

and will gain an appreciation of how much we have learned in a relatively short period about living creatures from the study of their proteins. Emil Smith can proudly stack the volume next to the six enormous editions of *The Principles of Biochemistry* that he helped issue over the years.

RUSSELL F. DOOLITTLE

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Aqueous Solutions

Ionic Liquids. Papers from a conference, Oxford, England, July 1978. DOUGLAS INMAN and DAVID G. LOVERING, Eds. Plenum, New York, 1981. x, 450 pp., illus. \$49.50.

This book of papers on highly concentrated aqueous solutions and molten salts covers experimental data on spectroscopic, transport, and thermodynamic properties; computer simulations; alternative macroscopic properties; applications to industrial electrochemistry; acid-base phenomena; and purification of materials.

In the last 60 years, following the development of the Debye-Hückel theory, the study of electrolytes has primarily been devoted to dilute aqueous solutions. Only in the last 20 years has there been a resurgence of interest in concentrated solutions. The subject is of interest to the geosciences community because of its increasing applications to the understanding of oil and ore formation and of hydrothermal and diagenetic processes.

Industrial applications mostly involve solutions or molten salt systems that are outside the region of validity of most microscopic theories. Consequently, much of the description of such systems is macroscopic or semi-empirical. Clearly much more experimental work needs to be done to aid future theoretical development. Many of the papers in the book describe the connections and analogies between concentrated aqueous solutions and molten salts. These connections and analogies will be the path of theoretical development over the next few years, and numerous new and old ideas are suggested for consideration by the various authors.

One that is of interest is the use of computer simulations (molecular dynamics) to explore the impact of various potentials and to isolate the most significant theoretical factors (Adams and Hills). However, it will be some time

before real systems will be accurately modeled. Another example is the comparison of a given macroscopic transport property for concentrated solutions, molten salts, and even ionic solids (Richter) to exploit or verify the prediction abilities of the various models such as free volume, lattice, and configurational entropy. Such comparisons are best made by using general macroscopic formulations like the Onsager l_{ij} or R_{ij} of irreversible thermodynamics or velocity correlation coefficients (Richter; Spiro and King). A third example is the empirical correlation between optical basicity parameters from absorption spectra and acid strength (Duffy and Ingram), although complex ion formation (for example, in $ZnCl_2$) does not seem to have been considered. A last example is the interesting linear correlations over quite substantial concentration ranges of charge-transfer-to-solvent spectral shifts with activity coefficients and with lattice-model Madelung constants (Griffiths and Wijayanayake).

Although the papers vary in quality and generality, overall the book is a rather nice survey of a field of growing importance and contains enough interesting and controversial ideas to be worth perusing.

DONALD G. MILLER

Lawrence Livermore National
Laboratory, University of California,
Livermore 94550

Books Received

Air Pollution Control for Hospitals and Other Medical Facilities. Louis Theodore. Garland, New York, 1981. xii, 324 pp., illus. \$37.50.

The Analysis of Explosives. Jehuda Yinon and Schmel Zitrin. Pergamon, New York, 1981. xii, 310 pp., illus. Cloth, \$60; paper, \$22.50. Pergamon Series in Analytical Chemistry, vol. 3.

Aquatic and Wetland Plants of Southeastern United States. Dicotyledons. Robert K. Godfrey and Jean W. Wooten. University of Georgia Press, Athens, 1981. x, 934 pp., illus. \$40.

Chemical Methods of Rock Analysis. P. G. Jeffery and D. Hutchison. Pergamon, New York, ed. 2, 1981. xvi, 380 pp., illus. \$60. Pergamon Series in Analytical Chemistry, vol. 4.

Circumstantial Evidence. John Penter. Faraday Press, San Francisco, 1981. 144 pp. \$11.95.

Classical and Modern Control with Worked Examples. Jean-Pierre Elloy and Jean-Marie Piasco. Translated from the French by Barbara Beeby. Pergamon, New York, 1981. xii, 196 pp., illus. Paper, \$17. International Series on Systems and Control, vol. 2.

Classics in Psychoanalytic Technique. Robert Langs, Ed. Aronson, New York, 1981. xii, 524 pp. \$50. Classical Psychoanalysis and Its Applications.

Climate's Impact on Food Supplies. Strategies and Technologies for Climate-Defensive Food Production. Papers from a symposium, San Francisco, Jan. 1980. Lloyd E. Slater and Susan K. Levin, Eds. Published for the American Association for the Advancement of Science by Westview Press, Boulder, Colo., 1981. xx, 244 pp., illus. \$22. AAAS Selected Symposia Series, 62.

Digital Computer Applications to Process Control. Proceedings of a conference, Düsseldorf, Oct. 1980. R. Isermann and H. Kaltenecker, Eds. Published for the International Federation of Automatic Control

by Pergamon, New York, 1981. xiv, 582 pp., illus. \$100. IFAC Proceedings Series.

Disasters and the Small Dwelling. Proceedings of a conference, Oxford, England, Apr. 1978. Ian Davis, Ed. Pergamon, New York, 1981. x, 220 pp. \$30.

Earthquake Interpretations. A Manual for Reading Seismograms. Ruth B. Simon. Kaufmann, Los Altos, Calif., 1981. x, 150 pp., illus. Paper, \$9.95.

The Evolving Biosphere. P. L. Forey, Ed. British Museum (Natural History), London, and Cambridge University Press, New York, 1981. viii, 312 pp., illus. Cloth, \$79.50; paper, \$24.95. Chance, Change and Challenge.

The Evolving Earth. L. R. M. Cocks, Ed. British Museum (Natural History), London, and Cambridge University Press, New York, 1981. viii, 264 pp., illus. Cloth, \$72.50; paper, \$22.50. Chance, Change and Challenge.

Excitons. Their Properties and Uses. Donald C. Reynolds and Thomas C. Collins. Academic Press, New York, 1981. xii, 292 pp., illus. \$36.

Father-Daughter Incest. Judith Lewis Herman with Lisa Hirschman. Harvard University Press, Cambridge, Mass., 1981. xiv, 282 pp., \$15.95.

The High Road. Ben Bova. Houghton Mifflin, Boston, 1981. x, 290 pp. \$11.95.

Information Technology and Health Care. The Critical Issues. Karen Duncan. AFIPS Press, Arlington, Va., 1981. xii, 144 pp., illus. \$25. Executive Information Series.

Infrared and Millimeter Waves. Vol. 3, Submillimeter Techniques. Kenneth J. Button, Ed. Academic Press, New York, 1980. xii, 428 pp., illus. \$50.

An Integrated System of Classification of Flowering Plants. Arthur Cronquist. Columbia University Press, New York, 1981. xviii, 1262 pp., illus. \$100.

IQ and Mental Testing. An Unnatural Science and Its Social History. Brian Evans and Bernard Waites. Humanities Press, Atlantic Highlands, N.J., 1981. x, 228 pp. Cloth, \$30; paper, \$13. Critical Social Studies.

Knowledge and Society. Studies in the Sociology of Culture Past and Present. A Research Annual. Vol. 3. Robert Alun Jones and Henrika Kuklick, Eds. Jai Press, Greenwich, Conn., 1981. viii, 304 pp. \$36.50.

Motor Unit Types, Recruitment and Plasticity in Health and Disease. John E. Desmedt, Ed. Karger, Basel, 1981. x, 416 pp., illus. \$88.75. Progress in Clinical Neurophysiology, vol. 9.

Mystical Bedlam. Madness, Anxiety, and Healing in Seventeenth-Century England. Michael MacDonald. Cambridge University Press, New York, 1981. xviii, 324 pp. \$39.95.

Nonlinear System Theory. The Volterra/Wiener Approach. Wilson J. Rugh. Johns Hopkins University Press, Baltimore, 1981. xvi, 326 pp. \$32.50. Johns Hopkins Series in Information Sciences and Systems.

Nuclear Magnetic Resonance Imaging in Medicine. Leon Kaufman, Lawrence E. Crooks, and Alexander R. Margulis, Eds. Igaku-Shoin, New York, 1981. xii, 242 pp., illus. \$29.50.

Nuclear War. The Facts on Our Survival. Peter Goodwin. Rutledge Press, New York, 1981. 128 pp., illus. Cloth, \$9.95; paper, \$5.95.

Progress in Oceanography. Vol. 7. Mary Swallow, Ed. Pergamon, New York, 1981. viii, 254 pp., illus. \$81. First published in *Progress in Oceanography*, vol. 7, Nos. 1-6.

Progress in Reaction Kinetics. Vol. 10. K. R. Jennings and R. B. Cundall, Eds. Pergamon, New York, 1981. vi, 406 pp., illus. \$82.50. First published in *Progress in Reaction Kinetics*, vol. 10, Nos. 1-4.

Progress in Surface and Membrane Science. Vol. 14. D. A. Cadenhead and J. F. Danielli, Eds. Academic Press, New York, 1981. xii, 492 pp., illus. \$41.

Reaction Engineering in Direct Coal Liquefaction. Yatish T. Shah. Addison-Wesley Advanced Book Program, Reading, Mass., 1981. xiv, 400 pp., illus. \$47.50. Energy Science and Technology, No. 3.

Realistic Planning for Arid Lands. Natural Resource Limitations to Agricultural Development. W. Gerald Matlock. Harwood, New York, 1981. xvi, 262 pp., illus. \$39.50. Advances in Desert and Arid Land Technology and Development, vol. 2.

Recent Progress in Analytic Number Theory. Papers from a symposium, Durham, England, July 1979. H. Halberstam and C. Hooley, Eds. Academic Press, New York, 1981. Two volumes. xii, 348 pp., and xii, 280 pp. Each volume, \$69.50.

Wie krank ist unser Wasser? Die Gefährdung des Trinkwassers: Sachstand und Gegenstrategien. Uwe Lahl and Barbara Zeschmar. Dreisam-Verlag, Freiburg i.Br., Germany, 1981. 124 pp., illus. Paper, DM 7.80. Öko-Bericht Nr. 18.

Winter Twigs of Arkansas. A Field Guide to Deciduous Woody Plants. G. Thomas Clark. Illustrations by T. Patterson Clark. Rose Publishing Company, Little Rock, 1981. xiv, 94 pp. Paper, \$13.95.

World Politics. The Menu for Choice. Bruce Russett and Harvey Starr. Freeman, San Francisco, 1981. xii, 596 pp. \$16.95.

Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising closing for a particular Friday issue is Wednesday, 3 1/2 weeks before. Advertising is accepted only in writing; no abbreviations. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

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POSITIONS WANTED

Acid Precipitation Scientist, M.S. 1978. Presently 2 1/2 years at the Integrated Lake Watershed Acidification Study (Adirondacks). Laboratory manager, field sampling team leader. Experienced in all chemical, biological, and geological methods typically used in watershed calibration studies. Certified diver. Adaptable, innovative technician seeking top field/laboratory position in precipitation pollution research. Available March 1982. J. Tokos, Raquette Lake, N.Y. 13436. X

Aquatic Biology. B.S. degree. Experience in fisheries, water analysis, invertebrate ecology. Seeks research technician position. Will relocate. 39 North Street, Binghamton, N.Y. 13905; telephone 607-724-9487. X

Chemical Engineer/Microbiologist, B.S.Ch.E., June 1982/Ph.D. microbiology, 1980. Research experience in cell culture techniques, enzymology, cell growth regulation. Seeks engineering position in scale-up or process development of microbial or enzyme systems. Box 299, SCIENCE. X

Clinical/Analytical Chemist, Ph.D. 1976. England. Five years of international experience in medical research; diabetes, cancer research, glycoproteins, drugs and metabolites, toxicology. Extensive experience in the application of GC, GC-MS, HPLC, electrofocusing, TLC, UV, AA, and IR in the development of methods. Currently World Health Organization employee. Publications. Desires faculty/senior research position. No agencies please. Box 262, SCIENCE. 12/4, 11, 18.

Physician, M.D./M.P.H. Experience in academia and government (NIOSH). Seeking position in preventive medicine, occupational health, or epidemiology. Box 305, SCIENCE. 12/4, 11, 18; 1/1

POSITIONS WANTED

Clinical Immunologist, Ph.D., experienced cellular immunology, histocompatibility, serum proteins, serology, research interest autoimmune disease. Seeks clinical laboratory position, teaching, research at university or teaching hospital. Box 300, SCIENCE. 12/4, 11, 18

Field Biologist/Geologist, B.A. 1978. Wide academic interest and experience in both areas. Advanced first aid, two additional wilderness first aid courses, and an NOLS mountaineering course (Wind River Mountains, Wyoming). Currently employed at U.S. Geological Survey, Denver. Seeking field job in the United States or Canada. Box 307, SCIENCE. X

Genetic Toxicologist, Ph.D. 1975. Strong background in mammalian cell mutagenesis. Consultant. Editor and national meeting session chairperson. Numerous publications in basic and applied area of specialty. Hands on and supervisory experiences in all aspects of genetic toxicology testing. Seek research/administrative position in industry. Box 301, SCIENCE. X

Microbiologist, Ph.D. Broad basic research background; tumor and molecular virology, bacteriology, cell/bone culture methodologies. Several publications. Hardworking. Seeking a challenging research position in an industrial/medical setting. Box 308, SCIENCE. X

Neurophysiologist, Ph.D., with 3 years of experience, seeks research position in East/Midwest; will also teach. Interests: neurophysiology of posture and locomotion, functional electrical stimulation. Experience: behavioral testing, intra-extracellular recording, brain slice techniques, computers/electronics. Box 304, SCIENCE. 12/4, 11

Organic Chemist, Ph.D. Ten years of experience in cancer research, carcinogenesis, mutagenesis, metabolic studies, organic synthesis, natural products, modern instrumentations. Seeks challenging position. Box 306, SCIENCE. 12/4, 11

Tissue Culture Specialist/Horticulturalist, Ph.D. in 1981; 8 years of previous research and teaching at assistant professor level. Seeking industrial research or academic research/teaching position. Will relocate. References and résumé on request. Box 289, SCIENCE. X

Virologist (Ph.D. 1972). Assistant professor with good publication record, interest in immunology, experience with viruses, radioimmunoassays, and tumor CSA detection. Current MMTV work funded by NIH through 31 December 1984. Medical center teaching experience in graduate education, medicine, dentistry, and pharmacy. Seeks secure teaching/research position. Box 302, SCIENCE. 12/4, 11

POSITIONS OPEN

AGRICULTURAL ECONOMIST/PLANNER to assist Yemen Arab Republic coordinate and plan agricultural development program. Contact:

Barry R. Bainton
Consortium for International Development
5151 East Broadway
Suite 1500

Tucson, Arizona 85711-3766
or telephone: 602-745-0455.

ASSISTANT PROFESSOR, tenure-track position in CELL BIOLOGY, starting August 1982. Ph.D. required; postdoctoral research experience desirable. Appointee will teach undergraduate courses in cellular and molecular biology, offer a graduate course in his (her) field of specialization, and be expected to develop a strong research program. Send curriculum vitae, a statement of research interests and needs, and three letters of recommendation to: **Dr. Richard Lumsden, Chairman, Cell Biologist Search Committee, Department of Biology, Tulane University, New Orleans, La. 70118.** Application closing date is 15 January 1982. *Tulane University is an Equal Opportunity/Affirmative Action Employer.*

POULTRY SPECIALIST to assist Yemen Arab Republic develop modern poultry industry. Prefer nutrition/management. Contact:

Barry R. Bainton
Consortium for International Development
5151 East Broadway
Suite 1500

Tucson, Arizona 85711-3766
or telephone: 602-745-0455.

POSITIONS OPEN

ANATOMIST

The School of Life and Health Sciences at the University of Delaware is seeking an anatomist whose primary teaching responsibility will be the offering of a comprehensive course in human gross anatomy. This is a tenure-track position and is expected to be filled at the assistant professor rank. The successful candidate will be a skilled experimentalist and show promise of developing an independent research program. The closing date for applications is 31 January 1982. Applicants should submit curriculum vitae, representative publications, and the names of three references to: **Dr. Roger Wagner, Chair of Anatomy Search Committee, School of Life and Health Sciences, University of Delaware, Newark, Delaware 19711.**

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

ASSISTANT PROFESSORSHIP, tenure-track. Excellent research support. Molecular biology of gene regulation and expression in eukaryotes. Fall 1982. Send curriculum vitae and research proposal, and have three letters of reference sent to: **Chairman, Department of Biology, University of Virginia, Charlottesville, Va. 22901.** *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR—Ph.D. or D.V.M., Ph.D. and evidence of successful research related to experimental cellular immunology and host responses to microbial or parasitic agents. Experience in clinical immunology desirable. Responsibilities include participating in team teaching of basic, clinical, and graduate immunology; supervision of some diagnostic immunology testing; development of an immunologically related research program; and support of cooperative immunology research. Position is available immediately. New, well-equipped facility and stimulating academic environment. Submit résumé, three references, and three relevant publications to: **Dr. T. R. Klei, Veterinary Microbiology and Parasitology, Louisiana State University School of Veterinary Medicine, Baton Rouge, La. 70803.** *Equal Opportunity University.*

ASSISTANT PROFESSORS

The Department of Biological Sciences invites applications for three tenure-track assistant professorships beginning September 1982; appointment at a more senior rank may be considered for uniquely qualified candidates. Preference will be given to candidates with postdoctoral experience who have demonstrated outstanding potential for experimental research in an area which can expand the department's graduate program in: (i) behavioral biology with preference for research in neurobiology, (ii) molecular genetics, and (iii) plant development. Responsibilities include teaching undergraduate and graduate courses in one of the above general fields and supervision of M.S. and Ph.D. candidates.

Applications, including curriculum vitae, reprints, a statement of research plans, and three letters of reference, should be sent to: **Dr. S. K. Shapiro, Head, Department of Biological Sciences, University of Illinois, Box 4348, Chicago, Illinois 60680.** Closing date: 23 December 1981. Availability of these positions is contingent upon budgetary allocation.

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

ASSISTANT PROFESSOR OF BIOLOGY. Full-time, tenure-track position expected September 1982 in small, liberal arts college in southern Maine. Qualifications: **CELL BIOLOGY** orientation, either plant or animal; Ph.D.; and commitment to undergraduate teaching. Duties include: microbiology, embryology, cell physiology, and histology. Send résumé, letter of professional interests, and names of three references to: **Dr. Garrett C. Clough, Coordinator, Science/Math Division, Nasson College, Springvale, Maine 04083,** by 15 February 1982. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT, ASSOCIATE, OR FULL PROFESSOR OF ENTOMOLOGY to teach insect behavior and conduct fundamental and/or applied research in insect behavior with application to practical problems. Ph.D. required. Submit curriculum vitae, transcripts, description of research experience and goals, summary of teaching experience, reprints of publications, dissertation summary, and names of three referees to: **H. K. Kaya, Chair, Search Committee, Department of Entomology, University of California, Davis, Calif. 95616,** by 31 December 1981. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

The University of South Alabama invites applications for a faculty position at the level of **ASSISTANT OR ASSOCIATE PROFESSOR**. Major teaching responsibility includes physiology for baccalaureate Allied Health students. The successful candidate will develop a research program of his/her own interest. Rank and salary are open.

Submit curriculum vitae and names of three references to:

Search Committee
c/o Dean's Office
College of Allied Health Professions
482 Cancer Center Building
University of South Alabama
Mobile, Alabama 36688

Deadline for submitting applications is 31 December 1981. *The University of South Alabama is an Equal Opportunity Employer.*

ASSISTANT PROFESSOR BIOCHEMISTRY

The Department of Biochemistry at The University of Texas Health Science Center at San Antonio invites applications for a tenure-track faculty position.

Highly qualified candidates with a Ph.D. or M.D. degree and appropriate postdoctoral research training in biochemistry or cell biology who are interested in establishing an active research program and participating in departmental instructional activities are encouraged to apply. Recruiting priorities will include individuals with strong backgrounds in organic chemistry applied to biological problems, enzymology using kinetic or spectroscopic approaches, molecular endocrinology with an emphasis on hormone reception, synthesis, or mechanism of action, and molecular immunology such as in the area of production and characterization of monoclonal antibodies.

Interested candidates should submit curriculum vitae, the names of three references, and a brief summary of research interests by 31 January 1982 to:

Biochemistry Search Committee
Department of Biochemistry
The University of Texas Health Science Center
7703 Floyd Curl Drive
San Antonio, Texas 78284

An Equal Opportunity/Affirmative Action Employer

ASSISTANT PROFESSOR OF BIOCHEMISTRY

Bloomsburg State College (BSC) is seeking applications for a **tenure-track** position in biochemistry at the assistant professor rank for fall 1982. The Ph.D. and quality teaching experience or potential are required. Salaries are competitive with other academic institutions, but are dependent upon experience and qualifications. BSC is a predominately undergraduate, liberal arts college with increasing emphasis on the health sciences. Teaching loads are limited by a collective bargaining agreement to an average of 12 contact hours per semester. Send a letter of application and résumé to: **Dr. Roy D. Pointer, Chairman, Department of Chemistry, Bloomsburg State College, Bloomsburg, Pa. 17815**, postmarked by 31 January 1982. *BSC is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR PHYSIOLOGY

The Department of Physiology at the University of Minnesota invites applicants for a tenure-track appointment at the assistant professor level beginning about 1 July 1982. Selection will be based primarily on demonstrated research excellence. Applicants must have at least 1 year of postdoctoral experience and be prepared to carry out independent research. The research must be in the field of cellular physiology, preferably involving one of the following areas: membrane transport, intracellular ionic concentration measurements, single-channel studies, quantitative biology of excitable membranes, and membrane reconstitution of transport proteins. The applicant will be expected to participate in the graduate and undergraduate teaching programs of the department. Send curriculum vitae, including undergraduate and graduate transcripts, a summary of planned research, and the names and telephone numbers of three references to: **Search Committee, Department of Physiology, 6-255 Millard Hall, 435 Delaware Street, SE, University of Minnesota, Minneapolis, Minnesota 55455.**

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

POSITIONS OPEN

ASSISTANT PROFESSOR, BIOLOGICAL SCIENCES, UNIVERSITY OF PITTSBURGH

The Department of Biological Sciences invites applications from highly qualified individuals with a strong research commitment in one or more of the following areas: theoretical ecology, population genetics, evolutionary ecology, physiological ecology, aquatic ecology, microbial ecology, or behavioral ecology. Curriculum vitae, list of publications, names of at least three references, and a summary description of your current research program and future plans should be sent to: **M. Sussman, Chairman, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, Pa. 15260**. Starting date after July 1982. Closing date for applications: 29 January 1982. *The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN EUKARYOTIC MOLECULAR BIOLOGY

The Department of Biological Sciences will make a tenure-track appointment for fall 1982. Candidates must have postdoctoral training in **recombinant DNA technology**. Appointee is expected to continue a productive research program in a **eukaryotic system** and to teach at the graduate and undergraduate levels. The department contains an active group of molecular and cellular biologists. Funds provided to initiate research. Send curriculum vitae, future research interests, and names of three referees to:

Professor Paul S. Lovett
Department of Biological Sciences
University of Maryland Baltimore County (UMBC)
Catonsville, Maryland 21228

UMBC is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF MEDICAL MICROBIOLOGY/IMMUNOLOGY

The Department of Medical Microbiology/Immunology at the School of Medicine, University of Minnesota at Duluth (UMD), has a tenure-track opening for an assistant professor. Primary responsibilities include: (i) establishment of an active, competitive research program in the field of pathogenesis of infectious agents preferably at the molecular level; (ii) sharing in teaching of medical students in area of host-parasite relationships of infectious agents; and (iii) supervision of graduate students. Submit curriculum vitae and three letters of reference to: **Thomas Fitzgerald, Ph.D., Medical Microbiology/Immunology, UMD School of Medicine, Duluth, Minnesota 55812**. Closing date is 15 January 1982. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

ASSISTANT PROFESSOR, Department of Neurological Sciences, Rush Medical College. The Department of Neurological Sciences has a full-time position for an academically oriented neurologist, Board-qualified in EEG, and preferably with some experience in evoked potentials. Duties will include participation in an extensive epilepsy surgery program with use of long-term, video-tape monitoring, implanted electrodes, special diagnostic procedures, and electrocorticography. An interest in epilepsy and/or sleep disorders is desirable. Research space as well as designated research time is available according to the interests of the candidate. Contact: **Dr. F. Morrell, Director, Neurophysiology Laboratories, Rush Medical College, 1753 West Congress Parkway, Chicago, Ill. 60612**. *Rush Medical College is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF PHARMACOLOGY

The Department of Pharmacology, University of Health Sciences/The Chicago Medical School (UHS/CMS), invites applications for a tenure-track assistant professor. A Ph.D. in pharmacology, 2 years of postdoctoral experience and training in one of the following fields is required: cardiovascular or renal pharmacology, immunopharmacology, and toxicology. Applicant should have demonstrated ability for independent research. We provide excellent facilities, stimulating environment, and a competitive salary. Please submit curriculum vitae, description of accomplished and planned research, and three letters of reference to: **Dr. S. Ehrenpreis, Chairman, Department of Pharmacology, UHS/CMS, 3333 Green Bay Road, North Chicago, Ill. 60064**. *UHS/CMS is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE RESEARCH SPECIALIST

The Educational Technology Center, University of California, Irvine, announces an immediate opening for an assistant/associate research specialist. Ph.D. in science, mathematics, or science or mathematics education required. Candidate will take over duties as project manager on three National Science Foundation research and development grants involving the use of computers in science and mathematics instruction. Strong background in research and methodology, curriculum development, evaluation, and instructional computing is required. In addition, candidates should have some teaching experience, and, preferably, some experience working with teachers or students at the junior high level. Salary range: \$18,500 to \$25,000. For more detailed description, please write to: **Alfred Bork, Department of Physics, University of California, Irvine, Calif. 92717**. *An Affirmative Action/Equal Opportunity Employer.*

The Department of Poultry Science at Oregon State University invites applications for a position at the **ASSOCIATE PROFESSOR** level in the area of **turkey research** involving physiology, management, and genetics of poultry. Both research and teaching responsibilities will be involved. The Ph.D. degree is required. Salary is commensurate with experience and qualifications. The position will be available 1 April 1982 but no later than 1 July 1982. Application deadline: 1 February 1982. *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973*. For information about the department and the requirements for the position, write:

Dr. G. H. Arscott, Head
Department of Poultry Science
Oregon State University
Corvallis, Oregon 97331-3402

The Institute for Behavioral Genetics (IBG), University of Colorado, Boulder, is seeking (contingent upon availability of funds) **TWO BEHAVIORAL GENETICISTS** to fill tenure-track positions at the assistant professor level, beginning September 1982. Applicants must have a Ph.D. and proven ability for superior teaching and research. Salary is dependent upon experience.

We seek candidates in two areas: (i) **genetics of psychopathology**, with qualifications for appointment in a cognate academic unit, for example, psychology or pharmacy, and expertise in neuropharmacology preferred; and (ii) **neurogenetics**, with qualifications for a joint appointment in the Department of Environmental, Population, and Organismic Biology.

Send curriculum vitae, statement of interest, and three letters of reference to: **Search Committee, IBG, Campus Box 447, University of Colorado, Boulder, Colorado 80309**. Closing date is 15 January 1982.

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

BIOCHEMISTRY/PLANT PHYSIOLOGY POSITION

The Biology Department, Williams College, invites applications for a renewable appointment at the assistant professor level starting fall 1982. Teaching duties include a one-semester course in general biochemistry and an advanced course in the instructor's area of major interest. The appointment, which is for a term of 3 years, requires a Ph.D. degree. Send completed application, containing résumé, description of research and teaching interests, and three letters of recommendation, to: **Dr. Henry W. Art, Chairman, Biology Department, Williams College, Williamstown, Mass. 01267**. *Application deadline: 10 January 1982. Equal Opportunity/Affirmative Action Employer.*

BIOCHEMISTS—Applications and nominations are invited for two tenure-track positions at the associate professor or upper assistant professor level. Applicants must hold a doctoral degree and have a proven record of externally funded research in any area of biochemistry or molecular biology. The appointments will be determined on the basis of scientific excellence and productivity as well as a commitment to teaching at the undergraduate and graduate levels in a developing program. Applications, including curriculum vitae, copies of most significant publications, summary of research goals, and names of at least three references, should be sent by 31 January 1982 to: **Dr. Phyllis R. Strauss, Biochemistry Search Committee, Department of Biology, Northeastern University, 360 Huntington Avenue, Boston, Mass. 02115**. *An Equal Opportunity/Affirmative Action/Title IX Employer.*

**CSIRO
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CSIRO has a broad charter for research into primary and secondary industry areas. The Organization has approximately 7500 employees, 2700 of whom are research and professional scientists, located in divisions and sections throughout Australia.

GENERAL: Research in the Division of Environmental Mechanics deals with energy exchange and the movement of natural and introduced substances (for example, water, carbon dioxide, salts, fertilizers) in the natural environment, with special reference to plants, soils, and the lower layers of the atmosphere. The division, which is located in Canberra, has 27 staff members, including 14 research scientists, working in the areas of soil physics, solar radiation, fluid mechanics, micrometeorology, and physical aspects of plant physiology.

DUTIES: The Soil Physics Program of the division has concentrated on properties of soils and other porous media and particularly their interaction with water. The appointee will work within this framework in a project exploring field application of theory.

The research might be directed to study of problems presented by systematic and random spatial variability of soils, to physical consequences of the interaction between soils and plants, or to the physics and physical chemistry of saline soils.

The appointee will be expected to collaborate with other members of the program and with research officers of state instrumentalities.

QUALIFICATIONS: A Ph.D degree in appropriate experimental area, a capacity for independent research, and an ability to apply mathematical and physical methods to field situations.

TENURE: A fixed term of 3 years.

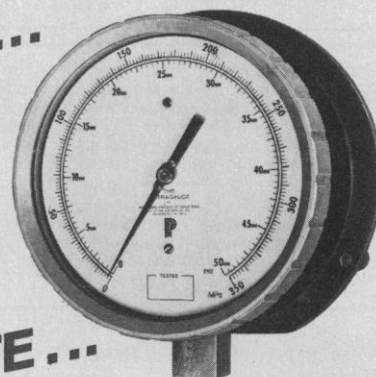
APPLICATIONS: Stating full personal and professional details, the names of at least two professional referees, and quoting reference number A2233 should reach:

The Chief
Division of Environmental Mechanics
CSIRO
P.O. Box 821
Canberra City, A.C.T. 2601
Australia

by 31 December 1981.

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AAAS MASS MEDIA SCIENCE AND ENGINEERING FELLOWS PROGRAM

AAAS invites outstanding natural and social science and engineering students, preferably those at the graduate level, to apply for the 1982 Mass Media Science and Engineering Fellows Program. Students majoring in English, journalism, or other nontechnical fields are not eligible for these fellowships.

Fellows will work as reporters, researchers, and production assistants for 10 to 12 weeks during the summer at radio stations, television stations, newspapers, and magazines throughout the United States. Fellows will have the opportunity to participate in the news-making process, to increase their understanding of editorial decision-making and information dissemination, and to develop skill in conveying to the public a better understanding and appreciation of science and technology. AAAS pays a \$250 weekly stipend and travel expenditures. Deadline for receipt of applications is 1 February 1982. *Minorities, women, and handicapped persons are especially encouraged to apply.*

For further information and an application, write:

Mass Media Science and Engineering Fellows Program
AAAS, 8th Floor
1776 Massachusetts Avenue, NW
Washington, D.C. 20036

COWLES DISTINGUISHED PROFESSORSHIP IN BIOLOGY

Trinity University invites applications and seeks nominations for an outstanding scientist to fill the position of the Ruth C. and Andrew G. Cowles Distinguished Professorship in Biology. The Professorship is to augment a well established curriculum in biological sciences and to contribute significantly to the academic community.

The University seeks an individual of distinguished reputation in the biological sciences with an established record of excellence in teaching and scholarship, as well as a commitment to liberal arts education. The Cowles Professor will be selected from candidates with superior credentials in the biological sciences. Developmental biology and/or genetics are fields of particular interest.

Trinity University is an independent institution committed to excellence in the liberal arts and selected professional programs, including engineering. Present enrollment is 3,200, of which 2,600 are undergraduates. The Department of Biology has nine faculty members with the earned doctorate degree and 150 majors. The department offers a Bachelor of Arts, Bachelor of Science, and Master of Science degrees. Trinity University is located in the San Antonio metropolitan area which has a population of over one million.

Nominations and applications must be received by December 31, 1981, and should be mailed to:



Dr. Harold D. Murray, Chairman
Department of Biology
Trinity University
San Antonio, Texas 78284

An equal opportunity/affirmative action employer

POSITIONS OPEN

BIOCHEMIST, with Ph.D. from an American university, for assistant professorship to teach medical and graduate students. Applicant must be able to use the Korean language with fluency. Applications must include curriculum vitae and names of references.

Dr. Yoon Soo Kim, Chairman
Department of Biochemistry
Yonsei University College of Medicine
P.O. Box 8044
Seoul, Korea

BIOLOGY ANATOMIST, BOTANIST, IMMUNOLOGIST

Three tenure-track openings for fall 1982. Responsibilities include: (i) teaching undergraduate and graduate level courses in field of specialization, and (ii) developing vigorous extramurally funded research program(s). One of the positions will involve operation of an electron microscope facility. Send curriculum vitae and the names of five references to: **Biology Search Committee, Department of Biological Sciences, Florida International University, Miami, Fla. 33199.** Florida International University is a member of the State University System of Florida and is an Affirmative Action/Equal Opportunity Employer.

BIOPHYSICIST

A tenure-track position will be available in biophysics at the University of Illinois at Urbana-Champaign, effective fall 1982. The position is expected to be at the assistant professor level. It is anticipated that the successful applicant will carry out research and teaching in biophysics, in the general area of biomolecular structure. Candidates should have a Ph.D. degree and some postdoctoral experience. Salary is negotiable. Please send your curriculum vitae by 15 February 1982 to: **Dr. Thomas G. Ebrey, Chairman of Biophysics Search Committee, 524 Burrill Hall, 407 South Goodwin, University of Illinois, Urbana, Ill. 61801.** Telephone: 217-333-2015. The position is available subject to budgetary approval. An Equal Opportunity/Affirmative Action Employer.

BOTANIST—Four-year, liberal arts college seeks a 1-year sabbatical replacement beginning in fall 1982. The applicant will teach general botany, plant morphology, and biology for nonmajors, and participate in the general biology program. Send résumé and three letters of reference by 15 February 1982 to: **Dr. J. Preston Cole, Coe College, Cedar Rapids, Iowa 52402.** Affirmative Action/Equal Opportunity Institution.

PRINCETON UNIVERSITY DEPARTMENT OF BIOLOGY CELL BIOLOGIST

The Biology Department invites applications for a faculty position in cell biology at the tenured or nontenured level. Applicants working with a wide range of systems will be considered. Special attention will be given to applications in the areas of development and differentiation, including cellular recognition, directed cell movements, and cell-cell interactions.

Our goal is to add an outstanding individual who will develop an active research program, attract graduate students, and teach effectively. Interested candidates should send curriculum vitae, publication list, an outline of future research directions, and the names of three references to: **Search Committee, c/o Malcolm S. Steinberg, Department of Biology, Princeton University, Princeton, New Jersey 08544.**

Princeton University is an Equal Opportunity/Affirmative Action Employer.

CELLULAR AND MOLECULAR BIOLOGY

The Department of Biochemistry and Molecular and Cell Biology of Northwestern University invites applications for tenure-track faculty positions at the rank of assistant/associate professor. Responsibilities will include development of an independent research program, and teaching in the College of Arts and Sciences and the Graduate School. Applicants should submit curriculum vitae, reprints, a statement of research interests, and three letters of reference to: **Emanuel Margoliash, Chairman, Department of Biochemistry and Molecular and Cell Biology, Northwestern University, Evanston, Ill. 60201.** Northwestern University is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

POSITIONS OPEN

BIOLOGY CHAIRMAN VIRGINIA COMMONWEALTH UNIVERSITY

Virginia Commonwealth University, a comprehensive, urban, state-supported institution, located in Richmond, Virginia, the state capital, and with an enrollment of 20,000, is seeking a chairman for the Department of Biology with the College of Humanities and Sciences.

The department currently employs 27 full-time faculty members and 20 graduate teaching assistants. It offers a wide variety of undergraduate courses and provides graduate training at the master's level with many faculty involved in Ph.D. programs within the School of Basic Sciences.

Candidates for the position should have a strong teaching and scholarly record, have demonstrated some administrative abilities, and qualify for senior rank. They should be able to communicate effectively with students, faculty members, administrators, and others in the university community and in their professions. Salaries are competitive. The position is available 1 July 1982. Applications and nominations accepted until 10 January 1982 or until suitable candidates are identified. Applicants or nominees for position should send résumé and names of three references to: **Dr. R. M. Ottenbrite, Biology Chairman Search Committee, College of Humanities and Sciences, 305 Hibbs, Virginia Commonwealth University, Richmond, Virginia 23284.** An Equal Opportunity/Affirmative Action Employer.

CHAIRPERSON OF PHYSICS DEPARTMENT UNIVERSITY OF SOUTH FLORIDA

The University of South Florida invites applications and nominations for the position, chairperson, Department of Physics. The department has 15 full-time faculty and offers the bachelor's and master's degree in physics. Interdisciplinary Ph.D. programs are available in applied mathematics and in engineering science. We prefer an individual (theorist or experimentalist) who strongly supports quality teaching and whose research specialties overlap and complement one or more of those already present in the department—solid-state physics, plasma physics, high-energy physics, theoretical physics, and atmospheric physics. The ability to provide innovative leadership, work effectively with related disciplines and industry, and direct an orderly departmental building and improvement process will be considered of primary importance. Salary and rank will be commensurate with qualifications. The application deadline is 1 March 1982. Send curriculum vitae and names of references to: **Professor Stanley R. Deans, Chairperson Search Committee, Department of Physics-PHY 114, University of South Florida, Tampa, Fla. 33620.**

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

THE UNIVERSITY OF MELBOURNE CHAIR OF GENETICS

The Chair of Genetics is vacant following the resignation of Professor M. J. Whitten.

Applications are invited from distinguished geneticists, preferably interested in eukaryotic genetics. Salary at present is A\$41,509 per annum.

Further information about the position, including details of application procedure, superannuation, travel and removal expenses, housing assistance and conditions of appointment, is available from the Registrar. All correspondence (marked "Confidential") should be addressed to: **The Registrar, The University of Melbourne, Parkville, Victoria 3052, Australia.**

Applications close 1 February 1982.

CHAIRPERSON DEPARTMENT OF DERMATOLOGY UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE

Applications are invited from highly qualified individuals to head the Department of Dermatology of the University of Pennsylvania School of Medicine.

Reply to: **Dermatology Search Committee, Dean's Office, School of Medicine, University of Pennsylvania, Philadelphia, Pa. 19104.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

CHAIRPERSON, DEPARTMENT OF BIOLOGY, EMORY UNIVERSITY. Emory University is seeking a distinguished scientist to chair its Department of Biology. Candidates should have an active research program of demonstrated excellence, a strong commitment to graduate and undergraduate education, and an interest in supporting interdisciplinary research efforts in areas such as neurobiology, cellular and developmental biology, molecular biology and genetics, and ecology and evolution. The new chair will play a major role in determining the future direction of the department not only by directing searches to fill several new appointments and fostering interdisciplinary research in the biological and biomedical sciences, but also by helping to plan a new biology facility. The Biology Department presently has graduate programs at the M.S. and Ph.D. levels. The appointment is to become effective 1 September 1982. Send curriculum vitae and names and addresses of at least three references to: **Professor William Murdy, Department of Biology, Emory University, Atlanta, Georgia 30322.** The deadline for applications is 15 January 1982. Emory is an Equal Opportunity/Affirmative Action Employer.

CURATOR OF ANTHROPOLOGY

A position is open for curator of anthropology and assistant professor or instructor at the University of Colorado Museum. The opening is for an 11-month job supervising a collection that is concentrated on materials of the southwestern United States. Due to recent trends in acquisition, persons with a specialty in textiles will receive preference. Ph.D. preferred but candidates A.B.D. will be considered if they can demonstrate the ability to finish graduate work in a brief time. Send applications and a list of at least five references to: **Dr. David Greene, Chairman, Curator Selection Committee, Department of Anthropology, Campus Box 233, University of Colorado, Boulder, Colo. 80309.** An Equal Opportunity/Affirmative Action Employer. Salary minimum: \$17,000. Application deadline is 1 February 1982.

We invite applications and nominations for the position of **DIRECTOR** of a newly reorganized and expanded center for the study of environment which is dedicated to multidisciplinary environmental education. The director will be administratively responsible for the center's programs on the main Plattsburgh campus and at a residential satellite campus in nearby Chazy, N.Y. Initial programs in the center include environmental sciences, ecology, geology, and planning. Candidates should have a commitment to teaching excellence and should have achieved significant research accomplishments in an area of environmentally oriented studies. Candidates should also have an earned Ph.D. and have demonstrated success in: (i) obtaining institutional and research fundings, (ii) working effectively with faculty and students in different departments, and (iii) administrative and program development. The anticipated starting date is July 1982. During the first year, the director will be expected to serve full time in planning, coordinating, and integrating the various existing programs and newly developed multidisciplinary and interdepartmental curricula. The director will be expected to offer appropriate courses in environmental studies in subsequent years. Salary and academic rank will be commensurate with experience. Send curriculum vitae, current reprints of publications, five letters of reference, and a statement addressing management/administrative qualifications by 20 February 1982 to: **Dean of Arts and Science, Search Committee for the Director of Center for Environmental Studies, Box 1000, State University of New York at Plattsburgh, Plattsburgh, New York 12901.** An Equal Opportunity/Affirmative Action Employer.

ECONOMIST

Staff economist, Ph.D., to work on toxic chemicals and other natural resource problems with national environmental organization in Washington, D.C. Experience in public policy desirable. Apply in writing to:

Environmental Defense Fund
2606 Dwight Way
Berkeley, Calif. 94704

TOXICS SCIENTIST

Ph.D. to direct technical aspects of Toxic Chemicals Program with national environmental organization in Washington, D.C. Salary competitive. Apply in writing to:

Environmental Defense Fund
444 Park Avenue South, 9th Floor
New York, N.Y. 10016

QUEEN'S UNIVERSITY
KINGSTON, ONTARIO

The DEPARTMENT OF BIOLOGY invites applications for three positions. Successful applicants will be expected to teach in the undergraduate program and develop vigorous research and graduate education programs. Appointments will be effective 1 September 1982 and are expected to be at, but are not restricted to, the rank of assistant professor with salary commensurate with qualifications (floor: \$20,800). *Equal opportunities exist for qualified male or female applicants.* First consideration will be given to Canadian citizens or landed immigrants. All positions require a Ph.D. degree and published evidence of excellent research ability.

PLANT ECOLOGIST—Tenure-track position. Preference will be given to persons with active interests in population or community ecology of land plants. Research program will be expected to emphasize a quantitative experimental approach and the application of ecological and evolutionary theory to problems of plant ecology. It is expected that the successful applicant will interact closely with the present faculty in population biology.

PLANT DEVELOPMENT—Tenure-track position. Applicants must have expertise in plant cell and tissue culture, including plant regeneration and are expected to be able to interact closely with present faculty in plant physiology/development and recombinant DNA technology.

CELL BIOLOGIST—One-year term appointment with the possibility of renewal. Applicants are expected to have research interests in animal cell biology, possibly including fine structure, and be able to interact closely with present faculty in cell biology. Successful applicant must be able to teach in a first-year cell structure and function course.

Application deadline is 1 April 1982 or until a suitable candidate is selected. Send applications, which should include curriculum vitae, statement of future research interests, and names and addresses of three referees, to: **Professor D. T. Canvin, Head, Department of Biology, Queen's University, Kingston, Ontario, Canada K7L 3N6.**

**RESEARCH
SCIENTISTS
Ph.D.**



Brown & Williamson Tobacco Corporation, third largest tobacco manufacturer in the U.S., has immediate openings in its Corporate Research and Development for Research Scientists who can creatively and vigorously attack and solve a wide range of problems in the physical and life sciences. The person will probably have excelled at one time in his/her area of specialization but will not, by inclination, be a specialist. The person will have, or be very close to having, a Ph.D. in the physical sciences. Someone who has been engaged in contract research for a few years could be very suitable.

These positions offer opportunities for professional growth and significant individual contribution to an exciting and dynamic organization. Qualified candidates should submit a confidential resume to:

**Mr. E. L. Donan
BROWN & WILLIAMSON
TOBACCO CORPORATION
P.O. Box 35090
Louisville, KY 40232**

Equal Opportunity Employer M/F

U.S. Department of Energy Thesis Research - Nuclear Waste Management

Description: The U.S. Department of Energy, in association with Argonne National Laboratory, will offer ten awards for Master's thesis research on nuclear waste management, in applicable areas of engineering or the physical sciences. The purpose of these awards is to enable graduate students in disciplines related to nuclear waste management to obtain practical research experience. Each of the ten research programs will be conducted at the academic institution in which the student is enrolled, under the guidance of the student's research professor. Any resources required for the research must be available on campus. The student will be required to provide to Argonne National Laboratory brief quarterly technical progress reports and a final detailed report at the conclusion of the research. Journal publication of the research is encouraged. The duration of the award will be from June 1, 1982 to May 31, 1983.

Areas of Research: The management of all types of nuclear wastes is of interest including high-level, low-level, transuranic, airborne, and mill tailings. Typical research areas of interest include waste from properties, interactions with geologic media, and environmental and safety aspects of waste treatment, transportation, and final disposal.

Eligibility: An award recipient must currently be a U.S. citizen and a full-time graduate student at an accredited U.S. college or university. The proposed research must have the approval of the applicant's research professor and department chairperson. Selections will be by peer review and will be based on academic record, availability of required research facilities and qualified faculty guidance, and applicability of the proposed research to the objectives and programs of the Department of Energy.

Financial Assistance: The Department of Energy will provide up to a total of \$12,000 for each accepted research proposal, payable to the academic institution where the research is performed.

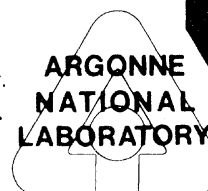
Applications: Each student applicant should provide to Argonne National Laboratory, at the address shown below, a 200-300 word summary of the proposed research, along with brief statements regarding academic qualifications, citizenship status, and availability of required research facilities and qualified faculty guidance. The application must carry written endorsement of the student's research professor and department chairperson.

Application Deadline: March 15, 1982

Mailing Address: Research proposals and requests for further information should be directed to:

**J. H. Kittel
Manager, Office of Waste Management Programs
Argonne National Laboratory
9700 South Cass Avenue
Argonne, Illinois 60439
(312) 972-6677**

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POSITIONS OPEN

CYTOGENETICIST

Corporation in Southwest invites applications for a Ph.D. cytogeneticist to direct a new cytogenetic service laboratory which accepts referrals on a nationwide basis.

Must have minimum of 4 years of laboratory experience in human cytogenetics beyond the doctorate. This is an opportunity to get in on the ground floor of a rapidly developing company, and to live in a delightful community with an ideal climate.

Please send curriculum vitae, list of publications, and names (with telephone numbers) of three references to:

VIVIGEN, INC.
550 St. Michael's Drive
Santa Fe, New Mexico 87501

DEPUTY DIRECTOR/MEDICAL ONCOLOGIST—

The Comprehensive Cancer Center of the University of Miami School of Medicine invites application for the position of deputy director. Position assumes senior leadership responsibilities for management of center programs with emphasis on clinical investigation. Individuals having demonstrated such ability should submit curriculum vitae by 15 January 1982 to: **Awtar Ganju-Krishan, Ph.D., Professor and Scientific Program Director, Comprehensive Cancer Center, University of Miami School of Medicine, P.O. Box 01690 (D8-4), Miami, Florida 33101. An Affirmative Action/Equal Opportunity Employer.**

ENVIRONMENTAL CROP SYSTEMS ECOLOGIST

University of California, Davis. Faculty position in environmental crop systems ecology, assistant professor, 20 percent teaching, 47 percent research, 33 percent extension. Ph.D. in related field with competence in systems analysis and modeling, and a strong background in crop ecology and horticulture. Teaching responsibilities include an undergraduate environmental horticulture course and a graduate course in modeling productivity of greenhouse crops. Research on production systems of flower and nursery crops would be expected. Applicant should submit résumé, transcripts, a list of publications, and the names and addresses of at least three referees to: **Dr. James Harding, Chairperson of Search Committee, Department of Environmental Horticulture, University of California, Davis, Calif. 95616, prior to 8 January 1982. Position available 1 July 1982. The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.**

FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology of the University of Texas Health Science Center at Dallas seeks applications for tenure-track positions at the level of assistant professor. Applicants must have a relevant Ph.D. or M.D. degree, postdoctoral training, and show evidence of firm commitment to a career in independent research. We are particularly interested in considering individuals with an appropriate background who wish to apply techniques of molecular or cellular biology or biochemistry to fundamental problems of pharmacological interest. Responsibilities will also include teaching of medical and/or graduate students after the first year of employment. The department is expanding its faculty, is well-equipped, and is prepared to offer an excellent environment for research as well as competitive salaries, space, and start-up funds. Send curriculum vitae, a brief description of proposed research, and three letters of reference to: **Dr. Alfred G. Gilman, Chairman, Department of Pharmacology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. An Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION IN MICROBIOLOGY—Applications are invited for a 9-month, tenure-track appointment at the assistant professor level in the Department of Microbiology. Appointment to begin in August 1982; a possibility of additional support for summer sessions exists during each year. The department is in the College of Arts and Science and offers A.B., M.S., and Ph.D. degrees in microbiology. Applicants must have a Ph.D. degree and postdoctoral research experience in molecular aspects of immunity or infection. Duties will include teaching undergraduate and graduate courses in the areas of infection and immunity. The individual must develop an active research program and direct M.S. and Ph.D. students. Send curriculum vitae, statement of research goals, and names and addresses of three references by 1 February 1982 to: **Dr. J. K. Bhattacharjee, Department of Microbiology, Miami University, Oxford, Ohio 45056. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

FACULTY POSITION IN ELECTRICAL ENGINEERING THAYER SCHOOL OF ENGINEERING DARTMOUTH COLLEGE

The Thayer School of Engineering at Dartmouth College invites applications for a tenure-track position at the assistant or associate professor level in electrical engineering, with teaching and research interests in either of the following areas: (i) biomedical engineering (instrumentation, medical imaging, signal processing); or (ii) integrated circuits and systems. Teaching competence in semiconductor theory and devices is also desirable. Opportunities for research collaboration exist with Dartmouth-Hitchcock Medical Center and with nearby industry.

Applications, including résumés, should be submitted by 31 January 1982 to: **Professor Thomas Laaspeere, Thayer School of Engineering, Dartmouth College, Hanover, New Hampshire 03755.** Applicants should arrange for the submission of three letters of recommendation/evaluation of their professional qualifications in advance of the closing date. *Dartmouth College is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and members of minority groups.*

FACULTY POSITION IN ECOLOGY—

Applications are now being accepted for a tenure-track position in ecology, the appointment to be effective 16 September 1982. Duties will consist of both teaching and research on some fundamental aspect of ecology of higher or lower plants. The teaching assignment will consist of undergraduate and graduate courses in plant ecology and related areas. The specific research area is open; however, preference will be given applicants whose research would complement other research programs in the department. Appointment will be on a 9-month basis and at the rank of assistant professor. A Ph.D. degree with specialization in ecology is required, and preference will be given applicants who have 1 or 2 years of postdoctoral research and/or teaching experience. Salary will be dependent upon qualifications and experience. Closing date for applications: 1 March 1982. Applications and inquiries should be directed to: **Dr. Thomas C. Moore, Chairman, Department of Botany and Plant Pathology, Oregon State University, Corvallis, Oregon 97331.** Applications must include curriculum vitae, reprints of research papers, transcripts of academic records, three letters of recommendation, and any other information considered pertinent by the applicant. *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

FISH BIOLOGIST, assistant professor, University of Hawaii, for 1982 academic year; tenure-base and half-time research appointment at Hawaii Institute of Marine Biology and half-time teaching appointment in the Department of Zoology to offer introductory ichthyology, contribute to fisheries courses, and develop specialty offerings. Research interest in population biology, regulatory physiology, or food chain dynamics is preferred. Send résumé, including a statement of teaching and research plans, and request three letters of recommendation to be sent by 1 March 1982 to: **Dr. Richard Grigg, Hawaii Institute of Marine Biology, P.O. Box 1346, Kaneohe, Hawaii 96744. The University of Hawaii is an Equal Opportunity/Affirmative Action Employer.**

IMMUNOLOGIST. Applications are invited from individuals interested in a position as assistant or associate professor at Ohio University in the College of Osteopathic Medicine and the Department of Zoology and Microbiology. This teaching-research position involves the instruction of osteopathic medical students in medical immunology and immunology courses at the graduate level. The successful candidate will be expected to develop a strong independent research program including direction of graduate students for the M.S. and Ph.D. Research area is open, but preference will be given to candidates specializing in cellular immunology. Minimum qualifications include a Ph.D. degree or equivalent and postdoctoral experience. Prior medical or dental school teaching is highly desirable. Earliest starting date: 1 July 1982.

Interested individuals should submit curriculum vitae, references from three individuals, and a summary of research plans by 31 January 1982 to: **Dr. Malcolm Modrzakowski, Chairperson, Ohio University, College of Osteopathic Medicine, Irvine Hall, Athens, Ohio 45701. Ohio University is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

DEPARTMENT OF GEOLOGY THE UNIVERSITY OF ALBERTA EDMONTON, ALBERTA, CANADA T6G 2E3

The Geology Department has one permanent faculty position available (subject to funding) 1 July 1982. We invite applications from qualified individuals for appointment at the assistant or associate professor level in any of these areas: geomorphology, mathematical geology, engineering geology, process sedimentology, and structural geology. Preference will be given to those applicants who demonstrate an ability to pursue a vigorous research program applying modern concepts and techniques in solving geological problems. The candidate is expected to teach an undergraduate course in quantitative geomorphology, course(s) in his or her specialty, including, if qualified, geostatistics. The position also involves supervising master's and Ph.D. students. A Ph.D. is required and salary is commensurate with education and experience. Canadian citizens and permanent residents will be given preference.

Interested applicants should submit a résumé, publications, and names and addresses of three referees to: **Dr. N. W. Rutter, Chairman, Department of Geology, University of Alberta, Edmonton, Alberta, Canada T6G 2E3.** Closing date for applications is 15 February 1982. *The University of Alberta is an Equal Opportunity Employer.*

IMMUNOLOGIST, CLINICAL CELLULAR IMMUNOLOGIST—

Position available 1 January 1982. Applicant should have a doctorate in or postdoctoral training in immunology. In addition, a minimum of 4 years of hospital-based experience in clinical immunology with emphasis on cellular is required. Starting salary is fixed by hospital rules at \$30,276 with annual step increments to \$38,640. Interested individuals should send their curriculum vitae to: **Dr. A. S. Mark, Chairman, Division of Immunology, Cook County Hospital, 639 South Wood Street, Chicago, Ill. 60612. An Equal Opportunity Employer, M/F/H.**

INSTRUCTOR OR ASSISTANT PROFESSOR OF BIOLOGY

The University of Maine at Fort Kent has an opening for an instructor or assistant professor of biology. Attractive small campus atmosphere in an appealing region of northern Maine. Primary responsibilities include teaching basic courses in biology, anatomy and physiology, microbiology, and nutrition. Preference will be given to doctorally prepared individuals with previous experience in college-level teaching. Interested applicants should submit curriculum vitae, transcripts, and three letters of recommendation by 31 January 1982 to:

**Biology Search
University of Maine at Fort Kent
Fort Kent, Maine 04743
Telephone: 207-834-3162**

The University of Maine is an Equal Opportunity Employer.

LIPID RESEARCH RELATED TO ARTERIOSCLEROSIS

Postdoctoral positions are available at The Hormel Institute, University of Minnesota, through a training grant award from the USPHS National Heart, Lung, and Blood Institute. The program is intended to provide research training in areas of lipid chemistry, biochemistry, and biophysics related to cardiovascular disease and includes lectures and seminars. Participating faculty members are: Doctors W. J. Baumann, H. L. Brockman, R. T. Holman, H. M. Jenkin, D. R. Pfeiffer, O. S. Privett, H. Schlenk, and H. H. O. Schmid. Applicants select a faculty sponsor specialized in their area of interest. Collaboration with other faculty members is possible.

The 1-year appointments are renewable and currently provide a minimum stipend of \$16,000. Applicants must be U.S. citizens, noncitizen nationals, or permanent residents of the United States, with Ph.D., M.D., or equivalent degree. Applications should include curriculum vitae, list of publications, and the names of three references. For further information or to apply, write to:

**Dr. R. T. Holman
Professor and Director
The Hormel Institute, University of Minnesota
801 16th Avenue, NE
Austin, Minn. 55912
Telephone: 507-433-8804**

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



Sigma Xi, The Scientific Research Society

There is a vacancy at the Headquarters Office of Sigma Xi for a senior staff member to act as Director of Program Development. Among other duties, the person appointed will, under the direction of the Executive Director, be responsible for maintaining and developing links between the Headquarters Office and the 500 chapters and clubs in North America, and with other organizations. The appointee will also play a key role in the development and implementation of Sigma Xi activities under the heading of "Science and Society," especially in improving the understanding of science and scientific research among nonscientists.

Essential qualifications include broad scientific education and experience; innovative and managerial ability; a talent for writing; and the capacity to represent the Society and to explain its objectives and activities to both scientists and nonscientists. Desirable qualifications include membership in Sigma Xi, a record of postgraduate scientific research, and also experience in program development and management, including direction and supervision of other staff. The position may be of particular interest to scientists with research degrees and about seven to ten years of subsequent work experience. The post involves some travel. Salary and other benefits will be appropriate to the position and to the qualifications of the person appointed. Further information can be obtained from the Executive Director, to whom applications should be submitted by 31 December 1981 (telephone 800-243-6534 or write to 345 Whitney Avenue, New Haven, CT 06511).

MOLECULAR GENETICS Ph.D.'s

THE INTERNATIONAL PLANT RESEARCH INSTITUTE (IPRI) invites applicants for its rapidly expanding programs in advanced molecular genetics. Applicants with significant records of frontier achievements in eukaryotic molecular genetics are invited to join a strong team of innovative scientific leaders in the pleasant San Francisco area.

Send résumé with recent publications to:

DIVISION OF MOLECULAR GENETICS, IPRI, 853 Industrial Road, San Carlos, Calif. 94070.

Equal Opportunity Employer, M/F

National Institute of Child Health and Human Development

National Institutes of Health

Department of Health and Human Services

Opening Date: December 1, 1981

Closing Date: December 31, 1981

All applications must be postmarked by closing date.

Director, National Institute of Child Health and Human Development

One of the world's foremost scientific research and development organizations seeks a Director for the National Institute of Child Health and Human Development. The Director is responsible for formulating overall policies relating to the Institute's program, including the determination of goals and the priority and means of their accomplishment. The Institute is responsible for the conduct and support of research and research training relating to maternal health, child health and human development, including research and research training in the special problems and requirements of mothers, children, and families, and in the sciences relating to human reproduction and population. Nationally and within its own facilities, the Institute administers programs of clinical and fundamental research and research training, promotes the application of research findings to clinical practices, and disseminates information about research advances to scientists, health practitioners, and the public.

This is a Civil Service position in the Senior Executive Service (SES), with salary from \$52,247 to \$57,673 per annum (currently limited to \$50,112.50). Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

Qualifications and Rating Process:

All candidates will be evaluated to determine whether they meet the mandatory professional/technical qualification requirements and the mandatory managerial/executive qualifications as outlined below:

Mandatory Professional/Technical Qualifications are either an M.D. or Ph.D., D.P.H. or equivalent or experience, and possesses research experience in pediatrics, obstetrics and gynecology, reproductive sciences or behavioral and social sciences as related to maternal and child health or the population sciences as related to health.

Mandatory Managerial/Executive Qualifications are:

Experience in the management of a basic or clinical research program, demonstrating competence to assume leadership responsibilities in assuring that national and agency goals and priorities are considered in carrying out the functions and responsibilities of the organization; directing and guiding programs and projects, including long-term and short-term planning and establishing objectives and priorities; establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; developing processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO objectives, and developing and implementing procedures for monitoring program performance, including periodic analysis and evaluation.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the following factors: scientific peer recognition, training and education, honors and awards and research experience and leadership. Additional information may be obtained from Mary Jane Meyers, Personnel Officer, NICHD, (301) 496-3365.

Applications (Personnel Statement of Qualifications SF-171) are to be sent to the above individual at this address: National Institute of Child Health and Human Development, National Institutes of Health, Building 31, Room 2A25, Bethesda, Maryland 20205. A current curriculum vitae, bibliography and references and/or appraisals of performance must accompany all applications.

Applications of women and/or minority group members are especially welcomed.

POSITIONS OPEN

DEPARTMENT HEAD—The Department of Chemistry at Texas A & M University is seeking applications and nominations for the position of department head to begin as early as fall semester 1982. Opportunities are available for further departmental development. Candidates should have a good record of research accomplishment, and administrative experience is desirable, but not essential. Applicants should submit curriculum vitae, a list of publications, and the names of three references to: **Dr. J. H. Lunsford, Chairman of the Selection Committee, Department of Chemistry, Texas A & M University, College Station, Texas 77843.** The closing date for receiving applications is 1 February 1982. *Texas A & M University is an Equal Opportunity/Affirmative Action Employer.*

HYDROLOGY, tenure-track position at assistant or associate professor level. Candidate should be a specialist in some quantitative aspect of hydrology with demonstrated skills in formulating hydrologic models, and a background in transport phenomena. Academic or professional credentials at Ph.D. level required. Starting date negotiable but could be as early as August 1982. Résumés, and so forth, should be received by 1 March 1982. Interested persons should request job description from: **Dr. E. S. Simpson, Chairman, Search Committee, Department of Hydrology and Water Resources, University of Arizona, Tucson, Arizona 85721.** *Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGY/PARASITOLOGY

The West Virginia School of Osteopathic Medicine (WVSOM), Department of Microbiology, anticipates an opening for a tenure-track position as assistant professor beginning in January 1982. The selected candidate will be expected to teach immunology and parasitology for first and second year medical students and conduct a vigorous research program.

Send curriculum vitae and arrange for three letters of recommendation to be sent to:

Elizabeth K. Blatt, Ph.D.
Associate Dean, Academic Affairs/Basic Sciences
West Virginia School of Osteopathic Medicine
400 North Lee Street
Lewisburg, West Virginia 24901

WVSOM is an Equal Opportunity/Affirmative Action Employer.

IMMUNOLOGIST. Staff level; 2 to 5 years of postdoctoral experience. Laboratory research on human autoimmunity at a Northwestern University-affiliated hospital. Salary: \$22,000 plus fringe benefits. Send résumé to: **Dr. Peter Dau, Department of Medicine, Division of Immunology, Evanston Hospital, 2650 Ridge Avenue, Evanston, Ill. 60201.**

INSTRUCTOR, ASSISTANT PROFESSOR, ASSOCIATE PROFESSOR, OR PROFESSOR OF PHYSIOLOGY (Ph.D. and/or M.D.). Teaching and research abilities are of primary consideration. Research areas: renal, neurophysiology, and membrane transport. Teaching responsibilities include medical, nursing, and graduate students. The individual must be willing and able to effectively teach areas other than in the primary research interest. Must have recently completed training in a medical center or medical center faculty status. Postdoctoral training preferred for beginning level positions. Evidence of current ability to compete for research funds required for other positions. Salary dependent upon experience. Send curriculum vitae and at least three references to: **Carleton H. Baker, Ph.D., Professor and Chairman, Department of Physiology, Box 8, College of Medicine, University of South Florida, Tampa, Florida 33612.** *The University of South Florida is an Affirmative Action/Equal Opportunity Employer.*

MOLECULAR GENETICIST/BIOCHEMIST

GENEX CORPORATION is seeking a Ph.D. with a strong background of independent research on control of transcription and/or translation in prokaryotes. Candidates should be qualified to design and carry out research on regulation of gene expression with applications to construction of bacterial strains of commercial importance. Applications are invited from senior investigators as well as from candidates with recent postdoctoral experience. Submit curriculum vitae and names of three references to:

Dr. Ethel Jackson
Genex Corporation
16020 Industrial Drive
Gaithersburg, Maryland 20760

POSITIONS OPEN

MICROBIOLOGIST. Ph.D., preferably with postdoctoral experience. A probably tenure-track opening at Swarthmore College beginning September 1982. We seek a candidate with broad experience in microbiology to teach general microbiology, virology, an advanced offering, and to participate in introductory biology. We anticipate making the appointment at the assistant professor level. Send curriculum vitae, and transcripts by 18 December 1981 to: **Dr. John B. Jenkins, Chairman, Department of Biology, Swarthmore College, Swarthmore, Pa. 19081.**

Swarthmore College is an Equal Opportunity Employer.

MICROBIOLOGIST/IMMUNOLOGIST/MEDICAL TECHNOLOGIST ADVISER. Assistant professor rank. Ph.D. qualified to teach immunology to medical technology majors, pathophysiology to nurses and medical technologists, epidemiology to allied health students, plus course of choice in specialty. Other duties include advising and recruiting medical technology majors, supervising student placement in hospitals, and maintaining an active research program. Individuals specializing in areas other than immunology are invited to apply. Salary commensurate with qualifications. Apply before 1 February 1982, and start August 1982. Send curriculum vitae, transcripts, five letters of recommendation, and a letter describing training, experience, and research interests to: **Dr. P. A. Winter, Biology Department, University of West Florida, Pensacola, Fla. 32504.** *The University of West Florida is an Equal Opportunity/Affirmative Action Employer.*

MOLECULAR BIOLOGIST with a strong background in eukaryotic cell biology and protein biosynthesis wanted to fill a tenure-track position at the assistant professor rank beginning 1 September 1982. The successful candidate will be expected to participate in the biochemistry program offered jointly with the Chemistry Department, develop one or more courses for the biology major, and prepare a course for nonscience students. The candidate should have a demonstrated commitment to undergraduate teaching and will be expected to develop an active research program involving advanced undergraduates. Persons with interests in cell physiology, immunology, or marine biology are especially encouraged to apply. Submit curriculum vitae, a complete set of transcripts, statement of teaching and research goals, and three letters of recommendation by 1 February 1982 to: **Dr. James Carlson, Chairman, Biology Department, Rider College, Lawrenceville, New Jersey 08648.** *Rider College is an Equal Opportunity/Affirmative Action Employer, M/F/H.*

MOLECULAR BIOLOGIST

Stauffer Chemical Company is seeking applications for a molecular biologist position in our biological research group. The position is located in recently constructed laboratories in Richmond, Calif. Applicants should have a Ph.D., preferably with postdoctoral experience. A background in recombinant DNA technology is essential, together with expertise in any of the following areas: immunology, nucleic acid chemistry, isolation of eukaryotic messenger RNA, the preparation of cDNA, and cloning and prokaryotic host-vector systems.

We offer a competitive salary and fringe benefits package, in addition to an attractive San Francisco Bay location. If you are interested in an opportunity with Stauffer, send your confidential résumé, statement of research interests and experience, and names of three references to: **D. A. Walker, Personnel Manager, Stauffer Chemical Company, 1200 South 47 Street, Richmond, Calif. 94804.** *Stauffer is an Affirmative Action/Equal Opportunity Employer.*

NEUROBIOLOGIST

The Division of Neurobiology, Department of Physiology, State University of New York (SUNY) at Buffalo, invites applications from qualified neurobiologists for a position at the assistant professor level to start in September 1982. Applicants must have a Ph.D. or M.D. degree with two or more years of postdoctoral training and should be prepared to take an active role in the medical, graduate, and undergraduate neurophysiology teaching activities of the division. Candidates should have demonstrated outstanding potential for independent research in neurobiology at the cellular or systems level. Deadline for applications: 1 February 1982. Please send curriculum vitae, a brief summary of research interests, and three letters of reference to: **Dr. Donald S. Faber, Division of Neurobiology, 313 Cary Hall, SUNY at Buffalo, Buffalo, N.Y. 14214.**

The State University of New York at Buffalo is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

MOLECULAR GENETICS

Seek assistant/associate professor, tenure-leading, August 1982. Conduct an active research program on molecular aspects of gene organization, gene replication, or gene expressing. Teaching responsibilities will include microbial genetics graduate course and molecular biology or microbiology course, \$19,500 minimum salary for academic year. Research initiation funds available. Send curriculum vitae, summary of research interests, and names of three referees by 1 February to: **Dr. S. D. Schwartzbach, School of Life Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska 68588-0118.** *Affirmative Action/Equal Opportunity Employer.*

NEUROPATHOLOGIST or NEUROBIOLOGIST. THE Institute of Pathology, Case Western Reserve University, invites applications for a full-time, tenure-track appointment at the assistant professor level beginning July 1982. Candidates with Boards or Board-eligibility in **NEUROPATHOLOGY** with strong research credentials, preferably in neuronal aging and cytoskeleton or, alternatively, with a Ph.D. degree and a record of productive research in protein chemistry and/or immunology are invited to apply. Salary commensurate with experience. Applicants should submit curriculum vitae to: **Pierluigi Gambetti, M.D., Division of Neuropathology, Institute of Pathology, Case Western Reserve University, Cleveland, Ohio 44106.**

NEUROPHYSIOLOGY/NEUROPHARMACOLOGY. Postdoctoral position available immediately for research on the neuropharmacology, chemistry, and physiology of the spinal cord. Recent Ph.D. with background in electrophysiology preferred. Please forward résumé and references to: **Robert A. Davidoff, M.D., Department of Neurology and Pharmacology, P.O. Box 16189, University of Miami School of Medicine, Miami, Florida 33101.** *An Equal Opportunity/Affirmative Action Employer.*

ERINDALE COLLEGE UNIVERSITY OF TORONTO

A position in **NEUROPSYCHOLOGY** for up to 3 years beginning 1 July 1982. Research interest in memory or laterality in humans or animals is desirable. Ample opportunity for collaborative research in a clinical or laboratory setting; light teaching load. Salary commensurate with experience, but the position is presently construed as a teaching/postdoctoral appointment. We are looking for candidates who are committed to excellence and productivity in research and teaching. Interested candidates should write to: **Morris Moscovitch, Psychology Department, Erindale College, Mississauga Road, Mississauga, Ontario, Canada L5L 1C6.**

POSITIONS IN OCEANOGRAPHY. The Virginia Institute of Marine Science (VIMS)/School of Marine Science invites applications for two state-funded oceanography research and teaching positions at the levels of senior marine scientist. VIMS is a broad-based marine science establishment with a mission to provide sound and timely advice to executive agencies and the legislature and to conduct incisive research programs. The School of Marine Science offers M.A. and Ph.D. programs with a faculty of 66 and 139 graduate students.

HEAD, DEPARTMENT OF GEOLOGICAL OCEANOGRAPHY (Position Number 113). Applicants are sought with research interests in estuarine sedimentary geochemistry, dynamics of cohesive sediment transport, or estuarine and coastal morphodynamics. For further information, contact: **Dr. Robert Byrne (VIMS), telephone: 804-642-2111, extension 173.**

ESTUARINE AND COASTAL HYDRODYNAMICS (Position Number 204). A physical oceanographer with a strong interest in interdisciplinary approaches to complex estuarine and continental shelf problems is desired. For further information, contact: **Dr. Bruce Neilson (VIMS), telephone: 804-642-6131, extension 244.**

Candidates for both positions should have established research credentials and be dedicated to furthering the research and educational programs of the Institute. Demonstrated ability to generate extramural support is expected. Salary range is \$24,972 to \$34,107 and faculty rank is commensurate with qualifications.

Applicants should send comprehensive curriculum vitae, reprints, and at least three letters of recommendation by 1 February 1982 (stating specific position of interest) to: **Employment Manager, Personnel Office, College of William & Mary, Williamsburg, Va. 23185.** *An Equal Opportunity/Affirmative Action Employer.*

ASSOCIATE DEAN FOR CURRICULUM UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL

Candidate for this position should have a Ph.D. or M.D. degree. Responsibilities will include the planning of a new curriculum and its ongoing evaluation; should have a strong interest and ability in teaching medical students; should have administrative skills, and be able to relate to large numbers of faculty; will work closely with existing faculty and student committees in the areas of educational policy and curriculum design.

In the organizational structure, the Associate Dean for Curriculum will report to the Academic Dean. The individual will be a member of the Educational Policy Committee and will be responsible for chairing a group of working subcommittees of faculty and students, which subcommittees will design the details of the new curriculum using guidelines recommended by the Educational Policy Committee. The Associate Dean for Curriculum will be responsible for the implementation of this new curriculum including matters such as scheduling, allocation of time to various learning activities, allocation of responsibility to various chairpersons and providing ample liaison and communication with faculty and students. Ongoing evaluation and efficacy should be monitored through contact with the student committee on evaluation of courses, by long term follow-up through feedback from house officer programs, and by any other methods which are appropriate.

This position offers an outstanding opportunity to an individual who wants to make his or her work in the field of medical education, in a school whose excellent faculty is clearly in favor of curriculum change.

Interested persons should send resume to:

John P. Howe, III, M.D.
Vice Chancellor/Academic Dean
University of Massachusetts
Medical School
55 Lake Avenue North
Worcester, MA 01605

An Affirmative Action/Equal Opportunity Employer

**University of
Massachusetts
Medical Center**

MARINE BIOLOGICAL LABORATORY Woods Hole, Massachusetts



invites applications from faculty members without tenure for participation in its

STEPS TOWARD INDEPENDENCE PROGRAM

This program furnishes support for summer research at MBL and is designed to provide the facilities, associations, and training that will enable scientists in their immediate post-doctoral years to develop into independent, competitive investigators. More detailed description and application materials may be obtained from

**Admissions Office
Marine Biological Laboratory
Woods Hole, MA 02543
telephone (617) 548-3705**

An Equal Opportunity/Affirmative Action Institution

35th Annual Symposium on Fundamental Cancer Research "Perspectives on Genes and the Molecular Biology of Cancer" March 2-5, 1982

This symposium, sponsored by The University of Texas M. D. Anderson Hospital and Tumor Institute, will focus on the molecular biology of cancer and explore in depth the metabolism involved in cellular cancer growth. Over 30 lectures and several poster sessions will cover the following topics:

- Gene organization and evolution
- Gene transfer
- Regulation of gene expression
- Novel applications of recombinant DNA technology to human cancer

Speakers will include:

R. Axel, D. Baltimore, J. Baxter, P. Berg, M. Birnstiel, D. Botstein, D. Brown, P. Chambon, D. Clayton, R. Davis, B. DeCrombrughe, W. Gilbert, W. Hazeltine, L. Hood, R. Kamen, P. Leder, T. Maniatis, B. Mintz, B. O'Malley, D. Robberson, F. Ruddle, G. Saunders, R. Schimke, C. Schmid, P. Sharp, H. Temin, S. Tonegawa, G. Vande Woude, H. Varmus, R. Weinberg, C. Weissman, and R. White.

For scientists interested in presenting poster papers, please send abstracts by Dec. 31, 1981 to:

Dr. Grady F. Saunders or
Dr. Donald L. Robberson
M. D. Anderson Hospital
and Tumor Institute
6723 Bertner Ave.
Houston, Tex. 77030

Registration information may be obtained from Frances Goff, Room 115, at the same address.

EXPERIMENTAL NUTRITIONIST

Dallas Location

Frito-Lay is a recognized leader in the growing \$12 billion snack food industry. Our state-of-the-art Research and Development technology has been a key ingredient to our 12 consecutive years of record earnings.

We currently have a challenging career opportunity available at our Corporate Headquarters located in Dallas, Texas. The position provides for a professionally trained Experimental Nutritionist responsible for the development, direction and/or coordination of scientific studies for the Nutrition/Food Safety Group with Basic Research.

Position involves interpretation and evaluation of scientific data and new developments in the area of experimental nutrition and the application of data into Frito-Lay nutrition activities.

Requirements are a PhD in Nutritional Biochemistry and active involvement in experimental nutrition research. Experience related to the food industry would be extremely valuable, as would management capabilities. Knowledge of governmental affairs involving the food industry would also be desirable. Position requires the ability to work independently, as well as a limited amount of travel.

Frito-Lay offers an excellent salary, comprehensive benefits package and relocation assistance. Please send your resume, along with salary history, in confidence to:



FRITO-LAY, INC.
Professional Placement-TL
P.O. Box 35034, Dallas, Texas 75235

Equal Opportunity Employer M/F

POSITIONS OPEN

ORGANIC CHEMIST. One-year sabbatical replacement to begin September 1982. Assistant professor level, for recent Ph.D. in organic chemistry. Teach undergraduate courses in organic chemistry and laboratory, general chemistry and laboratory, and an advanced course in area of special interest. Possibly direct undergraduate research. By 30 January please submit a résumé, three letters of recommendation, and transcripts to: **Gale Rhodes, Chemistry Department, Whitman College, Walla Walla, Wash. 99362.** An Equal Opportunity/Affirmative Action Employer.

TWO TENURE-TRACK POSITIONS are available to qualified applicants in pharmaceutical analysis, pharmacokinetics, or biopharmaceutics (including analysis of drugs in biological fluids and drug metabolism), or in physical pharmacy. The college has baccalaureate, Pharm.D., M.S., and Ph.D. programs and extensive opportunities for both basic and clinical research. Address inquiries and applications as soon as possible to: **Dr. S. H. Curry (chairman of Search Committee, telephone: 904-392-5880) or Dr. M. A. Schwartz (dean, telephone: 904-392-3401), College of Pharmacy, Box J-4, JHMH, Gainesville, Fla. 32610.** The University of Florida is an Equal Opportunity/Affirmative Action Employer.

PHARMACOLOGISTS

Applications are invited for faculty positions in a new Department of Pharmacology at Cornell University. Duties include the teaching of basic and/or clinical pharmacology to veterinary and graduate students. Candidates should have the D.V.M. or Ph.D. degree, should be firmly committed to a career of teaching, and have strong or potentially strong research programs. All areas of pharmacology are being considered in the development of the department. Preferred research interests are in mechanisms of action of pharmacological agents which affect basic cell processes. Applications and three letters of recommendation should be sent to: **Dr. Geoffrey W. G. Sharp, Chairman, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.** Cornell University is an Equal Opportunity/Affirmative Action Employer.

PHYSICAL SCIENTIST. Expertise in physics or geology. Interest in environmental science or science and public policy.

The School of Interdisciplinary Studies (Western College Program) is an undergraduate residential division featuring a team-taught core curriculum in liberal arts and career-oriented majors guided by learning contract, advising, and advanced seminars. Applicants must have commitment to teaching as a professional goal, research interests, and willingness to cooperate in a variety of teaching and residential learning activities. Research facilities and resources of a major university available. Completed Ph.D. degree. Assistant professor, tenure-track possible. Starting date: 18 August 1982. *Minority and women candidates are especially encouraged to apply, along with all other qualified candidates.*

Miami University: Affirmative Action and Equal Opportunity in Education and Employment. Send statement of interest, curriculum vitae, and letters of recommendation by 15 January to: **Dr. Eugene Metcalf, Search Committee, School of Interdisciplinary Studies, Miami University, Oxford, Ohio 45056.**

POSTDOCTORAL FELLOWS IN COGNITIVE SCIENCE AT THE UNIVERSITY OF CALIFORNIA, IRVINE

The Program in Cognitive Sciences at the University of California at Irvine has a number of openings for postdoctoral fellows for the academic year beginning fall 1982; supported by a Sloan Foundation grant. Individuals with an interest in study and research in the following and related areas are invited to apply: learnability theory, linguistic theory, psycholinguistics, neurolinguistics, cognitive neuroscience, perception, and mathematical cognitive science.

Applications from senior scholars are welcome. Please send a letter outlining research interests, curriculum vitae, and names of three or more references to:

**Postdoctoral Cognitive Science Committee
c/o Lykke Anderson
School of Social Sciences
University of California
Irvine, Calif. 92717**

An Equal Opportunity Employer. Applications for fall 1982 should be received prior to 15 March 1982.

POSITIONS OPEN

PHARMACOLOGIST

Indiana University School of Medicine—Evansville Center; faculty position available spring 1982. Responsible for the sophomore medical pharmacology course, fall term. Excellent facilities to support productive research. Teaching and postdoctoral experience desirable. Send curriculum vitae and names of three references by 15 January 1982 to:

**John F. Schaeffer, Ph.D., Chairman
Pharmacology Search Committee
Indiana University School of Medicine
Evansville Center for Medical Education
P.O. Box 3287
Evansville, Ind. 47732**

An Equal Opportunity/Affirmative Action Employer, M/F

PHYSIOLOGY

Faculty position at a New England medical school for recent Ph.D. with interest in renal physiology—membrane transport. Must have experience in the manufacture of microelectrodes. Send curriculum vitae to: **Box 296, SCIENCE.**

An Equal Opportunity Employer, M/F

POSTDOCTORAL POSITION available immediately for recent Ph.D. A strong background in lipid purification and lipid chemistry is desirable. Competitive salary. Please send curriculum vitae and three letters of reference to: **Box 303, SCIENCE.**

POSTDOCTORAL POSITION in molecular genetics and animal virology available immediately for 2 or 3 years. Joint research project between Doctors K. I. Berns and N. Muzycka to study the biological activity of the adeno-associated virus genome which has been cloned intact into pBR322 and its potential use as a cloning vector for mammalian cells. Experience in molecular genetics or animal virology desirable. Salary based on NIH scale. Send curriculum vitae and three letters of reference to: **Dr. Kenneth I. Berns, Department of Immunology and Medical Microbiology, Box J-266 JHMH, University of Florida, College of Medicine, Gainesville, Florida 32610.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS for recent Ph.D. or M.D. U.S. citizen or permanent resident; available immediately and 1 July 1982; supported by NIH Training Grant (National Research Service Awards) in the area of basic cancer chemotherapy, clinical cancer chemotherapy, cancer biology, and cancer drug development (organic synthesis). Application deadline for immediate position: 1 month. Send résumé, indicating area(s) of interest, and two or more letters of reference to: **Dr. Sungman Cha, Brown University, Box G, Providence, R.I. 02912.** Telephone: 401-863-3114. An Equal Opportunity/Affirmative Action Employer.

TWO POSTDOCTORAL POSITIONS available immediately to work in cloning and mapping of genes involved in resistance to radiation and radiation leukemia virus-induced tumorigenesis. Experience in recombinant DNA technology, transfection experiments, and cytogenetics would be a plus, but not required. Intelligence, enthusiasm, willingness to work hard, and good prior training are the most important qualifications. Please contact:

**Dr. Daniel Meruelo
Irrington House Institute
and Department of Pathology
Room H-438
New York University Medical Center
550 First Avenue
New York, N.Y. 10016
Telephone: 212-340-5599**

POSTDOCTORAL RESEARCH ASSOCIATES—Positions are available immediately to work in the area of internalization and intracellular binding of gonadotropins and prostaglandins in corpora lutea. Candidates with experience in one or more of the following areas will be considered: subcellular fractionation, marker enzyme assays, prostaglandin biosynthesis and metabolism, membrane receptors, cell dispersion, and cell and tissue culture. Send curriculum vitae and three letters of recommendation to: **Dr. Ch. V. Rao, Department of Obstetrics/Gynecology, 436B MDR Building, University of Louisville, Louisville, Ky. 40292.**

POSITIONS OPEN

POSTDOCTORAL POSITION

A postgraduate research position is available to work on prokaryotic regulation and enzymology of transcription. Ph.D. required. Salary range: \$15,936 to \$19,848 per year. Interested persons should send curriculum vitae and letters of reference to: **Dr. E. P. Geiduschek, Department of Biology, B-022, University of California, San Diego, La Jolla, California 92093.**

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

POSTDOCTORAL RESEARCH ASSOCIATE position available to study problems of membrane structure and function in tissue culture cells. Experience in enzymology and lipid-protein interactions desirable. Send résumé and names of three references to: **Dr. Michael Glaser, Biochemistry Department, University of Illinois, Urbana, Illinois 61801.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately (2 years duration) for research on surface and internal antigens of parasitic nematodes. Experiences in immunochemistry of membrane antigens or glycoprotein purification preferred. Full-time technician provided. Salary range: \$16,000 to \$19,000. Send curriculum vitae, statement of research background, and three names for reference to: **J. T. Neilson, College of Veterinary Medicine, Box J-144, JHMH, University of Florida, Gainesville, Fla. 32610.**

POSTDOCTORAL RESEARCH ASSOCIATE. Two-year renewable salaried position to join a group studying chromatin structures active in transcription and replication. Candidate should have a strong background in gene expression and chromatin structure. Send curriculum vitae to: **Dr. Ronald L. Seale, Department of Cellular Biology, Scripps Clinic and Research Foundation, La Jolla, Calif. 92037.**

POSTDOCTORAL RESEARCH IN OCEANOGRAPHY

Analyze and organize multidisciplinary oceanographic data from tropical oceans. Work with staff marine scientists in designing and operating stochastic oceanographic models and at-sea collection programs. Requires Ph.D. in marine science and oceanographic field experience in at-sea collection and quality control. Familiarity with oceanographic theoretical and empirical computer models desirable. One-year term appointment with the possibility of renewal. Send two résumés, including salary history, to: **Employment Office, LAWRENCE BERKELEY LABORATORY, One Cyclotron Road, Berkeley, Calif. 94720.** An Equal Opportunity Employer, M/F/H.

POSTDOCTORAL TRAINEE IN OVARIAN BIOCHEMISTRY

Beginning immediately, a postdoctoral position as a trainee in an NIH training grant in reproductive biology and biochemistry is available for a recent Ph.D. Projects involve the study of ovarian biochemistry and physiology: mechanism of LH action on ovarian tissue, mechanism of ovulation, role of postaglandin in ovarian function.

Forward résumé, including graduate transcripts, a synopsis of Ph.D. thesis or reprints, and the names of three references to: **William J. LeMaire, M.D., or Martin R. Clark, Ph.D., The Endocrine Laboratory (D-5), University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101.**

PREDOCTORAL AND POSTDOCTORAL TRAINING IN EXPERIMENTAL NUTRITION

Postdoctoral training is offered in the following area under a grant from the National Institute of Arthritis, Metabolism, and Digestive Diseases:

The significance of the gastrointestinal response to undigested food residues.

Research training will be for 1 to 2 years, and will be supplemented with lectures by faculty and invited speakers. Trainees must be citizens or noncitizen nationals of the United States or be permanent residents and have earned a Ph.D. or M.D. degree. Grants for predoctoral training in the department are also available. To apply or obtain more information, write: **Dr. S. E. Fleming, Department of Nutritional Sciences, University of California, Berkeley, Calif. 94720,** or telephone: 415-642-4797.

An Affirmative Action/Equal Opportunity Educator and Employer.

ANNOUNCEMENT AND CALL FOR PAPERS
International Symposium on the Biomedical Effects of
Ozone and Related Photochemical Oxidants
March 14-18
Pinehurst, NC

Objective:

Ozone and related oxidants are a problem of increasing concern because of their potential for effects on human health. The objective of this symposium is to update the database on the biomedical effects of ozone and related oxidants of photochemical smog.

Symposium Program:

The program will contain seven sessions with up to five invited presentations and discussion by an invited panel. Volunteer contributions will be presented in poster sessions. The following topics will be included: atmospheric chemistry; biochemical and morphological responses and effects on pulmonary function in experimental animals and humans; effects of chronic exposures; post-exposure susceptibility to infection; and modifying factors.

Symposium co-chairmen are M. G. Mustafa and R. S. Bhatnagar. The session chairmen, listed alphabetically, are: A. P. Altschuller, R. S. Bhatnagar, D. L. Dungworth, M. J. Evans, L. J. Folinsbee, R. Frank, D. E. Gardner, B. D. Goldstein, E. Goldstein, J. D. Hackney, J. Mead, M. A. Mehlman, D. B. Menzel, J. O'Neil, R. P. Sherwin and D. F. Tierney.

Symposium proceedings will be published incorporating peer-reviewed manuscripts.

Closing Date for Papers:

January 1, 1982.

For submitting abstracts and for registration and program information contact:

Institute for Biomedical and
Environmental Studies, Inc.
2040 Pioneer Court, Suite 15
San Mateo, CA 94403
Telephone (415) 574-0615
or (213) 825-1153 (Dr. Mustafa)

**The Swiss Federal Institute of
Technology in Zurich invites
applications for a**

**PROFESSORSHIP IN
MICROBIOLOGY**

The duties of the professor include teaching in microbial metabolism and soil microbiology in the Faculties of Agriculture and Natural Science. Teaching courses should examine the connections between microbial physiology and ecological behaviour.

Detailed knowledge of microbial physiology and a broad understanding of the activities of microorganisms in biogeochemical cycles are required. These should be the basis for research into nutrient cycling in agricultural and natural soils.

Applicants should have experience in university teaching and in directing research teams. Close collaboration with existing research teams in the field of microbiology is desired.

Applications with curriculum vitae and a list of publications should be submitted by December 31, 1981, to **Professor H. Ursprung, President, Swiss Federal Institute of Technology, ETH-Zentrum, CH-8092 Zurich.**

Rhizobiologists



Agrigenetics Corporation is a broadly-based plant science company engaged in research and in the development, production, conditioning and marketing of genetically-improved seed of more than 50 crop species and a variety of rhizobacterial inoculant preparations.

Opportunities now exist for several scientists (Ph.D. or MS.) to join the microbiology section of the Advanced Research Laboratory at Madison, Wisconsin in the area of Rhizobium genetics. Candidates familiar with the biochemistry and molecular genetics of Rhizobium in respect to symbiotic nitrogen fixation are invited to apply for new positions. Practical experience in working with Rhizobial plasmids and in recombinant DNA technology will be a major factor in the selection of candidates.

Successful applicants will join a group of more than 30 scientists working in various areas of plant molecular and cellular biology in a modern and attractive laboratory. Opportunities exist for interactions with additional Agrigenetics scientists at other locations, as well as the Corporation's applied divisions involved with legume species and in the fermentation and production of inoculants.

Please send resume to the Director, Advanced Research Laboratory, Agrigenetics Corporation, 5649 East Buckeye Road, Madison, Wisconsin 53716.

Environmental Advisor

O.M. Scott & Sons Company, the leading manufacturer of lawn and garden products for consumer and commercial markets, has a career opportunity for an Environmental Advisor located at our modern central Research Center at Corporate Headquarters in Marysville, Ohio (just northwest of Columbus).

You will be responsible for environmental research including compiling all toxicological and environmental data to support EPA pesticide registrations. Position also provides technical evaluation of all human health and environmental concerns related to company business.

We are seeking — MS or Ph.D. in Biological/Life Science with environmentally related training. Ideally, the successful candidate would have had experience in the use, environmental fate, and toxicological effects of agricultural chemicals. Requires strong written and verbal communication skills.

If you are looking for a career opportunity with a company that offers a competitive salary and comprehensive benefit package in a challenging and growing environment, look to Scotts. Please send your resume with transcripts and salary history to:



Rosemary L. Smith
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POSITIONS OPEN

PREDOCTORAL TRAINING IN ENVIRONMENTAL TOXICOLOGY. Interdepartmental program leading to Ph.D. in biochemistry and biophysics, food science and technology, or pharmacology and toxicology. Research emphasis: metabolism and mode of toxic action of environmental contaminants. Applications due January 1982. U.S. citizens or permanent residents only. NIEHS/NRS award funding. **Dr. Ian J. Tinsley, Program Director, EHSC, Oregon State University, Corvallis, Oregon 97331. An Equal Opportunity/Affirmative Action Institution.**

RENAL PHYSIOLOGIST (Ph.D.)—A Ph.D. renal physiologist research position is available in a newly developing Nephrology Division of a university-affiliated hospital located in a highly desirable area. The position is hospital based and not grant dependent. Salary is negotiable. Send curriculum vitae to: **Vincent DiScala, M.D., Professor of Medicine, Director, Division of Nephrology, Nassau Hospital, 259 First Street, Mineola, Long Island, New York 11501.**

RESEARCH ASSOCIATE

Ph.D. or equivalent with training in tissue and cell culture to work on research related to experimental liver carcinogenesis. Postdoctoral position available immediately. Salary negotiable. Send résumé to: **A. David Gibson, Research Administrator, Department of Pathology, School of Medicine, University of Pittsburgh, Pittsburgh, Pa. 15261.**

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RESEARCH ASSOCIATE (Postdoctoral) DEPARTMENT OF PHARMACOLOGY

This position available for studies on the control of insulin release. Emphasis on calcium handling at the subcellular level and the role of calcium in exocytosis. Both physiological and biochemical techniques will be used. Applications should be sent to: **Dr. Geoffrey W. G. Sharp, Chairman, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853. Cornell University is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH AWARDS Sponsored by the BALLISTIC RESEARCH LABORATORY in association with THE NATIONAL RESEARCH COUNCIL

The National Research Council will make awards in 1982 under the Resident Associateship Program, which provides awardees with opportunities to conduct experimental and theoretical research as visiting scientists and engineers in the fields of:

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Programs are open to senior investigators as well as recent doctorates.

Further details on research programs may be obtained from: **Dr. L. J. Puckett, Ballistic Research Laboratory, Aberdeen Proving Ground, Md. 21005, telephone: 301-278-2236.**

For application materials and details on specific research opportunities, write promptly, giving areas of interest, to:

Associateship Office (610-E1)
NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue, NW
Washington, D.C. 20418

Postmark deadline for application is 15 January.

POSITIONS OPEN

THE UNIVERSITY OF IOWA PROFESSOR AND HEAD DEPARTMENT OF PHARMACOLOGY

The University of Iowa invites applications for the position of professor and head of the Department of Pharmacology in the College of Medicine. Applicants should be able to present evidence of substantial research achievement and acknowledged leadership in the field of pharmacology. The successful applicant will be expected to demonstrate and foster excellence in research and in teaching in the health sciences as well as at the undergraduate and graduate levels. Candidates should have earned a doctoral degree and demonstrated experience in administration, teaching, and in scholarly achievement.

Applicants should send current curriculum vitae and the names of three references to:

**Dr. Edward C. Heath, Chairman
Pharmacology Search Committee
Department of Biochemistry
Bowen Science Building
The University of Iowa
Iowa City, Iowa 52242**

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

RESEARCH AND GRADUATE DEVELOPMENT, DEAN

The Bloomington campus of Indiana University (IU) seeks a **Dean for Research and Graduate Development.** The dean has primary responsibility for the stimulation, support, and coordination of research and graduate development for programs on the Bloomington campus. He or she will be expected to stimulate campus liaison with private and government funding agencies and to develop and to maintain a wide range of programs significantly increasing cooperation and interaction between the research facilities of IU Bloomington and private business and industry.

Demonstrated academic achievement and a commitment to research are essential qualifications for the position. Preference will be given to candidates with experience in administration at a relatively high level and with the demonstrated ability creatively and successfully to promote extramural funding. Address all correspondence to: **Professor J. Rufus Fears, Chairperson, Research and Graduate Development Search Committee, Department of History, Ballantine Hall, Indiana University, Bloomington, Indiana 47405. Telephone: 812-337-7581.** Nominations and requests for applications should be made by 15 December; completed applications are due by 15 January.

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RESEARCH PLANT PHYSIOLOGIST. Position at the Brooklyn Botanic Garden Research Center, Ossining, New York. Research program involves innovative approaches to basic and applied research mostly with a horticultural bias. Interest and expertise in tissue culture highly desirable. Ph.D. required. Send, in confidence, curriculum vitae, statement of research interests, salary history, three letters of reference, graduate transcripts, and publications to: **Dr. Stephen K-M. Tim, Director of Scientific Affairs, 1000 Washington Avenue, Brooklyn, New York 11225. An Affirmative Action/Equal Opportunity Employer.**

SENIOR CHEMIST. ISCO, a manufacturer of research instruments for chemistry and life sciences, has an immediate opening for a laboratory manager. Will conceive and perform bioanalytical experiments relating to new product development. Must be innovative and instrument-oriented. Strong skills in HPLC, electrophoresis, and written communications are essential. Send résumé to: **ISCO, Inc., P.O. Box 5347, Lincoln, Neb. 68505, or telephone marketing director at 800-228-4250. An Equal Opportunity Employer, M/F.**

SYSTEMATIC BOTANIST. Applications are invited for a tenure-track position at the assistant or associate professor level. We seek an individual with an established research program on the systematics of vascular plants. Knowledge of southwestern flora is desirable. We emphasize quality teaching for undergraduate and graduate students, thus duties will include direction of student research, teaching of systematics, and participation in the freshman biology program. Send curriculum vitae, a description of ongoing research, appropriate reprints, and the names and addresses of three references to: **Director, Faculty Search, Department of Biology, Baylor University, Waco, Texas 76798. An Equal Opportunity Employer.**

POSITIONS OPEN

TERRESTRIAL ECOLOGIST. Ph.D. with strong background in computers (especially micros) sought by small, rural Maine college with major emphasis in natural sciences. Permanent position to begin fall 1982; rank and salary dependent upon qualifications. Principal duties involve teaching, but research/professional development expected. Submit curriculum vitae and three letters of reference to: **Dr. Ronald Barry, Center of Environmental Sciences, Unity College-ADM, RR Number 78-Box 1, Unity, Maine 04988-9502, by 15 January 1982. Telephone: 207-948-3131, extension 212.**

TERRESTRIAL ECOLOGIST

The Department of Biology at West Virginia University invites applications for a tenure-track appointment at the rank of assistant professor beginning 15 August 1982. Applicants should have a background in either (i) community or evolutionary ecology of natural populations, or (ii) physiological ecology emphasizing water or nutrient relationships. Applicants must: (i) be able to teach an undergraduate core course in modern ecology and population biology and a graduate course in his/her area of specialization, (ii) participate in graduate education and training, and (iii) demonstrate potential for establishing a strong research program. Postdoctoral experience preferred. Please submit, before 10 January 1982, curriculum vitae, copies of recent publications, names (no letters) of three references, and description of future research plans to: **Dr. Gerald E. Lang, Chairman, Ecology Search Committee, Department of Biology, West Virginia University, Morgantown, West Virginia 26506. An Equal Opportunity/Affirmative Action Employer.**

VERTEBRATE BIOLOGIST

Sabbatical replacement for 1982-1983. Ph.D. (or in final stages) required. Teaching: ecology, comparative vertebrate anatomy, introductory course (partial), and a nonmajors field biology course (partial). Send letter of application, curriculum vitae, transcripts (copies), three letters of recommendation, and a statement on the role of biology in a liberal arts curriculum to: **Dr. Charles M. Drabek, Biology Department, Whitman College, Walla Walla, Wash. 99362. Equal Opportunity/Affirmative Action Employer.**

SYMPOSIUM

SYMPOSIUM ANNOUNCEMENT

The Johns Hopkins Center for Alternatives to Animal Testing is sponsoring a symposium on **Product Safety Evaluation—Development of New Methodological Approaches.** The symposium will be held in Baltimore from 12 to 14 May. For information, contact:

**Alan M. Goldberg, Ph.D., Director
Center for Alternatives to Animal Testing
The Johns Hopkins School of Hygiene
& Public Health
615 North Wolfe Street
Baltimore, Maryland 21205**

CONFERENCE

THE NEW YORK ACADEMY OF SCIENCES International Conference on CELL PROLIFERATION, CANCER, AND CANCER THERAPY The Barbizon-Plaza Hotel, New York City 17 to 19 February 1982

The conference is co-chaired by Anna Goldfeder, New York University, and Renato Baserga, Temple University. It consists of multidisciplinary invited lectures on growth factors, the biochemistry of cell proliferation, the molecular basis of transformation, the effect of viruses on cell proliferation, new approaches to cancer chemotherapy, and finally, gene transfer. There will be a poster session and abstracts for the poster session should be sent to: **Dr. Renato Baserga, Temple University School of Medicine, Philadelphia, Pa. 19140.** The abstracts should include the names of the authors, institution, and a 100- to 200-word summary of the work to be presented in the poster. The deadline for submission of abstracts is 4 January 1982. Short summaries of the posters will be published, together with the invited lectures, in the *Annals of The New York Academy of Sciences*.

Inquiries about the program and registration should be addressed to: **Conference Director, The New York Academy of Sciences, 2 East 63 Street, New York, N.Y. 10021.**

**Department of Health
and Human Services
Public Health Service
National Institutes of Health
National Heart, Lung,
and Blood Institute**

Opening Date: December 1, 1981

Closing Date: December 31, 1981

(All applications must be postmarked by the closing date.)

This vacancy is reissued to extend the time period for filing applications. Persons who previously applied under the October announcement will automatically be considered.

**DIRECTOR
DIVISION OF LUNG DISEASES**

The National Heart, Lung, and Blood Institute is recruiting a Director for its Division of Lung Diseases. The Director will coordinate the planning, management, and evaluation of a major program of basic and targeted research, cooperative clinical trials, education and demonstration projects, and national lung centers. The Division itself is divided into six major programs, with a staff of approximately 30 employees and a current annual budget in excess of \$80 million.

This is a Civil Service position in the Senior Executive Service (SES), with base salary from \$54,755 to \$61,300 per year depending on qualifications. Currently, the payable salary is limited to \$50,112.50. SES members are eligible for payments of up to \$10,000 per year, although total compensation cannot exceed the rate for Executive Level I (currently \$69,630 per year). (Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service). The SES individual selected, if not presently in the Senior Executive Service, must serve a one year probationary period. Mandatory professional/technical qualifications are a medical degree, or education in biomedical science and research and/or clinical experience in the field of lung diseases. Further information on these qualifications available by contacting Kathryn Osbourn, Personnel Management Specialist, National Institutes of Health, National Heart, Lung, and Blood Institute, Building 31, Room 5A-32.

Mandatory managerial/executive qualifications include evidence of management of a basic or clinical research program, demonstrating ability to assume leadership responsibilities in developing program goals; representing the program to outside groups; directing program planning; execution, and evaluation; and conducting a fair and equitable employment program, including the attainment of EEO objectives.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the degree to which they exceed the mandatory managerial/executive qualifications, and on the following desirable qualifications: scientific reputation/peer recognition; training and education in lung diseases; leadership of a basic or clinical research, or research administration program, and honors and awards indicative of outstanding contributions to the field of lung diseases.

Applications (Personnel Statement of Qualification - SF-171) should be sent to **Dr. Jay Moskowitz, Chairman, DLD Director Search Committee, Building 31, Room 5A03, National Institutes of Health, Bethesda, MD 20205, telephone (301) 496-6331.**

A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited. The National Institutes of Health is an equal opportunity employer.

MICROBIAL BIOCHEMIST/ BIOCHEMIST

Pfizer Central Research has an opening for a Microbial Biochemist or Biochemist who is interested in the development of processes for the production of chemical, pharmaceutical, and biochemical products via the use of enzyme systems. Research activities will be focused on the development of new biotransformations and will involve the isolation, characterization, and modification of the enzymes involved in the desired transformations. An interest in the preparation and use of immobilized enzymes and organisms is desirable.

Applicants must hold a Ph.D. in Microbial Biochemistry or Biochemistry. Post-doctoral experience in a field complementary to that in which the Ph.D. was obtained is highly desirable.

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Applications are invited from American scientists who wish to make professional visits in the USSR, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and Yugoslavia between January and December 1983. Applicants must be U.S. citizens and have a doctoral degree in the natural or social and behavioral sciences by the time of visit. Deadline for requesting applications is Monday, 1 March 1982. Please contact:

Section of USSR and Eastern Europe
National Academy of Sciences
2101 Constitution Avenue, NW
Washington, D.C. 20418
Telephone: 202-334-2644/45

GRADUATE STUDY

GRADUATE STUDY IN BIOCHEMISTRY

GRADUATE ASSISTANTSHIPS IN BIOCHEMISTRY leading to the Ph.D. degree are available for the 1982-1983 academic year to qualified applicants. The department has a challenging academic and vigorous research program with training available in a broad range of biochemical disciplines. Stipends for 12-month appointments begin at \$6500. Write: **Dr. William P. Kolb, Department of Biochemistry, The University of Texas Health Science Center at San Antonio, San Antonio, Texas 78284.** *An Equal Opportunity/Affirmative Action Employer.*

GRADUATE STUDY IN VETERINARY MICROBIOLOGY

Murray State University, Murray, Kentucky, is seeking applicants for a position as graduate research assistant in microbiology. The Department of Biological Sciences and the University Veterinary Diagnostic Center are offering a joint appointment leading to an M.S. degree in biology. Applicants must have earned a bachelor of science degree and should have completed 15 hours in microbiology/immunology. Applications from persons with research experience in veterinary microbiology will be preferred. The stipend will be \$500 per month for a 12-month award beginning in January 1982. Send applications to: **Dr. James Stuart, Department of Biological Sciences, Murray State University, Murray, Kentucky 42071.**

TRAINING PROGRAM

POSTDOCTORAL POSITIONS

Lipids-Atherosclerosis-Nutrition Training Program funded by NHLBI. Postdoctoral traineeships for 1 or 2 years are available (beginning 1 July 1982) for research and training in areas of: (a) lipoproteins structure, (b) apolipoprotein metabolism, (c) interaction of apoproteins with lipoprotein lipase, (d) effect of diet on plasma lipoprotein and apolipoprotein content and metabolism, (e) pediatric nutrition and bile acid metabolism, (f) development of cholesterol and bile acid hemostatic mechanism, (g) pathogenesis of atherosclerosis including the role of prostaglandins, (h) role of trace minerals in lipid metabolism and atherosclerosis, (i) vascular pathology in juvenile diabetes, (j) modulation of lymphocyte physiology by membrane bound lipoproteins, and (k) epidemiological and behavioral aspects of hyperlipoproteinemia. Faculty includes W. F. Balistreri, M.D., V. Finelli, Ph.D., J. A. Harmony, Ph.D., J. E. Heubi, M.D., J. Fischer, M.D., C. J. Glueck, M.D., R. L. Jackson, Ph.D., J. M. Vander Belkahn, M.D., M. L. Kashyap, M.D., L. Murthy, Ph.D., M. J. Mellies, M.D., E. A. Stein, M.D., M. T. R. Subbiah, Ph.D., and R. Tsang, M.D. Candidates with a Ph.D. degree in biomedical or behavioral fields and those with M.D. degree with appropriate research experience are eligible to apply. Applicants must be U.S. citizens or hold immigrant visas. Send curriculum vitae with three letters of recommendation indicating the special area of research interest to: **Dr. M. T. R. Subbiah, Program Director, Lipids-Atherosclerosis-Nutrition Training Grant, University of Cincinnati Medical Center, 234 Goodman Street, K-Pavilion, Room 401, Cincinnati, Ohio 45267.**

FELLOWSHIPS

PREDOCTORAL FELLOWSHIPS IN CARDIOPULMONARY AND ENVIRONMENTAL PHYSIOLOGY

The Physiology Division of The Johns Hopkins University, Department of Environmental Health Sciences, invites applications from qualified candidates with interest in obtaining the Ph.D. degree in the above areas of physiology. Admissions material for the academic year beginning September 1982 should be submitted by 1 March 1982. For further information and application forms, please write:

Dr. Wayne Mitzner
Department of Environmental Health Sciences
Division of Environmental Physiology
The Johns Hopkins University
School of Hygiene and Public Health
615 North Wolfe Street
Baltimore, Maryland 21205

GRADUATE TRAINING IN PHARMACOLOGY

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POSTDOCTORAL RESEARCH FELLOWSHIPS IN HUNTINGTON'S DISEASE

Applications invited for postdoctoral fellowships in clinical and/or basic research in studies relating to problems of Huntington's disease. Applicants must have M.D., Ph.D., or equivalent before fellowship is activated. Background and proposal must be in: basic sciences, including neuroscience, biochemistry, molecular biology, pathology, pharmacology, or clinical sciences, including neurology, psychiatry, and human genetics. Stipend: from \$13,000 to \$17,000, depending upon background of fellow. Fellowship may be done at any institution with adequate facilities and with an appropriate sponsor. Application deadline: 10 January 1982. Awards announced by 15 February 1982. Fellowship begins 1 July 1982. Send six copies of curriculum vitae and bibliography, at least two letters of recommendation, statement of support and facilities available from sponsor, and proposed research program to: **National Huntington's Disease Association, 128A East 74 Street, New York, N.Y. 10021.** There is no application form.

FELLOWSHIPS AVAILABLE IN NEUROTOLOGY

Applications for predoctoral and postdoctoral fellowships to start 1 July 1982 in neurotoxicology are being accepted. Stipends are set by NIH, depending upon experience. Eligibility limited by NIH regulations to U.S. citizens or aliens with permanent status. Research areas focus upon physiology and/or anatomy of vestibular and auditory systems, clinical neurotoxicology, and audiology/psychoacoustics. *Minorities and women are encouraged to apply.* For further information and description of research opportunities, write to: **V. Honrubia, M.D., Division of Head and Neck Surgery, University of California, Los Angeles, Calif. 90024.**

POSTDOCTORAL POSITIONS IN GENETICS

Applications are invited for postdoctoral positions in mammalian genetics supported by an NIH National Research Service Award. Research interests of participating staff sponsors include: H-2 immunogenetics; sex determination; cytogenetics; diabetes, obesity, and metabolic efficiency; molecular genetics of murine leukemia virus associated mutations of mice and leukemogenesis; transfection of biologically active transforming genes; and regulation of eukaryotic gene expression. Candidates must be U.S. citizens or have a permanent residence visa. Preference given to recent doctoral degree recipients. Send curriculum vitae, statement of research interests, graduate transcript, and three letters of recommendation, including one from the major professor, to: **Training Office, The Jackson Laboratory, Bar Harbor, Maine 04609.**

FELLOWSHIPS

DOCTOR OF ARTS IN BIOLOGY: FELLOWSHIPS are available for qualified persons interested in the D.A. degree in biology. The program stresses preparation for undergraduate teaching at colleges and universities. Applicants should hold a master's degree in some area of biology. Deadline for receipt of application is 1 March 1982. For more information, contact: **Chairman, D.A. Committee, Department of Biology, Idaho State University, Pocatello, Idaho 83209.** *An Equal Opportunity Employer.*

SEVEN POSTDOCTORAL FELLOWSHIP POSITIONS are available in fall 1982 for research in estuarine lagoon and nearshore continental shelf waters. Research areas include phytoplankton systematics and ecology, zooplankton biology, invertebrate reproduction and development, benthic community ecology, fish ecology and behavior, sedimentary processes, and biogeochemistry. Deadline for application is 1 April 1982. Request information brochure and application packet from: **Dr. Marsh J. Youngbluth, Postdoctoral Program, Harbor Branch Institution, Inc., RR 1, Box 196-A, Fort Pierce, Fla. 33450.** *An Equal Opportunity Employer.*

HARVARD UNIVERSITY DEPARTMENT OF BIOCHEMISTRY AND MOLECULAR BIOLOGY POSTDOCTORAL FELLOWSHIPS

A limited number of postdoctoral research positions become available from time to time. Appointments are funded through research grants awarded to faculty members, are for 1 year, and are renewable. For a list of faculty members who have postdoctoral positions available, write, but do not send applications, to: **Department Secretary, Department of Biochemistry and Molecular Biology, Harvard University, 7 Divinity Avenue, Cambridge, Mass. 02138.**

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PREDOCTORAL FELLOWSHIPS IN BIOMEDICAL RESEARCH

The Biology Department announces competition for the Dr. William M. Scholl Fellowships. Awards will be made for graduate studies in cellular and developmental biology, endocrinology, immunology, molecular genetics, or muscle and neural physiology. The \$10,000 awards include annual stipend, tuition, and fees. Other assistantships and fellowships are available. For information or applications, write: **Chair, Biology Department, Marquette University, Milwaukee, Wis. 53233.** *An Equal Opportunity/Affirmative Action Employer.*

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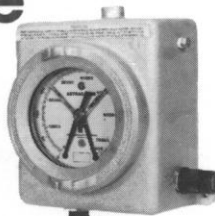
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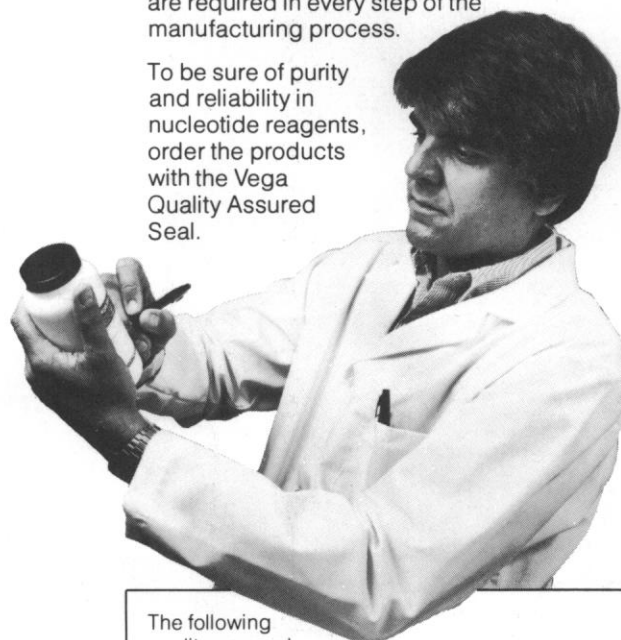


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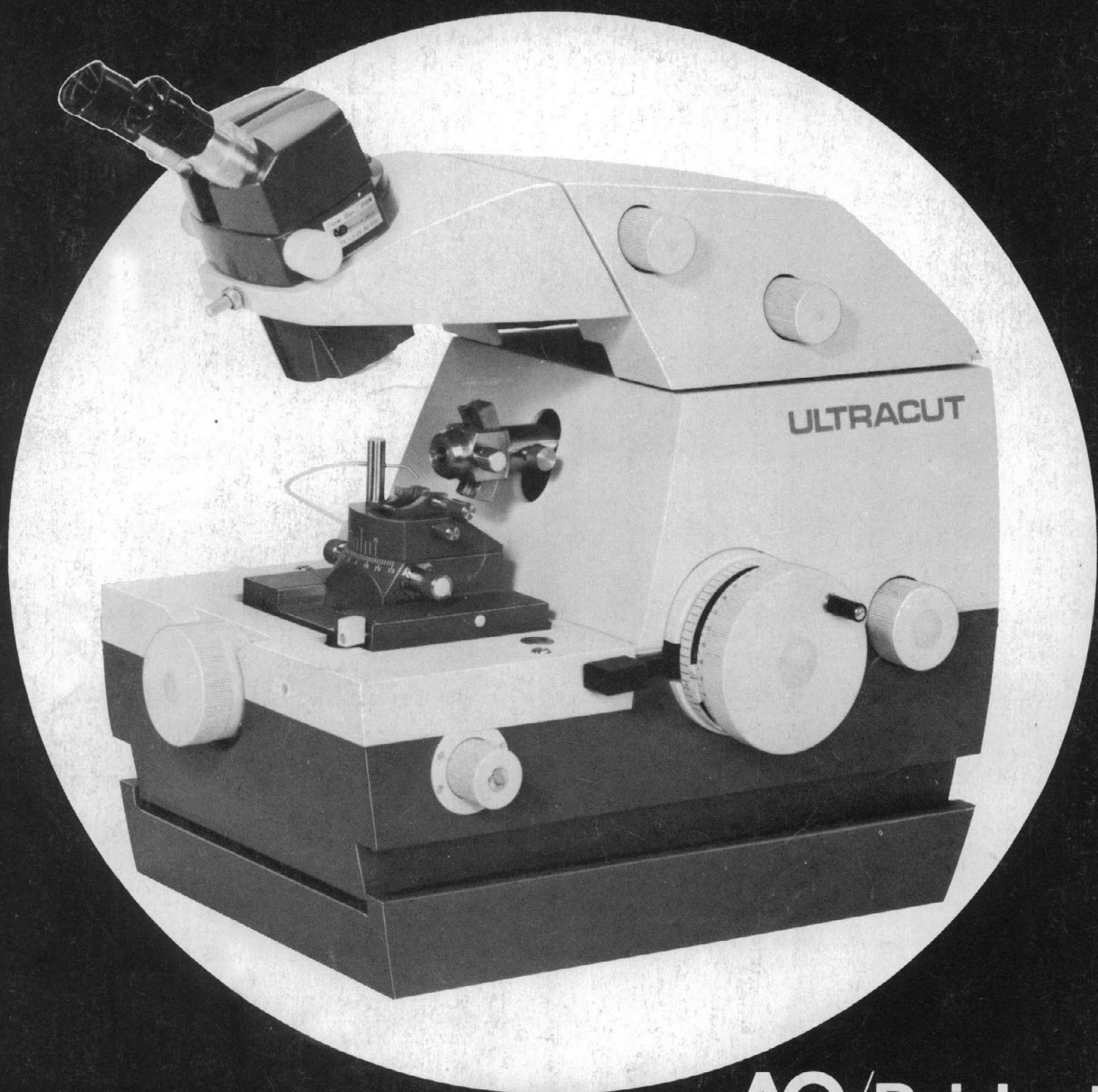
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the Ultracut insulates the feed and drive mechanisms from external disturbances - while the hydraulically dampened anti-vibration system provides further stability. □ The AO/Reichert Ultracut. For ultra-precision made ultra-easy. For a demonstration, see your AO/Reichert dealer or representative. Or write for our brochure: American Optical Instrument Division, Box 123, Buffalo, NY 14240.

Exclusive darkfield knife alignment lets you view the gap between specimen and knife. You see a bright slit on a dark background making it easy to orient the knife to the specimen.



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