

motor mechanisms, middle ear function, and general biology (including physiology, sense organs, brain, and ecology). These chapters provide a comprehensive review of the synapsid literature into 1981.

I was pleased that Kemp's phylogenetic analyses are based on cladistic methods but was disappointed that he chose not to wrestle with the difficulties of representing his cladistically based phylogeny in a formal classification. Rather, he reverts to a traditional classification (presented in an appendix) in which many of the subjective grade groups of more "classical" schemes are retained.

In the last two chapters, Kemp develops a macroevolutionary model of synapsid history that he hopes will yield generalizations about "the way in which a major new taxon arises from its ancestors" (p. 4). He views "the evolution of mammalness" as synonymous with the evolution of increased homeostasis and sees it occurring as a somewhat loose "correlated progression" in which each feature of the organism evolves gradually and in necessary functional association with all other features. Because the synapsids, irrespective of ecological niche, benefited from increased independence from the environment, there was an orthogenetic trend toward increased homeostatic control. Though earlier literature is not cited in this regard, these ideas are by no means new; over 20 years ago they were used to explain the pervasive parallelism then perceived to be the dominant theme in synapsid evolution.

The broad pattern of synapsid history is seen by Kemp to consist of three sequential adaptive radiations—pelycosaurs, non-cynodont therapsids, and cynodonts—with the last giving rise to mammals. He perceives each radiation as following a similar course: after the mass extinction of an earlier radiation, a single surviving lineage of more progressive small carnivorous forms rapidly radiated into all of the main niches formerly occupied by the less progressive forms; some turnover at low taxonomic levels occurred, but the higher taxon persisted until it, in its turn, was removed by a mass extinction. Major evolutionary change was restricted to the short interval between the mass extinction and completion of the subsequent radiation.

Turning to the interpretation of the processes underlying this pattern, Kemp suggests that the mass extinctions "were caused by relatively small environmental changes that altered the ratio of extinction rate to speciation rate of the various

lineages" (p. 326). The rapid rates of morphologic change accompanying the subsequent radiations are attributed to mutations of "regulator genes"—in effect, the production of "hopeful monsters"—with natural selection playing only a minor role in the process. The large role of chance in this punctuational view of synapsid evolution leads Kemp to conclude that parallel evolution, considered a dominant phenomenon by most earlier workers, was an improbable occurrence.

It seems to me that Kemp's interpretation of synapsid history has been as much influenced by the model of macroevolution he has adopted (a model that appears to owe a great deal to Steven Stanley's book *Macroevolution*) as the model has been influenced by the synapsid record. Assessment of the amount of parallelism that occurred in the mammal-like reptiles hinges upon one's theory of relationships within the group; without a detailed phylogenetic analysis, which Kemp has not really attempted, one can make statements about parallelism only on the basis of a priori assumptions about how evolution ought to have occurred. Likewise, although the fossil record of synapsids is sufficiently continuous to permit the main outlines of their history to be discerned, it is also sufficiently discontinuous to be compatible with a variety of macroevolutionary interpretations. For example, whether the mass extinctions overlapped or entirely preceded the subsequent radiations cannot be established with certainty; this surely affects one's interpretation of causes and effects.

Despite these reservations, I believe Kemp has provided a much-needed survey of a fossil group that, with further resolution of its systematics and faunal relationships, has the potential to contribute significantly to our understanding of large-scale patterns of evolution.

JAMES A. HOPSON

*Department of Anatomy,  
University of Chicago,  
Chicago, Illinois 60637*

## Books Received

**Annual Review of Materials Science.** Vol. 12. Robert A. Huggins, Richard H. Bube, and David A. Vermilyea, Eds. Annual Reviews, Palo Alto, Calif., 1982. viii, 444 pp., illus. \$22.

**Archaeobacteria.** Proceedings of a workshop, Munich, June 1982. Otto Kandler, Ed. Fischer, Stuttgart, 1982. xii, 366 pp., illus. Paper, DM 98. Enlarged reprint from *Zentralblatt für Bakteriologie, Mikrobiologie und Hygiene*, vol. 3, no. 12.

**Astronomy Handbook.** James Muirden. Arco, New York, 1982. 190 pp., illus. \$8.95.

**Bacterial Resistance and Susceptibility to Chemotherapeutic Agents.** L. E. Bryan. Cambridge University Press, New York, 1982. viii, 234 pp., illus. Cloth, \$34.50; paper, \$14.95.

**Batteries and Energy Systems.** C. L. Mantell. McGraw-Hill, New York, ed. 2, 1982. xvi, 320 pp., illus. \$29.95.

**Current Problems in Sociobiology.** Papers from a conference, Cambridge, England, July 1980. King's College Sociobiology Group, Eds. Cambridge University Press, New York, 1982. xiv, 394 pp., illus. Cloth, \$49.50; paper, \$16.95.

**Cytomegalovirus and Immunity.** John D. Hamilton, Karger, Basel, 1982. viii, 108 pp. \$45. Monographs in Virology, vol. 12.

**Debate on Disarmament.** Michael Clark and Marjorie Mowlam, Eds. Routledge and Kegan Paul, Boston, 1982. viii, 144 pp. Paper, \$7.95.

**The Defence of Western Europe.** Bernard Burrows and Geoffrey Edwards. Butterworths, Boston, 1982. viii, 156 pp. \$34.95. Butterworths European Studies.

**Diabetes Management in the '80s.** The Role of Home Blood Glucose Monitoring and New Insulin Delivery Systems. Papers from a symposium, New York, Nov. 1980. C. M. Peterson, Ed. Praeger, New York, 1982. xiv, 328 pp., illus. \$31.50.

**The Encyclopedia of Medical Tests.** Cathey Pinckney and Edward R. Pinckney. Facts On File, New York, ed. 2, 1982. xxxvi, 298 pp. \$14.95.

**Genetic Engineering.** Principles and Methods. Vol. 4. Jane K. Setlow and Alexander Hollaender, Eds. Plenum, New York, 1982. x, 288 pp., illus. \$39.50.

**A Global View of Energy.** Behram N. Kursunoglu, Andrew C. Millunzi, Arnold Perlmutter, and Linda Scott, Eds. Lexington (Heath), Lexington, Mass., 1982. xx, 318 pp., illus. \$36.95.

**The Golden Throng.** A Book About Bees. Edwin Way Teale. Alfabooks, Sherborne, Eng., ed. 2, 1981 (U.S. distributor, Universe, New York). 160 pp., illus. \$16.50.

**Handbook of Cotton Weaving.** E. Onikov, Ed. Translated from the Russian edition (Moscow, 1979) by N. Chernysheva. Mir, Moscow, 1981 (U.S. distributor, Imported Publications, Chicago). In two volumes. Vol. 1. 240 pp., illus. Vol. 2. 262 pp., illus. The set, \$15.

**Methods and Principles of Mycorrhizal Research.** N. C. Schenck, Ed. American Phytopathological Society, St. Paul, Minn., 1982. xii, 244 pp., illus. Member, \$22; nonmember, \$24.

**Methods in Protein Sequence Analysis.** Papers from a conference, Upton, N.Y., Sept. 1981. Marshall Elzinga, Ed. Humana, Clifton, N.J., 1982. xxviii, 590 pp., illus. \$64.50. Experimental Biology and Medicine.

**Microbes, Man and Animals.** The Natural History of Microbial Interactions. Alan H. Linton with contributions by five others. Wiley-Interscience, New York, 1982. xvi, 342 pp. \$47.95.

**Microbiology.** With Virology and Immunology. K. D. Pyatkin and Yu. S. Krivoshein. Second English edition translated from the Russian by L. Aksenova and V. Lisovskaya. Mir, Moscow, 1980 (U.S. distributor, Imported Publications, Chicago). 560 pp., illus. \$13.

**Microwave Field-Effect Transistors.** Theory, Design and Applications. Raymond S. Pengelly. Research Studies Press (Wiley), New York, 1982. xviii, 470 pp., illus. \$34.95.

**Patents for Chemists.** Philip W. Grubb. Clarendon (Oxford University Press), New York, 1982. xii, 274 pp. \$39.95.

**Percolation Processes.** Theory and Applications. Proceedings of an institute, Espinho, Portugal, July 1978. Alirio E. Rodrigues and Daniel Tondeur, Eds. Sijthoff and Noordhoff, Rockville, Md., 1981 (distributor, Kluwer Boston, Hingham, Mass.). viii, 588 pp., illus. \$65. NATO Advanced Study Institutes Series E, No. 33.

**Research Animals and Concepts of Applicability to Clinical Medicine.** Papers from a symposium, Hannover, Germany, 1981. K. Gärtner, H. Hackbarth, and H. Stolte, Eds. Karger, Basel, 1982. x, 232 pp., illus. Paper, \$88.75. Experimental Biology and Medicine, vol. 7.

**Siblings.** Love, Envy, and Understanding. Judy Dunn and Carol Kendrick. Harvard University Press, Cambridge, Mass., 1982. xii, 290 pp. \$18.50.

**Skin and Venereal Diseases.** Yu. K. Skripkin. Translated from the Russian edition (Moscow, 1979) by Ludmila Aksenova. Mir, Moscow, 1981 (U.S. distributor, Imported Publications, Chicago). 556 pp., illus. \$14.

**Trends and Perspectives in Parasitology.** Vol. 2. D. W. T. Crompton and B. A. Newton, Eds. Cambridge University Press, New York, 1982. viii, 92 pp., illus. Cloth, \$19.95; paper, \$7.95.

**Water Quality Criteria for Freshwater Fish.** J. S. Alabaster and R. Lloyd. Published for the Food and Agriculture Organization of the United Nations by Butterworths, Boston, ed. 2, 1982. xx, 362 pp., illus. \$49.95.

**When the Snakes Awake.** Animals and Earthquake Prediction. Helmut Tributsch. Translated from the German edition (Stuttgart, 1978) by Paul Langner. MIT Press, Cambridge, Mass., 1982. xvi, 248 pp. \$20.

## SCIENCE, ENGINEERING AND DIPLOMACY FELLOWSHIP

### Applications Invited

The American Association for the Advancement of Science (AAAS), in cooperation with the Department of State (STATE) and the Agency for International Development (AID) is seeking applicants for two Science, Engineering and Diplomacy Fellowships. Fellows will spend 1 year, beginning 1 September 1983, working either in the Bureau of Oceans and International Environmental and Scientific Affairs of the Department of State or in a scientific/technical office of the Agency for International Development.

Prospective Fellows must demonstrate exceptional competence in some area of science or engineering, be flexible, have some experience and/or a strong interest in applying knowledge toward the solution of problems in the area of foreign affairs, and have a Ph.D. or equivalent in years of experience.

The Fellows will serve a 1-year appointment at a salary consistent with education level and experience, if possible, but not exceeding, in the case of STATE, the GS-12 level (beginning at \$30,000). Fellows serving in AID will receive their stipend from AAAS. A SECRET security clearance process will be initiated by STATE and AID after selection. The secret level clearance must be obtained before a selectee can begin work in STATE or AID.

Deadline for receipt of application is 1 February 1983. For application details and materials write:

**Science, Engineering and Diplomacy Fellows Program  
American Association for the Advancement of Science  
1776 Massachusetts Avenue, NW  
Washington, D.C. 20036**

## Congressional Science and Engineering Fellowships

### Applications Invited

The American Association for the Advancement of Science (AAAS) invites applications for a 1-year Congressional Science and Engineering Fellowship it will offer for the period beginning 1 September 1983. The Fellowship Program provides an opportunity for accomplished and societally aware postdoctoral to mid-career scientists and engineers to participate in and contribute to the public policy-making processes within the Congress for approximately 1 year. Fellows work as special legislative assistants within the congressional staff system.

Persons may apply from any physical, biological, or behavioral science or any field of engineering. The term "science" is used broadly to include the system sciences, public health, and other technical professions. In addition to the Fellowship awarded by the AAAS, about 25 others are given by the 20 other participating professional societies. The AAAS runs a year-long educational program for the set of Congressional Science and Engineering Fellows. Addresses of all participating societies are available from the address listed below.

The 1983-84 AAAS Congressional Science and Engineering Fellow will receive a stipend of \$24,000; an additional \$1500 is available for relocation expenses and travel in connection with the Program.

In order to obtain detailed information on the program and specific application requirements write:

**Congressional Science and Engineering Fellow Program  
American Association for the Advancement of Science  
1776 Massachusetts Avenue, NW  
Washington, D.C. 20036**

*The deadline for application is 1 February 1983. The award will be announced around 1 May 1983.*

## Indoor Air Quality Scientist

The Lawrence Berkeley Laboratory is seeking an outstanding Chemist to contribute to the leadership of the Building Ventilation and Indoor Quality Program. Initial responsibility will focus on the program's project on organic pollutants, including methodologies for characterizations of emissions from building materials and for field sampling of airborne organics in office buildings.

Requires excellence in previous independent research and writing as demonstrated by substantial chemistry background. Must have strong scientific leadership experience. Substantial instrumental background required. Familiarity with GC and GC-MS would be an asset, as would be experience in environmental chemistry or air quality monitoring or modeling. Prefer Ph.D. in Analytical Chemistry, Physical Organic Chemistry or Physical Chemistry.

Please send TWO resumes, including salary history to: Employment Office, Bldg. 65, Lawrence Berkeley Laboratory, One Cyclotron Road, Berkeley, CA 94720. Please specify Job #A/0704. An affirmative action/equal opportunity employer, m/f/h.



**LAWRENCE  
BERKELEY  
LABORATORY**



## TECHNICAL DIRECTOR, COAST GUARD R&D CENTER Groton, Connecticut — SES(to \$58,500)

The R&D Center's mission is to conduct applied research, development, test, and evaluation in support of Coast Guard missions, including marine environmental response, search and rescue, marine law enforcement, navigation systems, advanced marine vehicles, marine fire and safety, command and control, and ice operations. The Technical Director will provide scientific, technical and managerial leadership for the Center, serve as principal advisor to the Center's Commanding Officer, and as director of the Center in his/her absence. Major requirements include extensive experience in the management and direction of major R&D programs; demonstrated ability to organize and direct effectively programs in one or more areas of the marine- and ocean-oriented physical sciences and/or engineering disciplines; and technical expertise as indicated by an earned doctorate degree/equivalent experience.

Applicants must submit a current SF 171 and supporting data.

**Applications must be received by the Coast Guard Civilian Personnel Division (G-PC-1, Room 4100), 2100 Second St., S.W., Washington, DC, 20593 by 17 January 1983. For more information, contact Mr. K. Valentine, (202) 426-0921 re: Announcement PC-83-17.**

**UNITED STATES  
COAST GUARD  
ACADEMY**

Equal Opportunity/  
Affirmative Action Employer

# Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

**CLASSIFIED ADVERTISING DEADLINES:**  
28 January issue (mailed 21 January): **7 January**  
4 February issue (mailed 28 January): **14 January**  
11 February issue (mailed 4 February): **21 January**  
18 February issue (mailed 11 February): **28 January**

**POSITIONS WANTED:** 40¢ per word, plus \$4 for use of box number, per insertion. \$10 minimum, per insertion. Prepayment required. This rate is available only to individuals seeking jobs.

**DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$9.80 per millimeter; \$245 minimum, per insertion (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing information required for all other advertising.

Send copy for all **Positions Wanted** ads and **Display** ads less than 1/6 page in size (125 millimeters) to:

**SCIENCE, Room 107**  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005  
Telephone: 202-467-4456

Send copy for **Display** ads 1/6 page and larger to:

Scherago Associates, Inc.  
1515 Broadway  
New York, N.Y. 10036  
Telephone: 212-730-1050

Blind ad replies should be addressed as follows:

Box (give number)  
SCIENCE  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005

## POSITIONS WANTED

**Aquatic Biologist.** M.S., benthos specialist, certified fisheries scientist: 11 years of consulting experience; technical and administrative expertise. Any position considered; prefers Midwest, but will relocate. Box 321, SCIENCE. X

**Behavioral Biology** research group with funding presently located at large urban university. Expertise in neurochemistry, neuropharmacology, and behavioral science. Interested in relocating. Box 3, SCIENCE. 1/7, 14

**Biomathematician.** Ph.D. 1980. Mathematical modeling, computer simulation, biomedical engineering; 2 years of postdoctoral experience; blood circulation, tracer transport, network analysis. Seeks position in academia, research institution, or industry. P.O. Box 31099, Houston, Texas 77231. X

**Collagen Biochemist.** Ph.D. Extensive experience in connective and hard tissue research. Collagen types, glycoproteins, phosphoproteins, and proteoglycans. Preparative, analytical, and HPLC methods development. Publications. Box 1, SCIENCE. X

**Marrow Transplantation/Radiobiologist.** Ph.D. Experienced researcher with excellent track record for grant support and publications, seeks change of environment to institute or medical center with a positive commitment to research. Hands-on laboratory experience in radiation effects on hematopoiesis, stem cell assays, murine leukemia viruses, immunology of marrow transplantation, GvH and GvL reactions, and monoclonal antibodies. Experience as a research section supervisor, in training of pre- and postdoctoral fellows, and teaching of radiobiology and cell physiology at graduate and undergraduate levels. Box 334, SCIENCE. X

**M.B.A./Microbiologist.** M.B.A. finance; M.S. microbiology. Seeks entry level managerial position capable of integrating both my scientific and business skills. Box 4, SCIENCE. X

## POSITIONS WANTED

**Population Ecologist.** Ph.D. 1982. Considerable field experience with tranquilization/telemetry/behavior of large game species. Experience and publications on computer modeling of wildlife populations. Seeks position in university/government research or consulting. Box 2, SCIENCE. X

## POSITIONS OPEN

### ACADEMIC CHIEF OF MEDICINE

Major medical facility offers full-time position for a Board-certified internist with experience in graduate medical education to supervise a 19-resident program at a university-affiliated private hospital.

Santa Barbara Cottage Hospital is a 465-bed, nonprofit, tertiary care medical facility, located 100 miles north of Los Angeles on the California coast. Prestigious medical community and beautiful surroundings provide an ideal work environment.

Please forward curriculum vitae to: **Search Committee, Department of Medical Education, Santa Barbara Cottage Hospital, P.O. Box 689, Santa Barbara, Calif. 93102.**

### ACADEMIC EMERGENCY PHYSICIANS

Faculty positions open in leading Midwest university hospital setting. Specialty Board-certification or -eligibility is required. Activities include patient care, teaching at all levels, supervision of house staff, advanced life support, research, and administration. Send curriculum vitae to: **James R. Mackenzie, M.D., Head, Section of Emergency Services, Department of Surgery, C4020 Outpatient Building, University of Michigan Hospitals, 1405 East Ann Street, Ann Arbor, Mich. 48109.** A nondiscriminatory, Affirmative Action Employer. Code 138.

**APPLIED BIOLOGISTS:** The School of Applied Biology at Georgia Tech invites applications for two tenure-track positions at the assistant professor level. Applicants with research and teaching interests in environmental toxicology (impact studies on physiology/ecology of animals and plants) or molecular genetics (use of recombinant DNA technology to study and manipulate gene expression) are encouraged to apply but outstanding candidates in other areas of applied biology and biotechnology will be considered.

Send curriculum vitae, significant publications, description of proposed research program, and three letters of reference to: **Search Committee, School of Applied Biology, Georgia Institute of Technology, Atlanta, Ga. 30332.** Closing date: 15 March 1983. *Georgia Institute of Technology is a unit of the University System of Georgia and is an Equal Opportunity/Affirmative Action Employer.*

The Department of Pharmacology, University of California, Los Angeles (UCLA), School of Medicine, invites applications for a tenure-track position as **ASSISTANT PROFESSOR.** Candidates should have an M.D. or Ph.D., with postdoctoral research experience in vascular smooth muscle regulation and control. Teaching experience is desirable. Salary range: \$30,200 to \$35,300. Send curriculum vitae and publications list to: **Department of Pharmacology, UCLA School of Medicine, The Center for the Health Sciences, Los Angeles, California 90024, attention: CV Search.** *The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.*

**ASSISTANT RESEARCH PHARMACOLOGIST** position available in molecular pharmacology. Candidate must have Ph.D. in organic or pharmaceutical chemistry, with postdoctoral experience in evaluating the pharmacological properties of new compounds using ligand binding techniques and in vitro preparations. Experience is desirable in stereochemistry and in physical methods of studying conformation and other molecular properties. Salary range: \$22,900 to \$26,800. Send curriculum vitae and publications list to: **Department of Pharmacology, University of California, Los Angeles, School of Medicine, The Center for the Health Sciences, Los Angeles, California 90024, attention: Chemical Pharmacology Search.** *The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.*

## POSITIONS OPEN

**Agroecosystem/Cropping Systems Agronomy/International Agricultural Development**  
**Assistant/Associate/Full Professor**  
**and Assistant/Associate/Full Agronomist**

The Department of Agronomy and Range Science invites applications for an assistant/associate/full professor and assistant/associate/full agronomist, tenure-track, 11-month position at the University of California Agricultural Experiment Station, Davis, California. Research (80 percent time) will focus on one or more of the following areas: crop physiology, ecology, and soils with a systems analysis approach pertaining to agronomic cropping systems. The candidate will be expected to teach (20 percent) and advise in the undergraduate and graduate programs in agronomy, international agricultural development and/or plant science. A Ph.D. in agronomy or a related field; experience in international agriculture desirable. Appointment will be commensurate with experience. Position is available 1 July 1983 or within a reasonable time dependent upon candidate's availability. Send a statement of research interests, curriculum vitae, transcripts, list of publications, and names of three references by 1 March 1983 to:

**R. C. Huffaker, Search Committee Chair**  
**Department of Agronomy and Range Science**  
**University of California**  
**Davis, Calif. 95616**  
**Telephone: 916-752-6162 or 752-1710**

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

**Amherst College** seeks an **ASSISTANT PROFESSOR** in the area of organismal biology with an emphasis on behavioral, physiological, or coevolutionary interests to begin 1 July 1983. Doctorate required; postdoctoral experience desirable. Teaching will include a team-taught ecology course with laboratory/field work; occasional interdisciplinary teaching encouraged. The candidate will develop an active research program including the supervision of student research. Three-year renewable contract, with tenure decision during the sixth year. Send curriculum vitae, copies of publications, and three letters of reference to:

**Dr. William M. Hexter, Chairman**  
**Biology Department**  
**Amherst College**  
**Amherst, Mass. 01002**

The deadline is 15 February 1983.

*An Equal Opportunity/Affirmative Action Employer*

### UNIVERSITY OF MINNESOTA Tenure-track Assistant Professors

Two tenure-track assistant professor positions are available in the Department of Anatomy beginning as early as 1 July 1983. Applicants must have postdoctoral experience, demonstrated research productivity, and training in gross anatomy. Applicants will be assessed on three major criteria: teaching ability; strength of research program; and research that complements ongoing departmental research interests in cell biology, reproductive biology, neurobiology, or endocrinology. Teaching responsibilities will include gross anatomy (for dental or medical students) and graduate teaching in the area of specialty. Curriculum vitae, brief statement of research interests and goals, reprints of publications, and names of three referees must be received by 15 January 1983, and should be addressed to: **Search Committee, Department of Anatomy, University of Minnesota, 4-135 Jackson Hall, 321 Church Street, SE, Minneapolis, Minn. 55455.**

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

**ASSISTANT PROFESSOR** needed for biomedical research in protein chemistry, peptide purification at the subnanomolar ranges, microsequencing of polypeptides, and instruction of these techniques to faculty and graduate students. Must have Ph.D. in chemistry or biochemistry with 5 years of experience in microsequencing of polypeptides and proficiency in application of high-performance liquid chromatography in the separation of peptides and amino acid derivatives. Knowledge of immunochemistry highly desirable. Salary: \$26,000 per year; 40 hours per week. Apply at the Texas Employment Commission, Houston, Texas, or send resumé to: **Texas Employment Commission, TEC Building, Austin, Texas 78778, J.O. Number 2740167.** *Ad paid by an Equal Opportunity Employer.*

## POSITIONS OPEN

### ANATOMIST

The AMERICAN UNIVERSITY OF THE CARIBBEAN (AUC), School of Medicine, located on Montserrat, British West Indies, seeks the service of an anatomist to share teaching responsibility of gross anatomy or neuroanatomy to medical students. Salary is competitive and commensurate to qualifications and experience. For consideration, submit résumé and salary requirement to: **Selection Committees, Medical Education Information Office, 100 N.W. 37 Avenue, Miami, Fla. 33125.**

**Tenure-track ASSISTANT PROFESSOR OF BIOCHEMISTRY.** A commitment to undergraduate education. Teaching duties in general chemistry and/or topics in science, as well as in biochemistry lecture and laboratory courses. Research expected. *Applications from minority group members and women especially encouraged.* Send covering letter describing teaching and research interests, résumés, and names of three references to: **Dr. Richard M. Kirchner, Chairman, Joined Chemistry Department, Manhattan College/College of Mt. St. Vincent, 4513 Manhattan College Parkway, Riverdale, N.Y. 10471. Telephone: 212-920-0206. An Affirmative Action/Equal Opportunity Employer.**

**ASSISTANT PROFESSOR OF BIOCHEMISTRY.** Funded on a 12-month basis with recurring University funds as 70 percent research, 30 percent teaching. It includes a full-time technician on similar funds. Qualifications: Ph.D. in biochemistry with at least 2 years of postdoctoral experience in nucleic acid biochemistry. Send curriculum vitae, three references, and reprints to: **S. B. Tove, Head, Biochemistry Department, North Carolina State University, Raleigh, N.C. 27650. An Equal Opportunity/Affirmative Action Employer.**

### BRYN MAWR COLLEGE ASSISTANT PROFESSOR OF BIOLOGY

Molecular biologist/developmental biologist with postdoctoral training. Four-year contract. The appointee will be expected to teach a course with a laboratory, as well as seminars in molecular and developmental biology, to participate in an introductory biology course, and to conduct an active research program involving both undergraduates and Ph.D. candidates. Researchers working on molecular aspects of plant or animal development are encouraged to apply. Send curriculum vitae, a description of current research and future plans, a summary of teaching experience and capabilities, and the names and addresses of three referees to: **Dr. Betty M. Twarog, Department of Biology, Bryn Mawr College, Bryn Mawr, Pa. 19010.** Closing date for receipt of applications is 11 February 1983. *Bryn Mawr College is an Equal Opportunity/Affirmative Action Employer.*

### BRYN MAWR COLLEGE GENETICIST, VISITING ASSISTANT PROFESSOR

One-year, three-quarter-time appointment as sabbatical replacement beginning August 1983. Ph.D. is required. Teaching responsibilities include offering a one-semester laboratory course in general genetics (fall 1983) and introductory biology (spring 1984), as well as a seminar in advanced genetics. Possibility of research facilities, if area of specialization is appropriate. Send curriculum vitae, a summary of teaching experience, current research and future plans, and letters from three referees to: **Dr. Betty M. Twarog, Department of Biology, Bryn Mawr College, Bryn Mawr, Pa. 19010.** Closing date for receipt of applications is 11 February 1983. *Bryn Mawr College is an Equal Opportunity/Affirmative Action Employer.*

**SMITH COLLEGE, Department of Psychology.** Replacement position at the assistant professor level in physiological psychology, with concentration in a sensory area. Preparation and willingness to teach in one or more of the following additional fields: statistics, experimental psychology, developmental psychology, and introductory psychology.

Candidates should submit the following materials by 15 February 1983: detailed curriculum vitae, brief statement of teaching and research interests, and three letters of recommendation. Send materials or inquiries to: **Jill deVilliers, Search Committee, Psychology, Clark Science Center, Smith College, Northampton, Mass. 01063. An Equal Opportunity Employer.**

## POSITIONS OPEN

### ASSISTANT PROFESSOR

The Harvard School of Public Health is seeking applicants to fill an assistant professorial position in the Department of Tropical Public Health. The applicant should have expertise in research on the biology of malaria. The person would be expected to establish a vigorous research and teaching program.

Applicants should send curriculum vitae, bibliography, copies of publications, the names and addresses of three referees, and a summary of both research and teaching objectives to: **Chairman, Search Committee in Malaria, Department of Tropical Public Health, Harvard School of Public Health, 665 Huntington Avenue, Boston, Massachusetts 02115. An Affirmative Action/Equal Opportunity Employer.**

**ASSISTANT PROFESSOR OF BIOCHEMISTRY.** Individual with postdoctoral experience and ability to establish independent research program is sought for a fully funded, tenure-track position. Although qualified applicants in all areas of biochemical research will be considered, we prefer an individual with accomplishments in the molecular biology of eukaryotic cells or in neurochemistry. Ability to teach biochemistry to medical and graduate students is required. Located in new facility 38 miles north of downtown Chicago. Submit curriculum vitae, three references, and a statement of research plans by 15 February 1983 to: **Dr. Robert G. Kemp, Department of Biochemistry, University of Health Sciences/The Chicago Medical School, 3333 Green Bay Road, North Chicago, Ill. 60064. An Equal Opportunity/Affirmative Action Employer.**

### ASSISTANT PROFESSOR OF BIOMEDICAL SCIENCES—ANATOMY

The UCR/UCLA Division of Biomedical Sciences has an opening available 1 July 1983 for an exceptional individual capable of teaching human gross anatomy to medical students while continuing a very high caliber research program in an area of basic medical science. Applicants should have a Ph.D. or M.D. degree and postdoctoral research experience and teaching experience in gross anatomy. *The University of California is an Affirmative Action/Equal Opportunity Employer.* Applications, including curriculum vitae and the names of three references, should be sent to:

**Ernst A. Noltmann, M.D., Chairman  
Anatomy Search Committee  
University of California  
Riverside, California 92521**

**HARVARD MEDICAL SCHOOL, DEPARTMENT OF NEUROBIOLOGY, ASSISTANT PROFESSOR—**Applications are invited for the position of assistant professor in the Department of Neurobiology at Harvard Medical School. Candidates should have a strong background in cell biology and in the use of immunological techniques to analyze the structure and function of the nervous system. The position will also involve active participation in the teaching of neuroscience to medical and graduate students. Applicants should submit curriculum vitae, statement of research interests, and the names of three references to: **Search Committee, Department of Neurobiology, Harvard Medical School, Boston, Mass. 02115, by 15 February 1983. Harvard Medical School is an Equal Opportunity/Affirmative Action Employer.**

### BIOCHEMISTRY FACULTY POSITIONS MEHARRY MEDICAL COLLEGE

Applications are invited for several tenure-track positions at the ASSISTANT or ASSOCIATE PROFESSOR LEVELS. The anticipated starting date is 1 July 1983, or as soon as suitable candidates are located. Applicants should have a Ph.D. or M.D. degree and postdoctoral training or previous faculty experience. We are primarily interested in individuals with research interests in eukaryotic gene regulation, enzymology, molecular mechanisms of hormone action and/or regulation of metabolism, although outstanding applicants in other areas of biochemistry will also be considered. Successful applicants will be expected to maintain a research program of high quality as well as to teach in the graduate and medical/dental biochemistry programs. Applications, including curriculum vitae, representative publications, a concise statement of research interests and/or proposed research, and names of three references, should be sent to: **Dr. Ifeanyi J. Arinze, Chairman, Department of Biochemistry, School of Medicine, Meharry Medical College, Nashville, Tennessee 37208.**

## POSITIONS OPEN

**ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSIOLOGY.** Applications are invited for a tenure-track position to begin no later than September 1983. Duties include teaching medical and graduate courses and conducting an independent research program. All areas of mammalian physiology will be considered, but preference will be given to neurophysiology, neuroendocrinology, and cardiovascular research. Qualifications include postdoctoral experience and a record of excellence and productivity in scholarly work. Send résumé and three references to:

**Dr. Charles D. Barnes  
Chairman, Department of Physiology  
Texas Tech University Health Sciences Center  
School of Medicine  
Lubbock, Texas 79430**

Deadline for application: 15 February. *An Equal Opportunity/Affirmative Action Employer.*

The Department of Physiology at The Ohio State University College of Medicine invites applications for a tenure-track appointment at the ASSISTANT/ASSOCIATE PROFESSOR level. We particularly, but not exclusively, seek individuals committed to excellence in the investigation of neural control of regulatory systems or cellular/transport phenomena. Candidates should have demonstrated the ability to conduct a strong independent research program. The selected individual will also be expected to take an active part in the medical and graduate teaching activities of the department. Please send curriculum vitae, description of current and future research activities, teaching experience, and names of at least three references to: **Dr. Bradford Stokes, Chairman, Search Committee, Department of Physiology, The Ohio State University, 314G Hamilton Hall, 1645 Neil Avenue, Columbus, Ohio 43210, within 60 days of this publication.**

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

### UNIVERSITY OF MINNESOTA ASSISTANT PROFESSOR TUMOR CYTOGENETICS

Applications are invited from individuals with interests in solid tumor cytogenetics. Applicants should have a doctoral degree in genetics or a related basic science discipline, at least 1 year of postdoctoral training, and demonstrated research productivity. The position involves research in the candidate's area of interest and the development of new techniques for cytogenetic analysis. In addition, the candidate will be responsible for the performance of a small number of clinical cytogenetic analyses on tumors and will have limited teaching obligations in the Medical School.

Applications, including curriculum vitae and the names of at least three referees, should be sent to: **Diane C. Arthur, M.D., Box 151 Mayo Memorial Building, University of Minnesota Medical School, Minneapolis, Minnesota 55455.**

*The University of Minnesota is an Affirmative Action Employer and specifically invites and encourages applications from women and minorities.*

**ASSISTANT RESEARCH PROFESSOR** position available to conduct research on gene expression in yeast. This position requires a strong background in yeast genetics. Total program funding is available for several years; the candidate is eventually expected to apply for extramural funding. Send curriculum vitae and names of references to be contacted to: **R. C. Dickson, Department of Biochemistry, College of Medicine, University of Kentucky, Lexington, Ky. 40536-0084.** The deadline is 1 February 1983. *An Equal Opportunity/Affirmative Action Employer.*

**BIOMOLECULAR CRYSTALLOGRAPHER.** The Department of Biochemistry, University of Minnesota, anticipates an opening for a tenure-track assistant professor working on crystallography of proteins, nucleic acids, viruses, or similar biomolecular structures. Teaching responsibilities will include general and physical biochemistry. Ph.D. and 2 years of postdoctoral experience in biomolecular crystallography required. Send curriculum vitae, list of publications, brief description of research plans, and the names of three references whom we may contact to: **Professor I. E. Liener, Crystallography Search Committee, Department of Biochemistry, University of Minnesota, 1479 Gortner Avenue, St. Paul, Minn. 55108.** Applications must be received by 31 January 1983. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from qualified women and minorities.*

## POSITIONS OPEN

### NEW YORK UNIVERSITY (NYU) MEDICAL CENTER

**ASSISTANT RESEARCH SCIENTIST**—Should have Ph.D. or master's in physical chemistry with experience in kinetics and/or surface chemistry desirable. Writing skills essential to do research on reactions of polycyclic aromatic hydrocarbons. This position is in our Department of Environmental Medicine in Sterling Forest, New York.

**POSTDOCTORAL POSITION**—Immediately available for recent Ph.D. in biochemistry or pharmacology to study peptide receptors and postreceptor molecule signals. Must have solid background in protein chemistry and enzymology. Prefer experience in cell cultures, ligand-receptor interactions, and immunological techniques. One-year appointment with second year option for Dr. Jose Musacchio, Department of Pharmacology.

For the above positions, send résumé with names of three references to: **M. Kerans, Recruitment Coordinator, NYU Medical Center, 560 First Avenue, New York, New York 10016. An Affirmative Action/Equal Opportunity Employer, M/F.**

Immediate opening for **ASSISTANT SPECIALIST**. Duties include investigation of genetic control of tumorigenicity in human cells. Must have Ph.D. degree in microbiology or biochemistry and demonstrated experience in the application of genetic engineering techniques to the study of malignancy. Must have experience in cell culture and recombinant DNA technology. Experience in gene transfer techniques involving mammalian cell system, cloning and sequencing of oncogenic viruses, and in construction of plasmid vectors also required. Send curriculum vitae and three letters of reference to: **Professor Eric J. Stanbridge, Department of Microbiology, College of Medicine, University of California, Irvine, California 92717.**

*An Affirmative Action/Equal Opportunity Employer*

**BIOCHEMICAL VIROLOGIST**: Postdoctoral position available immediately for Ph.D. experienced in animal virology and nucleic acid chemistry with an interest in studies of mechanism of action of antiviral drugs. Salary negotiable. Send résumé and names of three references to: **Dr. W. H. Prusoff, Department of Pharmacology, Yale University School of Medicine, New Haven, Conn. 06510. An Equal Opportunity/Affirmative Action Employer.**

### BIOCHEMISTRY DEPARTMENT UNIVERSITY OF WISCONSIN-MADISON

Applications are invited for a faculty position as **assistant professor** in the Department of Biochemistry, University of Wisconsin-Madison. Exceptional individuals who would appropriately be appointed at higher ranks will also be considered. Candidates should have research interests and experience in the development of nuclear magnetic resonance spectroscopy and its application to biochemical problems. The successful applicant will be expected to develop a substantial independent research program, to teach in the Biochemistry Department's curriculum, and to supervise graduate students. Salary will be on a 12-month basis at a level that is commensurate with qualifications and experience and compatible with the salary structure of the University of Wisconsin system. *Women and minority candidates are especially encouraged to apply.* Send detailed curriculum vitae, including a statement of research accomplishments and interests and the names of three references, to: **H. F. DeLuca, Chairman, Department of Biochemistry, University of Wisconsin-Madison, Madison, Wis. 53706, before 15 March 1983. The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.**

**BIOLOGIST**. Assistant professor, tenure track. Preference will be given to candidates with research interests in the area of ecology although exceptional candidates with other research interests will be considered. Ph.D. required. Demonstrated research productivity, in the form of publications, is essential. Successful applicant will be expected to maintain research productivity and actively pursue extramural research support. Teaching responsibilities will depend upon research interests. Applicants should forward complete curriculum vitae, including a statement of research plans and names of three references (letters of reference will be solicited for top candidates at a later date), by 15 February 1983 to: **Dr. Judith Snyder, Department of Biological Sciences, University of Denver, University Park, Denver, Colo. 80208. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**BIOCHEMIST**: Postdoctoral position in lipids, protein chemistry, and molecular biology. Send application and three letters of recommendation by 1 February 1983 to: **P. E. Kolattukudy, Institute of Biological Chemistry, Washington State University, Pullman, Washington 99164. An Affirmative Action/Equal Opportunity Employer.**

**BIOCHEMIST—MOLECULAR BIOLOGY OF CONNECTIVE TISSUE**. Joint appointment in the Departments of Biochemistry and Surgery for an **ASSISTANT PROFESSOR**. Initial appointment for 4 years; renewable for 3 years; tenure track and funded by institution. Research emphasis on genes on collagen and diseases involving collagen. Successful candidate must possess a Ph.D. in biochemistry; experience must include 2 to 4 years of work in appropriate areas of molecular biology. Salary dependent on background and experience. Position available 1 July 1983. Please send curriculum vitae and three references to: **Department of Biochemistry, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY-Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854. An Equal Opportunity/Affirmative Action Employer, M/F.**

### BIOLOGICAL OCEANOGRAPHY/MARINE BIOLOGY UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

**THE MARINE BIOLOGY RESEARCH SECTION** of the **DEPARTMENT OF BIOLOGICAL SCIENCES** at USC invites applications for one or more tenure-track faculty positions at the assistant or associate level. We are seeking individuals with outstanding records of research and publication as part of our expanding program in marine sciences. Preference will be given to scientists who have developed an active research program in biological oceanography (sea-going) or experimental marine biology. Candidates will be expected to offer courses in their specialty to undergraduate and graduate students.

The appointments are expected to be made by September 1983. Applications will be accepted until the positions are filled. A letter of inquiry and curriculum vitae should be mailed to:

**Dr. Cornelius W. Sullivan  
Marine Biology Research Section  
University of Southern California  
Los Angeles, California 90089-0371**

*USC is an Equal Opportunity/Affirmative Action Employer.*

### BIOLOGY FACULTY POSITIONS

Williams College anticipates two positions available at the assistant professor level, 1 July 1983. Applicants must have Ph.D., preferably with postdoctoral experience.

**CELL BIOLOGIST**: (Regular 3-year position with possibility of reappointment and consideration of tenure). Teaching duties to include advanced cell biology and introductory genetics courses. Interest in immunology preferred.

**PHYSIOLOGICAL ANIMAL ECOLOGIST**: (A 1- or 2-year visiting position). Teaching duties to include courses in general ecology and animal physiology, perhaps alternating with a course on social issues in human biology.

Send curriculum vitae, a statement of research and teaching interests, and three letters of recommendation by 5 February 1983 to:

**Dr. Henry W. Art, Chairman  
Department of Biology  
Williams College  
Williamstown, Mass. 01267**

*An Equal Opportunity/Affirmative Action Employer. We are especially eager to identify minority and women candidates.*

**BIOLOGY**. Baldwin-Wallace College has a 3-year, nontenure-track position available 1 September 1983. Applicants must be prepared to teach biology for the nonmajor student and a course in genetics. There will be opportunity to develop and teach a course in cellular biology. Excellence in teaching at the undergraduate level is required. Candidates must have a Ph.D. Baldwin-Wallace College, located in a suburb of Cleveland, is a private, liberal arts, 4-year institution with 1825 full-time and 1150 part-time students enrolled in day, evening, and weekend programs. Letters of application and current academic résumés should be sent by 1 February 1983 to: **Dr. Glenn W. Peterjohn, Chairman, Biology Department, Baldwin-Wallace College, Berea, Ohio 44017. Baldwin-Wallace College is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**BIOPSYCHOLOGIST**. University of New Orleans, Department of Psychology, Ph.D. Program. Two tenure-track positions (assistant-associate professor levels). Salary commensurate with experience. Applicants should have demonstrated research competence in biopsychology and have strong applied interests and capabilities. Duties to be assumed August 1983. Deadline for receipt of applications is 15 February 1983. Write: **Biopsychology Search Committee, Department of Psychology, University of New Orleans, New Orleans, La. 70148. An Equal Opportunity/Affirmative Action Employer.**

**CARDIOVASCULAR PHYSIOLOGY** research position on program project available immediately to study control of the cardiovascular system. Previous experience with animal surgery, chronic instrumentation, and computer use highly desirable. Send curriculum vitae and names of three references to: **Dr. Allen M. Scher, Physiology and Biophysics/SJ-40, University of Washington, Seattle, Wash. 98195. The University of Washington is an Equal Opportunity/Affirmative Action Employer.**

### CELL BIOLOGIST UNIVERSITY OF CALIFORNIA, IRVINE

The Department of Developmental and Cell Biology invites applications for a cell biologist interested in studying some aspect of the cell surface including the plasma membrane. The appointment will be as a regular tenure-track faculty member at either the junior or senior level. Applicants at the junior level would be expected to have postdoctoral experience, while applicants at the senior level would be expected to have a well-established research program. Applicants should submit curriculum vitae and three letters of reference to: **Dr. Patrick L. Healey, Chair, Department of Developmental and Cell Biology, University of California, Irvine, Calif. 92717. Deadline for receipt of applications is 15 February 1983. The University of California is an Affirmative Action/Equal Opportunity Employer.**

**CELLULAR PHYSIOLOGIST**. Teaching and research experience emphasized. For participation in current work on cell culture of transformed cells. Please apply to: **The Chairman, Physiology Department, Ponce School of Medicine, P.O. Box 7004, Ponce, P.R. 00732-7004.**

**CHAIRMAN, DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY**. Applications are invited for the position of chairman, Department of Microbiology and Immunology, Louisiana State University, School of Medicine in Shreveport. Applicants should have extensive research and teaching experience relative to microbiology and immunology and should have demonstrated leadership ability consistent with heading an academic department in a growing medical center. Applications, including complete curriculum vitae and the names of three persons who may be contacted for reference letters, should be sent no later than 15 February 1983 to: **Dr. John Diana, Department of Physiology and Biophysics, Search Committee for Microbiology, Louisiana State University Medical Center in Shreveport, P.O. Box 33932, Shreveport, Louisiana 71130. An Equal Opportunity Employer.**

### CHAIRPERSON DEPARTMENT OF BOTANY Curator/Professor

The Academy of Natural Sciences of Philadelphia (ANSP) is seeking a distinguished Ph.D. systematist to provide leadership in developing the resources of an expanding Department of Botany. The needs are to: develop vigorous research programs in systematics and evolution; integrate management for the various herbaria; and develop programs making maximum use of collection resources. The position will involve leading participation in the Plant Science Institute of the University of Pennsylvania, promoting programs involving other Philadelphia area botanical resources, and public outreach. The candidate must have a record of program development and of scholarly research publications appropriate for appointment as professor at the University of Pennsylvania. The salary will be competitive. Inquiries, nominations, and applications should be sent by 15 March 1983 to:

**George M. Davis  
Chairman, Botany Search Committee  
Academy of Natural Sciences  
19th Street and the Parkway  
Philadelphia, Pa. 19103**

*ANSP is an Equal Opportunity/Affirmative Action Employer.*



## POSITIONS OPEN

### CHAIR

#### DEPARTMENT OF BIOLOGICAL SCIENCES UNIVERSITY OF MARYLAND BALTIMORE COUNTY (UMBC)

The Department of Biological Sciences is seeking a distinguished scientist to serve as Professor and Chair. The Department is comprised of 22 productive faculty members whose research interests range from molecular to population biology. Almost all the faculty have extramural funding. It is anticipated that additional faculty will join the Department over the next few years. Expansion into a new teaching and research facility will occur over the next year. The Department presently offers the Ph.D. in Biological Sciences, in addition to the M.S. and B.A. degrees.

Send curriculum vitae and names and addresses of at least three references to:

**Dr. R. P. Burchard and Dr. F. E. Hanson**  
Chairmen, Search Committee  
Department of Biological Sciences  
University of Maryland Baltimore County  
Catonsville, Maryland 21228

UMBC is an Affirmative Action/Equal Opportunity Employer.

#### UNIVERSITY OF CALIFORNIA AT LOS ANGELES (UCLA) SCHOOL OF MEDICINE

Applications are invited to fill a tenured endowed professorship called the **JENNIFER JONES SIMON CHAIR IN BIOPHYSICS** within the **DEPARTMENT OF RADIOLOGICAL SCIENCES** at the UCLA School of Medicine. The endowment will be used to support the appointee's research which should be focused on both the normal and abnormal functioning of the human body involving, at least initially, the application of the nuclear medicine technique of positron emission tomography.

Highest priority will be accorded to applicants who have helped develop or have utilized emission tomographic and other comparably promising methods in nuclear medicine in the field of basic and/or clinical neuroscience research and who have demonstrated some of the potential that these methods may have for a better understanding of nervous and mental diseases. The Jennifer Jones Simon Professor is expected to qualify for appointment at the higher levels of the full professorship.

Applicants should forward a résumé or curriculum vitae and the names of at least three referees to the Search Committee chairman:

**Dr. Carmine D. Clemente**  
Director, Brain Research Institute  
UCLA School of Medicine  
Los Angeles, California 90024

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

**CHAIRMAN, Department of Environmental Science, Oregon Graduate Center.** Applications and nominations are sought for chairmanship of five-member, aggressive department with external research support exceeding \$1 million. Current department research includes aquatic chemistry, ground water pollution, toxic organics, atmospheric chemistry (trace gases, aerosols, rain), global modeling of tropospheric chemistry, and analytical environmental chemistry. The successful candidate should have a well established research career of national stature. He/she will be expected to conduct an active, sponsored research program and to administer department affairs. Interested applicants should submit curriculum vitae (including list of publications) and the names of at least three references to: **Personnel Administrator, Oregon Graduate Center, 19600 N.W. Walker Road, Beaverton, Oregon 97006.** An Affirmative Action/Equal Opportunity Employer.

**DEVELOPMENTAL PSYCHOBIOLOGIST.** A full or assistant professorship for a psychologist with a focused interest in the analysis of experiential influences in the development of perception, learning, social attachment, or the nervous system in animals or humans. Junior applicants should have postdoctoral research and teaching experience, and evidence of an innovative publication record. Senior applicants should have evidence of securing and maintaining extramural grant support. Specify rank for which you are applying and send curriculum vitae, three publications, and four letters of recommendation to: **Dr. M. R. Harter, Chairperson, Developmental Search Committee, Psychology Department, University of North Carolina at Greensboro, Greensboro, N.C. 27412, by 28 February 1983.** An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### CHAIRPERSON

#### DEPARTMENT OF MICROBIOLOGY/ IMMUNOLOGY NEW YORK MEDICAL COLLEGE

The New York Medical College has reopened the search to seek a distinguished individual to serve as professor and chairperson of the Department of Microbiology/Immunology. Applicants should have an M.D. and/or Ph.D., a record of significant accomplishments in research, administrative experience, and a strong commitment to medical and graduate education. Applications, including curriculum vitae, bibliography, and the names of at least four references, should be sent to:

**Richard D. Levere, M.D.**  
Chairman, Microbiology/Immunology  
Search Committee  
New York Medical College  
Munger Pavilion, Room 263  
Valhalla, New York 10595

New York Medical College is an Equal Opportunity/Affirmative Action Employer.

#### DEAN'S CHAIR OF PROFESSORSHIP IN TOXICOLOGY UNIVERSITY OF ROCHESTER

The Division of Toxicology within the Department of Radiation Biology and Biophysics at the University of Rochester, School of Medicine and Dentistry, invites applications for the Dean's Chair of Professorship in Toxicology. This research professorship shall be awarded to a scientist of distinguished accomplishment and international reputation whose research in cellular and molecular regulatory processes contributes significantly to understanding the mechanism(s) of toxic agents. The professorship may be held by a scientist whose area of expertise includes, for example: genetic mechanism(s) controlling cellular responses to drugs or toxic agents; receptor biochemistry; or cytoskeleton biochemistry. A major criterion for selection is that the individual be a productive leader in his or her area of research who can also interact with the faculty and students of the department. An appointment will be made for 1983-1984 academic year. Applications must be received by 15 March 1983. Applications or nominations should include detailed curriculum vitae, statement of major research accomplishments, and names of references. Applications or nominations should be forwarded to: **The Toxicology Search Committee, Division of Toxicology, Box RBB, University of Rochester Medical Center, 575 Elmwood Avenue, Rochester, New York 14642.** The University of Rochester is an Equal Opportunity/Affirmative Action Employer.

**UNIVERSITY OF ROCHESTER, DEPARTMENT ADMINISTRATOR, CHEMISTRY.** Serves the department chairman as principal deputy in administering fiscal and technical functions of the Department of Chemistry. Candidate should have bachelor's or advanced degree in chemistry or related field, expertise in accounting and business administration (including computer-based accounting), and managerial level experience in a research or education-based scientific environment. *The University is an Equal Opportunity Employer; we welcome applications from qualified women and minority candidates.* A résumé and three letters of reference should be forwarded to: **Professor Andrew S. Kende, Chairman, Department of Chemistry, University of Rochester, Rochester, New York 14627.**

**NMR INSTRUMENT SPECIALIST.** We seek a technical specialist to maintain, repair, and improve departmental CW and FT NMR spectrometers (90 to 400 MHz), develop and implement operating procedures, and instruct faculty, students, and staff in proper operation and tuning of NMR and other complex spectrometers. Excellent communication and teaching skills are essential; experience in service of state-of-the-art, computer-linked chemical instrumentation such as NMR or MS is highly desirable. We prefer a B.S. in electrical engineering, physics, or physical chemistry, plus 3 to 5 years of field experience in servicing NMR equipment. In lieu of a B.S. degree, we require at least an associate degree in electronics, excellent knowledge of modern electronics and RF circuitry, and 3 to 10 years of experience in repair of digital and analog electronic systems. *The University is an Equal Opportunity Employer; we welcome applications from qualified women and minority candidates.* Send résumé to: **Professor Andrew S. Kende, Chairman, Department of Chemistry, University of Rochester, Rochester, New York 14627.**

## POSITIONS OPEN

Applications are invited for a **POSITION** in the **DIAGNOSTIC PHYSICS LABORATORY** in the Department of Radiology at Duke University. A Ph.D. in physics, electrical engineering, or similar field is required. Duties will include research and development of imaging instrumentation, teaching, and support of the clinical imaging facilities. Candidates with experience in digital imaging, image sensor development, NMR and/or image processing are encouraged to apply. Salary will be commensurate with experience. Interested applicants contact:

**G. Allan Johnson, Ph.D.**  
Director of Diagnostic Physics  
Box 3332  
Duke University Medical Center  
Durham, North Carolina 27710

Affirmative Action/Equal Opportunity Employer

**DIRECTOR OF THE SCHOOL OF RENEWABLE NATURAL RESOURCES,** College of Agriculture, University of Arizona, Tucson. Applicants should have Ph.D. with at least one degree and an established professional identity within one or more fields of natural resources management. Applicant should be familiar with the issues associated with Western public lands and water resources and with roles and functions of land-grant institutions. The faculty consists of 32 state-supported positions and six scientists affiliated with Cooperative Research Units. Available 1 July 1983. Closing date for applications: 28 February 1983. Send letter of application, curriculum vitae, addresses and telephone numbers of three references to: **W. Shaw, Chairman, Director's Search Committee, School of Renewable Natural Resources, 325 Biological Sciences East, University of Arizona, Tucson, Ariz. 85721.** An Equal Opportunity/Affirmative Action Employer.

**ENVIRONMENTAL PATHOLOGY.** Pre- and post-doctoral positions available July 1983. Research emphasis is on cellular and molecular effects (mutagenesis, teratogenesis, biotransformation) of toxic chemicals (especially trace metals, aromatic hydrocarbons). Inquiries: **N. Karle Mottet, M.D., Program Director, Department of Pathology, SM-30, University of Washington, Seattle, Wash. 98195.** The University of Washington is an Affirmative Action/Equal Opportunity Employer.

### ELECTROENCEPHALOPHAGER

To conduct sleep hormonal research. Duties include EEG sleep recording and scoring, maintaining polygraph, and scheduling and managing patients. Bachelor's or master's level. Full-time appointment. Please send curriculum vitae to: **Raul C. Schiavi, M.D., Human Sexuality Program, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029.** An Equal Opportunity Employer.

The Johns Hopkins University, Department of Geography and Environmental Engineering. Two tenure-track appointments anticipated at the assistant or associate professor level.

**ENVIRONMENTAL SYSTEMS ANALYSIS.** Opening for engineer in Program in Systems Analysis and Economics for Public Decision Making. Graduate training should be in civil and environmental engineering or related engineering field. Knowledge of microeconomics, probability and statistics, and mathematical programming essential. Specific water resources systems or environmental systems background most desirable. Operations research orientation alone is insufficient. Ability to teach courses in water resources, mathematical programming, and water quality modeling. Applicants should send résumé and the names of three referees by 15 February 1983 to: **Professor Charles ReVelle, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Md. 21218.**

**SURFICIAL EARTH PROCESSES, HYDROLOGY, GEOMORPHOLOGY.** The department seeks an individual interested in surface earth processes and landforms. Background in the earth sciences should include a knowledge of hydrology, principles of fluid flow, and behavior of earth materials. Department includes related work in environmental engineering, systems analysis, and resources. Applicants should send résumé and the names of three referees by 15 February 1983 to: **Professor M. Gordon Wolman, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Md. 21218.**

The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### SIDS INSTITUTE DIRECTOR

The University of Maryland, Department of Pediatrics, invites nominations and applications for director, Sudden Infant Death Syndrome (SIDS) Institute. This Institute implements and fosters interdisciplinary research, advanced training programs, and clinical service directed toward prevention of SIDS.

Responsibilities include leadership, administration, and development of SIDS programs. The candidate must have established research skills and interest in relevant aspects of infant medicine.

Applications, including curriculum vitae and three letters of reference, will be received until 28 February 1983. *Equal Opportunity Employer. Department of Pediatrics, University of Maryland Hospital, Baltimore, Maryland 21201.*

### ENDOCRINOLOGIST

Tenure-track position as assistant professor to begin August 1983. Duties include teaching one or more of the following: endocrinology, physiology, developmental biology, and introductory biology. Will be expected to develop an active research program and direct M.S. and Ph.D. students in endocrinology. Ph.D. and training in endocrinology are required. Send curriculum vitae, a statement of research interests, and names and addresses of four recommenders to: **R. G. Sherman, Zoology Department, Miami University, Oxford, Ohio 45056.** Application review will begin 14 February 1983. *Equal Opportunity/Affirmative Action Employer.*

**TENURE-TRACK FACULTY POSITION IN BIOCHEMISTRY.** Postdoctoral experience and a strong commitment to research and teaching required. Candidates with an interest in metabolic regulation or membrane structure/function preferred, but all highly qualified candidates will be considered. Rank open. Send curriculum vitae, a brief summary of research and teaching interests, and names of at least three references by 15 February 1983 to: **Biochemistry Committee, Department of Chemistry, California State University, Fullerton, Calif. 92634.** *An Equal Opportunity/Affirmative Action Employer.*

### PURDUE UNIVERSITY HEAD, DEPARTMENT OF COMPUTER SCIENCES

Purdue University seeks a department head who will exert strong leadership as the university embarks on a \$5.7-million development effort to expand the faculty and improve the facilities and equipment in the computer sciences department, one of seven departments that comprise the School of Science.

The department currently consists of 30 faculty, and offers degrees at the bachelor's, master's, and doctoral levels. The research computing facilities currently available to faculty include: two VAX computers, extensive interactive graphics equipment, and ARPANET and CSNET connections. An additional two VAX computers support the undergraduate program.

Research groups within the department are active in:

- Parallel computation
- VLSI systems
- Operating systems
- Networks
- Programming languages
- Data base systems
- Numerical computation
- Software engineering

Candidates must have an earned doctorate and should demonstrate significant accomplishment in computer research, experience in group leadership, and a continuing commitment to research and instruction in the context of scientific disciplines and traditions.

Letters of application should be mailed no later than 22 January 1983 to:

Allan H. Clark, Dean  
School of Science  
Mathematical Sciences Building  
Purdue University  
West Lafayette, Ind. 47907

*Purdue University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**EVOLUTIONARY PLANT ANATOMIST**, Ph.D. with postdoctoral or equivalent experience. Assistant professor, tenure-track, beginning July 1983. To teach anatomy and morphology of vascular plants. Research may take a molecular, cellular, or genetic approach and be able to compete for external support. Send curriculum vitae and three letters of reference to: **A. C. Vasconcelos, Department of Biological Sciences, Rutgers University, P.O. Box 1059, Piscataway, N.J. 08854.** Deadline: 15 February 1983. *Rutgers University is an Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITIONS IN MICROBIOLOGY AND MOLECULAR GENETICS

The Department of Microbiology and Molecular Genetics at the University of Cincinnati College of Medicine is undergoing a major expansion, and invites applications for tenure-track positions at any level. Candidate should be involved in a vigorous and creative research program and should have demonstrated independence as an investigator. Preference will be given to individuals in the areas of molecular or cellular immunology, yeast genetics, and molecular mechanisms of pathogenesis. Applicants should submit curriculum vitae and a short statement of research accomplishments and direction for future research, along with the names of three scientists willing to write letters of recommendation. These should be forwarded to: **Dr. Jerry B. Lingrel, Chairman, Department of Microbiology and Molecular Genetics (524), University of Cincinnati College of Medicine, Cincinnati, Ohio 45267.** *The University of Cincinnati is an Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITION**, tenure-track, assistant or associate professor of anatomy. Preference given to a cell biologist with interests in the neurosciences and a strong pre- and postdoctoral background of productive research. Send a complete résumé and bibliography, as well as letters from three referees, to: **Dr. Douglas E. Kelly, Chairman, Department of Anatomy, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles, California 90033.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

The Department of Animal Science, Iowa State University, is inviting applications for a **FACULTY POSITION IN AVIAN IMMUNOGENETICS**. Initial appointment is approximately 75 percent research and 25 percent teaching. Applicants must have a Ph.D. degree with training in immunogenetics or immunobiology and should have a strong background in biochemistry and statistics and competence in modern computer applications in research. All degree requirements must be completed before appointment. Submit résumé of education, including transcripts, professional experience, list of publications, and other completed work and have a minimum of three references. Forward letters of recommendation to: **Dr. S. A. Ewing, Head, Department of Animal Science, 101 Kildee Hall, Iowa State University, Ames, Iowa 50011.** *Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITIONS AVAILABLE IN MOLECULAR CELL BIOLOGY

The Division of Life Sciences, The University of Texas at San Antonio (UTSA), will hire four tenure-track faculty members by June 1983. Applications are invited for assistant professors in the field of **developmental neurobiology** with expertise in electron microscopy and **molecular genetics** with interests in recombinant DNA, and for assistant and associate professorships in **molecular cell biology** with specialization in the regulation of RNA synthesis, neurochemistry, or membrane function at the molecular level. Candidates must show demonstrated research productivity and substantial ability and interest in teaching. Responsibilities will include teaching, research, and supervision of undergraduate and graduate student research. A Ph.D. with postdoctoral experience is desired. Submit curriculum vitae, names of at least three professional references, and representative publications to: **Matthew J. Wayner, Director, Division of Life Sciences, The University of Texas at San Antonio, San Antonio, Texas 78285**, prior to 1 February 1983. Telephone: 512-691-4457. *The University of Texas at San Antonio is an Affirmative Action/Equal Opportunity Employer.*

# SUPERINTENDENT CHEMISTRY DIVISION

ES-1320

**\$56,945-\$63,800**

\*per annum

(salary dependent on qualifications)

The Superintendent of the Chemistry Division plans and directs a broad program of basic and applied research in the field of chemistry. The majority of over 200 employees of the division are professional scientists and engineers (over 80 possess Ph.D's). The program includes areas of basic and applied research in the broad fields of chemical diagnostics, polymeric materials, inorganic and electrochemistry surface chemistry, and combustion and fuels. Specialized programs within these fields include organic composite materials, surface cleaning formulations, coatings, adhesives, dynamics, IR decoy materials, RAM technology, chemical agent defense, electroactive polymers, tribology, physical and chemical characterization of surfaces, theoretical chemistry, submarine atmosphere analysis and control, corrosion, solution chemistry, personnel protection, fire suppression, the chemistry and physics of synfuels, and combustion control. The Superintendent serves as

the Naval Research Laboratory authority on chemistry, and as such, participates in conferences with officials of the Laboratory and in contacts with other Government organizations and industrial and university laboratories. *All applications should be postmarked by 2 February 1983.*

## NAVAL RESEARCH LABORATORY

Code 61-131-11 S, 4555 Overlook Avenue, S.W., Washington, D.C. 20375

\*Stationary pay cap limited maximum payable salary to \$58,500 as of 12-1-82.

An Equal Opportunity Employer  
(Minority/Female/Disabled)

U.S. Citizenship Required

## POSITIONS OPEN

**TENURE-TRACK FACULTY POSITION** with emphasis in **CHEMICAL OCEANOGRAPHY/MARINE GEOCHEMISTRY**, Marine Sciences Research Center, State University of New York (SUNY) Stony Brook. We have an opening for an assistant or associate professor of marine chemistry, chemical oceanography, or marine geochemistry for September 1983. Candidates should hold a Ph.D. in an appropriate field and have their major research interests in coastal marine environments. By 1 March 1983, send a complete résumé and have at least three letters of reference sent directly to: **Chair, Chemistry Search Committee, Marine Sciences Center, SUNY Stony Brook, Stony Brook, N.Y. 11794.** *SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer.* AK Number 482.

The University of Iowa, College of Dentistry, is presently conducting a search to fill a full-time **FACULTY POSITION** in the Dows Institute for Dental Research with major responsibilities for research and teaching in the Division of Cariology. A research interest augmenting present research activities of Institute faculty is desirable. The position will be available 1 March 1983; screening will begin immediately. Applicants must have D.D.S. and/or Ph.D. Academic rank and salary will be commensurate with qualifications and experience. Letters of application should be submitted to: **Dr. Ian Mackenzie, Dows Institute for Dental Research, University of Iowa, College of Dentistry, Iowa City, Iowa 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Institution.*

### Stanford University School of Medicine Department of Biochemistry

Applications or nominations are invited for a **FACULTY POSITION** in the **Department of Biochemistry** at the level of **assistant, associate, or full professor**, depending upon qualifications and experience. Applicants should have demonstrated ability to perform important original research and show promise of excellence in teaching. Candidates should submit curriculum vitae, including a list of publications and a description of research interests, to: **I. R. Lehman, Department of Biochemistry, Stanford University School of Medicine, Stanford, Calif. 94305.** They should also provide the names of three individuals who can serve as references.

*Stanford University is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

**FACULTY POSITIONS.** The University of Iowa, Department of Internal Medicine, is seeking faculty for positions in all subspecialties of internal medicine. Qualifications include M.D. degree; Board-eligibility in internal medicine and its subspecialties preferred. Applicant should have demonstrated abilities and skills in research, teaching, and clinical medicine. Research activities will be commensurate with the interest and the demonstrated ability of the applicant. The applicant will be expected to participate in teaching and clinical activities of the Department of Medicine. Salary is based on the academic level of entry and on the applicant's qualifications and responsibilities. Candidates should submit curriculum vitae to: **Randall Jordison, Administrator, Department of Medicine, SE306 GH, The University of Iowa, Iowa City, Iowa 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*

### IMMUNOLOGIST

M.S. or Ph.D. with experience in research on identification, characterization, and isolation of antigens and antibodies, for well-established academic research group with solid financial basis. Please send curriculum vitae and references to: **Kurt Lange, M.D., Lenox Hill Hospital, 100 East 77 Street, New York, N.Y. 10021.**

Full-time position available for an **INFECTIOUS DISEASE PHYSICIAN** on the Medical Service of a university-affiliated Veterans Administration Medical Center. Qualifications: Board-certified in internal medicine and infectious diseases. Training and research experience in immune mechanisms in the pathogenesis or protection from infectious diseases. Administrative experience desirable. *Equal Opportunity Employer—Hispanics, other minorities, and women are encouraged to apply.* Rank and salary dependent upon qualifications. For information, write: **Richard K. Root, M.D., Chief, Medical Service, VA Medical Center, 4435 Beacon Avenue South, Seattle, Washington 98108.**

## POSITIONS OPEN

**GENETICIST.** Assistant professor (tenure-track), August 1983. Applicants should have competence in molecular genetics and interest in recombinant DNA techniques or population genetics. Experience desirable. Duties will be to teach general and molecular genetics, conduct research, and direct M.S. level thesis in the Marine Biology Graduate Program. Submit, by 18 February 1983, curriculum vitae, undergraduate and graduate transcripts, and three letters of recommendation to: **Dr. Donald F. Kappraun, Search Committee Chairman, Department of Biological Sciences, University of North Carolina at Wilmington, Wilmington, North Carolina 28406.** *An Equal Opportunity/Affirmative Action Employer.*

### IMMUNOLOGIST

Assistant or associate professor, dependent upon qualifications. Tenure-track appointment. Ph.D., preferably in microbiology, required. Expertise to teach immunology to medical students and a graduate immunology course required. Research space provided in a new medical school building. A strong commitment to conduct independent research required. Prefer research interests to include hybridoma methodology, bacterial antigen isolation and purification, and/or cellular immunity of infectious diseases. Inter- and intradepartmental research is encouraged. Postdoctoral experience desirable. Position begins 1 July 1983. An earlier starting date is negotiable. Salary dependent upon rank and qualifications. Submit curriculum vitae, three letters of reference, and a statement of research interests to: **Dr. D. W. Lambe, Jr., Chairman, Department of Microbiology, P.O. Box 19,870A, College of Medicine, East Tennessee State University, Johnson City, Tennessee 37614.** *An Affirmative Action/Equal Opportunity Employer.*

### IMMUNOLOGIST

The Department of Microbiology at Miami University invites applications for a tenure-track appointment at the rank of assistant professor starting August 1983. The candidate must have Ph.D. in microbiology or related discipline and postdoctoral research experience in the field of cellular immunology. The individual will be expected to develop a productive research program, direct the research of M.S. and Ph.D. candidates, and actively participate in teaching undergraduate and graduate courses in the areas of infection and immunity. Send curriculum vitae, an outline of research interests, and three letters of recommendation by 15 February 1983 to: **R. J. Brady, Chairman, Search Committee, Department of Microbiology, Miami University, Oxford, Ohio 45056.** *An Equal Opportunity/Affirmative Action Employer.*

**INFORMATION SYSTEMS FACULTY.** One tenure-track position available September 1983 at Drexel University for candidate prepared to teach existing courses in analysis, design, and evaluation of information systems and to develop new courses and research projects in areas such as; economics of information, social aspects of information systems, office automation, data communication, and artificial intelligence. Doctorate, supplemented by experience in information work, teaching, or research desired. Appointment at assistant or associate professor level, depending on qualifications, with nationally competitive salary. Candidates should have strong interests in research and in teaching at both graduate and undergraduate levels. Résumé should accompany application to: **Dr. Belver Griffith, Search Committee, School of Library and Information Science, Drexel University, Philadelphia, Pa. 19104.** Telephone: 215-895-2488 or 895-2474. Closing date: 14 February 1983. *An Equal Opportunity/Affirmative Action Employer; applications from women and minorities desired.*

### POPULATION ECOLOGIST

The University of Georgia, Department of Zoology, announces a tenure-track opening as assistant professor for a population ecologist, starting September 1983. Requirements include teaching in the introductory ecology course and in graduate courses of population and theoretical ecology as well as establishing an independent research program. An interdisciplinary person is desired, one who will interact with terrestrial and aquatic ecologists. Send curriculum vitae, reprints, and addresses of three referees to: **R. G. Wiegert, Chairman, Search Committee, Department of Zoology, University of Georgia, Athens, Georgia 30602,** by 7 February 1983. The position will be filled only if suitable and qualified candidates apply.

*Equal Opportunity/Affirmative Action Institution*

## POSITIONS OPEN

### THE CHINESE UNIVERSITY OF HONG KONG FACULTY OF MEDICINE LECTURESHIP IN PHYSIOLOGY

Applications are invited for the above post, tenable from August 1983. Candidates should have either a medical qualification or a Ph.D. in physiology or a related subject, preferably with some teaching or research experience. The appointee will be required to teach courses in physiology.

**Annual salary:**  
HK\$129,840 to \$147,360 by 2 increments BAR.  
HK\$156,120 to \$217,380 by 7 increments.

Exchange rate approximately: U.S.\$1 = HK\$6.6; £1 = HK\$10.7. (Entry point will depend on qualifications and experience.)

**Conditions of service:** Benefits include vacation leave, long leave with pay, superannuation (appointee 5 percent, University 15 percent), medical and dental benefits, education allowance for children, housing allowance (for those whose annual salary is HK\$138,600 or above) and, for appointees on overseas terms, passage benefits for themselves and their dependents as well.

**Application procedure:** Applications should be made out in duplicate, giving full particulars, experience, and the names and addresses of three persons to whom reference may be made, and sent together with copies of certificates/diplomas/testimonials and recent publications, to: **Personnel Section, The Chinese University of Hong Kong, Shatin, N.T., Hong Kong,** not later than 15 February 1983. Please mark "Recruitment" on cover.

**M.E./PHYSICIST.** We are a manufacturer of radiation detection equipment, looking for the right person to improve the productiveness of our operation. This would include but not be limited to product design, tooling design, process analysis, material analysis, and yield analysis. Prior experience in a manufacturing environment (5 years minimum), performing similar tasks, is absolutely required. A B.S. level of education or more is also required. Experience with plastic injection molding parameters, mold design, and molding materials is a definite plus. Please send résumé with salary requirements to: **Dosimeter Corporation, 11286 Grooms Road, Cincinnati, Ohio 45242.**

**NEUROBIOLOGY POSTDOCTORAL.** Position available to study the development and maintenance of synapses, utilizing intracellular recordings and electron microscopy. Send curriculum vitae and names of three references to: **Dr. Stephen D. Roper, Department of Anatomy, B-111, University of Colorado School of Medicine, 4200 East 9th Avenue, Denver, Colorado 80262.** *Equal Opportunity/Affirmative Action Employer.*

### POLLUTION BOTANIST

The Botany Department and the Environmental Studies Program of the University of Montana invite applications for a joint faculty position, tenurable in botany, at the rank of assistant/associate professor, available 15 September 1983. The position requires expertise concerning the biological effects of air pollution, and botanical training in grassland ecology, ecological modeling, stress physiology, or other fields. Candidates should have a demonstrated commitment to bring botanical aspects of pollution to public attention. Minimal qualifications include the Ph.D. in a botanical discipline, demonstrated or potential excellence in teaching, experience in grantsmanship, and publication. Duties include teaching at the undergraduate and graduate levels, directing graduate students in both botany and environmental studies, and development of an active research program. Eventually, the candidate would be expected to direct the Environmental Studies Research Laboratory. Salary and rank are dependent upon qualifications.

Application materials must include a letter which corresponds to the job description and include a detailed statement of interests and expertise, a complete personal résumé, transcripts, relevant reprints, and three letters of professional reference. The postmark deadline for all application materials is 15 February 1983. Send to:

**Dr. Sherman Preece  
Botany Department  
University of Montana  
Missoula, Montana 59812**

*The University of Montana is an Equal Opportunity Employer. Women, minorities, and handicapped persons are encouraged to apply.*



## SCIENTIST FOR AUDITORY RESEARCH

The Research Laboratory of Electronics of the Massachusetts Institute of Technology (MIT) seeks a research associate to participate in studies on the structure/function relations in the middle ear. This individual will plan, execute, and interpret data gathered from a series of measurements on the ears of various vertebrate species.

Candidates should have Ph.D. in relevant field and experience in research on the ear. Position also requires expertise in comparative anatomy and physiology of the ear, surgical preparation of several species, measurement of mechanical and electrical responses in ears, use of computer systems for controlling experimental measurements, application of circuit and systems theory, and the presentation of scientific results and their implications to the scientific and medical communities.

Please submit two copies of curriculum vitae with letter of interest to:

**Kenneth Hewitt**  
MIT Personnel Office  
E19-239  
77 Massachusetts Avenue  
Cambridge, Mass. 02139

(Refer to Job Number R940)

MIT is an Equal Opportunity/Affirmative Action Employer.

## BUTLER UNIVERSITY DIRECTOR OF HOLCOMB RESEARCH INSTITUTE

Butler University invites applications for the position of Director of the Holcomb Research Institute (HRI). The Director is the chief operating officer and reports to the President of the University.

HRI is dedicated to three programs: research concerning environmental and related fields of particular significance to Indiana and the Midwest; research focusing on national or global issues; and a joint program with Butler faculty and students to provide for scholarships and fellowships to support inquiry into pertinent or related disciplines.

The Director will be responsible for planning, developing, organizing and implementing programs related to the attainment of the three research and educational objectives, as well as directing the professional and support staff of the Institute. Development of new programs, appropriate for the next decade, is anticipated.

HRI occupies a building of 52,000-square feet on the Butler campus which also houses the University's main computer center. HRI has an endowment of approximately \$11,500,000 from which 72% of the income is applied to an annual operating budget of approximately \$1,000,000.

Candidates must have an earned doctorate in environmental studies, one of the natural sciences or related fields (e.g., contemporary biology), a well-recognized record of published research, and at least five years of management experience in inter-disciplinary research programs at a university or research institute.

Butler University is an independent, non-sectarian, coeducational institution located on a scenic 300-acre campus in a residential section of Indianapolis. There are approximately 3,000 full-time equivalent undergraduate and graduate students. The University includes colleges of liberal arts and sciences, business administration, pharmacy, fine arts, and education, and a 2,200-seat performing arts center.

The appointment may be effective as early as April 1, 1983. Salary is negotiable. Applications should include a comprehensive vita and documentation of experience. Names, addresses and phone numbers of at least three references should also be included. Application deadline is January 31, 1983. Please submit applications to:

**Dean Dale W. Doerr**  
Chairman, Search Committee  
College of Pharmacy  
Butler University  
4600 Sunset Avenue  
Indianapolis, IN 46208

Butler is an equal opportunity employer.



BUTLER UNIVERSITY

## Biotechnology Research

### INTERFERON/ FERMENTATION TECHNOLOGY

**Damon Biotech** is currently expanding its research efforts in the development of a broad range of products in cellular and molecular biology, genetics and immunology.

We are seeking experienced **research scientists** with expertise in the following areas:

- Induction/production of human interferons
- Large-scale purification of human interferons
- Cloning and expression of human interferon gene products
- Fermentation of recombinant DNA-containing bacteria

Qualified candidates for these positions should have a Ph.D. degree in molecular biology/biochemistry/cell biology or microbiology/fermentation engineering. One to three years' post-doctoral experience in the above mentioned areas is preferred.

Individuals interested in exploring these opportunities further should submit curriculum vitae and letter describing interests to: Manager of Human Resources, Damon Biotech, Box 1, 115 Fourth Ave., Needham Heights, MA 02192. We are an equal opportunity employer m/f/h.

**DAMON Biotech**

# FILMS IN THE SCIENCES

Reviews and Recommendations

Compiled and edited by  
Michele M. Newman and  
Madelyn A. McRae

This indispensable reference reviews nearly 1,000 films from all areas of science. It provides detailed summaries, evaluations, and complete ordering information for films appropriate to students, teachers, professionals, and general audiences. The reviews are grouped by Dewey decimal category. Subject-title and film distributor indexes also make them easy to use. A must for the librarian, the science teacher, or the curious browser.

182 pages 1980  
Cloth: ISBN 87168-304-7 \$14.00

American Association for the Advancement of Science, Dept.  
FL3S, 1515 Massachusetts Avenue, N.W., Washington, D.C.  
20005

## POSITIONS OPEN

### MOLECULAR BIOLOGIST

Applications and nominations are invited for a tenure-track position, the rank dependent upon qualifications. Candidates qualifying for a senior rank should have a record of distinguished contributions. Other candidates should have already demonstrated their research capabilities. Background and experience in biophysical aspects of molecular biology are strongly desired. Responsibilities will include development of a vigorous independent program of research in molecular biology and participation in the teaching program. *Women and minority candidates are especially encouraged to apply.* Please send applications, including curriculum vitae, list of publications, and summary of research plans, as well as letters of reference, by 31 January 1983 to: **Dr. Oscar Touster, Chairman, Department of Molecular Biology, Vanderbilt University, Nashville, Tennessee 37235.**

*An Affirmative Action/Equal Opportunity Employer*

### VANDERBILT UNIVERSITY

#### Molecular Genetics/Toxicology/Carcinogenesis

The Department of Biochemistry of Vanderbilt University School of Medicine announces the availability of a tenure-track appointment as **assistant professor of biochemistry**. The department is especially interested in someone who can apply techniques of molecular genetics to the study of problems in molecular carcinogenesis and toxicology. The person appointed will interact with the interdepartmental Center in Environmental Toxicology, as well as carry on normal teaching and research activities in the Department of Biochemistry. Applications (complete with curriculum vitae, lists of publications, names of references, and an outline of research interests) can be accepted until 1 March 1983, and should be directed to: **Dr. Leon W. Cunningham, Chairman, Department of Biochemistry, Vanderbilt University School of Medicine, Nashville, Tennessee 37232.**

**NEUROBIOLOGIST.** The Virginia-Maryland Regional College of Veterinary Medicine invites applications for a faculty position in neurobiology, with preference being given to applicants having research and/or clinical interests in neurophysiology or neurochemistry. Salary and rank will be commensurate with qualifications and experience.

Closing date is 15 February 1983, or until position is filled. Letters of application, including curriculum vitae and the names and addresses of three references, should be addressed to: **Dr. Peter T. McGovern, Chairman, Division of Veterinary Biology and Clinical Studies, Virginia-Maryland Regional College of Veterinary Medicine, Virginia Tech, Blacksburg, Va. 24061-5999.** *An Equal Opportunity/Affirmative Action Employer.*

### NEW FUNDS COORDINATOR

Exciting opportunity for the right individual to assist our office of sponsored programs and faculty in the identification of potential sources of research funding, and to participate in the solicitation of funds for research efforts. These efforts will emphasize individual and foundation sources for research funding. Familiarity with the federal funding mechanism will also be beneficial.

An earned degree, preferably a master's, in a scientific discipline; or degree(s) in a nonscientific area, plus scientific experience and aptitude, several years of experience in fund raising and/or research administration; the ability to solicit funds on a one-on-one basis; the ability to understand and conceptualize scientific matters. Ability to travel nationally. Salary: \$30,000.

Please send résumés to: **Office of Personnel Services, 101 Hayden Hall, Northeastern University, 360 Huntington Avenue, Boston, Mass. 02115.** *An Equal Opportunity/Affirmative Action, Title IX University.*

**RESEARCH TECHNICIAN.** A challenging new position has been created at our renowned medical center for an individual with a master's degree and solid multidisciplinary background in cell biology, tumor immunology, immunology, biochemistry, tumor antigens, hybridomas, and radioimmunoassays. The successful candidate will work in collaboration with clinicians and in basic research with independence. Experience and ability to develop methodologies and techniques are essential. Good salary and benefits. Send résumé in confidence to: **Lois Tarallo, Personnel Department, THE MOUNT SINAI MEDICAL CENTER, 19 East 98 Street, New York, N.Y. 10029.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

**ORGANIC CHEMIST—WILLIAMS COLLEGE** has an opening for fall 1983 for a regular assistant professor position (initial 3-year appointment with the possibility of reappointment and consideration for tenure) in organic chemistry (Ph.D. required; postdoctoral experience preferred). Applicants should have a strong commitment to both teaching and research. Teaching duties each semester normally include complete responsibility for one course with laboratory and supervision of senior research projects. Williams College is a highly selective, coeducational, liberal arts institution of approximately 155 faculty and 1900 undergraduates, located in northwestern Massachusetts. The Department of Chemistry is accredited by the ACS and has excellent facilities for teaching and research. Send résumé, description of research interests for undergraduates, and names of three references to: **Dr. Raymond Chang, Acting Chairman, Department of Chemistry, Williams College, Williamstown, Mass. 01267,** by 4 February 1983. *Affirmative Action/Equal Opportunity Employer. We are especially eager to identify minority and women candidates.*

**PHYSICIST/PROJECT ENGINEER:** We are a manufacturer of Direct Reading Dosimeters (DRD's) and portable radiation detection instrumentation. We require an experienced (5 to 10 years) physicist to support R & D and manufacturing. Minimum of a B.S. degree in physics is required. (Familiarity with Ion Chamber design and Beta Dosimetry is a definite plus.) Will interface closely with electronic design. Send all responses with salary history to: **Dosimeter Corporation, 11286 Grooms Road, Cincinnati, Ohio 45242, attention: Ed Shernoff.**

**PLANT PHYSIOLOGY.** Applications invited for a tenure-track position to teach undergraduate courses in plant physiology and general biology plus development of an advanced course in area of specialization. Excellence in teaching is essential. A Ph.D. is required as well as the establishment and maintenance of a productive research program. Appointment level dependent upon qualifications and experience. Send curriculum vitae, statement of goals, interests and capabilities in teaching and research, and three letters of recommendation to: **Dr. Daryl D. Smith, Head, Department of Biology, University of Northern Iowa, Cedar Falls, Iowa 50614.** Closing date: 15 February 1983. *An Equal Opportunity/Affirmative Action Employer; women and minorities are encouraged to apply.*

**POSTDOCTORAL FELLOW.** Position open immediately for postdoctoral fellow in vision laboratory. Opportunity to study visual deprivation using techniques from neurophysiology, neuroanatomy, neurochemistry, and behavior. Opportunity to participate in a well-knit neuroscience group with members from biology, chemistry, and psychology. Please send curriculum vitae and description of research interests and experience to: **Barbara Gordon, Department of Psychology, University of Oregon, Eugene, Ore. 97403.**

**POSTDOCTORAL POSITION** available immediately for Ph.D. in cellular biology or biochemistry to study cellular response to trauma. Research involves in vitro and in vivo labelling of proteins, two-dimensional electrophoresis, subcellular fractionation, radioautography, immunohistochemistry, and tissue culture. Send curriculum vitae, names of three references, and summary of recent research activities to: **Dr. F. P. White, Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3V6.**

### POSTDOCTORAL POSITIONS—CELL BIOLOGY OF MAMMALIAN SPERMATOZOA

The Worcester Foundation for Experimental Biology has openings for postdoctoral fellows in its Male Reproductive Biology Program. Foundation scientists involved in the program and their interest include: GRANT FAIRBANKS, sperm surface biochemistry; CHARLES GLABE, sperm-egg interaction; PETER HALL, Sertoli and germ cell functions; JOSEF VOGLMAYR, sperm maturation and capacitation; GEORGE WITMAN, control of sperm flagellar motility, and DAVID WOLF, physical properties of gamete membranes. The institute is located in an attractive New England setting 38 miles west of Boston. Applicants should indicate area(s) of interest and should send curriculum vitae and names of three references to: **Male Reproductive Biology, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.**

*An Equal Opportunity/Affirmative Action Employer, M/F/H*

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately for research relating to energetics and biochemical regulation of epithelial transport systems for ions and organic solutes. Candidates should have Ph.D. in biochemistry, biophysics, or physiology with experience in membrane biochemistry, especially isolation and characterization of membrane proteins. Send curriculum vitae, research résumé, and interests, along with names, addresses, and telephone numbers of at least two references, to: **Dr. George Kimmich, Department of Biochemistry, University of Rochester Medical Center, Rochester, N.Y. 14642.** *The University is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately investigating structure and interactions of contact phase protein clotting factors, particularly factor XI and high molecular weight kininogen. Ph.D. in biochemistry or related field and experience in proteins required; experience in clotting/immunology desirable. Contact: **Sandra Schiffman, Ph.D., Department of Medicine, University of Southern California Medical School, 2025 Zonal Avenue, Los Angeles, Calif. 90033.** Telephone: 213-224-7223.

**POSTDOCTORAL POSITION** available now for up to 3 years to work on DNA sequencing of mitochondrial DNA. Background in biochemistry essential. Salary: \$15,000 to \$18,000, depending on experience. Send curriculum vitae and three letters of recommendation to: **Dr. D. J. Cummings, Department of Microbiology and Immunology, Box B175, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colo. 80262.**

**POSTDOCTORAL POSITION** available to study biogenesis of membrane lipoproteins in bacteria. Background in biochemistry and genetics preferred. Submit curriculum vitae and names of three references to: **Dr. Henry Wu, Department of Microbiology, c/o Personnel/Manpower Division, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814.** Curriculum vitae will not be returned. *Equal Opportunity/Affirmative Action Employer.*

An NIH-funded **POSTDOCTORAL POSITION** is available immediately to study neurotransmitter localization in mammalian retina. Prior experience in immunological or cell culture techniques desired. Send curriculum vitae to:

**Dr. P. V. Sarthy  
Department of Ophthalmology, RJ-10  
University of Washington  
Seattle, Washington 98195**

*An Affirmative Action/Equal Opportunity Employer*

**POSTDOCTORAL POSITION.** Opportunity for research and training in clinical chemistry. Research involves enzyme purification, immunoassay, and clinical studies. Send inquiries with curriculum vitae to: **David E. Bruns, M.D., Department of Pathology, Box 214, University of Virginia School of Medicine, Charlottesville, Virginia 22908.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available for Ph.D. with experience in autonomic, cardiovascular, or smooth muscle pharmacology to investigate mechanisms involved in the regulation of excitable cell sensitivity to drugs. NIH-supported position. Send curriculum vitae and the names and addresses of three references to: **Dr. David P. Westfall, Department of Pharmacology, University of Nevada School of Medicine, Reno, Nevada 89557.**

**POSTDOCTORAL POSITION** available 1 March to study mode of action of *Bacillus thuringiensis* var. *israelensis* toxicity to mosquito larvae. Applicants should be recent graduates with strong background in insect physiology/biochemistry; \$13,000. Send résumé and names of three references by 15 February to: **Dr. Kenneth W. Nickerson, School of Life Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0118.** *Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL/RESEARCH ASSISTANT** position open immediately for project on regulation of contraction in skeletal and smooth muscle. Applicant should be a recent Ph.D. or M.S. with prior experience in biochemistry, cell biology, physiology, or chemistry. Salary range: \$16,000 to \$20,000 per annum, based upon experience. Applicants should send curriculum vitae and two letters of recommendation to: **Dr. W. Glenn L. Kerrick, Department of Physiology and Biophysics (R430), University of Miami School of Medicine, P.O. Box 016430, Miami, Florida 33101.**

## DEAN SCHOOL OF MEDICINE

The Oregon Health Sciences University seeks applications and nominations for the Dean of its School of Medicine. The University, which is an independent component of the Oregon State System of Higher Education, comprises schools of Dentistry, Medicine and Nursing, a teaching hospital, a Crippled Children's Division, and an Institute for Advanced Biomedical Research now funded and under development. New Shriner's and V.A. Hospitals are being constructed in the campus area. The Dean is the chief academic and administrative officer of the School, and is responsible directly to the President of the Health Sciences University. Besides medical education, the School's responsibilities include graduate training in biomedical sciences, allied health programs, and basic science instruction for the School of Nursing. Qualified candidates must have an M.D. or Ph.D. degree in a health related science and documented excellence and scholarly accomplishments appropriate for a senior tenured appointment in the School. Administrative skills and a clear understanding of the governance and mission of a medical school in an academic health center are required. All nominations and applications accompanied by a curriculum vitae submitted by February 15, 1983, will be considered.

J. David Bristow, M.D.  
Professor of Medicine, L800  
Chairman of Dean Search Committee



THE OREGON  
HEALTH SCIENCES UNIVERSITY

3181 S.W. Sam Jackson Park Road  
Portland, Oregon 97201

*an equal opportunity/affirmative action employer*

## DEAN College of Engineering University of California, Santa Barbara

Nominations and applications are invited for the position of dean of the College of Engineering at the University of California, Santa Barbara (UCSB). The dean reports directly to the vice chancellor and serves as chief administrative officer for a college consisting of the departments of Chemical and Nuclear Engineering, Computer Science, Electrical and Computer Engineering, and Mechanical and Environmental Engineering, with a combined faculty of approximately 55. Established in 1962, the College of Engineering offers professional training with both undergraduate and graduate degrees in each of the disciplines listed above. Its growing enrollment is currently about 1700 undergraduate and 325 graduate students.

UCSB has emerged as a national center for research in the basic and applied sciences; many distinguished appointments have been made, both within the College of Engineering and in the basic sciences. Because of its increasing number of students, presently unfilled faculty positions, and planned new building, the College of Engineering has exceptional potential for future development. In the next few years, the College will round out its curriculum, increase its involvement in the national community of engineers and applied scientists, and further expand its research and extramural funding.

The new dean of engineering will be the key person in determining how much of this potential is realized. The position demands someone with great initiative, outstanding accomplishments in engineering, and wide connections in academia and in industry. The candidate must be qualified for appointment as a tenured professor in the University of California and must combine the administrative and research skills needed to develop the potential of the College.

Applications and nominations, including a current résumé, should be sent to:

Office of the Chancellor  
Cheadle Hall  
University of California  
Santa Barbara, Calif. 93106  
Attention: James L. Merz, Chairman  
Engineering Dean Search Committee  
Telephone: 805-961-3821

*Nominations and applications are desired by 28 February 1983. The University of California is an Equal Opportunity/Affirmative Action Employer.*

## MANAGER Microbiology Research

Marion Laboratories, Inc., currently has an outstanding opportunity available in our Research & Development Department for a Manager of Microbiology Research. This key position will be located at our Marion Park facility in Kansas City.

Primary responsibilities will be to provide technical leadership in the development of new in vitro diagnostic products, improvement of existing products, training and supervision of technical staff.

The successful candidate will have a PhD in microbiology, immunology, virology, or parasitology with at least 4 years of experience. This individual must possess superior oral and written communication skills. Strong human relations skills, supervisory skills, and the ability to effectively interface with all levels of management is absolutely necessary.

We offer an excellent total compensation and benefit package including stock options, profit sharing, comprehensive group health, dental and life insurance benefits. Please send a detailed resume including salary history, in confidence, to:

Recruiting & Placement  
Dept. GC



MARION LABORATORIES, INC.

10236 Bunker Ridge Road  
Kansas City, Missouri 64137

*An Equal Opportunity Employer M/F*

## Regulatory Affairs

### Assistant Manager

SmithKline Beckman Corporation, a multinational leader in the health care industry, has an exciting new growth oriented position open, for a skilled professional, in our consumer products oriented Menley & James Laboratories. We seek an individual with a BS in Science and 5 or more years, or an advanced degree and 2 or more years, R&D related experience to manage the preparation and filing of INDs, NDA's and other FDA submissions. Demonstrated experience in Regulatory and Government Affairs and thorough knowledge of Pharmacology/physiology, FDA regulations/ processes required. Preferred skills include excellent interpersonal skills and excellent abilities to organize, coordinate and administrate the activities of multi-disciplinary groups.

Our compensation and benefits package, including our relocation package, are geared to today's economy and are among the best in industry. Investigate our continued growth and your potential to grow with us by sending your CV and salary history in confidence to Jim Beyea, MENLEY & JAMES LABORATORIES, 1532 Spring Garden Street, Philadelphia, PA 19101.

We are an equal opportunity employer, M/F/H/V

**SmithKline Beckman**  
CORPORATION

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS IN METABOLIC REGULATION.** A training program at the molecular level for research related to diabetes and other metabolic diseases has been instituted. Emphasis will be on basic approaches used in the study of protein phosphorylation, hormone receptors, calmodulin, ion transport, cyclic nucleotides, and the structure of relevant proteins. U.S. citizens or permanent residents who will soon be awarded or who are holding recent Ph.D. or M.D. degrees are invited to obtain further information by writing to the program director: **Dr. Edwin G. Krebs, Department of Pharmacology, SJ-30, School of Medicine, University of Washington, Seattle, Washington 98195.** The University of Washington is an Equal Opportunity/Affirmative Action Employer.

**THREE POSTDOCTORAL POSITIONS** available beginning 1 March 1983 in the Developmental Biology Center, University of California, Irvine. Recent Ph.D. required, preferably in the areas of cell biology, molecular biology, developmental biology, neurobiology, or genetics. The positions are for research in the laboratories of M. Bronner-Fraser (developmental neurobiology, neural crest, migration and differentiation); R. Campbell (morphogenesis in hydra); R. Meyer (developmental neurobiology); S. Fraser (developmental neurobiology and cell communication in pattern formation); and S. V. Bryant (patterning in vertebrates). The University of California is an Equal Opportunity/Affirmative Action Employer. Submit résumé and brief description of research interests and experience, together with the names of three individuals willing to write on your behalf, to: **Peter J. Bryant, Developmental Biology Center, University of California, Irvine, California 92717**, by 1 February 1983.

**POSTDOCTORAL RESEARCH ASSOCIATE.** Studies on monoclonal antibodies against phospholipid-sensitive  $Ca^{2+}$ -dependent protein kinase, including immunocytochemistry and pathophysiology in heart, brain, and human leukemic cells. Also to study regulatory and functional aspects of the enzyme and its substrates. Send application to: **Dr. J. F. Kuo, Department of Pharmacology, Emory University School of Medicine, Atlanta, Ga. 30322.** An Affirmative Action/Equal Opportunity Employer

### POSTDOCTORAL RESEARCH ASSOCIATE

Position available immediately to study structural determinants of growth hormone insulin interactions and biological consequences. Techniques in protein chemistry membrane hormone receptors and membrane transport employed. Send curriculum vitae and three letters of recommendation to: **Dr. Martin Sonenberg, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, N.Y. 10021.**

McGill University  
(Genetic Manipulation Research Group)

**TWO POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS** are available immediately to work on the molecular biology of *Rhizobium-legume* interactions. Efforts will be made to isolate and characterize symbiotic genes of *Rhizobium japonicum*. Experience in the area of nucleic acid biochemistry or microbiology and the knowledge of recombinant DNA technology is essential. The salary will be \$20,000 to \$22,000 per annum. Send curriculum vitae and three letters of recommendation to the attention of: **Professor D. P. S. Verma, Genetic Manipulation Research Group, McGill University, 1205 Docteur Penfield Avenue, Montreal, Quebec, Canada H3A 1B1.**

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position available immediately to develop gene cloning systems for use in a study of the genetics and biochemistry of antibiotic production by *Streptomyces*. Experience with bacterial genetics and biochemistry desirable; \$14,000 to \$15,000 per year, plus fringe benefits. Send résumé and two letters of recommendation to: **Professor C. R. Hutchinson, School of Pharmacy, University of Wisconsin, Madison, Wis. 53706; telephone: 608-262-7582.**

**PRE- AND POSTDOCTORAL POSITIONS IN MOLECULAR BIOLOGY.** Available from 1 April 1983. Successful candidates will join a research program to study the regulation of gene expression during differentiation of skeletal and cardiac muscle cells. Excellent laboratory facilities for work using recombinant DNA techniques, DNA sequencing, and cell free protein synthesizing systems. Send curriculum vitae and names of references to: **Dr. J. Bag, Assistant Professor of Molecular Biology, Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3V6.**

## POSITIONS OPEN

**POSTDOCTORAL SCIENTIST** position available for participation in studies of hormonal regulation of prostate cell function in aging. We are seeking an individual trained in molecular biology/immunology and having predoctoral experience with in vitro translation. The position is in the Department of Cellular and Molecular Biology at Southwest Foundation for Research and Education. The Department has established programs of in vitro and in vivo studies of prostate physiology. The initial appointment is for 2 years with opportunity for extension or conversion to a staff position. This is an unusual opportunity for a creative scientist. Send résumé, statement of research interests, and names of three references to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.**

We are an Equal Opportunity/Affirmative Action Employer.

**PROFESSIONAL POSITIONS** with the Commission for the Conservation of Antarctic Marine Living Resources in Hobart, Tasmania, Australia. Fluency desirable in more than one of the official languages: French, English, Spanish, Russian.

**Science Officer:** Degree/experience in scientific fields relating to Antarctic marine living resources. Salary: \$38,000 to \$47,000.

**Data Manager:** Degree/experience in computer sciences, advanced scientific data-handling facilities. Salary: \$38,000 to \$47,000.

**Administration/Finance Officer:** Accounting qualifications, experience in administrative/personnel management fields. Salary: \$27,000 to \$33,000.

For details, contact: **R. Tucker Scully, OES/OPA, Room 5801, Department of State, Washington, D.C., 20520.** Telephone: 202-632-3262.

**PROJECT SCIENTIST**—Ph.D. in Immunotoxicology or related field plus 3 to 5 years of experience in disease susceptibility models and/or related immune function tests. Opportunity to develop infectious, neoplastic, allergic, or autoimmune disease susceptibility models to be related to problems in immunotoxicity testing and collaborate on murine cytomegalovirus and influenza models.

Interested candidate should send salary history plus present salary requirements, in confidence, to: **NORTHROP, G. W. Jahtaniah, P.O. Box 12313, Research Triangle Park, N.C. 27709.** Equal Opportunity Employer.

### DEPARTMENT OF PSYCHOBIOLOGY UNIVERSITY OF CALIFORNIA, IRVINE

Applications are invited for a faculty position in a department that emphasizes the interface of neurobiology and behavior. Areas of particular interest are: (i) **developmental neuroscience**, preferably with emphasis on cellular or molecular approaches, (ii) **synaptic physiology**, and (iii) **neuroendocrinology**. Specific research area is less important than demonstrated scholarship. The position is for an assistant professorship but may be filled at a tenured level. Interested candidates should send résumé and representative reprints and arrange for three letters of reference to be sent to: **Chair, Department of Psychobiology, University of California, Irvine, California 92717.** Affirmative Action/Equal Opportunity Employer.

### RESEARCH ASSOCIATE BIOMEDICAL ENGINEER

Biomedical engineering positions are available immediately with reproductive biology research group. Posts involve design, production, and analysis using computer and microprocessor aided data acquisition systems.

Résumé and three references to: **Dr. Peter W. Nathanielsz, College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.**

Cornell University is an Affirmative Action/Equal Opportunity Employer.

**TURFGRASS RESEARCH ASSOCIATE**—Western Washington Research and Extension Center (WWREC) seeks an M.S. or Ph.D. in agronomy, horticulture, or closely related area to conduct research on turfgrass management. Funding from grant sources; no termination date. Salary: \$17,000 per year, minimum. Send résumé, transcripts, and names and addresses of three persons who have been asked to submit names of five personal/program evaluators by 1 March 1983 to: **Dr. E. C. Bay, WWREC, Puyallup, Wash. 98371.** An Equal Opportunity/Affirmative Action Employer. Women, minorities, and handicapped persons are encouraged to apply and identify themselves as such in their applications.

## POSITIONS OPEN

**RADIATION BIOLOGY/ECOLOGY/PHYSICS** Graduate research assistantships and traineeships are available for qualified students seeking M.S. or Ph.D. degrees in: molecular, cellular, and mammalian radiobiology; mutagenesis and oncogenesis; biological effects of hyperthermia; late effects of heavy ions; experimental radiation oncology; health and radiological physics; and radioecology. Positions are open as research fellows for recent doctorates (Ph.D. or D.V.M.) and as research associates (Ph.D., D.V.M., or M.S. plus experience) in radiobiology, and in the application of electro/optical instrumentation to cell biology. Faculty includes Drs. J. S. Bedford, S. J. Benjamin, T. B. Borak, M. M. Elkind, M. H. Fox, E. L. Gillette, J. E. Johnson, J. T. Lett, and F. W. Whicker. Inquiries and applications (résumé, bibliography, transcripts, and three references) should be sent to: **Professor M. M. Elkind, Chairman, Department of Radiology and Radiation Biology, Colorado State University, Ft. Collins, Colo. 80523; telephone: 303-491-5222.** Colorado State University is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Service Building.

**RESEARCH ASSOCIATE** to work on studies of effects of aging on the gastrointestinal tract. The applicant would be expected to supervise projects under the immediate direction of the chief of gastroenterology. The research work involves chemical and autoradiographic techniques applied to intestinal samples. Send curriculum vitae and names of references to: **Peter R. Holt, Gastroenterology Division, St Luke's Hospital Center and Department of Medicine, Columbia University, 114th Street and Amsterdam Avenue, New York, N.Y. 10025.** An Equal Opportunity/Affirmative Action Employer.

### RESEARCH ASSOCIATE/POSTDOCTORAL POSITION

A 2-year research associate/postdoctoral position is available immediately. Research will involve investigations in renal pharmacology-toxicology. Send curriculum vitae and two letters of recommendation to: **Dr. W. O. Berndt, Department of Pharmacology, College of Medicine, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, Neb. 68105.**

### RESEARCH ASSOCIATE

A postdoctoral position available to investigate the molecular biology of malaria parasite-host cell interactions. Applications with experience in one or more of the following areas will be considered: protein chemistry, radiolabeling, molecular biology. Send curriculum vitae and three letters of reference to: **Dr. Michael R. Hollingdale, Biomedical Research Institute, 12111 Parklawn Drive, Rockville, Maryland 20852.**

**RESEARCH ASSOCIATE.** Ph.D. in biochemistry (or related science) required. Research position involved with radiation transformation of cells in vitro; to determine biochemical mechanisms of action of modifiers of the carcinogenic process. Expertise in studies of cell membranes desirable. Send résumé to: **Dr. Ann Kennedy, Department of Cancer Biology, Harvard School of Public Health, 665 Huntington Avenue, Boston, Mass. 02115.** Harvard is an Affirmative Action/Equal Opportunity Employer.



### OFFERS CHALLENGING POSITIONS IN RESEARCH

We are an important research oriented European pharmaceutical company with headquarter and research facilities in Belgium, near Brussels.

We are expanding our research facilities and are searching for potential candidates for the following positions:

- **HEAD** of the Department of Pharmacology (cardiovascular, CNS, and general immunology),
- **HEAD** of the Department of General Screening,
- **ASSISTANT** to the head of the Department of Biochemistry, and
- **GROUP LEADER** in cerebrovascular research (to build up and conduct a team of 10 to 15 people).

All candidates should have a minimum of 3 to 5 years of postdoctoral research and a good understanding of biological mechanisms in general.

Applications and curriculum vitae will be treated in confidence and sent to: **UCB s.a., Direction du Personnel/Développement, 326 Avenue Louise, Bte 7, B-1050 Bruxelles, Belgium.**



is a new biotechnology company interested in the whole spectrum of biotechnology and is located in La Jolla, a seaside community in northern San Diego, California.

**SIBIA is a company which:**

1. **has a strong basic research component;**
2. **maintains close ties to very senior academic consultants; and**
3. **is actively engaged in challenging, multi-disciplinary research projects.**

You are invited to submit an application for the position of

### **STAFF SCIENTIST**

This position requires a PhD in molecular biology with 3-7 years of research experience in molecular and cellular biology, including recombinant DNA techniques and familiarity with gene regulation and expression in prokaryotic and eukaryotic systems. Knowledge of microinjection techniques is desirable.

Applications, including a curriculum vitae, a statement of research interests and goals, a list of publications, and the names of three professional references should be submitted to:

**SIBIA**

P.O. Box 85800

Dept. OMT

San Diego, CA 92138

*SIBIA is an equal opportunity employer.*

## **RESEARCH IN BIOCHEMISTRY THE UNIVERSITY OF CALGARY**

Under the auspices of the University Biochemistry Group, The University of Calgary offers an interdisciplinary environment for graduate and post-doctoral research in Biochemistry, Molecular Biology and Biotechnology. Highly qualified students with training in biochemistry, chemistry, biology or related disciplines may be admitted to programs leading to the MSc and PhD degrees. Research/teaching assistantships (\$9,420.00 to \$10,940.00/yr) are available from the University. Studentships (\$10,800.00/yr plus \$2500.00 research allowance) and post-doctoral fellowships (\$19,600.00/yr plus \$5000.00 research allowance) are available from the Alberta Heritage Foundation for Medical Research and may be applied for via The University of Calgary. Interested individuals should send a curriculum vitae which includes courses taken and grades obtained, and a statement of research interests to:

**Dr. George I. Drummond, Chairman,  
University Biochemistry Group  
The University of Calgary  
2500 University Drive North West  
Calgary, Alberta, Canada T2N 1N4**

## **TUMOR IMMUNOLOGIST**

**An opportunity for a creative and flexible Scientist to join our tumor biology group to do basic and applied research in tumor immunology. The successful candidate we are seeking will have a PhD with 1 or 2 years of post doctoral experience in tumor immunology. An interest in NK cell activation and tumor metastases as evidenced by publications would be helpful. The potential candidate should be highly motivated and should be able to work in collaboration with the other Scientists in the group in searching for new approaches for the treatment of cancer and metastases.**

**Inquiries should be directed to:**

**Merrell Dow**



**PSM MERRELL DOW  
RESEARCH CENTER**

**2110 East Galbraith Road  
Cincinnati, Ohio 45215**

**Equal Opportunity Employer M/F**

## **RESEARCH ASSISTANT ARACHIDONIC ACID RESEARCH**

The Upjohn Company, a leader in pharmaceutical research and development of new therapeutic agents, is seeking a research assistant for studies in the mechanism of action of prostaglandins and leukotrienes.

Applicants must have a BS or MS degree in biochemistry or pharmacology and have experience with techniques that measure phosphorylation of cellular proteins. Knowledge of 2-D gel electrophoresis would be beneficial.

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 plans.

For confidential consideration, please send your resume to:

**Lance D. Williams—14579  
5044-41-1**

**Upjohn**

**The Upjohn Company**

**7000 Portage Road  
Kalamazoo, Michigan 49001**

*An Equal Opportunity Employer M/F*



## POSITIONS OPEN

**RESEARCH ASSOCIATE** to work on calcium regulation of muscle contraction. Strong background in physical chemistry, protein chemistry, and computer modeling required. Salary range: \$20,000 to \$25,000. *We are an Equal Opportunity/Affirmative Action Employer.* Contact: **J. Gergely, Boston Biomedical Research Institute, 20 Staniford Street, Boston, Mass. 02114.**

Ph.D.—Division of Bone Marrow Transplantation and Research Immunology, Childrens Hospital of Los Angeles, University of Southern California (USC), School of Medicine, invites applications for a **RESEARCH POSITION** at the rank of **assistant professor**. Individual is expected to work in basic lymphocyte membrane structure.

Applicants should send curriculum vitae, statement of research interests, and names of two references to: **Robertson Parkman, M.D., Head, Division of Bone Marrow Transplantation and Research Immunology, Childrens Hospital of Los Angeles, P.O. Box 54700, Terminal Annex, Los Angeles, Calif. 90054.**

*USC and Childrens Hospital of Los Angeles are Equal Opportunity Employers.*

## SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

The Woodrow Wilson School of Public and International Affairs, Princeton University, is seeking candidates for an **assistant professorship** in the fields of **SCIENCE, TECHNOLOGY, AND PUBLIC POLICY ANALYSIS**. Applicants should have a research background at the Ph.D. level in policy problems that raise important scientific issues or have substantial technological content. Candidates will be considered who have degrees in the social, physical, or life sciences, engineering, or history of science and technology. The appointment might be made jointly with another academic department. Applications with curriculum vitae and references should be made to: **Dean, Woodrow Wilson School, Princeton University, Princeton, N.J. 08544.** *Princeton University is an Affirmative Action Employer.*

**SENIOR LABORATORY ASSOCIATE.** Ph.D. or master's with experience in tissue culture and background in receptor studies preferred to assist in program of human in vitro fertilization. Duties include media preparation and quality control, preparation of sperm and ova for insemination, and insemination and culture of embryos. Please send curriculum vitae to: **Jon W. Gordon, M.D., Ph.D., Department of Obstetrics/Gynecology, Annenberg 20-58, THE MOUNT SINAI MEDICAL CENTER, One Gustave L. Levy Place, New York, N.Y. 10029.** *An Equal Opportunity Employer.*

## STAFF OFFICER

The Environmental Studies Board of the National Research Council is seeking a Ph.D. in physical sciences, statistics, economics, or public policy or equivalent with 10 to 15 years of experience after the undergraduate degree, to plan, direct, and coordinate a committee examining institutional factors in hazardous chemical waste management. Candidates should have demonstrated relevant high technology background, administrative skills, and ability to work and communicate effectively with others. Send résumé to: **Dr. Myron F. Uman, Environmental Studies Board, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** *An Equal Opportunity Employer.*

**STAFF SCIENTIST I and II**—The Lawrence Berkeley Laboratory, Energy and Environment Division, has two staff scientist I and three staff scientist II positions available for scientists and engineers in the Building Energy Simulation Group to assist in the design, implementation, and documentation of computer programs for the analysis of the energy use of buildings. Applicants for staff scientist I must have the following qualifications: a significant and successful record of complex scientific programming preferably including language development, numerical techniques, report generation, or graphics. An advanced degree in computer science or mechanical engineering preferred. Applicants for staff scientist II positions must have the following qualifications: a strong background in heat transfer and building energy use physics with a knowledge of scientific computer programming. An advanced degree in engineering or computer science preferred. Send two copies of detailed résumé to: **Employment Office, Building 65, Lawrence Berkeley Laboratory, One Cyclotron Road, Berkeley, Calif. 94720.** Please refer to Job Number A/0683 for staff scientist I or A/0667 for staff scientist II. *An Equal Opportunity Employer, M/F/H.*

## POSITIONS OPEN

**TECHNICAL SPECIALIST.** Senior position for experienced electron microscopist to set up and supervise EM facility and manage departmental laboratories. Some opportunity for independent research. B.A. degree with 3 to 5 years of experience in EM required; master's degree preferable. Skills in photography and animal handling essential. Salary dependent upon qualifications. Send curriculum vitae to: **Jane McMahon, Assistant to Chairman, Department of Neurological Surgery, HSC T12-024, State University of New York (SUNY) Stony Brook, Stony Brook, N.Y. 11794.** *SUNY Stony Brook is an Equal Opportunity/Affirmative Action Employer.* AK

## DEPARTMENT OF ANATOMY AND CELLULAR BIOLOGY TUFTS UNIVERSITY SCHOOLS OF MEDICINE, DENTAL MEDICINE AND VETERINARY MEDICINE VETERINARY ANATOMY POSITION

The Department of Anatomy and Cellular Biology, Tufts University Schools of Medicine, Dental Medicine and Veterinary Medicine, invites applications for a tenure-track position beginning July 1983. Applicants should possess the Ph.D. in anatomy and/or the D.V.M. (or equivalent). The position involves the teaching of either veterinary histology or veterinary gross anatomy. Applicants at the assistant professor level should have at least 1 or 2 years of postdoctoral research experience and show promise of developing an independent research program. Applicants at the associate or full professor level must have an active, funded research program and extensive teaching experience in veterinary anatomy. Research areas in the department include: pulmonary cell biology, reproductive biology and neuroendocrinology, neurobiology, muscle biology and the effects of stress/disease on the musculoskeletal system, and cell/developmental biology including secretory mechanisms, cell-extracellular matrix interactions, cell motility, and control of cell multiplication. Salary and rank dependent upon qualifications and experience. Applicants are invited to submit curriculum vitae, names of three references, and a letter describing research and teaching interests to: **Dr. Karen Hitchcock, Chairman, Department of Anatomy and Cellular Biology, Tufts University Schools of Medicine, Dental Medicine and Veterinary Medicine, 136 Harrison Avenue, Boston, Massachusetts 02111.** Deadline for receipt of applications is 1 March 1983.

*Tufts University is an Equal Opportunity/Affirmative Action Employer.*

**WILDLIFE ECOLOGY.** Faculty position in wildlife ecology; teaching and research; tenure-track; 12-month. Teach undergraduate courses in terrestrial wildlife ecology, techniques, management, and animal damage control and predation ecology. Develop specialty courses at graduate level. Development and execution of research projects and supervision of graduate students are integral parts of position. Will be expected to devote significant effort to research concerning animal damage control and predation ecology. Requires Ph.D. degree with field experience in wildlife research or education with particular experiences and/or training in animal damage control. Salary and rank negotiable. Applications will be received until a suitable candidate is found, but no job offer will be made before 15 January 1983. Submit curriculum vitae, three letters of recommendation, publication list, and statement of research interests to: **Wallace Klusmann, Head, Wildlife and Fisheries Sciences Department, Texas A&M University, College Station, Texas 77843.** *An Equal Opportunity Employer.*

## DEPARTMENT OF ZOOLOGY AND PHYSIOLOGY LOUISIANA STATE UNIVERSITY (LSU)

Applications are sought for four anticipated tenure-track positions, starting August 1983, in the following areas: **developmental biology, vertebrate systems physiology, cell/molecular biology, and genetics.** Rank open. Successful candidates must demonstrate potential for initiating an extramurally funded research program. Establishment of an active graduate program and excellence in undergraduate teaching is expected. Curriculum vitae, university transcripts, selected reprints, and three letters of reference should be sent to: **Chairman, Department of Zoology and Physiology, Louisiana State University, Baton Rouge, Louisiana 70803-1725.** Preference will be given to those applications received by 28 February 1983. *LSU is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**RESEARCH AGRONOMIST.** Career Federal Service. Incumbent will conduct research on forage quality analysis procedures and on the management of forage crops, primarily perennial grasses for improved forage quality. Position located at University of Nebraska Campus, Lincoln, Nebraska. GS-11/12, salary based on qualifications and experience. For applications, contact: **J. L. Brooks, USDA-ARS-B56, 2000 West Pioneer Parkway, Peoria, Ill. 61615.** Telephone: 309-671-7813. Closing date: 28 February 1983. Candidates must be U.S. citizens. *An Equal Opportunity Employer.*

## SCIENTIFIC EXCHANGES

### NAS SCIENTIFIC EXCHANGE PROGRAMS WITH USSR AND EASTERN EUROPE

Applications are invited from American scientists who wish to make professional visits in the USSR, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and Yugoslavia between January and December 1984. Applicants must be U.S. citizens and have a doctoral degree in the natural, biomedical, or social and behavioral sciences by the time of visit. Deadline for requesting applications is Tuesday, 1 March 1983. Please contact:

**Section on USSR and Eastern Europe  
National Academy of Sciences  
2101 Constitution Avenue, NW  
Washington, D.C. 20418  
Telephone: 202-334-2644/2645**

## GRADUATE STUDY

### GRADUATE STUDY IN ENVIRONMENTAL HEALTH SCHOOL OF PUBLIC HEALTH HARVARD UNIVERSITY

Applications are being accepted for M.S. and doctoral programs in industrial hygiene and safety, air pollution control, radiation protection, and environmental health management.

Deadline for admission: 1 March 1983.  
Contact:

**Chairman, Department of Environmental Health  
Harvard School of Public Health  
665 Huntington Avenue  
Boston, Mass. 02115  
Affirmative Action Employer**

### DOCTORAL PROGRAM IN MOLECULAR AND CELLULAR BIOLOGY AND PATHOBIOLOGY

Interdisciplinary program leading to Ph.D. degree seeks qualified candidates interested in fundamental molecular and cellular biology and its application to disease states in man.

Stipends are available on a competitive basis. Contact: **Director, Program in Molecular and Cellular Biology and Pathobiology, College of Graduate Studies, Medical University of South Carolina, Charleston, South Carolina 29425.**

## TRAINEESHIPS

**POSTDOCTORAL TRAINEESHIP.** Radiation Biophysics Oncology Research. Three traineeships are available in the Radiation Biophysics Laboratory, Memorial Sloan-Kettering Cancer Center, New York, New York, for research in radiation biophysics, radiochemistry, and radiobiology including non-invasive quantitative functional imaging and nuclear medicine research. The annual stipend provided by National Research Service Awards ranges from \$13,380 to \$18,870, depending upon experience. Training and research will be carried out under the auspices of a National Cancer Institute Radiation Oncology Research Training Grant. Radiation facilities include a medical cyclotron, access to high energy x-ray and electron sources, nuclear medicine instrumentation, radiochemistry laboratories, extensive computer systems, and animal facilities. Applicants should have strong majors and/or minors in such subjects as physics, physiology, chemistry, or mathematics. U.S. citizens or permanent residents are eligible to apply. Send résumé, transcripts, and names and addresses of two references to: **Dr. John S. Laughlin, Head, Biophysics Laboratory, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, New York 10021.** *An Equal Opportunity Employer.*

# The MX Missile and the Strategic Balance of Power

A collection of recent articles from SCIENCE on contemporary strategic ideology is now available for use by professionals, teachers, and researchers interested in the nuclear arms race.

"Anyone seeking a better understanding of the MX debate would do well to look at [this] series of brief, clearly written analyses."

— *The Boston Globe*

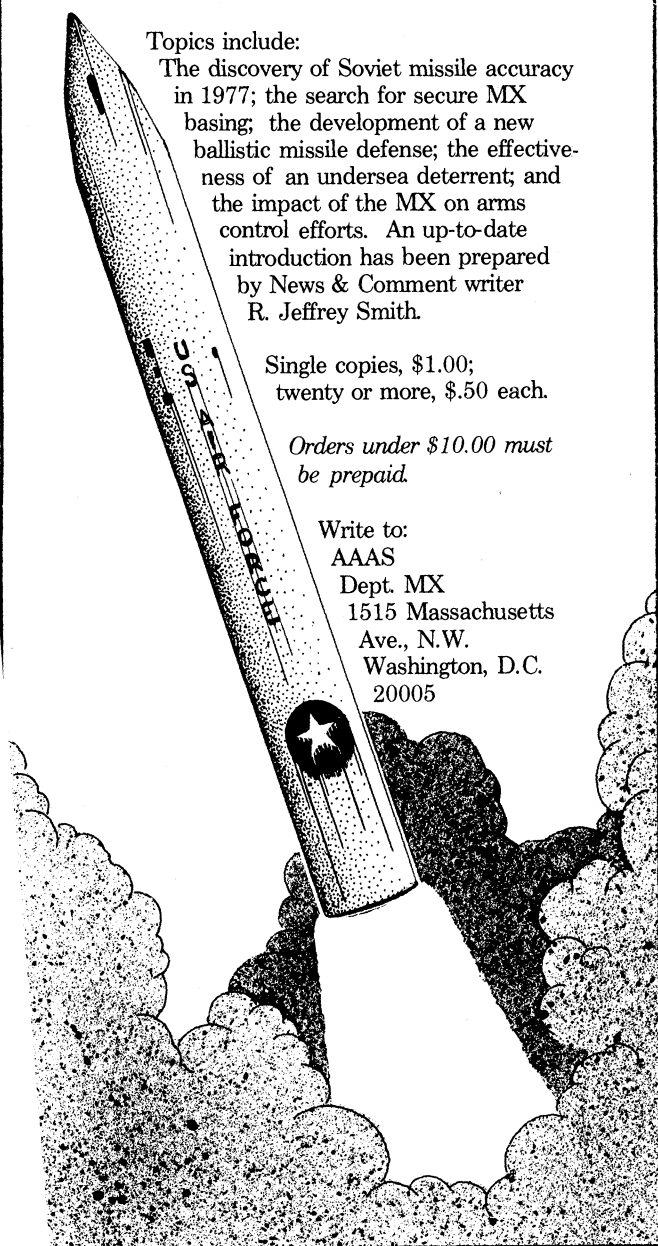
## Topics include:

The discovery of Soviet missile accuracy in 1977; the search for secure MX basing; the development of a new ballistic missile defense; the effectiveness of an undersea deterrent; and the impact of the MX on arms control efforts. An up-to-date introduction has been prepared by News & Comment writer R. Jeffrey Smith.

Single copies, \$1.00;  
twenty or more, \$.50 each.

Orders under \$10.00 must  
be prepaid.

Write to:  
AAAS  
Dept. MX  
1515 Massachusetts  
Ave., N.W.  
Washington, D.C.  
20005



## SENIOR RESEARCH SCIENTIST CELL CULTURE



Sandoz, Inc., a leader in the pharmaceutical industry, is seeking a Sr. Scientist to join a newly formed team of biochemical pharmacologists, arterial wall morphologists and organic chemists investigating atherosclerosis.

Responsibility will include the supervision of technical personnel and conducting both basic and applied research on models of endothelial cell injury and smooth muscle cell growth.

The ideal candidate should possess a Ph.D. in Cell Biology or a related field with at least 2 years of industrial or post-doctoral training in a related research program. Proficiency in cell culture techniques required. Preference will be given to candidates having a background in the pathology of atherosclerosis and relevant publications in major scientific journals.

Sandoz, located in northern New Jersey, offers a salary commensurate with your experience and an attractive work environment with opportunity and challenge. Please send resume to:

Mrs. Judith O'Hagan  
SANDOZ, INC.  
Route 10, East Hanover, New Jersey 07936  
Equal Opportunity Employer M/F

# SCIENCE

## SCIENCE Introduces "The Four-Day Close"

We now offer our recruitment advertisers the convenience formerly found only in daily newspapers. We call it "**The Four-Day Close.**" Instead of reserving space a month or more in advance, you now have until just four days before the issue is mailed to its 160,000-plus subscribers.

Film (right-reading, emulsion face down, 1/4 or 1/2 page size only) and insertion order must reach: **SCIENCE, Room 107, 1515 Massachusetts Avenue, N.W., Washington, D.C. 20005**, by 3 p.m. Mondays (except for legal holidays when material must reach Washington by 3 p.m. Fridays). Because space is limited, the four-day close page will be reserved on a first-come, first-served basis.\*

Now you don't have to wait for the professional you need **as soon as possible**. Nor must you advertise in a Sunday paper that pans a lot of sand, but not much gold. Scientific employers know that SCIENCE ads fill the job better. Now they fill it faster, too.

We call it "**The Four-Day Close.**"

You can call it "**Instant Recruitment.**"

For further information, telephone Dick Charles at **SCIENCE: 212-730-1050**, or write: 1515 Broadway, New York, N.Y. 10036.

\*At a 15% premium.

## SYMPOSIA

### NASA GODDARD SPACE FLIGHT CENTER Landsat-4 Science Office invites you to attend the LANDSAT-4 SCIENTIFIC CHARACTERIZATION EARLY RESULTS SYMPOSIUM

22 to 24 February 1983  
Goddard Space Flight Center  
Greenbelt, Maryland

Sessions will include presentation of early results in the following program areas:

- **Radiometry**
  - a) Sensor and Spacecraft Performance
  - b) Image Data Quality Performance
- **Geometry**
  - a) Sensor and Spacecraft Performance
  - b) Image Data Quality Performance
- **Applications Information**
  - a) Renewable Resources
  - b) Nonrenewable Resources
  - c) Planning/Environmental Management

For further information and registration procedures, please contact:

Judi Abraham  
ORI, Inc.  
1400 Spring Street  
Silver Spring, Maryland 20910  
Telephone: 301-495-6071

### 2nd International Symposium of the Society of Toxicologic Pathologists 8 to 11 May 1983

### DESIGN OF CARCINOGENICITY STUDIES: CONSIDERATIONS IN PATHOLOGY INTERPRETATION

Hyatt Regency Crystal City  
at Washington National Airport  
2799 Jefferson Davis Highway  
Arlington, Va. 22202

For information contact:

Dr. M. J. Iatropoulos  
American Cyanamid  
Pearl River, N.Y. 10965  
Telephone: 914-735-5000, extension 3760

## ADVANCED STUDY INSTITUTE

Applications are being accepted for the NATO ADVANCED STUDY INSTITUTE (ASI), "Technology Assessment, Risk Analysis, and Environmental Impact Assessment: Contributions from the Psychological and Decision Sciences." The ASI will be held 21 to 31 August at the Les Arcs Conference Center and Resort Complex in the French Alps. The program will include advanced level presentations by more than 25 distinguished experts and discussants. For further information, contact: Dr. V. Covello or Dr. J. Mumpower, c/o National Science Foundation, 1800 G Street, NW, Washington, D.C. 20550.

## REQUEST FOR PROPOSALS

### REQUEST INFORMAL PROPOSALS FOR CONTRACEPTIVE RESEARCH AND DEVELOPMENT

The Program for Applied Research on Fertility Regulation (PARFR), Northwestern University, Chicago, Illinois, continues to seek informal proposals from foreign and U.S. investigators for APPLIED RESEARCH projects in the field of fertility control. Proposals dealing with new ideas, techniques, and procedures, with the objective of developing new or improved methods of fertility control will receive priority consideration. PARFR's interest in contraception includes the full range of fertility control methods—hormonal and other pharmacologic agents, mechanical devices, and surgical techniques. Contraceptive methods proposed for research support should be close to the stage of clinical applicability, although projects could include laboratory studies, and/or animal studies.

Further information can be obtained by writing or calling:

Director of Administration  
PARFR  
Northwestern University  
Suite 1525  
875 North Michigan Avenue  
Chicago, Illinois 60611  
Telephone: 312-649-2990

## ASSISTANTSHIPS

THE MEDICAL SCIENTIST TRAINING PROGRAM AT THE MEDICAL UNIVERSITY OF SOUTH CAROLINA offers ASSISTANTSHIPS for a select number of individuals for training in an integrated basic and clinical medical science program leading to a combined M.D./Ph.D. degree in 6 to 7 years. For further information, please contact: Director, Medical Scientist Training Program, Dean's Office, College of Graduate Studies, Medical University of South Carolina, Charleston, South Carolina 29425.

TEACHING ASSISTANTSHIPS/RESEARCH FELLOWSHIPS for students studying for Ph.D. and M.S. degrees in all areas of chemistry, including clinical chemistry (clinical chemistry program affiliated with Cleveland Clinic Foundation). Stipend: \$6200 to \$7200, plus tuition and fees. Contact: Dr. Thomas Flechtner, Department of Chemistry, Cleveland State University, Cleveland, Ohio 44115; telephone: 216-687-2458.

## PROGRAM

### CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: The Dean of Admissions, The New England College of Optometry, Room 101, 424 Beacon Street, Boston, Mass. 02115.

## TRAINING GRANT

Postdoctoral NIH TRAINING GRANT POSITIONS with one of several faculty members performing hematology research. Research areas include erythropoietin, biochemistry, thrombopoietin and platelet physiology, cellular and humoral immunity, canine cyclic hematopoiesis, and fibrinogen split products and coagulation. Two-year appointments. Send curriculum vitae, including research goals and names of three referees, to: Robert D. Lange, M.D., Department of Medical Biology, University of Tennessee College of Medicine/Knoxville, 1924 Alcoa Highway, Knoxville, Tenn. 37920. Telephone: 615-971-3925.

*An Equal Opportunity/Affirmative Action Employer.* However, to be eligible applicant must be a U.S. citizen, noncitizen national, or in possession of an alien registration receipt card I-151 or I-551.

## FELLOWSHIPS

### IMPERIAL CANCER RESEARCH FUND RESEARCH FELLOWSHIP

Applications are invited for a 3-year postdoctoral appointment to clone mammalian DNA sequences specifying control regions, structural genes, and transforming genes, and to test expression and biological activity of the cloned sequences by the use of DNA transfection techniques and eukaryotic vector systems. Some experience essential.

Salary range: £8085 to £10,240, plus London weighting of £1220 with entry, according to qualifications and postdoctoral experience.

For further information, contact: Dr. M. Fried (telephone: 01.242.0200, extension 297). Applications supported by full typescript curriculum vitae, including date Ph.D. obtained, list of publications, and the names and addresses of two referees, should be sent to: The Personnel Officer, Imperial Cancer Research Fund, Lincoln's Inn Fields, London, WC2, England, quoting reference 33/83.

POSTDOCTORAL FELLOWSHIP in biochemical and clinical pharmacology. Studies will focus on daunorubicin metabolism in patients with acute non-lymphocytic leukemia and mechanisms of resistance to anthracyclines in human cell lines. Research experience in biochemistry and enzymology (particularly drug uptake into mammalian cells, tissue culture, and protein purification) is preferred. Submit application with curriculum vitae, a description of research interest, and the names of three references to: Dr. Nahed Ahmed, Assistant Member, St. Jude Children's Research Hospital, P.O. Box 318, Memphis, Tenn. 38101. *An Equal Opportunity/Affirmative Action Employer.*

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIP

Position is available immediately to study the biology of bovine coronavirus. The emphasis is on characterization of antigens involved in immune recognition, the identification of genes coding for these antigens and their expression in suitable prokaryotes. A strong background in biochemistry is essential and experience in cloning is preferred. Salary: \$21,000 per annum. *Canadian citizens and landed immigrants will be given first consideration but others are encouraged to apply.* Send curriculum vitae and the telephone numbers of three references to:

Dr. Geoffrey Hudson  
Veterinary Infectious Disease Organization (VIDO)  
124 Veterinary Road  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada S7N 0W0

DOCTOR OF ARTS IN BIOLOGY: FELLOWSHIPS are available for qualified persons interested in the D.A. degree in biology. The program stresses preparation for undergraduate teaching at colleges and universities. Applicants should hold a master's degree in some area of biology. Deadline for receipt of application is 1 March 1983. For more information contact: Chairman, D.A. Committee, Department of Biology, Idaho State University, Pocatello, Idaho 83209. *An Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS in molecular genetics and molecular biology. A wide range of genetic, regulatory, and cell biology projects in bacterial and human viruses, bacteria, yeast, and mammalian cells. Technology includes prokaryotic and eukaryotic expression systems, nucleotide and peptide synthesis, and monoclonal antibodies. Applicants should send complete curriculum vitae, letters of reference, and a statement of career objectives and area of investigative interest to: Dr. B. S. Strauss, Department of Microbiology, The University of Chicago, 920 East 58 Street, Chicago, Ill. 60637. *The University is an Affirmative Action/Equal Opportunity Employer.*

GRADUATE FELLOWSHIPS—The Department of Biology at George Mason University offers a Ph.D. in environmental biology-public policy stressing the involvement of environmental biologists in public policy issues. In fall 1983 graduate fellowships of \$8500 per year will be awarded to outstanding applicants. Interested persons should send inquiries, a résumé, and a summary of professional and research goals by 15 February 1983 to: Director, Program of Environmental Biology-Public Policy, Department of Biology, George Mason University, Fairfax, Virginia 22030. *Affirmative Action/Equal Opportunity Employer.*

## MIT POSTDOCTORAL FELLOWSHIPS

Two postdoctoral fellowships in auditor physiology are available at the Massachusetts Institute of Technology (MIT) in an NIH supported program. Specific areas of interest include comparative physiology of the middle ear, mechanoelectric transduction of the inner ear, structure-function relations normal and pathological ears, coding acoustic stimuli in the auditory nerve and brain stem nuclei, olivocochlear and middle ear-muscle systems, neurochemistry of the auditory system, and the use of evoked potentials in clinical applications.

Inquiries are invited from recent recipients of Ph.D. or M.D. degrees who are training in the physiology and anatomy of auditory systems at the Eaton-Peabody Laboratory, a facility operated jointly by MIT, Massachusetts Eye and Ear Infirmary, the Harvard Medical School.

Please submit two copies of curriculum vitae along with letter of interest to: Ken Hewitt, MIT Personnel Office, E19-23, Massachusetts Avenue, Cambridge, Mass. 02139 (attention: Job Number R941). *MIT is an Equal Opportunity/Affirmative Action Employer.*

# NEUROPHARMACOLOGIST

An immediate opening exists in the Department of Pharmacology for a Senior Research Pharmacologist to participate in our CNS research program.

Responsibilities include research into the mode of action of several classes of CNS-active drug and the use of neuropharmacological techniques to define the potential for clinical utility of new molecules.

Qualifications include a PhD in pharmacology and at least 2 years of post doctoral experience utilizing brain micro injection and recording techniques. Knowledge of computer application to data acquisitions and analysis is essential.

Inquiries should be directed to:

**Merrell Dow**



**PSM MERRELL DOW  
RESEARCH CENTER**

**2110 East Galbraith Road  
Cincinnati, Ohio 45215**

Equal Opportunity Employer M/F

If you would like to do research in a new industrial company which:

1. has a strong basic research component;
2. maintains close ties to very senior academic consultants; and
3. is actively engaged in challenging, multi-disciplinary research projects;

then you should investigate a position as a

**RESEARCH ASSOCIATE**

in

**THE SALK INSTITUTE BIOTECHNOLOGY/INDUSTRIAL ASSOCIATES, INC.**



SIBIA is a new biotechnology company interested in the whole spectrum of biotechnology and is located in La Jolla, California.

Candidates for this position should have a BS/MS in molecular and cellular biology, microbiology, or biochemistry. Knowledge of recombinant DNA techniques such as cloning, nucleic acid sequencing, and/or microinjection is required.

Applications, including a curriculum vitae and the names of three professional references should be submitted to:

**SIBIA**

P.O. Box 85800

Dept. CAB

San Diego, CA 92138

*SIBIA is an equal opportunity employer.*



## Marine Biological Laboratory

Woods Hole, Massachusetts

announces

### Courses—Spring/Summer—1983

#### Biophysics of Neural Function\*

Daniel Alkon, NINCDS/MBL, Director

#### Biology of Parasitism

John David, Harvard Medical School, Director

#### Embryology

William Jeffery, Texas and Bruce Brandhorst, McGill, Directors

#### Marine Ecology

Ivan Valiela, BU/MBL; John Teal, WHOI; and Peter Frank, Oregon, Directors

#### Microbial Ecology

Harlyn O. Halvorson, Brandeis, Director

#### Neural Systems & Behavior

Ronald Hoy, Cornell and Eduardo Macagno, Columbia, Directors

#### Neurobiology

John Hildebrand, Columbia and Tom Reese, NINCDS, Directors

#### Physiology

Joel L. Rosenbaum, Yale, Director

\*May 9—June 3, 1983; others June 12—August 19, 1983

Most courses are intended for graduate and postdoctoral students, although exceptionally well qualified undergraduates are accepted.

Limited scholarship funds are available.

**Deadline:** February 25, 1983.

For further information write the Admissions Office, MBL, Woods Hole, MA 02543.

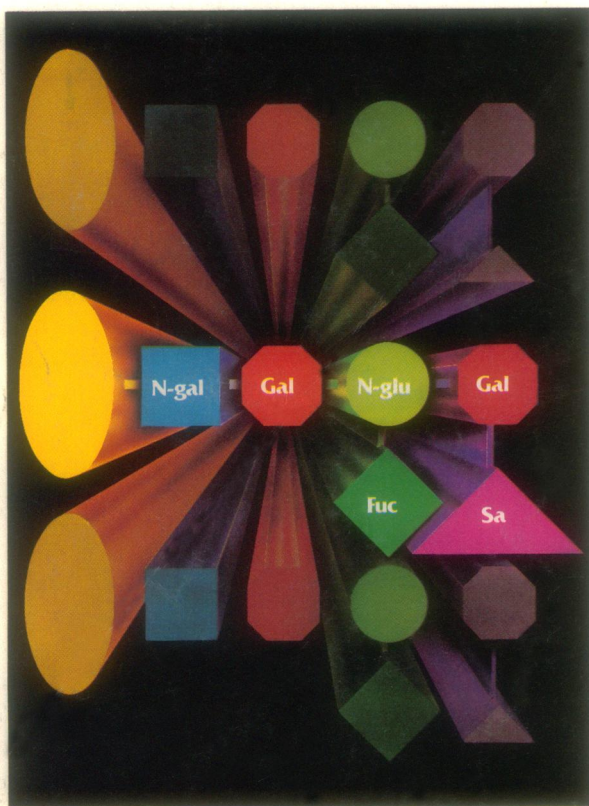
**The Marine Biological Laboratory is an  
Equal Employment Opportunity Institution.**



# CENTOCOR<sup>TM</sup>

## INTRODUCES CARBOHYDRATE ANTIGEN 19-9<sup>TM</sup> RADIOIMMUNOASSAY

### A VALUABLE RESEARCH TOOL USING MONOCLONAL ANTIBODIES FOR DETECTION AND MANAGEMENT OF GASTROINTESTINAL CANCERS



CARBOHYDRATE ANTIGEN 19-9<sup>TM</sup> (CA 19-9<sup>TM</sup>)

CA 19-9<sup>TM</sup> RIA is an *in vitro* radioimmunoassay for the measurement of CA 19-9<sup>TM</sup> in serum or plasma.

#### **THIS NEW TUMOR MARKER HAS DEMONSTRATED...**

##### **...LOW FALSE POSITIVE RATES**

- Normal Population <0.5%
- Heavy Smokers <1.8%
- Pancreatitis, rectal polyps and inflammatory bowel disease <3%

##### **...HIGH ASSOCIATION WITH GI CANCERS**

- High sensitivity and specificity for pancreatic cancer.
- Improved performance for detection of pancreatic, liver and stomach cancers.

##### **...USEFULNESS AS A PROGNOSTIC MONITOR FOR COLORECTAL CANCER**

- Clinical studies indicate CA 19-9<sup>TM</sup> levels may be elevated in some patients 6 to 18 months prior to Carcinoembryonic Antigen for the prediction of colorectal cancer recurrence.
- CA 19-9<sup>TM</sup> provides additional as well as confirmatory information for prognostic management of colorectal cancer patients when paired with Carcinoembryonic Antigen.

##### **...POTENTIAL TO BROADEN THE SCOPE OF CANCER RESEARCH**

- This new tumor marker which is sensitive for gastrointestinal malignancies and with low false positive rates affords a new tool for studies in such areas as chemotherapy protocols or testing of cancer diagnostics.

CA 19-9<sup>TM</sup> RIA IS AVAILABLE FOR RESEARCH USE.

## SPECIAL EVALUATION OFFER

To take advantage of this special offer, simply purchase one CA 19-9<sup>TM</sup> RIA kit for \$385.00 (FOB Malvern, PA, U.S. Dollars) and CENTOCOR<sup>TM</sup> will ship another kit at no charge!\*

### HOW TO ORDER:

By phone: (800) 345-2401 Continental USA.  
(800) 342-2842 PA only.  
(215) 296-4488 All others.

By telex: 834823 MARN

By mail: CENTOCOR, Inc., 244 Great Valley Parkway,  
Malvern, PA 19355 USA.



CENTOCOR

CENTOCOR, Inc., 244 Great Valley Parkway,  
Malvern, PA 19355 USA

\*Offer valid until December 31, 1982  
North America Only.