

Browning and collaborators up to the mid-1960's highlighted. There is no discussion or even mention of the more recent extensive research programs in Alberta, Oklahoma, and Colorado. It is too bad that the author does not mention the theoretical work of Moncrieff and Raymond or several recent review articles and books on the subject, since none of this important work is mentioned in the other papers in the section.

The application of numerical models to the study of cloud dynamics, though not covered by Agee, is illustrated in two other papers. Bennetts and Bader use a three-dimensional model to understand the way in which neighboring storm cells can interact to produce an enhanced rainfall at the ground. Ray, Klemp, and Wilhelmson attempt to model a particular storm that was observed with a multiple-Doppler radar network. The amount of agreement between theory and observation is quite impressive (though here is another case where the original journal articles are more satisfying reading). Both studies are good examples of how cloud modeling can be used as an additional tool to gain physical insight into cloud processes.

Case studies of particular storms are given by Curic (Yugoslavia), Held (South Africa), and Lin and Pasken (United States), and Battan summarizes his case for the variable nature of storm updrafts. The detection of tornadic storms using satellite imagery and the prediction of severe hailstorms as opposed to flash floods in southern France are also discussed. Seliga and collaborators review the use of radar differential reflectivity, which they regard as a very promising technique for studying convective storms. And Abshaev reviews the experimental methods used to study hailstorms in the Soviet Union; equipment, techniques, and formulas are given, but there is practically no discussion of physical results.

There are numerous typographical errors and omissions in many of the papers. The English is often rather poor in papers by authors from non-English-speaking countries. No technical editing appears to have been done. Though the book contains an index, a more complete one would have been desirable, for there is no cross-referencing between the various papers.

Though the book does not fill the need for a unified treatment of cloud dynamics that summarizes the important results, it should nevertheless be greeted with some enthusiasm. It is an informative collection of recent results over a broad

range of topics. And, despite the drawbacks noted, in this day of specialization it should prove interesting and useful to the expert in the field as well as to those in other fields who are looking for an overview.

G. BRANT FOOTE

*Convective Storms Division,  
National Center for Atmospheric  
Research, Boulder, Colorado 80307*

## Books Received

**Acoustic Behavior in the Rat.** Research, Theory, and Applications. Werner Nitschke. Praeger, New York, 1982. xviii, 186 pp., illus. \$22.95.

**Acute Phase of Ischemic Heart Disease and Myocardial Infarction.** A. A. Jennifer Adgey, Ed. Nijhoff, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xii, 202 pp., illus. \$49.50. Developments in Cardiovascular Medicine, vol. 21.

**Advances in Heterocyclic Chemistry.** Vol. 31. A. R. Katritzky, Ed. Academic Press, New York, 1982. x, 350 pp., illus. \$68.

**Advances in Microbial Ecology.** Vol. 6. K. C. Marshall, Ed. Plenum, New York, 1982. xii, 240 pp. \$39.50.

**Advances in Myocardiology.** Vol. 3. Papers from a congress, Moscow, Sept. 1980. E. Chazov, V. Smirnov, and N. S. Dhalla, Eds. Plenum, New York, 1982. xiv, 656 pp., illus. \$69.50.

**Advances in X-Ray Spectroscopy.** Contributions in Honour of Professor Y. Cauchois. C. Bonnelle and C. Mandé, Eds. Pergamon, New York, 1982. xiv, 466 pp., illus. \$80.

**AGI Data Sheets for Geology in the Field, Laboratory, and Office.** R. V. Dietrich, J. T. Dutro, Jr., and R. M. Foote, Eds. American Geological Institute, Falls Church, Va., ed. 2, 1982. Various pages, illus. Spiral bound, \$12.95.

**Agricultural Land in an Urban Society.** Owen J. Furuseh and John T. Pierce. Association of American Geographers, Washington, D.C., 1982. vi, 90 pp., illus. Paper, \$5. Resource Publications in Geography.

**Agroclimatic Information for Development.** Reviving the Green Revolution. Papers from a symposium, Caracas, Sept. 1981. David F. Cusack, Ed. Westview, Boulder, Colo., 1983. xvi, 400 pp., illus. \$20.

**All About Chess and Computers.** David Levy and Monroe Newborn. Computer Science Press, Rockville, Md., 1982. x, 146 pp., and viii, 146 pp., illus. \$19.95. Reprint of *Chess and Computers and More Chess and Computers* (ed. 2).

**Alzheimer's Disease, Down's Syndrome, and Aging.** Papers from a conference, Santa Ynez Valley, Calif., Oct. 1981. F. Marott Sinex and Carl R. Merrill, Eds. New York Academy of Sciences, New York, 1982. vi, 200 pp., illus. Cloth or paper, \$35. Annals of the New York Academy of Sciences, vol. 396.

**Basic Statistical Computing.** D. Cooke, A. H. Craven, and G. M. Clarke, Edward Arnold, Baltimore, 1982. xii, 156 pp. Paper, \$13.95.

**A Biography of the Eye.** Development, Growth, Age. R. A. Weale. Lewis, London, 1982. x, 368 pp., illus. £17.

**Biological Control of Pests in China.** USDA Office of International Cooperation and Development, Washington, D.C., 1982. viii, 268 pp. Paper.

**Biological Illustration.** Techniques and Exercises. John C. Downey and James L. Kelly. Iowa State University Press, Ames, 1982. x, 126 pp., illus. Spiral bound, \$11.75.

**Chemistry and Biology of  $\beta$ -Lactam Antibiotics.** Vol. 1, Penicillins and Cephalosporins. Robert B. Morin and Marvin Gorman, Eds. Academic Press, New York, 1982. xi, 554 pp., illus. \$73.

**Chemistry and Physics of Carbon.** A Series of Advances. Vol. 18. Peter A. Thrower, Ed. Dekker, New York, 1982. xii, 186 pp., illus. \$45.

**Chemistry of the Unpolluted and Polluted Troposphere.** Proceedings of an institute, Corfu, Greece, Sept. 1981. H. W. Georgii and W. Jaeschke, Eds. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). x, 510 pp., illus. \$63. NATO Advance Study Institutes Series C, vol. 96.

**Cholera.** The American Scientific Experience, 1947-1980. W. E. van Heyningen and John R. Seal. Westview, Boulder, Colo., 1983. xviii, 344 pp., illus. \$27.50.

**Circulation in the Coastal Ocean.** G. T. Csanady. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xii, 280 pp., illus. \$52.50. Environmental Fluid Mechanics.

**Clinical, Biochemical, and Nutritional Aspects of Trace Elements.** Papers from a conference, Detroit, Dec. 1980. Ananda S. Prasad, Ed. Liss, New York, 1982. xx, 578 pp., illus. \$96. Current Topics in Nutrition and Disease, vol. 6.

**The Development of the Vertebrate Retina.** A Comparative Survey. Gerd Grün. Springer-Verlag, New York, 1982. viii, 87 pp., illus. Paper, \$24. Advances in Anatomy, Embryology and Cell Biology, vol. 78.

**Discounting for Time and Risk in Energy Policy.** Robert C. Lind and eight others. Resources for the Future, Washington, D.C., 1982 (distributor, Johns Hopkins University Press, Baltimore). xviii, 468 pp. \$42.50.

**The Earth and Its Mountains.** R. A. Lyttleton. Wiley-Interscience, New York, 1982. xxiv, 206 pp., illus. \$38.95.

**Ecology of Tropical Savannas.** Papers from a symposium, 1979. B. J. Huntley and B. H. Walker, Eds. Springer-Verlag, New York, 1982. xii, 670 pp., illus. \$49. Ecological Studies, vol. 42.

**Economics of Scientific Journals.** Edited by Ad Hoc Committee on Economics of Publication. D. H. Michael Bowen, Chairman. Council of Biology Editors, Bethesda, Md., 1982. viii, 106 pp. Paper, \$11.75.

**Eighth International Conference on Numerical Methods in Fluid Dynamics.** Aachen, Germany, June 1982. E. Krause, Ed. Springer-Verlag, New York, 1982. x, 572 pp., illus. Paper, \$27.20. Lecture Notes in Physics, vol. 170.

**Electrical Properties of Polymers.** Donald A. Seanor, Ed. Academic Press, New York, 1982. xii, 380 pp., illus. \$52.

**Electromagnetism.** Paths to Research. Doris Tepitz, Ed. Plenum, New York, 1982. xii, 376 pp., illus. \$55.

**Electron Microscopy of Soils and Sediments.** Techniques. Peter Smart and N. Keith Tovey. Clarendon (Oxford University Press), New York, 1982. xviii, 264 pp., illus. \$98.

**The Emergence of Ornithology as a Scientific Discipline: 1760-1850.** Paul Lawrence Farber. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). xxii, 194 pp. \$39.50. Studies in the History of Modern Science, vol. 12.

**Geotechnology in Massachusetts.** Proceedings of a conference, Boston, Mar. 1980. O. C. Farquhar, Ed. University of Massachusetts Graduate School, Amherst, 1982. xlv, 626 pp., illus. \$25.

**Geriatrics 2.** Dieter Platt, Ed. Springer-Verlag, New York, 1983. xxiv, 490 pp., illus. \$70.

**The Gift of a Virgin.** Women, Marriage, and Ritual in a Bengali Society. Lina M. Fruzzetti. Rutgers University Press, New Brunswick, N.J., 1982. xiv, 178 pp., illus. \$22.50.

**Global Fission.** The Battle over Nuclear Power. Jim Falk. Oxford University Press, New York, 1982. viii, 410 pp. \$22.50.

**Global Marine Pollution Bibliography.** Ocean Dumping of Municipal and Industrial Wastes. Michael A. Champ and P. Kilho Park. IFI/Plenum, New York, 1982. xxiv, 400 pp. \$69.50.

**Government and Technical Progress.** A Cross-Industry Analysis. Richard R. Nelson, Ed. Pergamon, New York, 1982. x, 498 pp. \$45. The Technology Policy and Economic Growth Series.

**Groups—St. Andrews 1981.** Papers from a conference. C. M. Campbell and E. F. Robertson, Eds. Cambridge University Press, New York, 1982. viii, 360 pp. Paper, \$34.50. London Mathematical Society Lecture Note Series, 71.

**How and How Much Can Intelligence Be Increased.** Douglas K. Detterman and Robert J. Sternberg, Eds. Ablex, Norwood, N.J., 1982. x, 242 pp. \$24.95.

**Human Physiology.** R. F. Schmidt and G. Thews, Eds. Translated from the German edition (Berlin, 1980) by Marguerite A. Biederman-Thorson. Springer-Verlag, New York, 1983. xxii, 726 pp., illus. \$39.80.

**Ice.** The Ultimate Disaster. Richard William Noone. Astraea Publishers, Atlanta, 1982. 380 pp., illus. \$19.95.

**Immunoparasitology.** Principles and Methods in Malaria and Schistosomiasis Research. Papers from a training course, Bethesda, Md. G. Thomas Strickland and Kenneth W. Hunter, Jr., Eds. Praeger, New York, 1982. x, 294 pp., illus. \$39.95.

**Immunopharmacology and the Regulation of Leukocyte Function.** David R. Webb, Ed. Dekker, New York, 1982. xiv, 300 pp., illus. \$45. Immunology Series, vol. 19.

**Inorganic Chemistry and the Earth.** Chemical Resources, Their Extraction, Use and Environmental Impact. J. E. Fergusson. Pergamon, New York, 1982. x, 400 pp., illus. Cloth, \$40; paper, \$19.95.

(Continued on page 635)

## BOOKS RECEIVED

(Continued from page 601)

Pergamon Series on Environmental Science, vol. 6. **Interaction of Translational and Transcriptional Controls in the Regulation of Gene Expression.** Proceedings of a conference, Bethesda, Md., Apr. 1982. Marianne Grunberg-Manago and Brian Safer, Eds. Elsevier, New York, 1982. xii, 524 pp., illus. \$75. Developments in Biochemistry, vol. 24.

**An Introduction to Atomic Absorption Spectroscopy.** A Self-Teaching Approach. L. Ebdon. Heyden, Philadelphia, 1981 (distributor, Wiley, New York). xiv, 138 pp., illus. Paper, \$21.95.

**Optima for Animals.** R. McNeill Alexander, Edward Arnold, Baltimore, 1982. viii, 112 pp., illus. Paper, \$13.95.

**Orchid Biology.** Reviews and Perspectives, II. Joseph Arditti, Ed. Comstock (Cornell University Press), Ithaca, N.Y., 1982. 392 pp., illus. \$42.50.

**Organotransition Metal Chemistry Applications to Organic Synthesis.** Stephen G. Davies. Pergamon, New York, 1982. xvi, 412 pp., illus. \$85. Organic Chemistry Series, vol. 2.

**Orthopteran Mating Systems.** Sexual Competition in a Diverse Group of Insects. Papers from a symposium, Atlanta, Nov. 1980. Darryl T. Gwynne and Glenn K. Morris, Eds. Westview, Boulder, Colo., 1983. xviii, 376 pp., illus. Paper, \$30. A Westview Science Study.

**Pacific Plate Biogeography, with Special Reference to Shorefishes.** Victor G. Springer. Smithsonian Institution Press, Washington, D.C., 1982. iv, 182 pp., illus. Paper, \$7.95. Smithsonian Contributions to Zoology, No. 367.

**Paediatrics and Blood Transfusion.** Proceedings of a symposium, Groningen, 1980. C. Th. Smit Sibinga, P. C. Das, and J. O. Forfar, Eds. Nijhoff, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 240 pp., illus. \$28.50. Developments in Hematology and Immunology, vol. 2.

**Perspectives in Differentiation and Hypertrophy.** Proceedings of a symposium, Runaway Bay, Jamaica, Dec. 1980. Winston A. Anderson and William Sadler, Eds. Elsevier/North-Holland, New York, 1982. xiv, 388 pp., illus. \$72.

**Principles of Plant Disease Management.** William E. Fry. Academic Press, New York, 1982. x, 378 pp., illus. \$24.50.

**Principles of Surgical Technique.** The Art of Surgery. Gary G. Wind and Norman M. Rich. Illustrated by Gary G. Wind. Urban & Schwarzenberg, Baltimore, 1983. xvi, 228 pp. Paper, \$29.50.

**Problems of Metaphysics and Psychology.** Jay N. Eacker. Nelson-Hall, Chicago, 1983. xii, 290 pp. Cloth, \$19.95; paper, \$9.95.

**Progress in Hemostasis and Thrombosis.** Vol. 6. Theodore H. Spaet, Ed. Grune and Stratton, New York, 1982. xiv, 352 pp., illus. \$46.50.

**Progress in Solid State Chemistry.** Vol. 13. Gerd M. Rosenblatt and Wayne L. Worrell, Eds. Pergamon, New York, 1982. vi, 386 pp., illus. \$112. Previously published as *Progress in Solid State Chemistry*, vol. 13, Nos. 1-4.

**Promoters.** Structure and Function. Papers from a symposium, Monterey, Calif., May 1981. Raymond L. Rodriguez and Michael J. Chamberlin, Eds. Praeger, New York, 1982. xvi, 524 pp., illus. \$41.50.

**Psychophysiology Sensorielle.** Pierre Buser and Michel Imbert. Hermann, Paris, 1982. xiv, 410 pp., illus. Paper, 195 F. Neurophysiologie Fonctionnelle, 2.

**Pyretics and Antipyretics.** A. S. Milton, Ed. Springer-Verlag, New York, 1982. xxiv, 692 pp., illus. \$158.40. Handbook of Experimental Pharmacology, vol. 60.

**Quality Assurance in Nuclear Medicine.** World Health Organization, Geneva, 1982. 76 pp., illus. Paper, \$6.25.

**Reference Material for Health Auxiliaries and Their Teachers.** World Health Organization, Geneva, ed. 2, 1982 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). vi, 164 pp. Paper, \$7.50. WHO Offset Publication No. 28.

**Working Group on Mental Deficiency.** Papers from a meeting, Nov. 1980. Carlos Chagas, Ed. Pontificia Academia Scientiarum, The Vatican, 1981. xviii, 102 pp. Paper, \$15.

**Working Group on Perspectives of Immunization in Parasitic Diseases.** Papers from a meeting, Sept. 1981. Carlos Chagas, Ed. Pontificia Academia Scientiarum, The Vatican, 1982. xx, 178 pp., illus. Paper, \$15.

**Workshop on Software in High-Energy Physics.** (Where Do We Go from Here?) Geneva, Oct. 1982. CERN, Geneva, 1982. viii, 258 pp., illus. Paper.

**The X-Ray Information Book.** A Consumers' Guide to Avoiding Unnecessary Medical and Dental X-Rays. Priscilla W. Laws. Farrar, Straus, Giroux, New York, 1983. xviii, 154 pp. Cloth, \$14.50; paper, \$5.95. Revised edition of *Medical and Dental X-Rays*.

6 MAY 1983

# Personnel Placement

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SCIENCE  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005

## POSITIONS WANTED

**Biochemist.** B.S. (1978) seeks position in industry or a long-term academic research position. Expertise in hybridoma techniques recombinant DNA, tissue culture, protein biochemistry and purification, and separation techniques. Excellent command of current literature. Exceptional references. Box 110, SCIENCE. X

**Biologist/Histologist.** M.A. plus. Background in clinical, teaching, and research procedures. Experienced in several research areas: pathology, including neuropathology, histology/technology, histochemistry, and foreign body reaction. Teaching experience in physics, chemistry, and photography; has been directly involved in university curriculum development for health sciences program and university-level teaching of histology, ultrastructure, staining chemistry, and some gross anatomy. Seeking challenging position in industry/research or academia. Box 109, SCIENCE. X

**Clinical Microbiologist.** B.S. and M.S. medical technology, ASCP-certified microbiologist. Good background in clinical mycology and parasitology. Seeking any position related. Box 111, SCIENCE. X

**Drug Development:** Ph.D. with outstanding record of pharmaceutical industry accomplishment in clinical research/NDA programs (neuropharmacology) seeks challenging senior-level position. Box 101, SCIENCE. 5/6, 13

**Ecologist/Zoologist.** Ph.D. 1982. Two years of field experience in tropical America. Desires more of same. Fluent Spanish. Box 114, SCIENCE. X

**Molecular Biologist** seeks industrial position in R & D utilizing recombinant DNA techniques. Broad experience in recombinant DNA technology. Experience in clinical, industrial, and government laboratories. Experience includes biochemical/genetic manipulation of yeasts and fungi (*Escherichia coli*). Box 112, SCIENCE. 5/6, 13, 20, 27

## POSITIONS WANTED

**Plant, Crop, Pesticide Physiologist/Biochemist.** Ph.D. with extensive research experience. Seeks challenging research opportunity in public or private laboratory. Box 113, SCIENCE. 5/6, 20

**Scientist/Manager—Ph.D.** biologist. Experienced in biology, biophysics, biotechnology, energy, resources and environment, computer applications. Extensive publications, including 29 books. Seeks senior industrial R & D management position to take advantage of 18 years of practical experience. Box 115, SCIENCE. X

## POSITIONS OPEN

**PART-TIME ACADEMIC PATHOLOGIST.** The Department of Pathology, University of California, San Francisco, is recruiting for an assistant professor in residence to be located at the Veterans Administration Medical Center in San Francisco. Requirements: M.D. with competence in diagnostic electron microscopy in addition to anatomical pathology. Compensation will be commensurate with qualifications. Direct inquiries to: **Edward A. Smuckler, M.D., Ph.D., Department of Pathology, University of California, San Francisco, Calif. 94143.** An Equal Opportunity/Affirmative Action Employer.

**ASSISTANT PROFESSORS IN OBSTETRICS AND GYNECOLOGY (BIOCHEMISTRY).** Candidates must have doctoral degree and postdoctoral training. One candidate should have a strong theoretical background in biophysics and instrumentation, including computers. Participate in research program involving ESR and NMR studies of cytochrome P-450 and gonadotropic control of steroidogenesis. Teaching in reproductive biology. Supported by research grant.

Second appointee will participate in research program involving purification and activation studies with estrogen and progesterone receptors and cytochrome P-450 function in steroidogenesis. Teaching in reproductive biology. Partial support must be derived from own research grant. Both positions are available 1 July 1983.

Send curriculum vitae and names of three references to: **Hilton Salhanick, M.D., Brigham and Women's Hospital, Department of Obstetrics and Gynecology, Ambulatory Building, Third Floor Room 073, 75 Francis Street, Boston, Massachusetts 02115.** Affirmative Action/Equal Opportunity Employer.

**ASSISTANT PROFESSOR OF PHYSIOLOGY.** Applications are invited from Ph.D.-level scientists interested in a tenure-track position in the Department of Physiology at the University of Virginia School of Medicine. Applicants with a strong educational background in mammalian physiology, including electrophysiology, and with 2 to 5 years of postgraduate training in cellular physiology and biology are sought. Particular preference will be given to candidates knowledgeable in the areas of ion channel control and regulation and cell-cell communication involving muscle or receptor systems. The duties and responsibilities include teaching medical and graduate students and establishing a strong independent research program. Curriculum vitae, including a one-page summary of research experience and three references, should be sent by 1 July 1983 to: **Search Committee, B. R. Duling, Chairman, Department of Physiology, University of Virginia School of Medicine, Box 449, Charlottesville, Va. 22908.** The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

**CHAIR, DEPARTMENT OF NEUROSCIENCES/NEUROLOGY.** School of Medicine, University of California, San Diego (UCSD).

Applications and nominations are invited for the position of Professor and Chair of Neurosciences/Neurology, School of Medicine, University of California, San Diego. The Search Committee is seeking candidates with distinguished academic backgrounds and scholarship in the basic and/or clinical neurosciences.

Salary is related to academic rank and step within the established salary schedule of the University of California, San Diego.

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

All applications received by 1 June 1983 will be assured full consideration. Send to:

**Lewis L. Judd, M.D.**  
Chair, Search Committee  
UCSD School of Medicine (M-003)  
La Jolla, Calif. 92093

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## THE HEBREW UNIVERSITY OF JERUSALEM BIOTECHNOLOGIST SENIOR LECTURER/ASSOCIATE PROFESSOR/PROFESSOR

A biotechnologist is required for a tenure-track academic position. Qualifications are Ph.D. degree in biochemistry/biophysics/molecular biology; experience in large-scale biochemical preparations of small molecules, proteins, and nucleic acids; experience in fermentation of microorganisms; and experience in growing cells in tissue culture on a large scale.

The candidate will have to teach undergraduate and graduate courses in biochemistry and applied biochemistry within the Institute of Life Sciences and in coordination with the School of Applied Sciences.

Candidates should send their curriculum vitae, list of publications, and all other relevant information to: **Professor A. Levitzki, Chairman of the Department of Biological Chemistry, The Institute of Life Sciences, The Hebrew University of Jerusalem, Jerusalem 91904, Israel.**

## NATIONAL INSTITUTES OF HEALTH

*National Institute of Arthritis,  
Diabetes,  
and Digestive and Kidney Diseases  
Division of Intramural Research*

### POSTDOCTORAL POSITION:

Research is being conducted on the membrane functions of macrophages, with emphasis on phagocytosis. Projects may involve manipulating membrane functions in macrophage cell lines by mutation and/or induction and studying the biochemical mechanisms of the changes [see, e.g., *Proc. Natl. Acad. Sci. U.S.A.* 79, 4980 (1982)]. Background in cell biology, biochemistry, or mammalian cell genetics desirable. Initial appointment is for two (2) years, with additional extensions possible for talented researchers. U.S. citizenship required. Salary \$17,800 for the 1st year, or commensurate with candidate's qualifications and experience. Send *curriculum vitae* and names of references to: Dr. Loretta Leive, National Institutes of Health, 9000 Rockville Pike, Building 4, Room 116, Bethesda, Maryland 20205. NIH is an equal opportunity employer; women and minorities are encouraged to apply.

## POSITIONS OPEN

### ANATOMIST—HISTOLOGIST

Assistant professor, August 1983, tenure track, Ph.D. required. Primary responsibilities include teaching comparative anatomy, histology, anatomy-physiology, and general biology. Some research expected. State-supported university of 6000 students; Biology Department of 12 faculty offering B.S. and M.S. degrees. Send curriculum vitae, graduate transcript, three letters of recommendation, and statement of teaching philosophy before 6 June 1983 to: **Dr. Fred Dalske, Biology Department, University of Central Arkansas, Conway, Ark. 72032.** Advertised position. Contingent upon funding.

*An Affirmative Action/Equal Opportunity Employer*

**ANATOMY-NEUROANATOMY FACULTY**—Challenging tenure-track position available with developing undergraduate baccalaureate program for physical therapists. Must be capable of continued development and independent operation of department Human Dissection and Neurosciences Laboratories. Primary teaching responsibilities will include gross human anatomy and neuroscience. Ph.D. preferred, master's required. Experience and preparation in physical therapy extremely desirable; 9-month appointment begins September 1983. Competitive salary. Rank commensurate with qualifications. The University of Scranton is a Jesuit institution. Collegial department located in foothills of Pocono Mountains less than 3 hours by car from major eastern seaboard cities. Forward application and résumé to: **Dr. James Simon, Chairman, Department of Physical Therapy, University of Scranton, Scranton, Pa. 18510; telephone: 717-961-7494.** *An Equal Opportunity/Affirmative Action Employer and Educator.*

**ASSISTANT PROFESSOR, BIOCHEMISTRY.** Full-time lectureship (or tenure-track) position for September 1983. Position contingent upon budgetary authorization. Ph.D. in biochemistry. Will teach undergraduate and M.S.-level biochemistry courses. Must be able to develop an active research program. Send résumé and three letters of recommendation to: **Dr. John C. Shelton, Chairman, Department of Chemistry, California State University, Hayward, Hayward, Calif. 94542.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR, FISHERIES/AQUATIC BIOLOGY.** Candidates must have strong interest in undergraduate education. This tenure-track position is for 9 or 11 months per year, beginning 15 August 1983. Initially, teaching responsibilities include an entry-level course for fisheries and wildlife majors, a course in natural resource conservation for non-majors, and a graduate course of the incumbent's choosing. The area of aquatic research specialization is open but should complement the basic and applied needs of resource agencies in the region. Salary is commensurate with qualifications. Curriculum vitae, including a list of college courses, a statement of research and teaching interests, copies of publications, summary or abstract of dissertation, and three letters of reference should be sent by 27 May 1983 to: **John R. Jones, Chairman, Search Committee, School of Forestry, Fisheries and Wildlife, 112 Stephens Hall, University of Missouri-Columbia, Columbia, Mo. 65211. Telephone: 314-882-3436 or 3524.** *An Equal Opportunity Employer.*

**ASSISTANT RESEARCH SCIENTIST** to work on secretion of proteins by endometrium and trophoblast of domestic animals. Individuals should have a Ph.D. or D.V.M. and at least 2 years of postdoctoral research experience with some background in reproductive biology, immunology, and biochemistry. Salary will be commensurate with qualifications and experience. Send curriculum vitae and three letters of reference to: **Dr. Fuller W. Bazer, Animal Science Department, University of Florida, Gainesville, Fla. 32611,** by 31 May 1983.

The California Academy of Sciences, Northern California's largest natural history museum, invites applications at all levels for the **IRVINE CHAIR IN ANTHROPOLOGY.** As curator and chairman of the Department of Anthropology the successful candidate will participate in the development and implementation of all public programs relating to anthropology and will oversee the expansion of ethnological collections in one or more of the following areas: western North America, the Pacific-Far East, and Central and South America. Excellent research and publication record (specialization open) expected; Ph.D. required. Send letter of inquiry and curriculum vitae by 31 July 1983 to: **Nancy B. Dykes, Director of Administration, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118.**

## POSITIONS OPEN

### ASSISTANT PROFESSOR—IMMUNOLOGY/ VIROLOGY

Tenure-track position at assistant professor level. Candidate is expected to develop a research program in immunological aspects of viral diseases of domestic animal species and to collaborate with faculty working in related areas. Teaching duties will be primarily at the graduate level. Qualifications include Ph.D. in related discipline and postdoctoral experience. Experience with molecular biochemistry desirable. Salary negotiable. Submit curriculum vitae and statement of research plans and arrange to have three letters of reference sent to: **Dr. James C. DeMartini, Department of Pathology, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, Colo. 80523.** Deadline for applications: 1 June 1983.

*Colorado State University is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building.*

### ASSISTANT PROFESSOR—NEUROBIOLOGY

The Biology Department at the University of Utah anticipates a vacancy and invites application for a tenure-track position as assistant professor in the general area of neurobiology. Applicants with interests in development or behavior are particularly encouraged to apply, but all applicants will be considered regardless of specific research area.

Our department is a highly diverse community. We seek faculty members with broad interests and the ability to interact widely within this group.

Applications, including curriculum vitae, a description of research plans, and a list of at least three referees should be sent to:

**Baldomero M. Olivera  
Department of Biology  
University of Utah  
Salt Lake City, Utah 84112**

Apply no later than 1 June 1983. *The University of Utah is an Equal Opportunity/Affirmative Action Employer.*

Agriculture: University of Nevada is seeking applicants for the **ASSOCIATE DIRECTOR** of the Nevada Agricultural Experiment Station.

The associate director, under the supervision of the dean and director, administers research programs in the Nevada Agricultural Experiment Station. This person also formulates research objectives, policies, and budgets for the Experiment Station and represents the University at regional and national meetings; provides leadership for state research programs and provides liaison with other research agencies in the state. The applicant must have an earned doctorate in a discipline represented within the college, have demonstrated research and administrative accomplishments, and have ability to work effectively with research faculty. The candidate should be thoroughly familiar with the philosophy of the land-grant university system. Position is available 1 July 1983.

To apply, send letter of application, curriculum vitae, and names, addresses, and telephone numbers of five references to:

**Dr. Donald A. Klebenow, Chairman  
Search Committee for Associate  
Experiment Station Director  
College of Agriculture  
University of Nevada, Reno  
Reno, Nevada 89557**

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

**ASTROPHYSICIST/ASTRONOMER.** Applications are invited for a tenure-track appointment to be made during the 1983-1984 academic year as assistant or associate professor. Ph.D. or equivalent degree is required, and appointment will be at a level and salary commensurate with the appointee's accomplishments. Applicants from any subdiscipline within the field will be considered. About one-quarter of the physics faculty (26 members, including three astronomers) are involved in research in astrophysics or earth and planetary atmospheres. Local facilities are available for observational astronomy: our 60-centimeter telescope has been instrumented with modern signal-processing equipment, and faculty members may use major Canadian observing facilities. *This position is advertised in accordance with a Canadian Immigration requirement which specifies that preference be given to Canadian citizens and permanent residents.* Send curriculum vitae and names of three referees by 30 June 1983 to: **Dr. W. J. Megaw, Chairman, Department of Physics, York University, Downsview, Ontario, Canada M3J 1P3.**

## POSITIONS OPEN

### UNIVERSITY OF PENNSYLVANIA

A tenure-track position to begin at the assistant professor level is available in the Department of Human Genetics for an M.D. or M.D./Ph.D. with a record of research experience in molecular biology. The candidate should be qualified to hold a joint appointment in a clinical department. Areas of interest may include developmental biology, neurobiology, cytogenetics, and molecular mechanism of disease.

Please send résumé to: **Dr. Roy Schmickel, Department of Human Genetics, Room 195 Medical Laboratories Building/G3, University of Pennsylvania, Philadelphia, Pa. 19104.**

*An Equal Opportunity/Affirmative Action Employer*

Applications are sought for the position of ASSOCIATE HEMATOPATHOLOGIST in the Department of Pathology, level of assistant or associate professor. Responsibilities include teaching and hospital service. Pursuit of individual research interests as well as participation in ongoing research desirable. Send curriculum vitae and three references to: **Joseph Wiener, M.D., Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.**

*An Equal Opportunity/Affirmative Action Employer*

**CHAIR, DEPARTMENT OF ANATOMY.** The Medical University of South Carolina is seeking a highly qualified academic to assume the position of professor and chair of the Department of Anatomy. Candidates must have the Ph.D. and/or M.D., administrative and leadership capability, commitment to teaching, and an ongoing research program within the broad reach of anatomical science. A substantial opportunity exists in the productive and cooperative setting developed at this institution which is dedicated to biomedical education and research. Nominations and applications should be sent to: **Dr. Edward L. Hogan, Chairman, Search Committee for Anatomy, Department of Neurology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, S.C. 29425.** *An Equal Opportunity/Affirmative Action Employer. Qualified women and minority candidates are encouraged to apply.*

## POSITIONS OPEN

### BIOLOGIST, CELL Faculty Position

Position available at Cleveland State University (CSU) for visiting assistant/associate professor of biology, with specialization in cell biology. Position is nontenure-track, 1-year appointment. Duties will include teaching a cell physiology course, participation in freshman biology courses, and participation in graduate program. Research encouraged. Ph.D. required. Postdoctoral research and teaching experience desirable. Area of specialty should be within broad scope of cell biology. CSU's Biology Department offers B.S., M.S., and Ph.D. degrees. Position to begin 19 September 1983. Salary competitive. Send curriculum vitae and statement of research and teaching interests and have three letters of recommendation sent by 1 July 1983 to: **Chairperson, Cell Biology Search Committee, Biology Department, Cleveland State University, 1983 East 24 Street, Cleveland, Ohio 44115.** *Equal Opportunity Employer, M/F/H.*

### CHAIRPERSON, DEPARTMENT OF STOMATOLOGY UNIVERSITY OF CALIFORNIA SAN FRANCISCO (UCSF) SCHOOL OF DENTISTRY

Full-time position as chairperson of the new Department of Stomatology which includes programs in oral biology, oral and maxillofacial surgery, oral medicine, oral pathology, periodontology, and oral radiology. Responsibilities include the administration of research, teaching, patient care, and community and university service in this broad array of subject areas. Demonstrated administrative experience and qualifications for a senior professorial rank are required. Salary commensurate with qualifications. *Applications from women and minorities are encouraged. The University of California, San Francisco, is an Equal Opportunity/Affirmative Action Employer.*

Please send curriculum vitae to: **Dr. Robert J. Isaacson, Chair, Search Committee, School of Dentistry, UCSF, San Francisco, California 94143.** The deadline for receipt of applications is 30 May 1983.

## POSITIONS OPEN

### DEPARTMENT CHAIRMAN

The Department of Plant Pathology, The Ohio State University, invites applications for the position of department chairman. Candidates must hold a Ph.D. in plant pathology or closely related field, and have a proven record of excellence in research. Experience in either teaching or extension is highly desirable.

Inquiries can be directed to: **Dr. Landon H. Rhodes, Department of Plant Pathology, The Ohio State University, 2021 Coffey Road, Columbus, Ohio 43210; telephone: 614-422-1375.** Applications should be received no later than 1 June 1983 and must include complete curriculum vitae, copies of noteworthy publications, and names and addresses of five references.

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

**ELECTRON MICROSCOPIST—PATHOLOGIST** to direct new, fully equipped contemporary laboratory of electron microscopy, including TEM, SEM, EDXA. Experience in nephropathology essential. High-level academic research opportunities abound. Experience in surgical pathology highly desirable. Position available 1 July 1983. Appropriate faculty rank at the University of Utah College of Medicine accompanies this appointment. Apply in confidence, providing curriculum vitae and names of references, to: **Stephen C. Woodward, M.D., Chief, Laboratory Service, VA Medical Center, 500 Foothill Boulevard, Salt Lake City, Utah 84148.**

### ELECTRON MICROSCOPY TECHNICIAN EMORY UNIVERSITY ATLANTA, GEORGIA

Position available at Yerkes Primate Center for individual experienced in operating and maintaining scanning electron microscope and energy-dispersive x-ray analyzer in a research setting. For more information, telephone: **Eunice MacArthur at 404-329-7611**, or write: **Emory University, Personnel Department, Atlanta, Ga. 30322.** *An Equal Opportunity/Affirmative Action Employer.*

The University of Bergen invites applications for a vacant

### CHAIR IN SEDIMENTOLOGY (BASIN ANALYSIS).

Salary is on the scale 31, Nkr.192.589. per annum gross of which Nkr.3.361. per annum are paid in pension contributions.

The chair will be appointed on the understanding that any changes in scientific duties, pension, or retiring age made by law or by the King with the agreement of Parliament are to be accepted without compensation.

Applicants should submit five copies of scientific works—published or unpublished—which they wish to be considered for the appointment as well as six copies of a list of all scientific contributions with information on where they were published. Scientific contributions are to be submitted, in numbered order and in five groups, to the science faculty of the University of Bergen within 1 month of the closing date for applications. Scientific manuscripts in preparation may be submitted within 3 months of the closing date for applications provided notice of intent is given on submitting the other publications. Applicants are otherwise referred to the current rules for the procedures to be followed in the appointment of professorships and readerships.

A résumé of the vacant chair can be obtained on request from:

**Det matematisk-naturvitenskapelige fakultet.**

*By decision of the collegium, applications from women are especially encouraged.*

Applications, which must include complete curriculum vitae, should be addressed to the King and be sent together with relevant certificates and one copy of a list of publications to:

**Det matematisk-naturvitenskapeligefakultet  
postboks 25**

**5014 Universitetet i Bergen  
Norway**

before 31 May 1983.

## VACANCY ANNOUNCEMENT

### U.S. ENVIRONMENTAL PROTECTION AGENCY

The Environmental Protection Agency invites applications for the position of **DIRECTOR, INHALATION TOXICOLOGY DIVISION, HEALTH EFFECTS RESEARCH LABORATORY.** This is a Civil Service position located at Research Triangle Park, N.C., with an annual salary at the GS-15 level (presently \$48,553 to \$63,115).

The Inhalation Toxicology Division conducts research with humans and animals to determine the health effects of inhaled environmental pollutants using highly sophisticated inhalation exposure facilities and multidisciplinary research teams consisting of physicians, physiologists, toxicologists, chemists, engineers, statisticians, and other types of professional scientists. Investigations center on determining the cause and effect relationships at pollutant concentrations which mimic those occurring in the environment, developing improved methods for assessing health effects of air pollutants, and devising techniques for improving the correlation between animal and human studies with particular emphasis on extrapolation models for better risk assessment.

The candidate must have the following proven scientific and managerial qualifications.

- Should possess an M.D. or Ph.D. in physiology, pharmacology, toxicology, or biochemistry with special training and experience in inhalation toxicology. At least 5 years of proven experience as evidenced by publications in the open literature and peer recognition by scientific community. High level of scientific stature with both national and international recognition as expert in inhalation toxicology.
- Proven ability in technical and managerial management of a large multidisciplinary research organization. Position involves a full range of managerial and supervisory responsibilities such as program direction, planning, organization, coordination of budget and personnel management and involves establishment of goals, general work schedules, and development of research plans and procedures.

Further information about the position and qualification requirements may be obtained by contacting: **The Office of Personnel Management, Raleigh Area Office, P.O. Box 25069, Raleigh, N.C. 27611; telephone 919-755-4361.** Applications (SF-171, Personal Qualifications Statement), accompanied by current curriculum vitae and bibliography, should be submitted to the Raleigh Area Office prior to 15 June 1983. **Recruiting Bulletin Number AR-3-083.**

*An Equal Opportunity Employer*

## POSITIONS OPEN

### ADJUNCT FACULTY POSITION IN ENVIRONMENTAL ENGINEERING AND SCIENCE

The Stanford University Department of Civil Engineering, is soliciting applications for a nontenure-track associate professor (research) position now available in the Environmental Engineering and Science Program. Expertise is sought in environmental chemistry, with a strong emphasis on experience with analytical organic chemistry (HPLC, GC, GC/MS/C, and so forth). Candidates should have an interest in problem-oriented research and be able to demonstrate aptitude for working productively in an engineering-oriented program. Responsibilities will be primarily for graduate-level research in a developed program with well equipped laboratories for trace organic, trace metal, microbiological, and process research. Demonstrated excellence in research is requisite. Interested persons should send a detailed résumé together with names of references to: **Professor James O. Leckie, Environmental Engineering and Science, Department of Civil Engineering, Stanford University, Stanford, California 94305**, by 1 June 1983.

*Stanford is an Affirmative Action Employer.*

**CHEMIST, ORGANIC** (postdoctoral associate, chemistry). Require 1 year of postdoctoral experience in any chemistry-related occupation, synthesis of biologically active molecules and their structural elucidation using spectroscopic techniques. Duties involve synthesis of novel imidazole and triazole nucleosides with potential antitumor activity using silylated diaminomaleonitrile and blocked sugars and structural determination of nucleosides using infrared and ultraviolet spectroscopy and carbon-13, high-resolution proton nuclear magnetic resonance, mass spectroscopy; \$14,500 per year. Contact: **Troy Job Service Office, attention: John Lynch, 1801 6th Avenue, Troy, N.Y. 12180**; refer to job order number 4808506, D.O.T. code 022. 061-010. *RPI is an Equal Opportunity/Affirmative Action Employer.*

### CHIEF, ADULT BONE TUMOR SERVICE PRESBYTERIAN-UNIVERSITY OF PENNSYLVANIA MEDICAL CENTER

The Department of Orthopaedic Surgery at the University of Pennsylvania School of Medicine is seeking applicants for a full-time academic position as chief of the Adult Bone Tumor Service at the Presbyterian-University of Pennsylvania Medical Center, a major teaching and research facility of the University of Pennsylvania. Candidates should have completed a year's fellowship in bone tumor surgery. Duties of the position include participation in the teaching and research programs of the department as well as the clinical responsibilities of running an adult bone tumor service. Applicants should submit their curriculum vitae and arrange to have three letters of recommendation sent directly to:

**Carl T. Brighton, M.D., Ph.D.**  
Professor and Chairman  
Department of Orthopaedic Surgery  
University of Pennsylvania School of Medicine  
Two Silverstein  
3400 Spruce Street  
Philadelphia, Pa. 19104

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

### CHIEF, ORTHOPAEDIC SURGERY SERVICE PRESBYTERIAN-UNIVERSITY OF PENNSYLVANIA MEDICAL CENTER

The Department of Orthopaedic Surgery at the University of Pennsylvania School of Medicine is seeking applicants for a full-time academic position as chief of the Orthopaedic Surgery Service at the Presbyterian-University of Pennsylvania Medical Center, a major teaching and research facility of the University of Pennsylvania. Duties of the position include participation in the teaching and research programs of the department as well as the clinical responsibilities of running a general orthopaedics service in a 328-bed hospital. Applicants should submit their curriculum vitae and arrange to have three letters of recommendation sent directly to:

**Carl T. Brighton, M.D., Ph.D.**  
Professor and Chairman  
Department of Orthopaedic Surgery  
University of Pennsylvania School of Medicine  
Two Silverstein  
3400 Spruce Street  
Philadelphia, Pa. 19104

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

## POSITIONS OPEN

### EVOKED POTENTIAL LABORATORIES UNIVERSITY OF CALIFORNIA, IRVINE

The University of California, Irvine, has openings for two **POSTDOCTORAL FELLOWS** to study mechanisms of auditory and cognitive evoked potentials in experimental animals. Knowledge of single-unit techniques, field potential recordings, and computer programming required. One of the fellows will study the generators of auditory brainstem potentials. The second fellow will study cognitive evoked potentials in behaving animals.

There is an opening for an **ASSISTANT PROFESSOR IN RESIDENCE** to study cognitive evoked potentials in clinical disorders in humans. The individual must be Board-eligible in neurology with at least 2 years of experience after residency and Board-certified in EEG. Detailed knowledge of computer programming and evoked potential recording techniques are required.

Positions available 1 August 1983. *An Equal Opportunity/Affirmative Action Employer.* Send résumé and three letters of recommendation to: **Dr. Arnold Starr, University of California, Irvine, Neurology Department, Room 154/Med Surge I, Irvine, Calif. 92717.**

**DIRECTOR, FAMILY PRACTICE RESIDENCY PROGRAM.** Opportunity for family physician at a newly established School of Medicine mandated to emphasize family medicine. Residency program has 36 residents with facilities that include a modern Family Practice Center. Responsibilities include residency program curriculum development, evaluation, clinical teaching, and administration. ABFP certification required. Experience in practice, teaching, administration, and research is preferred. Address inquiries and curriculum vitae to: **James G. Jones, M.D., Professor and Chairman, Department of Family Medicine, East Carolina University School of Medicine, P.O. Box 1846, Greenville, N.C. 27834.** *An Equal Opportunity/Affirmative Action Employer.*

### FAMILY MEDICINE FACULTY POSITIONS

Opportunities for family physicians and community/preventive medicine physicians to significantly influence the design and implementation of an integrated 4-year undergraduate family medicine curriculum in a School of Medicine mandated to emphasize family medicine. Positions involve medical student teaching, patient care, and research in a well-established Department of Family Medicine. Send inquiries/curriculum vitae to: **James G. Jones, M.D., Professor and Chairman, Department of Family Medicine, School of Medicine, East Carolina University, P.O. Box 1846, Greenville, N.C. 27834.** *An Equal Opportunity/Affirmative Action Employer.*

### EXECUTIVE DIRECTOR BOARD ON TOXICOLOGY AND ENVIRONMENTAL HEALTH HAZARDS

The Commission on Life Sciences of the National Research Council seeks a toxicologist with a Ph.D., M.D., or equivalent in toxicology, biochemistry, pharmacology, or a related discipline in the life sciences. Individual should have at least 15 years of research and managerial experience and proven competence in addressing a wide variety of topics such as toxic effects of exposure to substances in air, water, and the occupational environment, familiarity with methods for evaluating the health effects of substances including mutagenicity and carcinogenicity testing, risk assessment, and knowledge of regulatory aspects of exposure to toxic substances. Candidates must have demonstrated managerial skills in a complex organization and have experience in dealing with public policy issues. Send curriculum vitae and letter of interest to: **Dr. Alvin G. Lazen, Executive Director, Commission on Life Sciences, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** *An Equal Opportunity Employer.*

**FACULTY POSITION IN PHYSIOLOGY, NORTHWESTERN UNIVERSITY MEDICAL SCHOOL,** tenure track, available September 1983. Applications are invited from either established or young investigators with an interest in the control of physiological systems by endocrine and/or neural mechanisms. The department has a strong research emphasis and modern computer, electronics, neuroanatomical, and machine shop facilities. Send curriculum vitae, description of research and teaching expertise, and names of three references to: **James C. Houk, Chairman, Department of Physiology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611.** *An Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**DEPARTMENTAL CRYSTALLOGRAPHER** to coordinate and oversee the operation of facilities for x-ray structure determination. Responsibilities include scheduling of experiments, maintenance and improvement of hardware and software, instruction of users, and assistance in the solution of x-ray structures. The candidate should have an advanced degree in chemical crystallography and experience with automated single-crystal x-ray diffractometers. Familiarity with computing programming and interest in working with people essential. Opportunities for co-publication and professional travel. Salary competitive depending on background and experience. Submit résumé and two or three letters of reference to: **Professor W. Robert Scheidt, Department of Chemistry, University of Notre Dame, Notre Dame, Ind. 46556**, by 1 July. *The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITION.** Broward Community College North Campus invites applications for a tenure-track position in the teaching of biology, beginning 23 August 1983. Our growing institution desires individuals committed to classroom and laboratory instruction and curriculum development. A minimum of 18 semester hours of graduate credit in biology is required. Salary range: \$15,700 to \$23,000, depending on degree and experience. Application deadline: 26 May 1983. Send résumé and request for application to: **Personnel, Broward Community College, 225 East Las Olas Boulevard, Ft. Lauderdale, Fla. 33301.** *An Affirmative Action/Equal Opportunity Employer.*

**FACULTY POSITIONS IN CELL, MOLECULAR, AND POPULATION BIOLOGY/EVOLUTIONIST.** The Department of Biology at New York University (NYU) is seeking applicants for tenure-track appointments in the areas of cell, molecular, and population biology. Successful applicants will be responsible for maintaining an active research program in their field of interest as well as sharing in departmental teaching responsibilities. Send curriculum vitae, a short statement of research interests, and the names of three references to: **New York University, FACULTY OF ARTS AND SCIENCES, Department of Biology, 952 Brown Building, New York, New York 10003, Attention: Dr. Herndon Dowling, Chair, Recruitment Committee.** *NYU is an Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITIONS IN PHARMACOLOGY AND PHYSIOLOGY

The Department of Physiology and Pharmacology at Bowman Gray School of Medicine of Wake Forest University invites applications for tenure-track positions at a level commensurate with experience. Candidates will be expected to participate in teaching medical and graduate students. Preference will be given to individuals with active research programs and interests in aging, stress, hypertension, and cancer. Send curriculum vitae and a brief description of research and career goals and have three letters of reference sent to: **Dr. Alvin Brodich, Chairman, Department of Physiology and Pharmacology, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, N.C. 27103.** *Equal Opportunity/Affirmative Action Employer.*

**GEOLOGY**—Tenure-track position beginning August 1983. Ph.D. required, competence in field geology and ability to teach mineralogy, economic geology, and general geology desired. Preference will be given to candidates qualified to assume departmental chair and to develop a vigorous grant-supported research program involving undergraduates. Rank and salary open. Send résumé, transcripts, and so forth to: **Dr. J. Cotter Tharin, Acting Chairman, Department of Geology, Hope College, Holland Mich. 49423.**

### LIFE SCIENCE RESEARCH POSITIONS Agricultural Research Service

Career positions in areas of: (i) animal product and protection; (ii) plant production and protection; (iii) use and improvement of soil, air, and water; processing, storage, distribution, food safety, consumer service; and (v) human nutritional requirements and the composition and nutritive value of food. A monthly Listing of Positions in Life Science Research with the U.S. Department of Agriculture listing current vacancies, is issued by:

**Special Examining Unit 421/408**  
Agricultural Research Service  
U.S. Department of Agriculture  
6505 Belcrest Road, Room 555  
Hyattsville, Maryland 20782



## Positions in Molecular or Clinical Endocrinology

The **Endocrine Research Group** at The University of Calgary seeks new faculty members with expertise in the areas of molecular or clinical endocrinology. Candidates must be qualified to compete for scholarships funded either by the Alberta Heritage Foundation for Medical Research or the Medical Research Council of Canada. Although positions at the Assistant Professor level are envisioned, applications from more senior investigators will be considered. In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. The final date for consideration is September 1, 1983. Applications, including a complete curriculum vitae and at least two personal references should be sent to:



**Dr. H. J. Goren**  
Endocrine Research Group  
Health Sciences Centre  
Room 2961  
The University of Calgary  
3330 Hospital Drive N.W.  
Calgary, Alberta T2N 4N1

## NATIONAL SCIENCE FOUNDATION (NSF)

NSF, Office of Scientific and Engineering Education, is seeking candidates for the position of **ASSOCIATE PROGRAM DIRECTOR IN THE SCIENCE EDUCATION IMPROVEMENT SECTION**. This is a rotational assignment for 1 to 2 years. The position is excepted from the competitive civil service with a salary range of \$34,930 to \$53,661 per annum (equivalent to GS-13/14). Appointment will begin during summer 1983. Candidates should have a Ph.D. in science, mathematics, or engineering or equivalent research experience at the college or university level. In addition, for the GG-13 (GS-13 equivalent) level, 4 years of teaching and research experience at the college or university level beyond the Ph.D. are required and for the GG-14 (GS-14 equivalent) level, 6 years of teaching and research experience at the college or university level beyond the Ph.D. are required. Preference will be given to candidates with a strong background in mathematics. Some administrative experience and familiarity with the teaching of mathematics at the precollege level are also desirable. Responsibilities include all aspects of proposal handling and review, evaluation, award and program administration, liaison with outside agencies, and representation of the Foundation in the scientific community. The incumbent will also contribute to the range of staff expertise available to advise on other activities of the Office. The closing date for applications is 10 June 1983. Applicants should submit résumés, indicating their current salary, to: The National Science Foundation, Personnel Administration Branch, Room 212, 1800 G Street, N.W., Washington, D.C. 20550, attention: E. Paul Broglie. For further information, telephone: 202-357-7841. NSF is an Equal Opportunity Employer.

## Intestinal Disease Research Unit Position in Biochemistry

The Gastrointestinal Research Group, The Intestinal Disease Research Unit and Department of Medical Biochemistry at the University of Calgary are recruiting an individual with a background in Biochemistry, gut defense mechanisms and glycoprotein metabolism.

Applicants must have demonstrated ability to do productive independent research. Funding will be provided by the Intestinal Disease Research Unit for three years and then on a competitive basis from the Alberta Heritage Foundation for Medical Research. Candidates will be appointed at the beginning assistant professor level. Remuneration will be based upon normal faculty rank salary at The University of Calgary. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Deadline for receipt of applications is July 1, 1983. Interested candidates please send a curriculum vitae, a brief description of field of interest and three names of referees to:



**Dr. D. Grant Gall, Director,**  
Intestinal Disease  
Research Unit  
Faculty of Medicine,  
Department of Paediatrics  
3330 Hospital Drive N.W.  
Calgary, Alberta  
Canada T2N 4N1

## THE HEBREW UNIVERSITY OF JERUSALEM

### Faculty of Sciences and Mathematics

### Department of Science Teaching

Invites applications for two faculty positions, one in chemical education, particularly at secondary school and undergraduate levels, and one in the use of computers as learning and teaching aids.

The level of appointment will be according to qualifications and experience, on the regular academic scale (lecturer, senior lecturer, assistant professor, professor). Candidates should write to: **Professor E. Mendoza, Department of Science Education, The Hebrew University of Jerusalem, 91904 Jerusalem, Israel**, enclosing full curriculum vitae, list of publications, and names of three referees, before 20 May 1983.

The Department of Science Teaching in the Faculty of Sciences trains students who already have a B.Sc. degree in one of the sciences for M.Sc. and Ph.D. degrees in science education.

The department consists of five full-time faculty members and five part-time members who devote the rest of their time to research in their own scientific fields. The department is engaged in research in the fields of mathematical, physical, chemical, and biological education; in problems of evaluation, of misconceptions, and of difficulties of learning scientific concepts experienced by children of families originating in non-European cultures.

## Alberta Children's Hospital Position in Inborn Errors of Metabolism

The Division of Medical Genetics, Department of Paediatrics, and the Department of Medical Biochemistry of the Faculty of Medicine at The University of Calgary and the Genetics Research Group at the Alberta Children's Hospital wish to recruit an individual with expertise in the area of inborn errors of metabolism. Applications are invited from individuals with the M.D. degree plus an appropriate degree (Ph.D. preferred) and/or experience in the field. Preference will be given to an individual who has clinical training in paediatrics. Fundings will be provided on a competitive basis from the Alberta Heritage Foundation for Medical Research, and newly established foundation for the support of medical research in the Province of Alberta. The candidate will be appointed at the assistant or associate professor level, depending on his/her background and experience. Remuneration will be based on salary scales at The University of Calgary. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents. Other qualified applicants should also apply.

Deadline for the receipt of applications is May 30, 1983. Interested candidates please send curriculum vitae, brief description of areas of interest and names of three referees to:



**Dr. R. B. Lowry**  
Division of Medical Genetics  
Department of Paediatrics  
Faculty of Medicine  
Alberta Children's Hospital  
1820 Richmond Road S.W.  
Calgary, Alberta,  
Canada T2T 5C7

## FOOD TECHNOLOGISTS BIOCHEMICAL ENGINEERS

Genencor has two openings for experienced Ph.D. Level scientists:

1. **RESEARCH IN THE ENZYMATIC MODIFICATION OF FOODS**—The successful candidate must possess a strong background in enzymology and biochemistry, and must have demonstrated successful research experience—will be technical leader of both basic and applied research that will lead to new products and processes in the food industry.
2. **DEVELOPMENT IN FERMENTATION**. The successful candidate must possess a strong background in biochemical engineering, and must have demonstrated successful fermentation or recovery development experience. Familiarity with scale-up, economic evaluation, and computer control of fermentation desirable. Ability to provide leadership to projects important.

The positions are available immediately.

Salary is commensurate with experience.

Please send resumes to:

**Mr. Gordon R. McPherson**  
Manager, Personnel Administration  
Research and Development Division  
Genencor, Inc.  
Baron Steuben Place  
Corning, New York 14831

# GENENCOR

An Equal Opportunity Employer

## POSITIONS OPEN

### HEAD Department of Microbiology and Immunology University of Illinois College of Medicine

The University of Illinois College of Medicine at Chicago invites applications and nominations for the position of head of its Department of Microbiology and Immunology. The College of Medicine, located in the West Side Medical Center in Chicago, is a major institution for research and education in the health sciences. The Department of Microbiology and Immunology has 18 full-time faculty members who have strong research programs in the areas of molecular biology, virology, immunology, and bacteriology. The department has an active graduate program with 50 graduate students and has numerous postdoctoral fellows.

Candidates should have an M.D. and/or Ph.D. degree, a record of outstanding scientific accomplishment, and the ability to administer a comprehensive academic program.

Interested individuals should send curriculum vitae and the names and addresses of three references to:

**Robert L. Perlman, M.D., Ph.D.**  
Chairperson, Search Committee  
Professor and Head  
Department of Physiology and Biophysics  
P.O. Box 6998  
Chicago, Ill. 60680

*University of Illinois at Chicago is an Equal Opportunity/Affirmative Action Employer.*

**GENETICIST—MICROBIOLOGIST** needed to teach genetics, microbiology, and general biology. Experience in EM is desirable. One-year appointment but with possibility of renewal, beginning July 1983. Ph.D., entry level position. Curriculum vitae, transcripts, and three letters of reference should be received prior to 10 June 1983 by: **Professor Daniel J. McDonald, Biology Department, Dickinson College, Carlisle, Pa. 17013. An Affirmative Action/Equal Opportunity Employer.**

**HEALTH PHYSICS FACULTY POSITION.** Anticipated tenure-stream position for a full professor or below, beginning summer 1983. Duties: teaching graduate-level courses in basic radiation physics and applied health physics; developing health physics research program; enhancing ongoing radiation safety and emergency service program. Minimum requirements are doctoral degree and several years of experience in operational health physics and/or teaching. Board-certification in health physics and emphasis on occupational and environmental aspects of radiation protection preferred. Send curriculum vitae to: **Dr. Niel Wald, Chairman, Department of Radiation Health, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, Pa. 15261.**

### HUMAN MOLECULAR GENETICIST

Assistant professor position in the Department of Human Genetics. Applicant must have a Ph.D. or M.D. with postdoctoral experience in eukaryotic systems relevant to human genetics. The appointee will be expected to initiate an independent research program and participate in graduate training. Send complete curriculum vitae, a statement of research interests, and the names of three references to: **Dr. Walter E. Nance, Chairman, Department of Human Genetics, Box 33 MCV Station, Medical College of Virginia, Virginia Commonwealth University, Richmond, Virginia 23298.**

*An Affirmative Action/Equal Opportunity Employer*

### IMMUNOLOGIST

The Department of Biology, University of California at San Diego, invites applications for a tenure-track faculty position, available 1 January 1984, in the general area of cellular or molecular immunology. Salary and rank will be commensurate with qualifications and experience. The nontenured appointee must have had postdoctoral training and is expected to conduct a vigorous research program. The tenured appointee must have already made significant contributions to this field and is expected to continue a vigorous research program. Excellence in teaching and in the pursuit of an independent research program are the criteria to be met. The position is associated with the Cancer Center. Applicants should send curriculum vitae, a list of publications, names of three references, and a brief statement of research interests by 1 July to: **Dr. Richard Dutton, Biology Department M-001, University of California, San Diego, La Jolla, California 92093.**

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

## POSITIONS OPEN

**MEDICAL ENTOMOLOGIST/PARASITOLOGIST.** Full-time, 11-month tenure-track appointment at assistant professor level beginning 1 September 1983. Research to emphasize ecology, feeding behavior, and vector relationships of ticks, mites, and related ectoparasites associated with zoonotic pathogens. Teaching involves shared responsibility for undergraduate and graduate courses in medical/veterinary entomology and parasitology. Qualifications include a Ph.D. degree and evidence of outstanding potential for teaching and research. Applications should include: (i) curriculum vitae, academic transcripts, and evidence of teaching skills and experience, (ii) bibliography and reprints of significant publications or manuscripts, (iii) a statement outlining research areas and approaches used, and (iv) names and addresses of at least three people who can provide recommendations. All materials should be submitted by 1 July 1983 to: **E. S. Sylvester, Chair, Department of Entomological Sciences, 201 Wellman Hall, University of California, Berkeley, Calif. 94720. The University of California is an Equal Opportunity/Affirmative Action Employer.**

**MICROBIOLOGIST/IMMUNOLOGIST** for research laboratory, to develop and conduct immunologic assays and participate in other areas of bacterial and viral vaccine development. Prefer M.S. in microbiology or related field plus 1 to 2 years of experience with variety of immunologic techniques. Strong background in bacteriology is desirable. Good salary; excellent benefits. Send résumé to: **Personnel Department, WELLCOME ANIMAL HEALTH DIVISION, BURROUGHS WELLCOME CO., P.O. Box 167, Kansas City, Mo. 64141**

*Equal Opportunity Employer, M/F*

**MOLECULAR BIOLOGIST**—Will be assigned to the U.S. Department of Agriculture (USDA) Plum Island Animal Disease Center, Greenvale, N.Y. Will characterize RNA animal virus (foot-and-mouth disease virus) genomes at the molecular level, contributing to a multidisciplinary effort (molecular biology, protein chemistry, immunochimistry) studying virus genome structure/function and biochemical antigenic characterization of their polypeptides. Will clone related strains and characterize these by recombinant DNA procedures. Requirements: Ph.D. in molecular biology or biochemistry with experience in recombinant DNA and DNA sequencing methods. Research experience with mammalian viruses desirable. The term of employment: 1 year with renewal for a second year possible. Salary commensurate with training and experience. Contact: **Dr. Jerry J. Callis (Re: 656), Plum Island Animal Disease Center, Box 848, Greenvale, Long Island, N.Y. 11944. An Affirmative Action/Equal Opportunity Employer.**

**MOLECULAR BIOLOGY LABORATORY TECHNICIAN.** Work involves DNA cloning and sequencing in a strong, stimulating research department. Excellent opportunity for a highly motivated recent graduate evaluating graduate education in science or in professional schools. Bachelor's degree required as well as strong background in molecular biology; experience not necessary. Send résumé with names and telephone numbers of three references to both: **Ellie Mattner, Personnel, and Dr. G. Di Mayorca, Chairperson, Department of Microbiology, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—New Jersey Medical School, 100 Bergen Street, Newark, N.J. 07103. An Equal Opportunity/Affirmative Action Employer, M/F.**

### PHYSICIAN/SCIENTIST

Dacomed Corporation is a leader in the development of instrumentation and devices for diagnosis and treatment of genitourinary dysfunction. We are expanding our activities in research of lower urinary tract and male erectile function and in development of advanced technological methods for restoring reflex control in dysfunctional systems. We are seeking an experienced laboratory and clinical investigator to work with our engineering staff in devising and applying innovative technological solutions to problems of incontinence and impotence.

If the opportunity to work in a stimulating and productive research environment and to contribute to the solution of problems with urinary control and male erectile function in a new laboratory in southern California are of interest, please send your curriculum vitae with salary history to: **Dr. Gerald W. Timm, Dacomed Corporation, 1701 East 79 Street, Suite 17, Minneapolis, Minn. 55420.**

## POSITIONS OPEN

**MOLECULAR GENETICS—ASSISTANT OR ASSOCIATE PROFESSORS:** Oregon State University (OSU) announces the availability of two faculty positions in molecular genetics, to be filled at assistant or associate professor levels. These full-time, tenure-track positions will be funded initially from a private foundation grant, which is supporting an interdepartmental gene research program at OSU. Assignment to specific departments within the College of Science or the College of Agricultural Sciences will be based upon interests of the appointees and of the departments involved. Each appointee is expected to establish an independent research program in some aspect of gene structure, organization, expression, or manipulation. At least one of the appointees should plan to work with plant systems. Both appointees will be encouraged to carry out joint research with existing faculty, either as collaborators or consultants.

Each applicant should hold a Ph.D. degree in a biological science and have at least 2 years of postdoctoral research experience in molecular genetics. Each application should include a letter of interest, current curriculum vitae, a description of research plans, and the names of at least three professional references. Applications should be submitted before 30 June 1983 to:

**Molecular Genetics Search Committee  
Department of Biochemistry and Biophysics  
Oregon State University  
Corvallis, Oregon 97331**

*Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

**NEUROPHARMACOLOGISTS.** Two positions as assistant professor/research associate are available in the Department of Neurology, Columbia University College of Physicians and Surgeons, for neuropharmacologists experienced in either the field of neurotransmitter receptors or in acetylcholine studies to work with a research group involved in basic and clinical research on movement disorders. Send curriculum vitae and names of three references to: **Dr. Stanley Fahn, Neurological Institute, 710 West 168 Street, New York, N.Y. 10032. An Affirmative Action/Equal Opportunity Employer.**

**PATHOLOGIST,** Chief of Laboratory Service, Mountain Home, VA Medical Center, Johnson City, Tennessee. This position is a joint appointment with East Tennessee State University (ETSU) College of Medicine. The major responsibilities are high-quality patient care and resident education. Send curriculum vitae to: **Philip S. Coogan, M.D., Chairman of Pathology, Box 19540A, ETSU, Johnson City, Tenn. 37614. Equal Opportunity/Affirmative Action Employer.**

### PHYSIOLOGICAL OPTICS/VISUAL PSYCHOPHYSICS

**ASSISTANT RESEARCH SCIENTIST I-III** is desired, with one or more years of clinical and/or research experience in visual psychophysics or clinical vision testing, and Ph.D., M.D., or O.D. degree, for full-time appointment to active optometry/ophthalmology research laboratory in San Francisco Bay area. Duties will include research in various aspects of visual science, including new visual field techniques (layer-by-layer perimetry), for example, Stiles-Crawford functions, Westheimer sensitization paradigms, hyperacuity, accommodation studies, and so forth. Individual will assist in training graduate and postdoctoral students. Experience with PDP-11 laboratory computer is desirable, but not required. Salary range is from \$22,900 to \$25,200 per year, beginning 1 August 1983 or earlier. Please send curriculum vitae, statement of research interest and experience, and three references before 30 June 1983 (or until position is filled) to: **Professor Jay M. Enoch, Chairman, Search Committee, School of Optometry, University of California, Berkeley, Calif. 94720. An Equal Opportunity/Affirmative Action Employer.**

## PHYSIOLOGIST

THE AMERICAN UNIVERSITY OF THE CARIBBEAN, School of Medicine, located in Montserrat, British West Indies, is announcing a physiology position opening. Main responsibility is to provide lecture in human physiology to first year medical students. Send résumé to: **Selection Committee (Sc), MEIO, 100 NW 37 Avenue, Miami, Fla. 33125.**



## **FACULTY POSITIONS OPEN IN CARDIOVASCULAR PHYSIOLOGY RESPIRATORY PHYSIOLOGY**

The Physiology Department, College of Medicine and Medical Sciences, King Faisal University, Dammam, Saudi Arabia invites applications from qualified men and women for the 1983/84 academic year.

Prerequisites include a Ph.D. degree and minimum of two years teaching experience at the University level. Instruction is in English. Salaries are competitive and negotiable. Contracts are for one year and renewable.

Benefits include free furnished housing, air tickets for a family of four to and from Saudi Arabia annually, 60-days paid vacation, generous overweight baggage allowance, and educational allowance for children. No Saudi income taxes.

Please send your curriculum vitae and contact address and telephone numbers along with the names and addresses of three references to:

Dr. Tawfik Tamimi, Dean  
College of Medicine and Medical Sciences  
c/o U.S. Recruiting Office  
2425 West Loop South, Suite 540  
Houston, Texas 77027

or

c/o U.K. Recruiting Office  
29 Belgrave Square  
London SW1 8QB, ENGLAND

THE SALK INSTITUTE BIOTECHNOLOGY/INDUSTRIAL ASSOCIATES, INC.

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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.

Several positions are available immediately for:

### **RESEARCH ASSOCIATES**

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

### **STAFF SCIENTISTS**

These positions require 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.

We offer a comprehensive benefit package and competitive salary. Applications, including a curriculum vitae, a statement of research interests and goals, a list of publications, if applicable, and the names of three professional references should be submitted to:

**SIBIA**  
P.O. Box 85800  
Dept. 4013  
San Diego, California 92138

*SIBIA is an equal opportunity employer.*

## **HEBREW UNIVERSITY OF JERUSALEM POSTDOCTORAL FELLOWSHIPS MARINE BIOLOGY**

The Hebrew University of Jerusalem offers postdoctoral fellowships in oceanography and marine sciences at the Marine Biology Laboratory in Eilat, on the Red Sea. The positions are for 1 year, starting October 1983, and may be extended for a total of 3 years. The fellowship amounts to U.S. \$800 per month.

Research activities in the laboratory are in the following areas:

- 1) Marine microbiology: microbial ecology of hypersaline marine microenvironments,
- 2) Pathology and parasitology of fish,
- 3) Marine geochemistry and sedimentology: calcification and  $\text{CaCO}_3$  production by reef organisms and plankton,
- 4) Biology and ecology of coral reefs,
- 5) Biology and ecology of open-water and reef fishes, and
- 6) Biology of open-water plankton.

Applications should include a brief research proposal, three letters of recommendation from senior scientists, an abstract of the Ph.D. dissertation, curriculum vitae, and a list of publications.

Applications should be postmarked no later than 31 May 1983, and should be addressed to

**Professor D. Koller, Scientific Director**  
The H. Steinitz Marine Biology Laboratory  
P.O. Box 469, Eilat, Israel

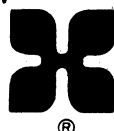
## **DIRECTOR, FOOD SCIENCE & TECHNOLOGY**

Hershey Foods Corporation, a Fortune 500 company in south central Pennsylvania, is looking to fill the position of Director, Food Science and Technology. This is a newly created position that will report to the Vice President of Research and Development for Hershey Foods Corporation.

We are seeking an experienced individual who will have primary responsibility for providing direction and strategic planning for basic/applied research programs for the Corporation. This person will be responsible for directing a staff in areas such as: chemistry and functionality of food ingredients and their interactions; the biochemistry and technology of food manufacturing processes; as well as sensory evaluation services.

The successful candidate will possess: a PhD, preferably in Biochemistry or Chemistry; 8-10 years scientific experience in a food related area; and a minimum of 5 of those years in a management capacity.

We offer a salary commensurate with experience, a comprehensive benefits package and relocation assistance as well. Please send your resume and salary history in confidence to: **B.D. Lundell, Sr. Employee Relations Representative.**



**Hershey Foods Corporation**  
14 E. Chocolate Ave., Hershey, PA 17033

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to the future*



## POSITIONS OPEN

**PHARMACOLOGIST.** The Department of Pharmacology and Therapeutics of the Schools of Medicine and Dentistry invite applications for a full-time faculty position as **assistant professor of pharmacology-toxicology**. Position offers opportunities for basic research and teaching. Candidates must have a Ph.D. degree in pharmacology-toxicology with postdoctoral experience and evidence of ability to conduct independent research, for example, publications and grants obtained or an M.D. degree with appropriate training in basic pharmacology-toxicology. Send curriculum vitae and also request that three letters of recommendation be sent to: **Dr. Edward A. Carr, Jr., 127 Farber Hall, State University of New York at Buffalo, Buffalo, N.Y. 14214.** An Equal Opportunity/Affirmative Action Employer.

## POPULATION ECOLOGIST

The Biology Department of Pomona College anticipates a full or part-time sabbatical replacement position during 1983-1984 in population biology/ecological genetics. Responsibilities contemplated involve (fall semester) team-teaching an introductory course in genetics, evolution, and ecology, and giving a seminar course in population/ecological genetics. Spring semester duties would include teaching a lecture/field course in population and community ecology. Letter of application, curriculum vitae, and three letters of recommendation must be received no later than 1 June 1983 by: **Search Committee, Department of Biology, Pomona College, Claremont, Calif. 91711.**

## POSTDOCTORAL FELLOW

A position is available now for a postdoctoral fellow to work on identifying cyclic AMP and calcium-calmodulin regulated phosphorylation of proteins in intestine in order to understand regulation of active salt transport. The goal is to identify and characterize transport proteins. The candidate should have a Ph.D. in biochemistry with experience in membrane and protein purification. Salary commensurate with experience. Funding is by a newly funded 4-year NIH grant. Candidate should send curriculum vitae and names of three references to: **Dr. Geoffrey W. G. Sharp, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, N.Y. 14853.**

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

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE.** Position available immediately for a person with a Ph.D. in biochemistry or related field or M.D. with biochemical background to join a team studying the regulation of macrophage arachidonate metabolism in inflammatory and immune diseases. Send curriculum vitae and names of three references to: **Dr. David Newcombe, Department of Environmental Health Sciences, Johns Hopkins University, 615 North Wolfe Street, Baltimore, Md. 21205.** An Equal Opportunity Employer, M/F/H.

**POSTDOCTORAL POSITION** available 1 September for individual with research interest in cell biology. Individual should be capable of teaching in gross anatomy laboratory. Starting salary: \$19,320. Send curriculum vitae and names of three references by 15 June to:

**Gary E. Wise, Ph.D.  
Chairman, Department of Anatomy  
Texas College of Osteopathic Medicine  
Camp Bowie at Montgomery  
Fort Worth, Texas 76107-2690**

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL POSITION** available 1 June 1983 (but later start possible). To study the algebraic form of synaptic modification equation (long-term associative potentiation/depression) for use in neural models of cognition. Methods include extracellular physiology of intact hippocampus and hippocampal explant. Salary consistent with expertise (\$14,000 to \$18,000). Submit curriculum vitae and three references to: **Dr. William B. Levy, Department of Neurosurgery, Box 420, University of Virginia School of Medicine, Charlottesville, Va. 22908.** An Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE POSITION** available in neuroendocrinology of reproduction from September 1983; with interest in steroid feedback, neuropeptide, and neurotransmitter interactions. Strong background in neurochemistry desirable. Send curriculum vitae and three references to: **Dr. S. P. Kalra, Department of Obstetrics and Gynecology, University of Florida College of Medicine, Gainesville, Fla. 32610.**

## POSITIONS OPEN

### POSTDOCTORAL ASSOCIATE POSITIONS UNIVERSITY OF IOWA

Please contact the appropriate department to express your specific interest:

**ANATOMY**—Dr. Terence H. Williams, Professor and Head, Bowen Science Building.

**BIOCHEMISTRY**—Dr. Edward C. Heath, Bowen Science Building.

**DERMATOLOGY**—John S. Strauss, M.D., Professor and Head, or Kenzo Sato, M.D., Ph.D., Associate Professor, North Tower General Hospital. A postdoctoral research associate for the study of immunology, biochemistry, and cell biology of the skin.

**INTERNAL MEDICINE**—Openings available in all disciplines in the Internal Medicine Department, College of Medicine, University of Iowa. Contact: **Francois M. Abboud, M.D., Professor and Head, or Darris Goerdt, Administrator, telephone: 319-356-2850.**

**MICROBIOLOGY**—Dr. Irving P. Crawford, Professor and Head, Bowen Science Building. Research in microbial genetics and physiology, as well as mammalian virology.

**PATHOLOGY**—Dr. Richard G. Lynch, Professor and Chairman, Medical Laboratories. Research activity in all areas of experimental pathology.

**PHARMACOLOGY**—Dr. Gerald F. Gebhart, Chairman and Head, Bowen Science Building. Openings available in all areas of pharmacology and toxicology.

**PHYSIOLOGY AND BIOPHYSICS**—Dr. Robert E. Fellows, Professor and Head, Bowen Science Building.

**The College of Medicine, University of Iowa, Iowa City, Iowa 52242.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION IN BIOPHYSICS HARVARD UNIVERSITY

A research position is available immediately for an applicant with a background in physics or applied mathematics to join a group developing a two-dimensional electronic area detector for application in protein and virus x-ray crystallography. The qualified applicant will have primary responsibility for developing and testing software and strategies for x-ray diffraction data collection with the instrument. The position in the laboratories of Professors S. C. Harrison and D. C. Wiley at Harvard University is tenable for 2 or 3 years. The detector development is a joint project with Xentronics Inc. of Cambridge, Massachusetts. Opportunity exists for future advancement either in crystallographic research at Harvard or in instrument design and production at Xentronics. Résumés and recommendations should be sent to: **Dr. S. C. Harrison or Dr. D. C. Wiley, Biophysics, 7 Divinity Avenue, Cambridge, Mass. 02138.**

**TWO POSTDOCTORAL POSITIONS** available immediately to join a group investigating the mechanism of action of a toxin/antibiotic produced by a plant pathogen. Research areas include kinetic analysis of the inhibition of glutamine synthetase, studies of the route of biosynthesis of the toxin, and studies of mechanisms of self protection in the pathogen. Available for 1 to 2 years. Salary range: \$14,000 to \$16,000 per year. Send curriculum vitae and names of three references to: **Dr. R. D. Durbin, Department of Plant Pathology, University of Wisconsin, Madison, Wis. 53706.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available September 1983 for Ph.D. in biochemistry or related field to join group studying the role of cell surface carbohydrates in cell recognition and adhesion [see *J. Biol. Chem.* 257, 14288 and 14292 (1982); 258, 1180 and 2340 (1983)]. Send résumé and forward references to: **Dr. R. L. Schnaar, Department of Pharmacology, The Johns Hopkins University School of Medicine, Baltimore, Md. 21205.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available summer 1983 for biochemical and/or genetic studies on functions and developmental regulation of glycoprotein-linked oligosaccharides in *Dictyostelium discoideum*. Send résumé, description of research experience, and names (and telephone numbers) of three references to: **Professor Ellen J. Henderson, Department of Biology, Georgetown University, Washington, D.C. 20057.** An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately for 2 years in the Division of Orthopaedic Surgery for qualified individual to study various aspects of skeletal metabolism. Applicant should have Ph.D. in one of the biological sciences with emphasis on biochemistry and endocrinology. Knowledge of tissue culture and RIA would be of value. Salary of \$14,000 to \$16,000, depending on qualifications. Interested applicants send résumé with names of three references to: **Dr. Irwin Clark, Department of Surgery, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—Rutgers Medical School, P.O. Box 101, Room S225, Piscataway, N.J. 08854.** An Equal Opportunity/Affirmative Action Employer, M/F.

**POSTDOCTORAL POSITION.** For work on analysis of the alcohol dehydrogenase gene structure in Hawaiian *Drosophila*. Ph.D. in biology, genetics, or biochemistry; experience with recombinant DNA technology and *Drosophila* chromosome preparation desirable. Available from 16 August 1983 for 1 year with renewal for a further year possible. Send résumé and three references by 1 June 1983 to: **Dr. John A. Hunt, Genetics Department, University of Hawaii, Honolulu, Hawaii 96822.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available September 1983 (approximate). Duties will involve participation in studies of gene structure, regulation, and evolution at the molecular level using *Drosophila*. Applications will be considered from individuals trained in the biology and genetics of *Drosophila* or from individuals with training in molecular techniques using microbial systems. Salary is negotiable, depending on experience and qualifications. Send curriculum vitae and the names of three references to: **Dr. D. T. Sullivan, Department of Biology, Syracuse University, Syracuse, N.Y. 13210.**

## POSTDOCTORAL POSITION

Postdoctoral position as research fellow or research associate in biological chemistry at Harvard Medical School available immediately in the Mailman Research Center at McLean Hospital. The research deals with drug induced changes in membrane phospholipid metabolism in the nervous system. Experience in one or more of the following areas is essential: calcium cell culture, enzymology, lipid methodology, and pharmacology. Appointment is initially for 1 year, renewable for at least a second year thereafter. Salary is competitive, depending on experience. Please send curriculum vitae and names of three references to: **George Hauser, Ph.D., Ralph Lowell Laboratories, McLean Hospital, 115 Mill Street, Belmont, Mass. 02178.** An Equal Opportunity Employer.

**POSTDOCTORAL POSITIONS (TWO)** available now for studies on the role of tissue proteinases and plasma inhibitors in various disease states, including emphysema, rheumatoid arthritis, and other inflammatory conditions. Minimum salary: \$16,000. Send curriculum vitae and the names of three references to: **Dr. James Travis, Department of Biochemistry, University of Georgia, Athens, Georgia 30602.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** to begin September 1983 to participate in studies of cytoskeletal elements of frog olfactory neurons, with emphasis on microtubules and their role in intracellular transport. Background in biochemistry, cytochemistry, immunolabeling, or neurobiology preferred, and individual should have keen interest in how structure is related to function. Should be willing and eager to add ultrastructural analyses to skills. Person would be important part of interacting group of active microtubule researchers on beautiful nonurban campus located in a lovely smog-free setting. Send résumé and names of three references by 25 August 1983 to: **Dr. Paul R. Burton, Cell Biology, Center for Biomedical Research, University of Kansas, West Campus, Lawrence, Kans. 66044.** Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available 1 July 1983 to study the intracellular membrane traffic involved in the assembly of the postsynaptic membrane at the neuromuscular junction and at other cholinergic neurons. These studies are carried out in tissue culture, and utilize immunochemistry, biochemistry, and electron microscopy. Experience in any of these areas helpful. Send curriculum vitae and names and telephone numbers of three professional references to: **Dr. Sherry Bursztajn, Neuroscience Program, Baylor College of Medicine, Houston, Texas 77030.** An Equal Opportunity/Affirmative Action Employer.

# STAFF FELLOW, PSYCHOLOGIST:

The Stress and Coping Section in the Laboratory of Behavioral Sciences of the Gerontology Research Center is seeking a Ph.D. psychologist with experience in the measurement of evoked potentials and EEG's in humans for a renewable two-year position as Staff Fellow. The Section conducts research in personality, aging, and stress and coping. Candidate is expected to have a strong background in research and interests in personality and individual differences. The position is located at the Gerontology Research Center, National Institute on Aging, National Institutes of Health, Public Health Service on the grounds of the Baltimore City Hospitals, Baltimore, Maryland. Yearly salary range is \$17,000 to \$34,269 depending on background and experience. **Send letter of interest, reprints and vita to: Paul T. Costa, Jr., Chief, Section on Stress and Coping, Gerontology Research Center, Baltimore City Hospitals, Baltimore, MD 21224. Phone: (301) 396-8100.**

*NIH is an Equal Opportunity Employer.*

## BIOGEN

Positions are available in our Cambridge laboratory for a scientist with experience and skills in Recombinant DNA Technology in the specialty area of:

**Expression of eucaryotic DNA sequences in *E. coli*, *B. subtilis*, yeast and other fungi and in mammalian cells.**

Biogen is a biotechnology company with laboratories in the United States and Switzerland, developing commercial applications of molecular biology in the areas of agriculture, chemicals, pharmaceuticals and energy. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment.

Biogen offers a competitive salary and benefits package.

Reply to: **Human Resources Department, Biogen Inc., 14 Cambridge Center, Cambridge, MA 02142.**

Please send your resume and a list of three individuals whom we may contact for references on your behalf. All replies will be evaluated in confidence. Biogen is an equal opportunity employer.

\*Biogen is a service mark of Biogen N.V. for the provision of research and consultation services relating to all aspects of biotechnology including genetic engineering, fermentation, microbiological conversion, and the purification and processing of the products of biotechnology.

## The heart of Wisconsin— UNSPOILED for business.

Work hard. Expand. Diversify. That's the free enterprise opportunity. But it's not as predictable anymore. Except in the heart of Wisconsin: where the natural and business environment is still fertile ground for the American ethic. Forward-thinking companies are moving to Wisconsin because of friendly support from local officials. Bankers. Residents. And the nationally acclaimed University of Wisconsin. A leader in R & D, technological innovation, and information sharing. Discover the "unspoiled" business advantage in the heart of Wisconsin. For your Potential for Profit Kit, send your business card to Paul Bergmann, Wisconsin Power & Light, P.O. Box 192, Madison, Wisconsin 53701. Or call 608/252-3251 or 608/252-3252.

 **Wisconsin Power  
& Light Company**

- 1) **SENIOR MOLECULAR BIOLOGIST.** Ph.D. plus a minimum of 5 years of postdoctoral experience in the biochemistry, physiology, and genetics of secretory processes for macromolecules in Gram-positive microbes such as *Bacillus subtilis*. Excellence in the transport of small molecules and intermediary metabolism of *Bacillus* sp. as documented by a substantial scientific publication or patent record. Applicants must have conducted experiments on the cloning, expression, and secretion of eukaryotic and prokaryotic gene products in industrial microbes. Salary: \$30,000 to \$45,000, commensurate with experience.
- 2) **SENIOR APPLIED MICROBIAL PHYSIOLOGIST AND RESEARCH DIRECTOR.** Ph.D. plus a minimum of 10 years of relevant postdoctoral experience. Education, training, experience, and credentials to include evidence of superior accomplishment, in both industrial and academic environments, in the following areas: supervision of R & D effort of scientists and engineers from a variety of disciplines; process development, microbial and mammalian cell physiology, fermentation technology, and equipment design; computerized control system theory and application of these techniques to optimization of biological systems. Substantial scientific publication and/or patent record in above areas also required. Salary: \$38,000 to \$55,000, commensurate with experience.
- 3) **SENIOR BIOCHEMICAL ENGINEER.** Ph.D. plus a minimum of 1 year of postdoctoral industrial experience, R & D in both fermentation and microbial physiology. Applicants must demonstrate practical experience in: polysaccharide and related enzyme analysis, fermentations, and physiology; enzyme applications technology, including experience in new assay development as these apply to the development of new enzyme or macromolecular products; firsthand experience in the fermentation and physiology of both laboratory and various wild-type yeast species; and relevant physiology experience in such fungal species as *Cladosporium*, *Aurobasidium*, and *Rhodotorula*. Experience must be documented by scientific publications or filed patent applications. Salary: \$30,000 to \$35,000, commensurate with experience.

Fringe benefits. Only qualified applicants meeting minimum job requirements should apply. Please indicate position for which you are applying, and submit curriculum vitae, describing relevant scientific background, publications, and three professional references to:

**Box 96, SCIENCE**

*An Equal Opportunity Employer—Principals Only*

## POSITIONS OPEN

**POSTDOCTORAL POSITION**—Ph.D. in psychology or related neurosciences, with experience in computerized data acquisition and analysis, to work on in vivo measurements of cerebral metabolism and blood flow in humans. Send curriculum vitae and recommendations to: **Dr. Ruben C. Gur, Department of Neurology/GI, University of Pennsylvania, Philadelphia, Pa. 19104.** Starting 1 June 1983, for 2 to 3 years.

**POSTDOCTORAL POSITION** available 1 June 1983 for studies of monoamine and neuropeptide dynamics in retina and brain. Individuals seeking this position should have biochemistry or pharmacology training and experience using contemporary biochemical techniques (for example, HPLC, electrophoresis, radioimmunoassay). Send curriculum vitae and names and addresses of three references to: **Dr. John D. Fernstrom, WESTERN PSYCHIATRIC INSTITUTE AND CLINIC, University of Pittsburgh School of Medicine, 3811 O'Hara Street, Pittsburgh, Pa. 15213.** An Equal Opportunity Employer.

### RESEARCH INSTITUTE OF SCRIPPS CLINIC La Jolla, California

**POSTDOCTORAL POSITION** in cellular immunology available 1 July to investigate immunologically specified monocyte responses. These studies involve genetically restricted induction in monocytes by cloned functional T cell lines of effector gene products—for example, cofactors and zymogens of serine proteases that initiate and propagate mediation pathways. Primary address is to the cellular and molecular biology of this T cell-instructed monocyte effector pathway using long-term bone marrow culture generation of functional monocytes. The role of this monocyte and macrophage pathway in immunobiology is the general goal. U.S. citizen with relevant experience required for position on NIH Training Grant. Submit curriculum vitae and three references to: **Dr. Thomas Edgington, Department of Immunology, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, Calif. 92037.** An Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately for protein chemist to collaborate with P.I. on elucidation of the structure of an abnormal human hemoglobin. Experience with methods of protein separation including gel electrophoresis and isoelectric focusing and peptide mapping essential. Starting salary: \$16,880, 1- to 3-year appointment. Please send curriculum vitae with names and addresses of three references to: **Dr. H. D. Hoberman, Department of Biochemistry, ALBERT EINSTEIN COLLEGE OF MEDICINE, 1300 Morris Park Avenue, Bronx, N.Y. 10461.** An Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE POSITION** to study mechanism of transduction in vertebrate photoreceptors using patch clamp techniques. Position available beginning 1 September 1983, in the **Jules Stein Eye Institute at University of California at Los Angeles (UCLA)** for a period of at least 3 years. Salary between \$25,000 and \$30,000. Applicants must have previous pre- or postdoctoral training either in photoreceptor physiology or in patch clamp techniques. Applicants should send curriculum vitae and résumé of research interests to: **G. L. Fain, Professor of Ophthalmology, c/o H. M. Gerschenfeld, Laboratoire de Neurobiologie, Ecole Normale Supérieure, 46 rue d'Ulm, 75005 Paris, France.** UCLA is an Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE: VIROLOGY.** The Department of Entomology, Texas A & M University, invites applications for a research position starting August 1983. Applicants should have background in molecular biology or virology to conduct studies on baculovirus gene structure and expression. Salary starts at \$20,000. Further details are available from: **Dr. Max Summers, Department of Entomology, Texas A & M University, College Station, Texas 77843.** Applications in the form of curriculum vitae should include names and addresses of three references.

Seventy-five percent **RESEARCH ASSOCIATE** to supervise and carry out EM, histological, and autoradiographic aspects of research programs in development, epilepsy, and hippocampal local circuits. Send résumé to:

**P. Schwartzkroin  
University of Washington RI-20  
Seattle, Wash. 98195**

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position in cardiac electrophysiology available immediately; 2-year appointment. Studies will focus on physiology of cardiac conduction system and cardiac effects of toxins. Experience with transmembrane potential recording and familiarity with cardiac physiology will be given preference. Send curriculum vitae, summary of research interests, and names of three references to: **Dr. W. Thomas Woods, Department of Physiology and Biophysics, University of Alabama in Birmingham, University Station, Birmingham, Ala. 35294.** Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE** position available approximately 1 July 1983 for a 3-year study of tree aluminum toxicity in solution culture. Strong quantitative background and demonstrated research ability in plant science required. Closing date: 3 June 1983. Send curriculum vitae and three letters of reference to: **Dr. Michail Schaedle, Department of Environmental and Forest Biology, State University of New York College of Environmental Science and Forestry, Syracuse, New York 13210.**

### KING SAUD UNIVERSITY/KING KHALID UNIVERSITY HOSPITAL, SAUDI ARABIA PROFESSORS OF ANATOMY

Two professors of anatomy, one specializing in gross anatomy and one in neuroanatomy, are required to take leading role in teaching and research planning at new University Hospital for tour of 1 to 2 years. Salary and benefits extremely competitive in minimum taxation situation. Recently updated and attractive housing arrangements and generous leave allowance. Position available now.

Applicants will be interviewed at the University of Colorado School of Medicine and successful candidates will be granted temporary clinical faculty rank as professor at the University of Colorado.

Please send application with updated curriculum vitae to: **Dr. John F. Nolte, Associate Professor and Acting Chairman, Department of Anatomy, University of Colorado School of Medicine, 4200 East Ninth Avenue, Box B-111, Denver, Colorado 80262.** Equal Opportunity/Affirmative Action Employer.

### PROFESSOR OF STATISTICAL COMPUTING AND DIRECTOR OF THE HEALTH SCIENCES COMPUTING FACILITY

The Harvard School of Public Health is searching for a professor of statistical computing who will: (i) lead a new academic program in applied biomedical computing within the Department of Biostatistics; (ii) direct the Health Sciences Computing Facility; and (iii) integrate the activities of the Computing Facility with the teaching and research programs of the School. The candidate should have a distinguished record of publications and teaching and the capability of supervising doctoral dissertations. It is essential that the candidate have collaborative experience with investigators on the application of statistics and computing to the health sciences and experience in directing a computer facility.

Applicants should send their curriculum vitae and the names of three referees to:

**Dr. Joseph J. Harrington, Ph.D.  
Chairman of the Search Committee/Biostatistics  
Office of the Dean  
Attention: J. Macdonald  
677 Huntington Avenue  
Boston, Mass. 02115**

*Harvard University is an Equal Opportunity Employer with an Affirmative Action Program.*

The University of Texas Health Science Center at Houston is looking for a **RESEARCH SCIENTIST** with a materials science/physics/electronic background to aid in operation of a biological x-ray microprobe facility (Cameca MBX and Tracor Northern EDS). Previous experience with x-ray microprobe analysis is essential. Responsibilities would include maintaining equipment, programming, development of new instrumentation and techniques, as well as aiding biological scientists in appropriate applications of XMP methods. Salary and position commensurate with experience. Contact: **Albert J. Saubermann, Director, Microprobe Center, University of Texas Health Science Center at Houston, MSMB 5182, 6431 Fannin, Houston, Texas 77030; telephone: 713-792-5570.**

*The University of Texas Health Science Center at Houston is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

## POSITIONS OPEN

### ENDOWED PROFESSORSHIP FOR CANCER RESEARCH

The University of Kansas College of Health Sciences is seeking a highly qualified scientist who will devote 80 percent effort to cancer research. Candidates must have a Ph.D., M.D., or M.D./Ph.D. and be able to establish a productive program in basic cancer research. Expertise in molecular genetics, immunology, or toxicology is preferred. Extensive laboratory space, developmental funds, and faculty appointment with tenure are available. Submit curriculum vitae, three references, and a letter describing interests and needs to: **Dr. Larry H. Baker, University of Kansas Cancer Center, 39th and Rainbow Boulevard, Kansas City, Kansas 66103.** An Equal Opportunity/Affirmative Action Employer.

**RESEARCH ASSOCIATE:** Independent research into the mechanisms of ion transport in epithelial tissues by means of electrophysiological and fluctuation analysis methods, including microelectrode cell impalements, computer-driven voltage clamps, radioisotope studies, statistical analysis, and computer analysis. Requires M.S. degree in physiology (electrophysiology). Must be highly skilled in electrophysiological methods and techniques; epithelial studies; computer programming; data analysis and reduction; and statistical analysis. Must be capable of independent research with minimal supervision. Must be familiar with the relevant research literature. Salary: \$15,000 per year. Please send résumé to: **Illinois Job Service, 402 North Randolph Street, Champaign, Illinois 61820, Reference number 4052.** Position available April 1984.

*Affirmative Action/Equal Opportunity Employer*

**RESEARCH ASSOCIATE IN MOLECULAR GENETICS.** Applications are invited for a research associate position in the Department of Microbiology. This position is in a research group involved with molecular biology of BK virus, the polyoma virus. Applicants should have demonstrated research capability in molecular genetics and experience in recombinant DNA technology. Please send curriculum vitae to: **Personnel and Giampiero Di Mayorca, M.D., Professor and Chairman, Department of Microbiology, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—New Jersey Medical School, 100 Bergen Street, Newark, N.J. 07103.** Equal Opportunity/Affirmative Action Employer.

## RESEARCH SCIENTIST

Los Angeles-based Fortune 500 health care company is seeking analytical and self-motivated individual to provide technical support and expertise for its R & D laboratory. You must have a Ph.D. in microbiology, virology, or immunology; at least 2 years of experience in development and production of selected monoclonal antibodies; and in-depth knowledge of cell culture techniques.

Excellent salary and benefits package offered. Send your résumé and salary history to:

**Mike Graziano, Personnel Manager  
TRAVENOL LABORATORIES  
Hyland Therapeutics Division  
444 West Glenoaks Boulevard  
Glendale, Calif. 91202  
Equal Opportunity Employer**

### SCIENCE WRITER/ PUBLIC RELATIONS OFFICER Tucson, Arizona

Kitt Peak National Observatory, which provides observational facilities for infrared and optical astronomers throughout the United States, is looking for an experienced science writer who will serve as a public relations officer. The main function of this individual will be to interact with the media in providing news releases concerning astronomy carried out by staff and visiting astronomers at the observatory. A master's degree is desirable. Experience in scientific writing is essential and experience in public relations at a scientific or academic institution is also desirable. *Kitt Peak is an Equal Opportunity/Affirmative Action Employer*, and offers liberal benefits including 24 days' annual vacation, comprehensive insurance plans, and fully vested retirement after 1 year. Please send résumé and salary history to: **Dr. Geoffrey Burbidge, Director, Kitt Peak National Observatory, P.O. Box 26732, Tucson, Ariz. 85726.**

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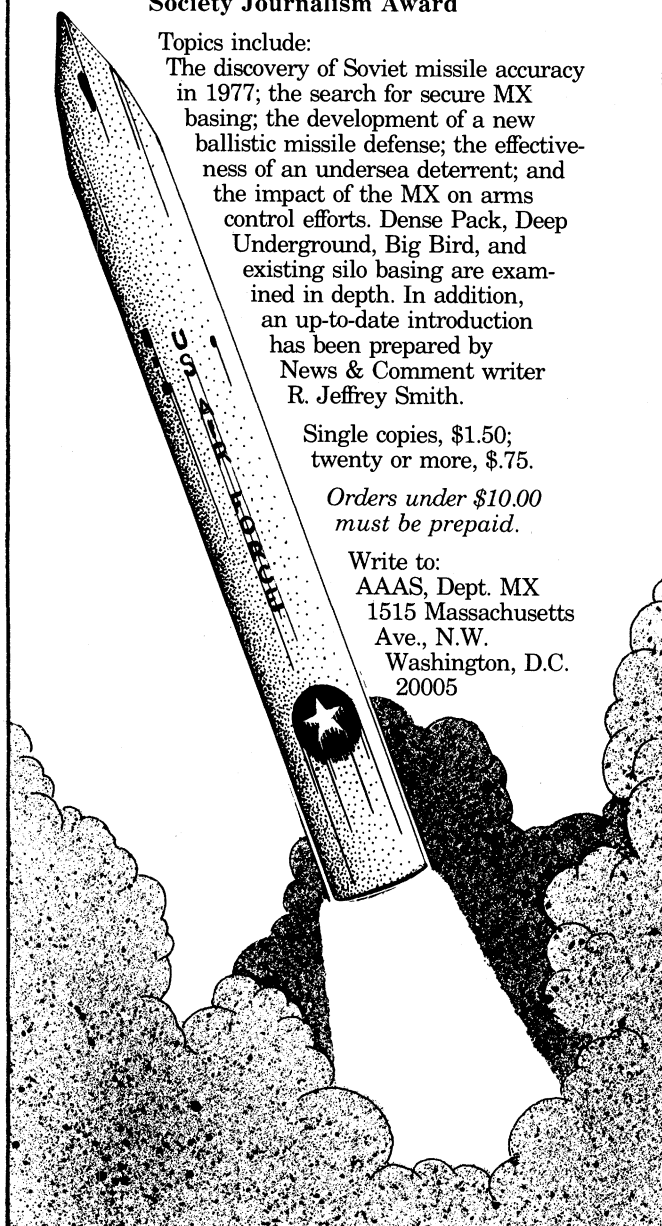
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## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately to study the cell biology and biochemistry of epithelial differentiation using cell culture and immunological techniques. [For recent work, see *Cell* 30, 361 (1982); *J. Cell Biology* 95, 580 (1982); *Science* 215, 1239 (1982).] Applicants with experience in protein chemistry and/or tissue culture will be preferred. Send curriculum vitae and the names of three references to: **Dr. Tung-Tien Sun, Departments of Dermatology and Pharmacology, New York University Medical School, 550 First Avenue, New York, N.Y. 10016.**

**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, Fort 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, Ph.D.,** with background in electrophysiology to join in a study of CNS plasticity following lesions of dorsal roots or spinal cord afferent pathways. Model systems include experimental demyelination. Work will be done in conjunction with 2-DG studies. Applicants should have experience in extracellular recording and receptive field analysis in spinal cord and somatosensory systems. Salary scale: \$18,000 to \$25,000 annually, depending on background and experience. Position available immediately. Send curriculum vitae and references to: **Dr. Richard Berenberg, Department of Neurology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611. Affirmative Action/Equal Opportunity Employer.**

**RESEARCH ASSOCIATE** to study gastrointestinal hormones in diabetes and obesity. Must have Ph.D. in biochemistry; should have extensive experience in endocrine research, radioimmunoassays, computer data processing, laboratory management, and teaching medical students. Send curriculum vitae, statement of research interests, and names of three references by 6 June 1983 to: **E. L. Mazzaferri, M.D., Chairman, Department of Internal Medicine, University of Nevada School of Medicine, Reno, Nevada 89557.**

### SEDIMENTOLOGIST—WRIGHT STATE UNIVERSITY

The Department of Geological Sciences invites applications for a position in sedimentology, beginning September 1983. The position will be either for a tenure-track assistant professorship or a 1-year visiting position, depending upon qualifications. A classic sedimentologist is preferred, but strong candidates in any sedimentology field will be considered. The successful candidate will be expected to teach at the undergraduate and graduate levels and to participate in the department's active graduate program. The department is active with 12 faculty with an emphasis on professional practice, yet maintaining a firm commitment to basic research. Send a letter of application, curriculum vitae, and names of three references to: **Chairman, Search Committee, Department of Geological Sciences, Wright State University, Dayton, Ohio 45435.** Closing date for the position is 15 June 1983.

**SENIOR SCIENTIST** position opening 30 June; Ph.D. Experience in numerous fields required, including coastal and pollution ecology, culture of marine organisms, and aquatic toxicology. International business development and project management skills desirable. Salary to match experience and potential. Submit application, including résumé and list of references by 1 June to: **Karen Keith, Research Planning Institute, Inc., 925 Gervais Street, Columbia, South Carolina 29201.**

## CONFERENCE

14 to 17 June, **ACID RAIN AND FOREST RESOURCES CONFERENCE**, Quebec City. **Claude Gendreau, Chairman of the Arrangements Committee, Acid Rain and Forest Resources Conference, Laurentian Forest Research Centre, Environment Canada, P.O. Box 3800, 1080 Route du Vallon, Sainte-Foy, Quebec, Canada G1V 4C7.**

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP** available immediately for an individual with a Ph.D. and experience in molecular biology and cloning. The project involves work with a neurotropic virus. Send curriculum vitae and names of three references to: **Dr. Raymond Roos, Department of Neurology, University of Chicago Medical Center, BH Box 425, 950 East 59 Street, Chicago, Illinois 60637.**

### POSTDOCTORAL FELLOWSHIP

Postdoctoral fellowship available immediately at VA Medical Center/Stanford Medical Center, Palo Alto, California, to characterize immune complexes by immunoelectrofocusing techniques and to study their effects on cloned endothelial and vascular smooth muscle cells in vitro. Prior experience in electrophoresis, electrofocusing, cell culture, and nucleic acid biochemistry required. Candidate should hold the Ph.D. or M.D. degree and be a U.S. citizen or permanent resident. Submit application letter, curriculum vitae, and three references to: **Dr. Thomas Okarma, Geriatric Research, Education and Clinical Center (182-B), Veterans Administration Medical Center, 3801 Miranda Avenue, Palo Alto, Calif. 94304. Stanford University is an Affirmative Action/Equal Opportunity Employer.**

### THE DEPARTMENT OF PATHOLOGY SCHOOL OF MEDICINE UNIVERSITY OF UTAH

#### RESEARCH POSTDOCTORAL FELLOWSHIPS

Available immediately are experimental pathology fellowships in: (i) the biochemistry and physiology of connective tissue components, (ii) the biochemistry of thrombosis, (iii) the biochemistry of tumor antigens, (iv) cellular immunology, (v) the biochemistry and physiology of cell surface receptors, and (vi) cellular immune responses to tumors. These programs will be described in greater detail on request.

Initial appointments are for 1 year, carry an attractive stipend, and are potentially renewable.

Ph.D. or M.D. applicants should provide a brief statement of career goals and data of availability as well as curriculum vitae, bibliography, and the names of three referees to: **John M. Matsen, M.D., Professor and Chairman, Department of Pathology, University of Utah School of Medicine, Salt Lake City, Utah 84132.** Promising candidates will be invited for an expense-paid interview. *The University of Utah is an Equal Opportunity/Affirmative Action Employer.* Opening date: 1 April 1983. Closing date: 1 July 1983. Applications submitted after the deadline may be considered if no qualified candidates have applied by the deadline.

### POSTDOCTORAL FELLOWSHIPS HEARING SCIENCE

Opportunities for training/research in an interdisciplinary laboratory. Faculty activities in anatomy, audiology, pharmacology, physiology, psychophysics, and speech science involve both human and nonhuman subjects. Contact: **Kresge Hearing Research Laboratory, 1100 Florida Avenue, Building 124, New Orleans, La. 70119; telephone: 504-947-6641.**

### RESEARCH INSTITUTE OF SCRIPPS CLINIC La Jolla, California

**POSTDOCTORAL FELLOWSHIP** available immediately to investigate the molecular biology of phosphorylated glycoproteins of the surface of human neoplastic cells using hybridoma-based immunohistochemical and biochemical methods followed by molecular genetic analyses. These studies address the identity and structure of unique molecules coupled with analysis of their functional significance and relationship to oncogene sequences and the neoplastic transformation of cells. Applicants with relevant investigative experience preferred for position in Program Project in the Molecular Immunology and Pathobiology of Neoplasia. Submit curriculum vitae and three references to: **Dr. Thomas Edgington, Research Institute of Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, Calif. 92037. An Affirmative Action/Equal Opportunity Employer.**

## FELLOWSHIPS

### ENDOCRINOLOGY/NEUROBIOLOGY

A postdoctoral fellowship is available this June to study the hormonal and neural control of seasonal reproduction and thermoregulation in rodents. A knowledge of mammalian neuroanatomy and hormone-binding techniques is desirable. Send curriculum vitae, representative reprints, and three letters of recommendation by 20 May 1983 to: **G. Robert Lynch, Department of Biology, Wesleyan University, Middletown, Conn. 06457.**

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

### POSTDOCTORAL FELLOWSHIP IN BIOCHEMICAL PARASITOLOGY

Postdoctoral fellowship available to study purine and nucleic acid in pathogenic protozoans, especially leishmania and trypanosomes. Investigation includes metabolic pathways, enzymology, and use of tissue culture to study intracellular forms. Applicant should have experience in biochemistry, tissue culture, and analytical techniques used in biochemistry laboratory. Please send curriculum vitae to: **J. J. Marr, M.D., University of Colorado Health Sciences Center, Division of Infectious Diseases, Box B-168, 4200 East 9 Avenue, Denver, Colo. 80262. University of Colorado is an Equal Opportunity Employer.**

## GRADUATE STUDY

### GRADUATE STUDIES IN BIOMEDICAL SCIENCES

#### EASTERN VIRGINIA MEDICAL SCHOOL (EVMS)/OLD DOMINION UNIVERSITY (ODU)

The Eastern Virginia Medical School participates in the Biomedical Sciences Program of EVMS/ODU by offering interdisciplinary study leading to the Ph.D. in the following areas: cancer biology, immunology, cardiovascular, infectious diseases, cellular endocrinology, neurosciences, and general biomedical sciences. Course work and research opportunities offer breadth in basic biomedical sciences and depth in interdisciplinary dissertation research. Faculty from the medical school and university departments participate in teaching and research direction. Fellowships and waivers of tuition are available and based upon credentials. For further information, please contact: **Biomedical Sciences Program, Eastern Virginia Medical School, Box 1980, Norfolk, Virginia 23501.**

## TRAINING GRANT

### POSTGRADUATE RESEARCH DEPARTMENT OF BIOLOGY PRINCETON UNIVERSITY

NIH postdoctoral training grant positions for recent Ph.D.'s in the areas of biochemical and genetic aspects of cell differentiation (Doctors T. Cline, E. Cox, A. Newton, P. Schedl, and E. Wieschaus), cell biology and development (Doctors J. Bonner, M. Constantine-Paton, E. Luna, and M. Steinberg), and behavioral and population genetics (Doctors J. Gould, R. Greenspan, J. Hoogland, R. May, W. Quinn, D. Ready, and D. Rubenstein) are available. Candidate must be U.S. citizen or national, or permanent resident, and must have Ph.D. degree at time of appointment. Appointment must start after 1 July 1983 and before June 1984.

Applications should include curriculum vitae, references, and summary of research interest. Application closing date: 27 May 1983. Inquiries or applications should be sent to: **Dr. E. C. Cox, Chairman, Department of Biology, Princeton University, Princeton, N.J. 08544. Princeton University is an Equal Opportunity/Affirmative Action Employer.**

## TRAINING PROGRAM

**POSTDOCTORAL AND PREDOCTORAL POSITIONS** are available in a new training program in Neural Control of Physiological Systems. Opportunities for training are available in neurophysiology, neuroanatomy, endocrinology, and behavior. Research areas include metabolism (L. A. Campfield), respiratory rhythmicity (J. L. Feldman), voluntary movement (J. C. Houk), circulation (D. O. Nelson), eye-head coordination (B. W. Peterson), nutrient and fluid homeostasis (R. C. Rogers), spinal reflexes (W. Z. Rymer), and circadian and reproductive rhythms (F. W. Turek). To apply, send curriculum vitae, academic records, and three letters of reference to: **TRAINING PROGRAM, Department of Physiology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611.**



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## Research Scientist – Physical Oceanography

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Dartmouth, Nova Scotia**

### IN-DEPTH SCIENTIFIC PURSUITS

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### Qualifications

You require a doctoral degree in physical oceanography, physics, applied mathematics or a related field from a recognized university, or a lesser degree with research experience and scientific productivity equivalent to a doctorate. A sound background in oceanography teamed with experience

in the use of numerical models and in the utilization of large data sets is mandatory. A pre-employment medical will be required.

### Language Requirements

Knowledge of English is essential.

### Salary

We offer a salary ranging from \$25,315 to \$47,088 commensurate with your qualifications and experience.

Additional job information is available by writing to the address below.

Tout renseignement relatif à ce concours est disponible en français et peut être obtenu en écrivant à l'adresse suivante:

### How to apply

Send your application form and/or résumé to:

**Joan Girling  
National Capital Region Staffing Office  
Public Service Commission of Canada  
300 Laurier Avenue West  
Ottawa, Ontario K1A 0M7  
Tel.: (613) 593-5331, ext. 403  
Closing date: May 27, 1983**

*Please quote the applicable reference number at all times.*

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