either 1 July 1986 or 1 January 1987. The successful candidate will also hold an appointment in the university's Institute of Molecular Biology and Genetics. Preference will be given to a molecular biologist working on gene expression in prokaryotes and/or viruses. The appointee is expected to maintain an independent research program and to contribute to graduate and undergraduate education and training in his/her area of specialization. All candidates are expected to have postdoctoral experience. Applicants should send curriculum vitae, representative publications, a summary of their previous and proposed research, and the names and addresses of three references to:

**Dr. Nina W. Hillman
Department of Biology 015-00
Temple University
Philadelphia, PA 19122**

Closing Date: 31 May 1986. Applications will be reviewed upon receipt. *Temple University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

MOLECULAR BIOLOGIST

Marshfield Medical Foundation invites applications for a senior research scientist. The successful candidate will be expected to maintain an independent research program and collaborate with other senior scientists and physicians. The research program area is open, but should be related to problems in human disease and complement the resources of a large medical center. Prerequisites include a Ph.D. with at least 3 years of postdoctoral experience and expertise in recombinant DNA techniques. Applicants should have an established research program with grant support, preferably at the national level. Send curriculum vitae, including names of references to: **Search Committee, Marshfield Medical Foundation, Inc., 5110 North St. Joseph Avenue, Marshfield, WI 54449.**

An Equal Opportunity Employer, M/F/H

MOLECULAR BIOLOGIST

Tenure-track assistant professor position starting August 1986. Ph.D. required. Teaching and postdoctoral research experience desirable. The successful candidate will actively participate in a course for undergraduates using recombinant DNA technology, and in the team-taught introductory curriculum. The appointee will join a biology faculty deeply involved in creating a strong, research-oriented program for upper-class undergraduate students, and will contribute to this effort. Applications are encouraged from candidates in any area of the biological sciences using recombinant technology including the plant sciences. Forward a letter of application with curriculum vitae and representative publications by 28 March and arrange to have three letters of recommendation sent as quickly as possible to: **Dr. Dietrich Kessler, Chair, Department of Biology, Colgate University, Hamilton, NY 13346. Women and minorities are encouraged to apply.**

Colgate University is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR IMMUNOLOGIST—Tenure-track faculty position with a highly competitive salary, excellent continuing institutional research support, and new physical facilities. The appointment will be as a university research associate professor or university research professor. Applicants should send a statement of their research interests; curriculum vitae and list of publications; and names, addresses, and telephone numbers of three persons who may be contacted as references to: **Molecular Immunology Search Committee, Department of Microbiology, Box 7615, North Carolina State University, Raleigh, NC 27695-7615. Closing date for applications is 30 April 1986.**

North Carolina State University is an Equal Opportunity Employer.

DEPARTMENT OF ZOOLOGY, UNIVERSITY OF ALBERTA

The Department of Zoology, University of Alberta, has two positions available, in the areas of **NEUROBIOLOGY, DEVELOPMENTAL BIOLOGY, AND/OR FUNCTIONAL MORPHOLOGY OF INVERTEBRATE ANIMALS.** Interaction with an active group of neurobiologists, developmental biologists, and functional morphologists, working on vertebrate and invertebrate animals, in the department and across the campus is expected. Applicants should minimally have a Ph.D. degree or equivalent and postdoctoral experience, and must be highly qualified investigators capable of a vigorous, independent research program. The successful applicants will be expected to compete for scholarship support from the Alberta Heritage Foundation for Medical Research (AHFMR) and/or University Research Fellowship from the Natural Sciences and Engineering Research Council (NSERC). NSERC URF appointments will be made at the rank of assistant professor (1985 to 1986 salary \$30,316 to \$43,780); AHFMR Scholarship appointments may be at the rank of assistant professor or associate professor (1985 to 1986 salary \$38,170 to \$55,450). Applicants should forward their curriculum vitae with names of three referees and selected reprints to: **Dr. R. E. Peter, Chairman, Department of Zoology, University of Alberta, Edmonton, Alberta, Canada T6G 2E9, by 1 May 1986.**

The University of Alberta is an Equal Opportunity Employer, but in accordance with Canadian immigration regulations, priority will be given to Canadian citizens and permanent residents.

POSITIONS OPEN

DEPARTMENT OF ZOOLOGY, UNIVERSITY OF ALBERTA

The Department of Zoology, University of Alberta, has a position available, in the area of **MOLECULAR BIOLOGY**, particularly with interests in the actions and postreceptor mechanisms of action of neuropeptides. Interaction with an active group of neurobiologists in the department and across the campus is expected. Applicants should minimally have a Ph.D. degree or equivalent and postdoctoral experience, and must be highly qualified investigators capable of a vigorous independent research program. The successful applicant will be expected to compete for scholarship support from the Alberta Heritage Foundation for Medical Research. Appointment may be at the rank of assistant professor (1985 to 1986 salary \$30,316 to \$43,780) or associate professor (1985 to 1986 salary \$38,170 to \$55,450). Applicants should forward their curriculum vitae with names of three referees and selected reprints to: **Dr. R. E. Peter, Chairman, Department of Zoology, University of Alberta, Edmonton, Alberta Canada T6G 2E9, by 1 May 1986.**

The University of Alberta is an Equal Opportunity Employer, but in accordance with Canadian immigration regulations, priority will be given to Canadian citizens and permanent residents.

MOLECULAR BIOLOGY RELATED TO DENTAL GENE DISORDERS. The Department of Basic Sciences, Laboratory for Developmental Biology, School of Dentistry, University of Southern California, is seeking candidates for the position of research assistant professor (nontenure track faculty). The position is available 1 March 1986 and will carry an initial appointment potential of 5 years at a competitive salary. Candidates should have a strong background in molecular biology, and be prepared to complement our research group's efforts using recombinant DNA technology related to the structural analyses of mouse and human dental genes and gene products, and restriction fragment length polymorphism studies of inherited dental disorders. Successful candidates will be expected to work full-time on research activities. Interested applicants should send curriculum vitae, an outline of research interests, and the names of five references to: **Dr. Howard M. Landesman, Associate Dean, Academic and Faculty Affairs, University of Southern California School of Dentistry, University Park, Los Angeles, CA 90089-0641. The University of Southern California is an Equal Opportunity/Affirmative Action employer. Minorities and women candidates are encouraged to apply.**

NEUROTOXICOLOGIST/ NEUROPHARMACOLOGIST

The Department of Pharmacology of Northwestern University Medical School in Chicago seeks applications for a tenure-track faculty position at the level of assistant or associate professor. This position is to be filled by an active investigator whose major research interest lies in the area of neurotoxicology-neuropharmacology as studied by contemporary molecular and biochemical approaches. The department has been rapidly growing since Dr. Toshio Narahashi assumed the chair 8 years ago. About half of the 19 faculty members are working in the area of neuropharmacology and cardiac pharmacology including excitable membrane electrophysiology, CNS pharmacology, and neurochemistry of various receptors. The other half are in the area of molecular and biochemical pharmacology including drug metabolism, drug-enzyme interaction, mechanism of action of antineoplastic agents, pharmacokinetics and endocrine pharmacology. Research in the department is well funded by external sources; and we are proud of our highly stimulating academic atmosphere and extensive resources. Northwestern University is now committed to further development of life sciences with generous financial support from the Searle Leadership Fund. Neuroscience is an area of great strength at Northwestern University and its medical school. Strong emphasis is placed on the achievement of academic excellence through active research. We have a highly promising future in our school and university. Send curriculum vitae, three letters of recommendation, and a brief description of future research plans to: **Dr. Toshio Narahashi, Professor and Chairman, Department of Pharmacology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611; telephone: 312-908-8284. An Affirmative Action/Equal Opportunity Employer.**

REQUEST FOR PROPOSALS STUDIES ON THE GENETIC/BASIC DEFECT IN CYSTIC FIBROSIS

The Cystic Fibrosis Foundation invites research proposals to develop and/or apply technologies to determine the genetic abnormalities underlying cystic fibrosis (CF).

The Foundation's special request for proposals calls for innovative studies relevant to identifying the structure of the CF gene and its expression. Studies may broadly represent approaches in genetics, molecular biology or cell biology. In cases where the proposed research does not involve studies using CF materials, the applicant must clearly define the relevance of the work to CF.

Awards will be made in the form of research contracts. Funding for each contract will be based on the scope of work proposed. Applicants may request up to \$150,000 in total costs (direct and indirect) annually, for up to two years.

Interested individuals are urged to submit a letter of intent which summarizes the proposed research. Prior discussion of the potential relevance of the proposed work to the objectives of this request are strongly encouraged. Letters of intent should be submitted no later than April 15, 1986. The deadline for submission of the formal proposals is July 1, 1986.

Guidelines for preparing responses to this request and research application forms are available from the

Cystic Fibrosis Foundation
6000 Executive Boulevard, Suite 510
Rockville, Maryland 20852
(301)881-9130



ASSOCIATE DIVISION DIRECTOR

The Chemistry Division of Argonne National Laboratory currently seeks a research administrator for the position of Associate Director. In this capacity, the individual will be responsible for chemistry program development, budget management, staff recruitment and interactions with universities, industrial collaborators and program sponsors.

Candidates must possess an outstanding record of achievement and recognition with the desire for a highly visible role in forefront basic research programs encompassing closely coupled theoretical and experimental studies in gas-phase chemical dynamics, photosynthesis and electron transfer processes, ultra-fast radiolysis and photolysis in condensed phases and plasmas, and metal cluster chemistry.

Qualified applicants must have extensive experience as an active researcher with demonstrated leadership in one or more of the following: chemical kinetics, excited state chemistry, molecular beams, metal clusters, photochemistry, radiation chemistry, theoretical chemistry or chemical physics. A Ph.D. or equivalent in Physical Chemistry/Chemical Physics is preferred. Must be able to communicate oral and written scientific information clearly, for both technical and non-technical applications. Demonstrated management experience is highly desirable.

We offer a comprehensive benefits and salary package commensurate with your background and qualifications. For immediate consideration send your resume and at least three references to:



Walter D. McFall
Box J-CHM-23131-55
ARGONNE NATIONAL LABORATORY
9700 South Cass Avenue
Argonne, IL 60439
An affirmative action/
equal opportunity employer m/f

Applications are invited for a faculty position in

EXPERIMENTAL PHYSICS

at the Swiss Federal Institute of Technology in Zurich.

The duties of the new professor include teaching in physics at all departments. In research a field of condensed matter physics in a broad sense should be taken up. Interdisciplinary collaboration with engineers and natural scientists is thereby expected.

Applicants should have a Ph.D., several years of independent research, be cooperative and willing to teach at all university levels.

Applications with curriculum vitae and list of publications should be submitted before March 31, 1986, to the **President of the ETH Zurich, Prof. H. Ursprung, ETH-Zentrum, CH-8092 Zurich.**

PROTEIN ISOLATION SCIENTIST

The Pharmaceutical Research and Development Division of The Upjohn Company, located in Kalamazoo, Michigan has openings in its Biopolymer Chemistry/Biotechnology Unit for Ph.D. Protein Isolation Scientist.

Qualified candidates will have experience in the isolation, purification, and characterization (including gas-phase sequencing) of proteins from natural and recombinant sources. Interest in structure and function of polysaccharide moieties in glycoproteins is highly desirable. A strong independent research effort is expected as well as the ability and willingness to work with researchers in molecular biology and therapeutic discovery departments. A demonstrated level of excellence in research as evidenced by an outstanding publication record commensurate with level of experience is required. Minimum requirements are two years of experience beyond the receipt of the Ph.D. in biochemistry or a closely related field. Appointment will be to a level appropriate for level of experience.

Kalamazoo is a mid-sized Southwestern Michigan community offering an excellent mix of cultural/recreational opportunities including lakes, nearby colleges, and a four-season climate. The Upjohn Company offers an excellent salary, benefits and relocation plan.

For confidential consideration, please call from outside of Michigan toll free 1-800-253-8600 extension 3-6767; or inside Michigan collect (616) 323-6767 to request a specialized employment application be sent to you immediately. Please refer to Ad Number 18935-B when calling.



POSITIONS OPEN

TEMPLE UNIVERSITY DEPARTMENT OF BIOLOGY MOLECULAR BIOLOGY—GENETICS

The Department of Biology is expanding its program in molecular biology and genetics. We invite applications for a tenure-track academic appointment at the assistant professor level to begin either 1 July 1986 or 1 January 1987. The successful candidate will also hold an appointment in the University's Institute of Molecular Biology and Genetics. Preference will be given to applicants whose research programs are in developmental biology, cell biology, or neurobiology. The appointee is expected to maintain an independent research program and to contribute to graduate and undergraduate education and training in his/her area of specialization. All candidates are expected to have postdoctoral experience. Applicants should send curriculum vitae, representative publications, a summary of their previous and proposed research, and the names and addresses of three references to:

Dr. Nina W. Hillman
Department of Biology 015-00
Temple University
Philadelphia, PA 19122

Closing Date: 31 May 1986. Applications will be reviewed upon receipt. *Temple University is an Equal Opportunity/Affirmative Action Employer.*

NEUROSCIENCE ASSISTANT PROFESSOR University of California, San Francisco

The UCSF Department of Physiology is searching for a candidate whose primary research interest is in the organization and function of the vertebrate central nervous system for appointment at the assistant professor level. The successful candidate will conduct an independent research program, as well as take part in teaching and in the intellectual life of the department and the interdepartmental neuroscience program. *Applications from women and underrepresented minorities are particularly encouraged.* Applicants should promptly send curriculum vitae, statement of research interests, and the names, addresses, and telephone numbers of three individuals from whom we may solicit letters of recommendation to:

Dr. Michael Stryker
Search Committee
Department of Physiology, S-762
University of California
San Francisco, California 94143-0444

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

PHYSICAL OCEANOGRAPHER: Old Dominion University's Department of Oceanography invites applications for a tenure-track faculty position in physical oceanography available fall 1986. Rank and salary will be commensurate with qualifications. Applicants must have an earned doctorate and a history of successful research efforts. Candidates should have an established record in physical oceanographic research, preferably with interest in theoretical aspects. The successful applicant is expected to continue sponsored research, supervise graduate students, and teach courses. Send résumé, names of three references, and a brief description of research interests by 4 April 1986 to: Dr. Larry P. Atkinson, Physical Oceanography Search Committee, Department of Oceanography, Old Dominion University, Norfolk, VA 23508. Telephone: 804-440-4285. *Old Dominion University, a state supported institution, is an Affirmative Action/Equal Opportunity Institution.*

PLANT PHYSIOLOGIST-ECOLOGIST. Marietta College, a small four-year liberal arts college, is seeking to fill this tenure-track biology position at the assistant professor level, beginning 15 August 1986. Ph.D. required with primary interest in teaching. Principal duties include teaching courses in plant anatomy and taxonomy, plant physiology, field ecology, and introductory biology. Opportunities to guide independent student research are available. Expertise in computers desirable and a secondary expertise in molecular biology is preferred. Send résumé and three letters of reference by 28 March 1986 to: Dr. Peter E. Hogan, Chairman, Biology Department, Marietta College, Marietta, Ohio 45750.

Marietta College is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

PHARMACEUTICAL SCIENTISTS

Immediate openings for B.S.- M.S.- Ph.D.-level scientists with formulation experience in solids, liquids, parenterals, dermatologicals, sterile solutions, novel drug delivery systems, and process development operations. Positions range from bench level (1 to 3 years of experience) to Department Head/Director level (8 to 10 years of experience) with compensation levels from 30,000 to 80,000.

Ronald J. Geczak, J.D., Ph.D.
Sampson, Neill & Wilkins, Inc.
543 Valley Road
Upper Montclair, NJ 07043
Telephone: 201-783-9600

PLANT ECOLOGIST: training and experience in wetland and terrestrial systems; graduate degree required. Position: phytosociology, preserve design, working with public agencies, literature review, and extensive fieldwork. Initial one year funding. Deadline: 4 April 86. Salary: \$18,000, plus benefits. Send cover letter and résumé to: **THE NATURE CONSERVANCY (CO/NM)**, 1370 Pennsylvania, 190, Denver, CO 80203. *Equal Opportunity Employer.*

PLANT PATHOLOGIST (epidemiologist). The Department of Plant Pathology, University of Massachusetts, seeks applicants for a 9-month, tenure-track research and teaching position at the assistant professor level. Salary is competitive and commensurate with qualifications and experience. Responsibilities include development of a research and teaching program in epidemiology. Interaction with integrated pest management programs is essential. Candidates must have a Ph.D. degree in plant pathology and be proficient in research techniques used in modern epidemiological studies. Postdoctoral experience desirable. Applicants should send a letter of application, statement of research interests, curriculum vitae, transcripts, and the names of four references by 15 April 1986 to: Dr. William J. Manning, Search Chairman, Department of Plant Pathology, Fernald Hall, University of Massachusetts, Amherst, MA 10003. *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATE

Postdoctoral position (research fellow or research associate, depending on experience) to work on the regulation of fatty acid and phospholipid metabolism in mammalian cells (platelets, myocytes). Research interests may include receptor-mediated metabolic activation in intact cells (chemical analysis, radioisotope, and stable isotope techniques) or purification and characterization of enzymes (phospholipases, acyltransferases, transacylases). Please send inquiries to: Dr. Harald H. O. Schmid, The Hormel Institute, University of Minnesota, Austin, MN 55912. Telephone: 507-433-8804. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages women and minority applicants.*

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE position at Wright State University (WSU) School of Medicine in the Division of Hematology/Oncology of the Department of Medicine available July 1986 for research of immunoregulatory abnormalities associated with human hematologic neoplasia. Experience in cellular and molecular immunology desirable. M.D. or Ph.D. in life or physical sciences required. Salary and benefits are competitive. Closing date for receipt of applications is 2 June 1986. Send curriculum vitae and the names of three references to: Michael Baumann, M.D., Department of Medicine, Wright State University School of Medicine, P.O. Box 927, Dayton, OH 45401, Attention: Pam Horning. *WSU is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately in **NEUROIMMUNOLOGY**. We are defining the molecular bases of the immune response to neural antigens, with particular reference to the modulation and function of the major histocompatibility complex. The approach is multi-disciplinary. Experience in immunocytochemistry, neuroanatomy, or developmental biology is desirable. Send résumé and names of references to: Dr. Lois Lamson, Department of Anatomy, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-6058. *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for NIH-funded studies on structure-function relationships of thrombin-like venom enzymes. Amino acid sequencing and comparative three-dimensional molecular modeling using computer graphics in collaboration with Dr. R.M. Stroud, University of San Francisco, leading to site-directed mutagenesis experiments. Candidates should have background in molecular biology and protein chemistry. Competitive salary, dependent on experience. Send letter describing interests, curriculum vitae, and names and addresses of three references to: Dr. H. C. Pirkle, Department of Pathology, Medical Sciences I, University of California, Irvine, CA 92717. *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available for studies of adhesive proteins from marine organisms. Work involves protein isolation, characterization and sequencing, and gene isolation and sequencing. Experience in protein chemistry and/or recombinant DNA techniques essential. Funding available for up to 3 years. Send résumé and names of three references to: Dr. Richard Laursen, Chemistry Department, Boston University, Boston, MA 02215. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION IN CARCINOGENESIS

Candidates will synthesize carcinogen-modified oligonucleotides for conformation and site-specific mutation studies. Experience in organic synthesis or molecular biology is desirable. Apply by sending curriculum vitae and three letters of reference to: Dr. Thomas Meehan, Department of Pharmaceutical Chemistry, University of California, San Francisco CA 94143.

POSTDOCTORAL POSITION: Biochemistry, molecular biology available to study expression of leukemia cell surface antigens, glycosyl transferases and multidrug-resistant phenotypes using lectins and monoclonal antibodies and to characterize and clone the genes involved. Writing and communication skills essential. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae to: Robert N. Taub, M.D. Ph.D., Division of Oncology, Columbia College of Physicians and Surgeons, 630 West 168 Street, New York, NY 10032.

POSTDOCTORAL POSITION—Available immediately to study structure-function relationships of fibronectin and other cell adhesive glycoproteins.

Experience in ESR or fluorescence spectroscopy is required. Initial 1-year appointment with possible extension up to 4 years. Send curriculum vitae and names of three references to: Dr. Ching-San Lai, National Biomedical ESR Center, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, WI 53226. *Equal Opportunity/Affirmative Action Employer, M/F/H.*

POSTDOCTORAL POSITION. Available immediately to investigate molecular mechanisms involved in the observed changes in vascular smooth muscle cells correlated with age and hypertension [(*Science* 226, 559-61)]. Molecular biology experience necessary. Salary NIH scale. Duration: minimum of 2 years. Send résumé and names of three references: J. Nadakavukaren, Ph.D., Department of Radiation Oncology, LONG ISLAND JEWISH MEDICAL CENTER, New Hyde Park, NY 11042.

POSTDOCTORAL POSITION available to study human tissue factor and its role in extrinsic blood coagulation. Ph.D. in biochemistry required, with preference given to applicants with experience in either protein chemistry or membrane biochemistry. Competitive salary. Send curriculum vitae, summary of research experience, and names of three references to: Dr. Walter Kiesel, Department of Pathology, University of New Mexico School of Medicine, Albuquerque, NM 87131.

POSTDOCTORAL/RESEARCH SCIENTIST POSITION available immediately for a Ph.D. in biochemistry or chemistry to study the scope and mechanism of participation of cytochrome b₅ in cytochrome P-450-catalyzed mixed-function oxidations. Send résumé and three letters of recommendation to: Dr. L. Waskell (129), VA Medical Center, 4150 Clement Street, San Francisco, CA 94121.

MICROBIOLOGIST/ BIOCHEMIST

The Tennessee Valley Authority's National Fertilizer Development Center in Muscle Shoals, Alabama, is seeking an individual with a Ph.D. in microbiology or biochemistry with solid experience in the use of microorganisms in bioconversion processes.

This individual will be responsible for assessing the potential for applying microbiological or bacteriological techniques to the development of new or improved fertilizer materials, monofactoring and processing methods for agronomically useful compounds, and managing or minimizing the environmental impact of fertilizer manufacture and use.

This is a temporary appointment which will not exceed 12 months. If you are qualified and eager to contribute to a new program during the initial formulation, please send your resume with social security number to:

TENNESSEE VALLEY AUTHORITY
Employment Branch SM0061
Room 240 MIB
Knoxville, TN 37902



EQUAL OPPORTUNITY EMPLOYER: TVA may consider for appointment only U.S. citizens and others eligible for payment under applicable statutes.

CHIEF, MENTAL RETARDATION AND DEVELOPMENTAL DISABILITIES BRANCH

Center for Research for Mothers and Children
National Institute of Child Health and Human Development
National Institutes of Health
Bethesda, Maryland
U.S. Public Health Service

The MRDD Branch fosters and supports the nation's largest program of research and research training in the etiology, pathogenesis, epidemiology, treatment and prevention of mental retardation and developmental disabilities. It includes administration of a centers program for research in these specific areas.

The Chief of this Branch develops new program plans, oversees ongoing program management and provides overall scientific direction for extramural research and training in mental retardation and developmental disabilities. Candidates should have an M.D. or Ph.D. with research experience in the fields of mental retardation and/or developmental disabilities. In addition, applicants should have significant managerial experience in initiating and directing a research program in mental retardation, developmental disabilities or related areas.

Salary Range — \$52,262 to \$67,940 per annum
(may be eligible for up to \$10,000 additional physician's comparability allowance)

Position information may be obtained by contacting:

Michael M. Rosenthal
NICHD Personnel Office
National Institutes of Health
9000 Rockville Pike
Building 31, Room 2A25
Bethesda, Md. 20892

Applications (Personal Qualifications Statement, SF 171, CV, bibliography, letters of reference) must be submitted to the above address and postmarked by May 5, 1986.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

Cell and Molecular Biology POSTDOCTORAL POSITIONS

Postdoctoral positions are available in the Cell Biology Group at the Worcester Foundation for Experimental Biology, supported by an NIH Training Grant and individual investigator awards. The faculty and their research interests are:

Earl Baril: Enzymology of eukaryotic DNA replication.

Edward Berger: Cell-cell interactions and differential gene expression in *Dictyostelium*.

William Crain: Actin gene expression in embryonic development.

Grant Fairbanks: Organization and function of erythrocyte and sperm plasma membrane.

Clare O'Connor: Protein modifications during gametogenesis; development of cell polarity.

Thoru Pederson: Nuclear ribonucleoproteins and messenger RNA processing.

Joel Richter: Transcriptional and translational regulation in *Xenopus* oocytes.

Harriet Robinson: Retroviruses, oncogenes, cell growth and differentiation.

Greenfield Sluder: Timing and molecular control of mitotic events during early development.

David Steffen: Murine leukemia virus gene expression and oncogenicity.

Richard Vallee: MAPs, monoclonal antibodies, mitosis, neuronal cytoskeleton.

Samuel Wadsworth: Structure and function of *Drosophila* oncogenes, growth factors and receptors.

George Witman: Generation and control of flagellar movement in *Chlamydomonas* and mammalian sperm.

David Wolf: Diffusion and control of membrane regionalization; sperm maturation and capacitation.

Paul Zamecnik: Synthesis of modified oligonucleotides for chemotherapy.

Carol Ziomek: Membrane structure and cell polarity in early mouse development.

The institute is founded on a basic research philosophy and fosters an open, collegial environment conducive to scientific interactions.

Send curriculum vitae and names of references to faculty member(s) of interest to: Cell Biology Group, Position ID #T2, C/O Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545. USA.

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER M/F/H



WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY

POSITIONS OPEN

Two **POSTDOCTORAL POSITIONS IN RADIATION AND HYPERTHERMIA BIOLOGY**; available immediately. Research concerns the action of radiation and/or hyperthermia on mammalian cells with emphasis on cellular and DNA repair processes, cell cycle progression, and thermotolerance. Permanent residency and experience with cell culture techniques required. Experience in DNA-repair techniques and/or flow cytometry preferred. Send curriculum vitae, important reprints, research interests, and three letters of recommendation to: **George Iliakis, Ph.D., or Dennis B. Leeper, Ph.D., Laboratory of Experimental Radiation Oncology, Department of Radiation Therapy and Nuclear Medicine, Thomas Jefferson University Hospital, Philadelphia, PA 19107. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION at the University of Pennsylvania available immediately to study the molecular biology of the platelet derived growth factor induced replicative response. Recent Ph.D. in molecular or cellular biology required. Send curriculum vitae and names of two references to: **Dr. C. D. Scher, Children's Hospital of Philadelphia, 34th Street and Civic Center Boulevard, Philadelphia, PA 19104.**

POSTDOCTORAL POSITION available for an individual with a Ph.D. in biochemistry, biochemical pharmacology, molecular biology, or related field for studies on DNA repair in human cells treated with cancer chemotherapeutic agents or radiation. This position offers training in molecular biology and enzymology and the opportunity to participate in an established research program studying human enzymes involved in the repair of specific lesions in DNA. Core facilities are available for DNA and peptide sequencing and synthesis and for monoclonal hybridoma production. Starting salary \$20,000. Send curriculum vitae and three letters of recommendation to: **Dr. Thomas Brent, Division of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101.**

POSTDOCTORAL POSITION—available immediately to study spinal cord regeneration in nonmammalian vertebrates. Emphasis will focus on ependyma-mesenchyme interactions. Ph.D. with experience in electron microscopy and fluorescent antibody techniques required. Salary will be \$20,000 per year. Send curriculum vitae and three letters of reference to: **Dr. Sidney B. Simpson, Jr., Head, Department of Biological Sciences, University of Illinois at Chicago, P.O. Box 4348, Chicago, IL 60680. The University of Illinois is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION Search Extended

Immediate opening for a recent Ph.D. with strong background in synthetic organic chemistry. Work involves isolation and characterization of cross-linked aromatic peptides and synthesis of model aromatic-amino acid adducts. Salary competitive. Send résumé and names of three references by 4 April 1986 to:

Dr. M. Sugumaran, Department of Biology, University of Massachusetts at Boston, Boston, MA 02125. An Affirmative Action/Equal Opportunity/Title IX Employer.

POSTDOCTORAL POSITION: The sleep laboratory at the National Institute of Mental Health has a position for a neuroscientist interested in mechanisms of action of hypnotics and anxiolytics. The laboratory has facilities for single cell recordings in vivo and from brain slices, and similar procedures. Send curriculum vitae and reference letters to: **Dr. Wallace Mendelson, NIMH, 9000 Rockville Pike, Building 10, Room 4S239, Bethesda, Maryland 20892.**

The Department of Psychology, Columbia University announces a **POSTDOCTORAL POSITION IN VISUAL PSYCHOPHYSICS** beginning April 1986. We seek a candidate with an interest in simple mathematical models, preferably in the field of adaptation, to work with **Professor Donald Hood**. Candidates should send a copy of their curriculum vitae and the names of three individuals who are willing to write letters of recommendation to: **Personnel Search Committee (Postdoctoral Search), Department of Psychology, Box 29, Schermerhorn Hall, Columbia University, New York, NY 10027. Columbia University is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITION Department of Microbiology and Molecular Genetics University of California, Irvine (UCI)

Two positions are available in the laboratory of **Dr. G. Wesley Hatfield** for independent research in one of the following areas:

- 1) The molecular mechanisms of attenuation of gene expression in bacterial systems.
- 2) The roles of tRNA isoacceptors in coding context using bacterial attenuators as model systems.
- 3) The molecular genetics and biochemistry of protein-DNA interactions involved in activation of gene expression.
- 4) The application of molecular genetics to the production of primary and secondary metabolites by microorganisms of industrial importance.

The position affords an excellent opportunity for further training and career advancement in a stimulating well-funded, scientific environment. UCI is located in a desirable coastal area of Southern California. Send curriculum vitae to:

**Dr. G. Wesley Hatfield
Department of Microbiology and Molecular Genetics
College of Medicine
University of California
Irvine, CA 92717**

An Affirmative Action Equal Opportunity Employer.

POSTDOCTORAL POSITION in bioorganic chemistry available immediately to study the mechanism of protein glycosylation using synthetic peptides and glycosylated peptides. A background in organic synthesis is required, and experience in solution-phase peptide synthesis and/or carbohydrate synthesis is preferred. Salary competitive and commensurate with experience. Send curriculum vitae and three letters of reference: **Professor James K. Coward, Department of Chemistry, Rensselaer Polytechnic Institute, Troy, NY 12180-3590. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN IMMUNOLOGY available immediately to study molecular genetics, protein chemistry, and cellular immunology of MHC and tumor antigens. Prefer recent Ph.D. with experience in molecular genetics and/or immunology. Submit by 1 April 1986, statement of interests, curriculum vitae, and names of three references to: **G. N. Callahan, Department of Pathology, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, CO 80523. Colorado State University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITIONS IN NUTRITIONAL SCIENCES. The University of Illinois at Urbana-Champaign offers a unique, multidisciplinary traineeship involving collaboration with two faculty members in the Division of Nutritional Sciences. Independent research projects will be developed in fundamental and applied nutrition of animals and humans. Potential research areas include: nutrient metabolism throughout life, nutrition in health and disease, and the influence of food preferences and food processing on nutritional quality of diets. Exceptional individuals with an M.D. or Ph.D. in nutrition or an allied field are encouraged to apply. Duration is 2 years, with stipend of \$18,000 per year. Completed applications must be received by 28 March 1986 in order to receive full consideration. *University of Illinois is an Equal Opportunity/Affirmative Action Employer.* For further information and application, contact: **Dr. John A. Milner, Director, Division of Nutritional Sciences, 451 Bevier Hall, 905 South Goodwin Avenue, Urbana, Illinois 61801.**

POSTDOCTORAL RESEARCH ASSOCIATE positions are immediately available to work in a multidisciplinary environment to study the molecular mechanisms of gonadotropin action in corpus luteum. Previous experience in cell separation, purification, and culturing techniques is required for one position. For the second position, previous experience in studying eukaryotic gene expression is required. Interested candidates please send curriculum vitae, three references, and a statement of research goals to: **Dr. C. V. Rao, Department of Obstetrics/Gynecology, University of Louisville, 438 MDR Building, Louisville, KY 40292. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL PSYCHOLOGIST APPOINTMENT: Research and administration primarily with established international project investigating psychological/physical sequelae in adults of prenatal exposure to substances which alter uterine environment in humans. Require doctorate, proven publication record. Immediate opening, minimum 2-year commitment, 12-month appointment. \$18,000 plus, depending upon experience. Contact: **June M. Reinisch, Ph.D., Kinsey Institute, Indiana University, Bloomington, IN 47405.**

POSTDOCTORAL RESEARCH POSITION available in 1986. Ph.D. in molecular biology to study control of Cachectin/Tumor Necrosis Factor production. Applicant must have training in biochemistry/molecular biology. Experience with recombinant DNA technology, including the construction and screening of cDNA libraries is desirable. Submit curriculum vitae and three references to: **Anthony Cerami, Ph.D., Laboratory of Medical Biochemistry, The Rockefeller University, 1230 York Avenue, New York, NY 10021.**

UNIVERSITY OF CALIFORNIA, IRVINE POSTDOCTORAL RESEARCH IN PSYCHOBIOLOGY

The Department of Psychobiology, University of California, Irvine (UCI), anticipates filling several postdoctoral research positions in the laboratories of the faculty with starting dates between 1 February 1986 and 31 December 1986. The current faculty and their research interests are: **D. Aswad** (neurochemistry); **M. Baudry** (cell biology and neurochemistry); **C. Cotman** (synaptic growth and plasticity); **R. Josephson** (comparative physiology of muscles); **M.-L. Kean** (linguistics and neural mechanisms of language processing); **H. Kilackey** (developmental neuroanatomy); **M. Leon** (developmental psychobiology); **G. Lynch** (physiology, neurochemistry); **J. Marshall** (neural plasticity of catecholamines); **J. McGaugh** (memory, storage processes); **R. Miledi** (synaptic physiology and molecular neurobiology); **I. Parker** (synaptic physiology); **D. Perkel** (theoretical neurobiology); **A. Starr** (cognition, sensation, and evoked potentials); **K. Sumikawa** (molecular neurobiology); **N. Weinberger** (neural mechanisms of learning); and **P. Yahr** (neuroendocrinology and behavior).

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

An Equal Opportunity/Affirmative Action Employer.

PROFESSOR OF TELECOMMUNICATIONS TECHNOLOGY AND DIRECTOR AT&T TELECOMMUNICATIONS TECHNOLOGY PROGRAM UNIVERSITY OF PENNSYLVANIA

A **Chaired Professorship** in telecommunications technology has been established in the Department of Electrical Engineering. The person appointed to this chair will also serve as director of the AT&T Telecommunications Technology Program.

The aim in filling this chair is to build on past and current strengths in telecommunications at the university and to further develop a center in this field for research, education, and application which will be of worldwide eminence.

The holder of the chair would have an appointment in the Moore School of Electrical Engineering and, depending on background, secondarily in one or more other departments in the natural sciences and technology, in a management unit within the Wharton School and/or in the Annenberg School of Communications.

Each candidate should have superlative qualifications in scholarship and teaching and be able to achieve a top leadership position in telecommunications for the University of Pennsylvania. To do so will require the ability to work closely with AT&T, other firms, foundations and government agencies.

Applications and nominations should be directed to: **Professor Kenneth A. Fegley, Search Committee Chair, Department of Systems Engineering, University of Pennsylvania, Philadelphia, PA 19104-6314.**

The University of Pennsylvania is an Equal Opportunity, Affirmative Action Employer.

DEAN COLLEGE OF AGRICULTURE University of Idaho

The University of Idaho invites applications and nominations for Dean of the College of Agriculture, whose principal responsibility is to administer the College of Agriculture which includes the Idaho Agricultural Experiment Station and the Idaho Cooperative Extension Service. The Dean is the chief administrative officer of the College and is responsible to the Vice President for Academic Affairs. The Dean is assisted by an Associate Dean and Director of Resident Instruction, an Associate Dean and Director of the Agricultural Experiment Station and an Associate Dean and Director of the Cooperative Extension Service. College of Agriculture activities are conducted in nine on-campus departments, six research and extension centers, four district extension offices and 42 county offices throughout the state.

The Dean is responsible for overall administration and planning and has authority for decisions involving policy, personnel, and budget matters. The Dean provides leadership for and seeks support of the public, agricultural and related industries, state and local governments, and the University. The qualities of vision and leadership are considered essential characteristics in the Dean's role.

Minimal qualifications include an earned doctorate in an appropriate discipline and a proven record of professional achievement; an appropriate combination of successful administrative experiences in planning and evaluation, complex budget processes, public relations, policy formulation, and personnel management in the areas of research, teaching, or extension; vision and leadership to address present and future agricultural and societal needs; experience in and/or an understanding of a land grant system; ability to communicate and interact with diverse groups and develop agricultural policy; demonstrated ability to generate financial support; a commitment to excellence in teaching, research, and extension.

The University of Idaho is the land grant and senior research institution in the state. Diverse programs provide instruction for more than 9,000 undergraduate and graduate students enrolled in nine colleges. The University, with its statewide agricultural research and cooperative extension programs, is a major force for the advancement of agriculture in the state and region.

The Dean may assume duties as early as July 1, 1986 or as soon thereafter as possible. Salary is commensurate with qualifications and experience.

Nominations will be accepted until April 1, 1986. Letters of nomination should include a brief statement about the nominee's qualifications for the position. Individuals wishing to apply should submit a letter of application, a curriculum vitae and any other information which may be helpful to the search committee. Names, addresses and telephone number of five individuals who can serve as referees should be included with the applications. All application materials, including letters of reference, must be received by April 18, 1986. Nominations and applications should be submitted to:

Dr. Dale Gentry
Chairman, Search Committee
University of Idaho
College of Education
Moscow, Idaho 83843
(208) 885-6772

The University of Idaho is an equal opportunity/affirmative action employer and educational institution.

Program Head

The American Association for the Advancement of Science is seeking an individual to direct the office for its Committee on Scientific Freedom and Responsibility. The Committee was established in 1976 to address the problems and concerns facing scientists and engineers and their organizations in the exercise of their professional conduct. Candidates should have a comprehensive understanding of one or more project areas currently sponsored by the Committee: science and human rights; professional ethics; and national security and scientific communication. A doctoral degree in a relevant discipline or an equivalent combination of education and experience and excellent writing skills are necessary. Three to five years in project management or association experience is essential.

The AAAS is an Equal Opportunity, Affirmative Action Employer.

Applications will be received until 31 March 1986. For further details or to submit a résumé, salary requirements, and three references, please write:

Carolyn Bell

Personnel Office

American Association for the Advancement of Science
1333 H Street, NW
Washington, DC 20005

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- Whenever you write us about your membership or subscription, please attach a Science address label to ensure prompt service.

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POSITIONS OPEN

POSTDOCTORAL TRAINING OPPORTUNITIES IN DRUG DELIVERY RESEARCH

The research emphasis of this multidisciplinary drug delivery research/training program is on the innovative applications of biochemical and chemical principles to improve the transport of drugs through biological membranes and to direct drugs to specific cellular and subcellular sites. Initial emphasis is being placed on delivery of peptides and proteins. Specific areas of research include: (i) the development of cell culture systems as models for the epithelial and endothelial cellular barriers; (ii) use of these cell culture systems to study the transport and metabolism of drugs; and (iii) development of carrier-based systems for enhancing membrane flux and for targeting of drugs to specific cellular sites. Applicants should have a Ph.D. degree in biochemistry, pharmacology, chemistry, pharmaceutical chemistry, or related disciplines. Send curriculum vitae with names and addresses of three references to: **Dr. Ronald T. Borchardt, Department of Pharmaceutical Chemistry, The University of Kansas, Lawrence, KS 66045. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSISTANT PROFESSORSHIP IN RENAL CELLULAR FUNCTION AND TRANSPORT AT WAKE FOREST UNIVERSITY WINSTON-SALEM, NORTH CAROLINA

Academically oriented holders of D.V.M., M.D., or Ph.D. degrees may apply for tenure-track research position associated with an institutional research program in atherosclerosis. Candidates will have the responsibility for development and supervision of a related research program with orientation to renal disease. Candidate should have knowledge and technical expertise in the fields of enzymology, lipid biochemistry, membrane biophysics, and cell biology. Current emphasis is directed toward mapping of enzymatic and mineral metabolism using various techniques including cell and tissue culture, monoclonal antibody localization of differentiation-dependent antigens, and localization of intracellular ions using ion-specific electrodes. Candidate should be able to demonstrate a strong research background and commitment to a research career. Salary dependent on background and experience. Applicants should send curriculum vitae and the names and addresses of three references to: **Carol C. Cunningham, Ph.D., Professor of Biochemistry, Chairman of Search Committee, Bowman Gray School of Medicine, Wake Forest University, 300 South Hawthorne Road, Winston-Salem, NC 27103. Wake Forest University is an Equal Opportunity/Affirmative Action Employer.**



RESEARCH IMMUNOLOGIST

Nova Pharmaceutical Corporation, a young company dedicated to the discovery of novel therapeutic and diagnostic products using the most current techniques, has an immediate opening for a Research Immunologist. Minimum requirements are B.S. or B.A. in Biochemistry, Immunology or equivalent. Some previous chemistry background is preferred, and a minimum of 2 years experience with hybridoma techniques and ELISA assays is essential.

Nova occupies new facilities at the Francis Scott Key Medical Center in Baltimore, and has strong intracampus links with The Johns Hopkins University, NIDA, and NIA. Nova has a full complement of chemical, biochemical, and pharmacological support personnel.

Nova offers competitive salaries and an excellent benefits package. For further information, please submit a current résumé with salary requirements to:

**Mrs. Lydia K. Battaglia
Director of Personnel
Nova Pharmaceutical Corporation
5210 Eastern Avenue
Baltimore, Maryland 21224-2788**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

RESEARCH ASSOCIATE position available immediately to study developmental changes in novel amino acid transport systems in mouse ova and preimplantation embryos [see *J. Biol. Chem.* **260**, 12118 (1985)]. Ph.D. required. Salary: \$20,000 to \$23,000. Send curriculum vitae, reprints, and names of three references to: **Lon J. Van Winkle, Department of Biochemistry, Chicago College of Osteopathic Medicine, 1122 East 53 Street, Chicago, IL 60615; telephone: 312-947-4734.**

The Chicago College of Osteopathic Medicine is an Affirmative Action/Equal Opportunity Employer.

RESEARCH ASSOCIATE

Permanent position, section head at university hospital. Immunochemist or immunologist with strong biochemical background. Doctorate and benchwork experience required. Original work on immunochemical and pathogenetic aspects of human carcinoma glycoconjugates. Salary and benefits excellent. Send curriculum vitae, details of expertise, and bibliography to: **Dr. G. F. Springer, Director, Immunochemistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, Illinois 60201.**

Equal Opportunity Employer, M/F

RESEARCH ASSOCIATE (Postdoctoral)

Research on the bioavailability of iron from foods. Also iron-binding proteins of milk. Experience with EPR and other chemical physical techniques useful. Salary—\$18,000 to \$23,000, commensurate with experience. Employment will last until 31 July 1986. Respond to: **Dr. George W. Bates, Department of Biochemistry and Biophysics, Texas A&M University, College Station, Texas 77843. Texas A&M University is an Equal Opportunity Employer.**

RESEARCH BIOLOGIST-MOLECULAR BIOLOGIST. GS-11. \$26,381 per year. Renewable up to 3 years. To engage in research on molecular biology of insect and insect virus. Candidates are required to have Ph.D. in molecular biology, genetics or microbiology, or related field. Experience in construction of expression library and in vitro mutagenesis will be given preference. The laboratory is located at Delaware, Ohio, 20 miles north of Columbus. This is a new research laboratory of Northeastern Forest Experiment Station of U.S. Department of Agriculture-Forest Service aimed at applying biotechnology for forest pest management. Qualified individuals should send résumé to: **Kathy Worth, USDA-Forest Service, 359 Main Road, Delaware, Ohio 43015, by 15 May 1986. Telephone 614-369-4471. Forest Service is an Affirmative Action/Equal Opportunity Employer.**

RESEARCH TRAINING IN SALIVARY SECRETION

Positions available immediately, at the University of Washington for research training in the cell biology and pathophysiology of salivary secretion. Possible topic areas include elemental analysis using electron probe, interactions between salivary macromolecules, intracellular messengers, transport of secretory macromolecules, tissue culture, bacterial colonization, and so forth. Applicants should have Ph.D. or professional degree (M.D., D.D.S., D.V.M., or equivalent) and must be U.S. citizen or have permanent visa. Graduate programs leading to Ph.D. or M.S. are available. Stipends: \$15,996 to \$30,000, depending upon years of experience. Send curriculum vitae, three references, and statement of research interests to: **Dr. Kenneth Izutsu, Department of Oral Biology, SB-22, University of Washington, Seattle, WA 98195, at earliest possible date. An Affirmative Action/Equal Opportunity Employer.**

THE PACIFIC GAMEFISH RESEARCH FOUNDATION (PGRF) invites applications for **SCIENTIFIC DIRECTOR** from experienced biologists and economists interested in big game fishes and fisheries, who can carry out own research, promote use of facilities by visiting scientists, and relate well to public and Board of Governors. Laboratory located in Kailua-Kona, Hawaii, with year-round access to marlin, tuna, and other fishes. Send letter, current curriculum vitae, bibliography, and names and addresses of three references to: **John C. Marr, PGRF Search Committee, P.O. Box 772, Temecula, CA 92390.**

POSITIONS OPEN

SCIENCE OFFICER For Environmental and Scientific Research

The Hudson River Foundation, a nonprofit institution which supports research on matters of environmental, ecological, and public health concern, seeks a science officer to assist in the development of research, education and information programs and to supervise the processing of grant applications and awards. Duties also include dissemination of scientific information and maintenance of communication with grantees, scientific committees, and public and private institutions having interest in the Hudson River. An earned Ph.D. and experience in environmental or ecological science necessary. Salary negotiable.

Send curriculum vitae, a short statement of qualifications and interest, and arrange to have the names of three professional references sent by 31 March 1986 to:

**Dr. Jeffrey Levinton
Chairman, Hudson River Panel
Hudson River Foundation
122 East 42 Street
New York, New York 10168**

SENIOR RESEARCH ASSOCIATE

Protein biochemist holding Ph.D. degree and at least 2 years of postdoctoral training to be an active participant in well-developed, but innovative study of biologically relevant protein-lipid interactions. Problem area deals primarily with separation isolation and characterization of unique human liver secretory proteins having a variety of biological functions. Co-workers consist of an interactive group already of critical size for productivity. Candidates should have appropriate biochemistry, cell biology, and possibly applied immunochemistry experience. Submit complete résumé and names of three references to: **G. I. Research Unit, Cleveland Clinic Foundation Research Institute, 9500 Euclid Avenue, Cleveland, OH 44106. An Equal Opportunity Employer.**

SENIOR RESEARCH INVESTIGATOR. Designs, initiates, and supervises research experiments to evaluate safety and efficacy of new animal drug candidates. Supervises development research projects and coordinates discovery and initial animal trials in conjunction with other research facilities. Supervises work of staff and nonstaff under his jurisdiction. Participates in design and evaluation of disease, and performance of enhancement models to evaluate new drug candidates. Prepares animal safety and efficacy section of new animal drug application, reports, and reviews protocols and data with FDA scientists. Ensures adequate technological transfer of products to corporate marketing division, coordinates project objectives and clinical aspects of projects with team members, development project teams, and department service groups. Interacts with staff management in performance appraisal process, salary administration, purchase requests, and expense reports. Ensures appropriate and timely fiscal accounting associated with conduct of research, maintenance of organized records of experimental data, the timely finalization of experimental reports and organization of required documents upon completion of studies. Must possess Ph.D. in veterinary medicine with parasitology or infectious disease as major field of study. Must have 5 years of experience in job or 5 years of experience as veterinary adviser/technical manager in the field of parasitology. Experience/education must include knowledge in the field of parasitology with specific anthelmintics and antibiotics in animal help research. Requires experience with design organization and implementation of field studies with new animal health products. 40 hours per week, \$67,000 per year. Send résumé with social security number to: **Indiana State Employment Service, 10 North Senate Avenue, Indianapolis, IN 46204, Attention: W. F. Shepard, ID Number 3027759.**

UNDERGRADUATE LABORATORY SUPERVISOR: The University of Georgia—invises applications for the position of undergraduate laboratory supervisor. The candidate's responsibilities will include supervision of the general chemistry and the basic organic chemistry laboratories. Minimum requirements: M.S./M.A. in chemistry and some teaching experience. Please submit a cover letter, résumé, and the names of three references to: **Dr. Harry D. Peck, Director, School of Chemical Sciences, Department of Chemistry, The University of Georgia, Athens, Georgia 30602, by 1 May. An Equal Opportunity/Affirmative Action Employer Institution.**

SCIENTISTS

Program Resources, Inc. has the following scientists positions available at the NCI-Frederick Cancer Research Facility, Frederick, MD.

MOLECULAR BIOLOGIST

The successful candidate will have a PhD in molecular biology or biochemistry with experience in recombinant DNA technology. As a team member working in the Laboratory of Cell and Molecular Structure, responsibilities include the pursuit of new cloning projects, and projects in progress using DNA sequencing, molecular cloning, restriction enzyme mapping, preparation and screening of genomic libraries, cDNA preparation, expression vectors, and DNA and RNA characterization.

BIOCHEMIST/CELL BIOLOGIST

The successful candidate will have a PhD in biochemistry or cell biology with experience in immunology including: affinity columns, immunoprecipitation, western blotting, protein isolation and characterization, and antibody production and manipulation. This position is in the Laboratory of Cell and Molecular Structure. Responsibilities include the Flow Cytometry unit and participation in multidisciplinary projects with other working groups in molecular and cell biology.

IMMUNOLOGIST/PROTEIN CHEMIST

The successful candidate will have a PhD and experience with purifying, fragmenting, and assaying monoclonal antibodies and their fragments. As part of the Chemical Synthesis & Analysis Laboratory, responsibilities include the supervision and development of procedures for the isolation, purification, analysis, and fragmentation of monoclonal antibodies.

VIROLOGIST

The successful candidate will have a PhD with experience in immunoassays, especially ELISA radioimmunoassays; tissue culture; and virus isolations. Previous supervisory responsibility is desired. This position, in the Biological Products Laboratory, is responsible for the supervision of 4-7 technicians in a Seroepidemiology/Virology Laboratory. Duties include: screening serum samples for antibodies to human T-lymphotropic viruses I, II, and III; and conducting primary virus isolations of HTLV I, HTLV II, and HTLV III under P3 containment conditions.

Program Resources, Inc. offers a salary commensurate with training and education and a comprehensive benefits program including a 401(K) Retirement Plan and relocation assistance.

For consideration, send a curriculum vitae, salary requirements, and three letters of reference to:



Program Resources, Inc.
Personnel Department
P.O. Box B
Frederick, MD 21701

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PHARMACEUTICAL RESEARCH AND DEVELOPMENT OPPORTUNITIES

The Pharmaceutical Research and Development Division of The Upjohn Company, located in Kalamazoo, Michigan, has the following positions available.

BIOCHEMICAL TOXICOLOGY

We have an opening for a research associate in the Dermatotoxicology and Skin biology laboratory. This research group is studying the pharmacokinetics of drug transport through living intact skin in short-term organ culture. Responsibilities also include participation in routine drug safety studies.

Qualified candidates will have a B.S. degree in Chemistry, Biochemistry or a related discipline with 3-5 years work experience dealing with *in vitro* and *in vivo* xenobiotic metabolism in mammalian systems. The position requires working knowledge of HPLC, radioTLC, metabolite isolation and operation of general laboratory equipment. **Please refer to ad number 19069-AM when responding.**

EXPERIMENTAL PHYSIOLOGIST

We're seeking a motivated research associate to conduct toxicological and physiological studies of experimental endotoxic shock. Knowledge and experience are necessary in the areas of animal surgery, animal physiology, laboratory calculations for dilution and dose preparation, animal handling and dosing, computer application, grant and technical writing. Qualified candidates will have a B.S. or M.S. in Physiology, Experimental Biochemistry, or Medical Technology and a minimum of 3 years of research experience in these areas. **Please refer to ad number 19069-AR when responding.**

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a rich mix of cultural, educational and recreational pursuits including numerous lakes and a four-season climate. Upjohn offers the opportunity for career growth, a competitive salary, commensurate with experience, a comprehensive benefits program and relocation assistance.

For confidential consideration, please call from outside of Michigan toll-free 1/800/253-8600, ext. 3-6767, (inside Michigan call collect 616/323-6767) to request an employment application be sent to you immediately. Please refer to the appropriate ad number when calling.

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POSITIONS OPEN

RESEARCH PSYCHIATRIST, INPATIENT DIRECTOR, CLINICAL STUDIES UNIT (CSU)—DEPRESSIVE DISORDERS PROGRAM. Tenure-track faculty position in the University of Michigan Department of Psychiatry. The CSU is an established clinical research program with an emphasis on longitudinal studies of neuroendocrine dysfunction in patients with depressive disorders. Generously equipped and located in the recently completed University of Michigan Hospital, the CSU comprises 12 inpatient beds, an adjacent outpatient clinic, laboratory support, and a comprehensive data management system. Strong collaboration in place with peptide, sleep electroencephalography, and psychoimmunology investigators. Opportunities for development of projects with positron emission tomography and magnetic resonance imaging facilities. Candidates should submit curriculum vitae and the names of three references to: **Roger F. Haskett, M.D., Director, Clinical Studies Unit, Department of Psychiatry, University of Michigan Medical Center, Ann Arbor, MI 48109.** *The University of Michigan is an Affirmative Action Employer.*

LIFE SCIENCES: Eastern New Mexico University (ENMU) seeks a person for a tenure-track position in **VERTEBRATE BIOLOGY**, preferably freshwater fisheries biology with teaching responsibilities in such areas as fisheries, limnology, histology, microtechnique, and general biology. The six-member department displays excellence in teaching and conducts research with environmental emphases. Earned doctorate in field appropriate to above responsibilities is required. Send letter of application describing teaching and research interest, curriculum vitae, official transcripts, and three letters of recommendation by 15 April 1986 to: **Dr. A. L. Genaro, Chairperson, Search Committee, Department of Life Sciences, Eastern New Mexico University, Portales, NM 88130.** *ENMU is an Affirmative Action/Equal Opportunity Employer.*

VERTEBRATE PHYSIOLOGIST

The Department of Biology at Gettysburg College is inviting applications for a term appointment for up to 5 years, renewable annually, to teach comparative or vertebrate physiology and biochemistry. Applicants must hold the Ph.D. degree. Send curriculum vitae, statement of teaching and research interests, and three letters of recommendation by 4 April 1986; to: **Dr. Sherman Hendrix, Chairman, Biology Department, Gettysburg College, Gettysburg, PA 17325.** Gettysburg College is a selective liberal arts college related to the Lutheran Church in America. *It is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

VISITING ASSISTANT PROFESSOR. Ten-month appointment (sabbatical replacement) starts 1 September 1986. Teach courses in human physiology and anatomy, histology, possibly electron microscopy; participate in teaching freshman biology. Curriculum vitae and three references to: **Tom Frederick, Head, Biology Department, Rochester Institute of Technology, One Lomb Memorial Drive, Rochester, New York 14623.**

ASSISTANTSHIPS

BIOLOGY—GRADUATE ASSISTANTSHIPS. Eleven-month support to study biophysics or developmental biology. Write to:

Dr. Harry Roy, Graduate Coordinator, Biology Department, Rensselaer Polytechnic Institute, Troy, New York 12180-3590.

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COURSE

ELECTRON MICROSCOPY (TEM/SEM): Biological applications. Designed for professional and laboratory personnel who desire practical hands-on training in basic techniques of TEM and SEM. Graduate credit and/or certificate awarded. Tuition: \$800. Date: 8 through 25 July 1986. For further information and registration form, contact: **Dr. Dan Scheirer, Department of Biology, Northeastern University, Boston, MA 02115;** telephone: 617-437-2260.

SYMPOSIUM



MODERN BIOLOGICAL THEORIES OF AGING
(Sponsored by Brookdale Foundation and NIA)
3 to 6 June 1986

Daytime location: Mount Sinai Medical Center, New York, NY

Evening: American Museum of Natural History

This major symposium brings together outstanding leaders both in aging and in biomedical research to re-examine the theories of aging. Among those presenting are **Dr. Caleb Finch, Dr. Leonard Hayflick, Dr. George Martin, Dr. Irwin Fridovich, and Dr. David Gershon.** Topics include free radical damage, error catastrophe, DNA damage and repair, developmentally programmed aging, evolution of life-span, and organ systems as pacemakers of aging.

Fee (including luncheon): \$200.00, Student: \$25.00
Registration limited to 1000

For further information, contact: **Dr. Kenneth Smith, Director, The Page and William Black Post-Graduate School of Medicine, Mount Sinai School of Medicine, One Gustave Levy Place, New York, NY 10029.** Telephone: 212-650-6737.

CONFERENCE

MECHANISMS OF POLLUTANT ACTION IN AQUATIC ORGANISMS

Research Triangle Park, North Carolina
21 to 23 May 1986

The National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina, is sponsoring a conference focusing on the physiological and pharmacological bases of pollutant toxicity in aquatic organisms and the potential of comparative studies to elucidate general mechanisms underlying the toxic effects of foreign chemicals. The conference will consist of approximately 25 reviews of the following areas: physiological and biochemical model systems, metabolic activation and deactivation, pathology and carcinogenesis, and pharmacology of effects in the wild. Attendees are invited to present posters.

Information regarding the conference may be obtained from:

June Wallace
Corporate Travel, Inc.
3867 Roswell Road NE
Atlanta, GA 30342

Telephone: 800-241-2324 or 404-237-3431

FELLOWSHIPS

EVOKED POTENTIAL POSTDOCTORAL FELLOWSHIP may be available 1 April 1986, depending upon external funding and research needs. Nonhuman experiments involve advanced three-dimensional computational techniques applied to auditory brainstem response and possibly somatosensory response. Background in electrophysiology or evoked responses important. Send curriculum vitae and references to: **Dr. D. L. Jewett, Room U-471, University of California, San Francisco, CA 94143.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIPS IN MOLECULAR IMMUNOLOGY available in July 1986. Areas of interest: Immune cytolytic mechanisms. Techniques: Recombinant DNA, protein chemistry, cell culture. New York Medical College is located 25 miles north of Manhattan in beautiful Westchester County; a 30-minute train ride will take you to Grand Central Station and the research centers of New York City. Please contact: **Dr. E. R. Podack, Professor, Department of Microbiology and Immunology, New York Medical College, Valhalla, NY 10595;** telephone: 914-993-4183.

FELLOWSHIPS

POSTDOCTORAL RESEARCH FELLOWSHIP.

A postdoctoral position is available immediately to study the molecular mechanisms of chemo-prevention both in vivo and in vitro. The applicant should be a U.S. citizen or have immigrant status, hold a Ph.D. degree (or equivalent), and have background and experience in protein and DNA chemistry, carcinogen-adduct formation, enzymology, and cell culture. Please send curriculum vitae and the names and addresses of two academic references to: **Dr. Leon Milewich, The University of Texas Health Science Center, Cecil H. and Ida Green Center for Reproductive Biology Sciences, 5323 Harry Hines Boulevard, Dallas, TX 75235-9051.** *The University of Texas is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP CELLULAR ENDOCRINOLOGY

Available May 1986. To study control of hormone secretion at the single cell level by use of reverse hemolytic plaque assays in combination with other modern biochemical and microscopic techniques. Ongoing projects include: (i) ontogeny and functional interconversion of growth hormone and prolactin secreting cells, (ii) differential regulation of hormone release from cells that simultaneously release both of these hormones, and (iii) molecular heterogeneity of secreted forms of hormone. Salary is very competitive and commensurate with experience. Background in cellular or molecular biology and endocrinology is desirable, but not an absolute requirement. Please send curriculum vitae and names of three references by 15 April 1986 to:

Dr. L. Stephen Frawley
Department of Anatomy and Cell Biology
Medical University of South Carolina
171 Ashley Avenue
Charleston, South Carolina 29425
Telephone: 803-792-3521

The Medical University of South Carolina is an Affirmative Action Equal Opportunity Employer.

POSTDOCTORAL FELLOWSHIPS

You'll be involved with in vivo/in vitro work on growth factors, osteoblasts, and receptor physiology. Interested applicants with experience in physiology of somatomedins, receptor interactions, working with small animals, osteoporosis are encouraged to apply. Salary will be paid according to NIH scale. Please send curriculum vitae, brief description of research interests, and three letters of recommendation to: **E. Martin Spencer, M.D., Ph.D., Director, Laboratory of Growth and Development, Children's Hospital of San Francisco, CA 94118.** *We are an Equal Opportunity Employer.*

DEPARTMENT OF BIOLOGICAL SCIENCES Simon Fraser University NSERC UNIVERSITY RESEARCH FELLOWSHIPS

Applications are invited for NSERC university research fellowships for the 1986 competition in the following areas:

ANIMAL, PLANT, OR MICROBIAL PHYSIOLOGY

Preference will be given to candidates with research interests in biochemistry, biotechnology, developmental biology, or weed control.

Applicants must hold a doctoral degree and be a Canadian citizen or landed immigrant at the time of application. Preference will be given to candidates with relevant experience and demonstrated research ability.

Appointment(s) will be made at the assistant professor rank (limited term), salary commensurate with experience. Further details on the conditions of employment are given in the NSERC application form.

Applicants should submit an up-to-date curriculum vitae, a brief statement of their research interests and objectives, and reprints of published research to the undersigned by 15 July 1986.

Applicants should also request a confidential assessment of their research ability from four referees to be forwarded directly to:

Dr. L. M. Srivastava, Chairman,
Department of Biological Sciences,
Simon Fraser University,
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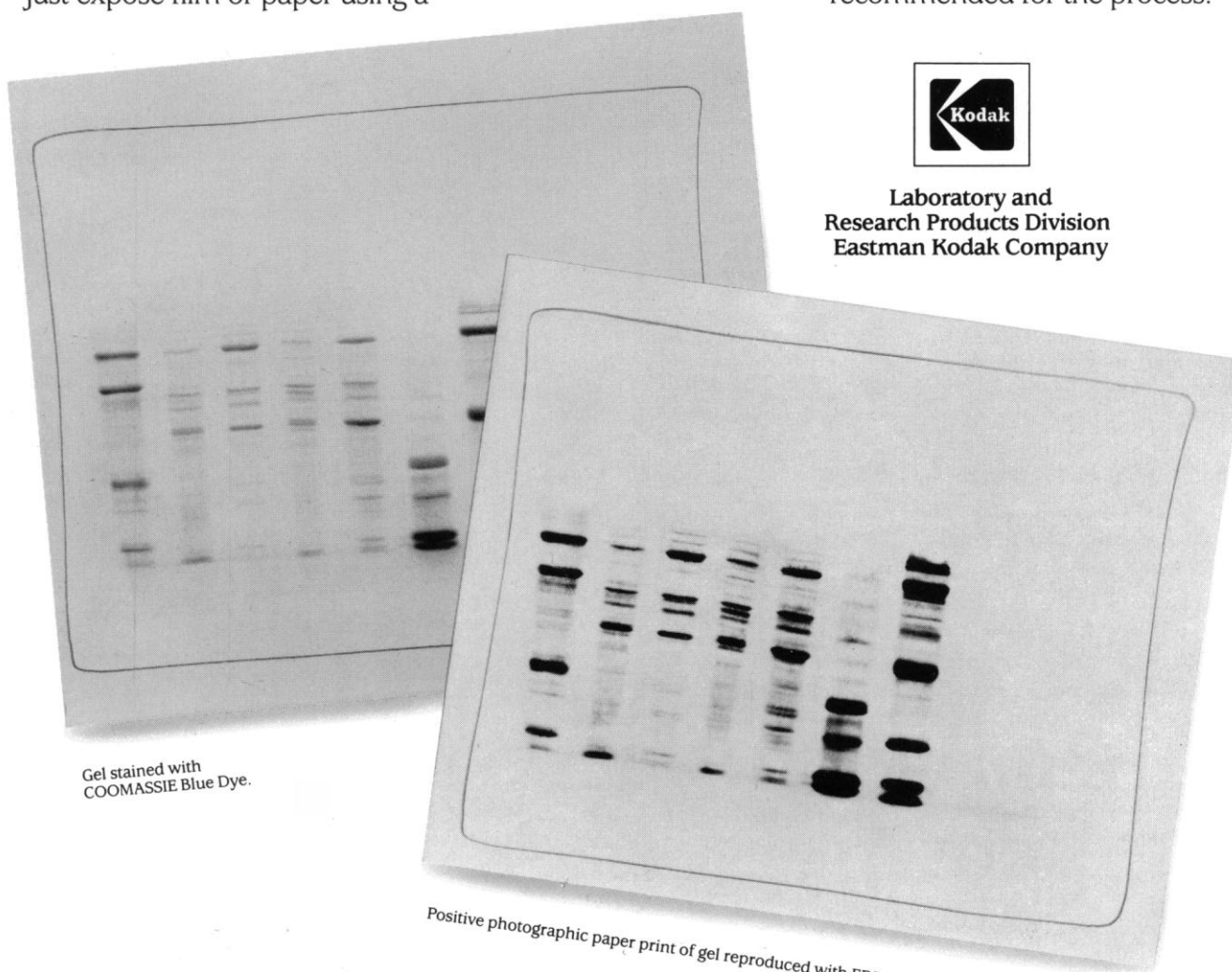
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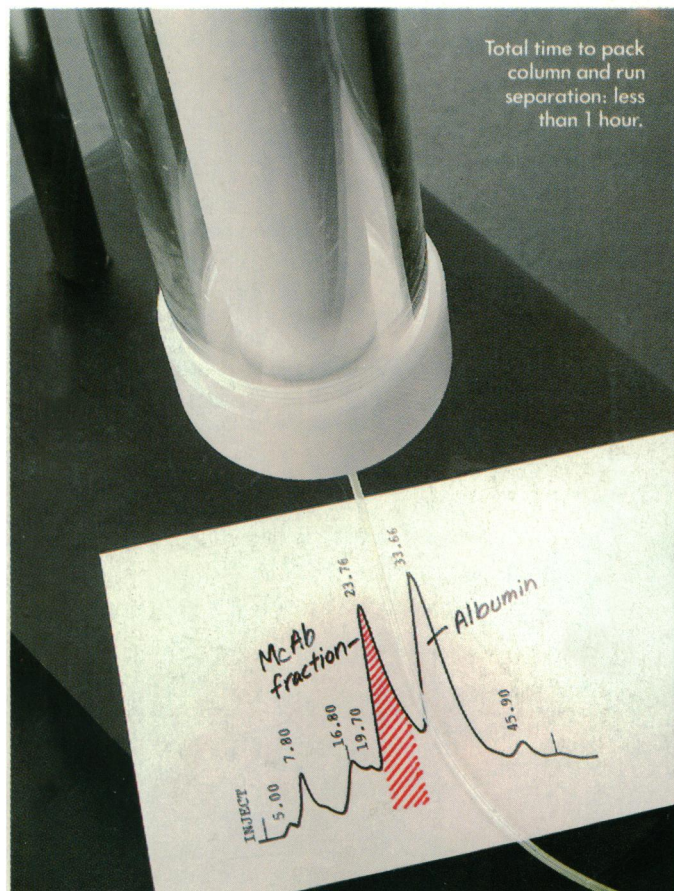
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