

the hierarchy is more complicated or the orders and families split into more entities or both. Despite his wealth of knowledge Cronquist seems somewhat hampered by a conservative or even somewhat reactionary attitude. Thus in my opinion the following families are out of place in the orders where they are placed on the basis of superficial resemblance and should be removed from them: Chloranthaceae in Piperales; Nelumbonaceae in Nymphaeales; Coriariaceae in Ranunculales; Sarracenaceae and Droseraceae in Nepenthales; Fouquieriaceae, Bixaceae, and Cistaceae in Violales; Gunneraceae in Haloragaceae; Boraginaceae in Lamiales; Hippuridaceae and Hydrostachyaceae in Callitrichales; and Poaceae in Cyperales. These few changes alone would make the classification more convincing. A number of other changes would also improve the classification. Being, as I am, responsible for a different system of classification and having somewhat different evaluations, I feel tempted, of course, to put forward divergent points of view.

Cronquist's conservative approach is most obvious in the case of the Liliiflorae. Instead of acknowledging Alliaceae, Hyacinthaceae, Alstroemeriaceae, and a number of other segregate families on the same level, Cronquist includes these in his Liliaceae. This approach is both radical and practical, although important constellations of genera, representing main interesting evolutionary lines, are relegated to infrafamilial level in Liliaceae. Surprisingly, within the jungle of generic groups Cronquist acknowledges a few, such as Cyanastraceae, Aloëaceae, and Iridaceae.

Some comments should also be included on the basic philosophy behind the treatment of the evolution of the angiosperms. Cronquist claims that the earliest angiosperms were probably shrubs of riparian habitats and had monosulcate pollen grains and leaves with irregular pinnate-reticulate venation. His sequence of orders indicates that he favors the so-called Euanthian theory, with Magnoliales as the most archaic existing order of flowering plants. This is in accordance with the general view held today. The connection between monocotyledons and dicotyledons is more vaguely, and in my opinion less satisfactorily, explained. The close relation between Nymphaeales and monocotyledons is emphasized, and, although Cronquist does not suggest that the Nymphaeales are direct ancestors to the monocotyledons as a whole, he concludes that the premonocotyledonous dicotyledons probably somewhat resembled the mod-

ern Nymphaeales. Leaf impressions resembling water lilies from Albian times support this view. In the discussion of the affinities of the Nymphaeales I would have liked to see mentioned sieve tube plastid conditions, occurrence of perisperm (remarkably similar to that in Piperales), and chemical conditions. A note on alternative views would have been appropriate, for example that the monocotyledonous Dioscoreales, such as Trichopus, and various members of the dicotyledonous Magnoliales sensu lato exhibit a number of conspicuous similarities.

The book is not, however, meant to be speculative-philosophical or "evolutionary." It is a highly pragmatic presentation of the present groups of angiosperms and their characteristics. It can be strongly recommended for its wealth of exact information, not to mention its attractive appearance, and is far superior to other handbooks of its kind. It should be present in all libraries attached to the botanical departments of universities and available to botanical gardens and secondary schools all over the world. It certainly also deserves to have a place on the shelves of all taxonomists with a broad range of interests.

ROLF DAHLGREN

*Botanical Museum,
University of Copenhagen,
DK-1123 Copenhagen, Denmark*

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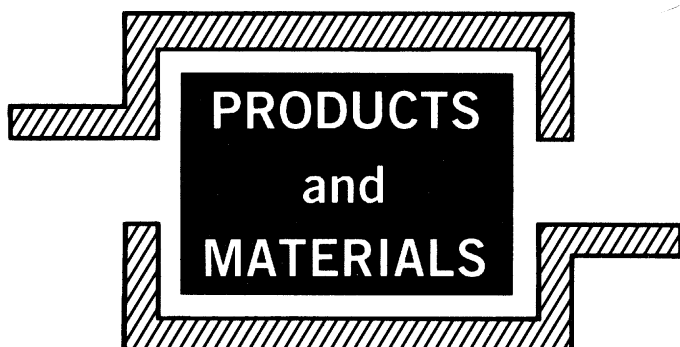
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Electrons, Phonons, Magnons. M. I. Kaganov.

(Continued on page 1256)



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Literature

Tissue Culture Products offers a complete line of polystyrene labware. Becton Dickinson Labware. Circle 630.

BioResearch Products and Handbook relates techniques and references and lists laboratory equipment and chemicals. Pierce Chemical. Circle 631.

Ultrasonic Cleaners describes a line of portable, benchtop devices. Heat Systems-Ultrasonics. Circle 632.

Surface Tension Measurements features the SensaDyne 5000 instrument. Chem-Dyne Research. Circle 633.

Personal Computer Software offers products for modeling, record keeping, trend analysis, statistics, and charting with the IBM instrument. Visicorp. Circle 634.

Diluter-Dispenser gives design specifications and capabilities of the Microlab series. Hamilton. Circle 635.

Ion-Selective and pH Meters and Electrodes catalogs a complete line of pH and conductivity equipment for scientific research. Orion Research. Circle 636.

Monoclonal Antibodies lists a line for human T and B lymphocyte studies. Hybritech. Circle 637.

Ultrasonic Apparatus features cleaners and solutions for a variety of scientific applications. L & R Manufacturing. Circle 638.

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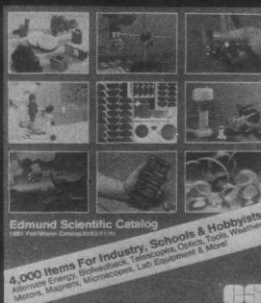
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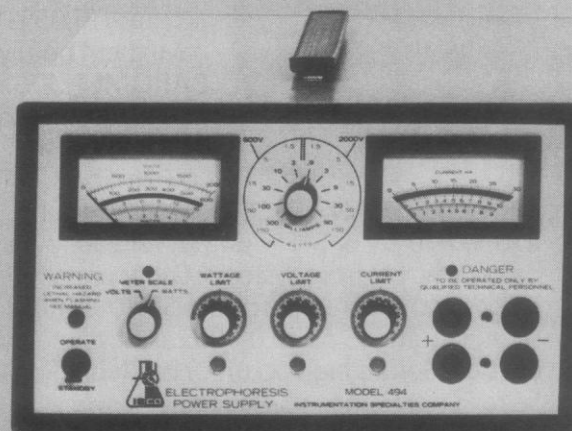
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(Continued from page 1218)

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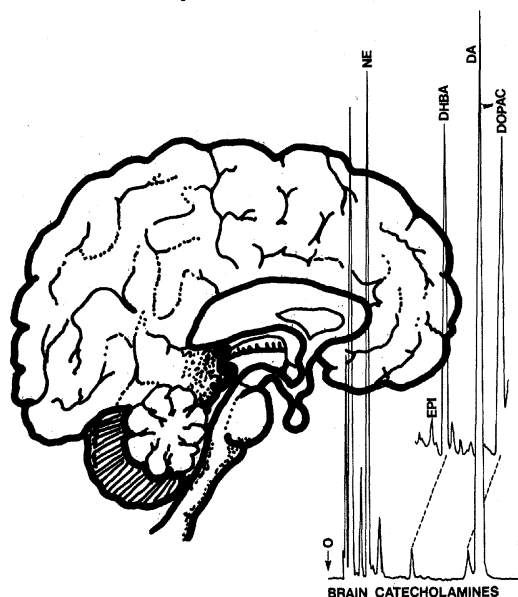
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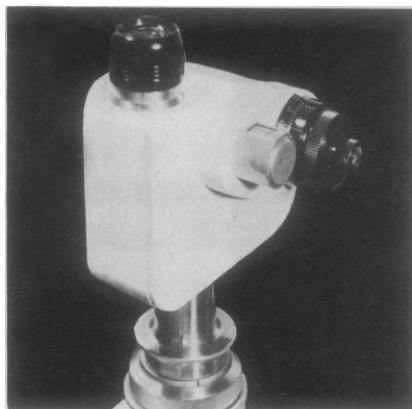
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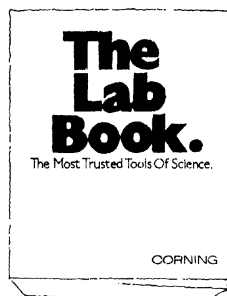
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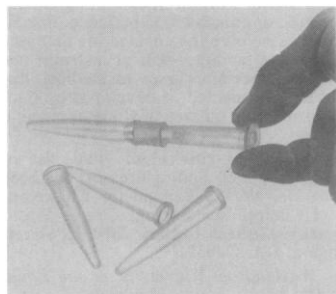
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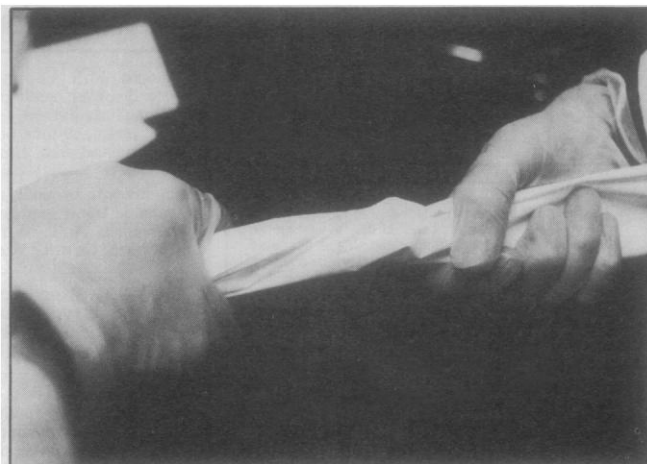
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The University of Health Sciences/The Chicago Medical School is accepting applications for the chair of microbiology. Candidates should have a strong research program, a commitment to teaching medical and graduate students, and the ability to provide aggressive leadership for scientific excellence and the development of the department. Submit curriculum vitae to: Dr. Robert G. Kemp, Department of Biochemistry, University of Health Sciences/The Chicago Medical School, 3333 Green Bay Road, North Chicago, Illinois 60064. *An Equal Opportunity/Affirmative Action Employer.*

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The University of Alabama in Birmingham is seeking qualified candidates for the directorship of a newly created program in clinical pharmacology. Substantial space and state support are available. Appointments in an appropriate clinical department and pharmacology are available. Applicants should apply to: John R. Durant, M.D., Chairman, Search Committee, Clinical Pharmacology, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294. *An Equal Opportunity/Affirmative Action Employer.*

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The assistant to the director will conduct independent work on study design, data collection, and analysis of research projects in the field of drug development and regulation. The assistant will review projects of co-workers and consultants, assume responsibility for their accuracy and clarity, write up research proposals for government and the private sector, and carry them out if funded as well as assist with projects already funded. Supervision of graduate and undergraduate students may be required. A Ph.D. or Pharm.D. in pharmacology, biochemistry, or related biological science is required, or an M.D. with pertinent research training. Background in pharmacology and ability to write with scientific clarity and judgment are essential.

Submit résumé to: K. Niven, Department of Pharmacology, University of Rochester School of Medicine and Dentistry, Rochester, New York 14642. *The University of Rochester is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR. Divisions of Developmental Therapeutics and Medicine. We are seeking to fill two positions at the assistant professor level in the Divisions of Developmental Therapeutics and Medicine at the Sidney Farber Cancer Institute with concomitant appointment at the Harvard Medical School. Candidates should have a doctorate (M.D. and/or Ph.D.). Candidates for the position in developmental therapeutics should be prepared to develop an independent research program in an area of biochemical pharmacology relevant to cancer. Areas of interest include mechanisms of action of oncogenic proteins and protein kinases, regulation of gene expression in mammalian cells and development of new therapeutic approaches based on recent advances in cell and molecular biology. Candidates for the position in medicine should be prepared to develop an independent research program in the areas of preclinical and clinical pharmacology. Areas of interest include systemic and regional pharmacokinetics, molecular mechanisms of drug action, and genetics of drug resistance. Applicants should send curriculum vitae and bibliography, including names of three references, to: Dr. Emil Frei III, SIDNEY FARBER CANCER INSTITUTE, 44 Binney Street, Boston, Mass. 02115. *An Affirmative Action/Equal Opportunity Employer.*

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Applicants should send curriculum vitae, list of publications, and names and addresses of three references to: Dr. W. S. Yamamoto, Chairman, Department of Clinical Engineering, George Washington University Medical Center, 2300 K Street, NW, Washington, D.C. 20037.

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invites applications for appointment to the

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Salary: A\$43,904 per annum.

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Applications, giving the particulars listed in paragraph 9 of the statement, should reach: The Registrar, University of Adelaide, G.P.O. Box 498, Adelaide, South Australia, 5001, Australia (Telex: UNIVAD AA 89141), as early as possible but not later than 15 September 1982.

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ASSISTANT, ASSOCIATE, AND FULL PROFESSORSHIPS IN PHYSIOLOGY. The Department of Medical Physiology, College of Medicine, Texas A & M University, invites applications from individuals specializing in any aspect of **CARDIOVASCULAR SCIENCE**, including: (i) cardiovascular instrumentation, (ii) cellular basis of vascular or myocardial function, and (iii) microcirculation. Candidates must demonstrate ability to conduct a vigorous research program. Appointees will join a physiology faculty deeply involved in cardiovascular research and will participate in its medical and graduate teaching programs. Send curriculum vitae, summary of research interests, and names of three references to: **Dr. Harris J. Granger, Professor and Head, Department of Medical Physiology, College of Medicine, Texas A & M University, College Station, Texas 77843**. Texas A & M University is an *Equal Opportunity Employer*.

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Search Committee, c/o Director of Personnel
The University of Texas Health Center at Tyler
Box 2003
Tyler, Texas 75710
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CHEMIST. The Pennsylvania Department of Agriculture is accepting applications for the position of director, Pennsylvania Race Horse Testing Laboratory. This appointment involves administrative work in directing and supervising a comprehensive pre-and/or post-race drug testing program, including determination of laboratory methodology, personnel management, and budget planning. Knowledge of the principles and practices of analytical biochemistry and pharmacology and the ability to communicate effectively are required. Candidates must have extensive training and/or experience in biological and chemical science as well as familiarity with laboratory analytical equipment and procedures, a Ph.D. in chemistry or equivalent combination of experience and training is desired. Contact: **Dr. Max A. Van Buskirk, Director, Bureau of Animal Industry, Department of Agriculture, Commonwealth of Pennsylvania, 2301 North Cameron Street, Harrisburg, Pa. 17110**. An *Equal Opportunity/Affirmative Action Employer*.

RENAL ELECTROLYTE DIVISION UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE

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CARDIOVASCULAR PHYSIOLOGIST/ PHARMACOLOGIST

A position is available at Southwest Foundation for Research and Education for a scientist with a Ph.D. in physiology or pharmacology. The individual will be expected to conduct an independent research program and to coordinate research activities in our cardiovascular research laboratory in collaboration with Dr. Vernon S. Bishop of the Department of Pharmacology at the University of Texas Health Science Center at San Antonio. An interest in nonhuman primate research and knowledge in cardiovascular instrumentation is necessary. Southwest Foundation has modern animal surgery facilities, biochemical laboratories, a well-equipped cardiovascular laboratory for studying conscious primates, and a veterinary staff. Salary is competitive and commensurate with experience and training. The appointment can be at either the associate or assistant scientist rank. Please send curriculum vitae, a description of present and future research interests, and names of three references to: **Personnel Director, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284**. We are an *Equal Opportunity/Affirmative Action Employer*.

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Alvin L. Watne, M.D.
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West Virginia University Medical Center
Morgantown, W.Va. 26506

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

CHIEF, LABORATORY SERVICE. A Board-certified pathologist with special interest in clinical pathology for an 800-bed medical, surgical, and psychiatric VA Medical Center located near Roanoke in southwestern Virginia in the Blue Ridge Mountain area. Affiliated with the University of Virginia Medical School. An *Equal Opportunity Employer*. Interested applicants send curriculum vitae to: **Philip Fogg, M.D., Chief of Staff, VA Medical Center, Salem, Virginia 24153**.

MAMMALOGY DEPARTMENT, Royal Ontario Museum, seeks a **CURATORIAL ASSISTANT** to begin 1 August 1982. M.S. or B.S. in zoology with several years of experience. Preference given to candidates with experience in collection management and field mammalogy. Send résumé and names of three references by 15 July 1982 to: **Personnel Services, Royal Ontario Museum, Toronto, Ontario, Canada M5S 2O6**. In accordance with immigration requirements, priority is given to citizens and permanent residents of Canada.

DIABETES RESEARCH POSITION. Sansum Medical Research Foundation. Available 15 October 1982 as head of diabetes research in charitably funded foundation. Requires M.D. degree and several years of research experience, and ability to create and pursue own program. Salary commensurate with qualifications. Foundation is closely affiliated with 60-physician multispecialty clinic and adjacent to 400-bed hospital. University affiliation possible. Send curriculum vitae and names of three references to:

C. A. Domz, M.D.
Sansum Medical Research Foundation
P.O. Box LL
Santa Barbara, California 93105

FACULTY POSITIONS IN PHYSIOLOGY

Applications are invited for two tenure-track positions. One position is available at the rank of assistant professor and one at the rank of associate professor. Applicants must have a strong interest in teaching of medical and graduate students and must have a strong ongoing research program in cardiovascular physiology. Send letter and curriculum vitae to: **Dr. Carl E. Jones, Chairman, Department of Physiology, Texas College of Osteopathic Medicine (TCOM), Camp Bowie at Montgomery, Fort Worth, Texas 76107**. TCOM is a state-supported medical school under the direction of the North Texas State University Board of Regents. An *Affirmative Action/Equal Opportunity Employer*.

IMMUNOBIOLOGISTS

The Department of Microbiology of the University of Miami School of Medicine invites applications for two tenure-track openings of assistant and associate professor. Emphasis is placed on individuals with research interests in immunogenetics, immunoglobulin gene structure, immune system differentiation and/or immunochemistry. Send curriculum vitae, an outline of research interests, and names of three references to: **Chairman, Immunobiology Search Committee, Department of Microbiology (R-138), University of Miami School of Medicine, Miami, Fla. 33101**. An *Equal Opportunity/Affirmative Action Employer*.

MYCOLOGIST—HAWAII. ASSISTANT PROFESSOR, tenure-track position. Duties: courses in general mycology and general botany; participation in research relating to basic aspects of agriculture and natural resources. Appointee will be expected to develop advanced courses. Research areas open with respect to systematics, ecology, physiology, or combinations. Write for details: **Chairman, Department of Botany, University of Hawaii, 3190 Maile Way, Honolulu, Hawaii 96822**. An *Equal Opportunity/Affirmative Action Employer*. Closing date: 15 August 1982.

POSITIONS OPEN

DIRECTOR OF THE OFFICE OF THE MEDICAL INVESTIGATOR, state of New Mexico, and faculty member, Department of Pathology, School of Medicine, University of New Mexico. This position will become available on 1 July 1982.

The Office of the Medical Investigator is the official agency charged with the investigation and examination of sudden unexpected and natural deaths throughout the state of New Mexico, and also enjoys a unique position in being an integral part of the Department of Pathology and the School of Medicine.

Successful applicants must possess an M.D. and have appropriate postgraduate training in pathology and forensic pathology. Certification by the American Board of Pathology and experience in the administration of a medical examiner's office are highly desirable. Applicants must also have demonstrated interest and experience in teaching and research. Rank is at the associate professor/professor level and salary is competitive. Applicants should forward curriculum vitae and list three individuals knowledgeable with respect to their background and expertise. All credentials must be received by 9 July 1982. Address correspondence to: **Robert E. Anderson, M.D., Professor and Chairman, Department of Pathology, School of Medicine, University of New Mexico, Albuquerque, N.M. 87131. The University of New Mexico is an Equal Opportunity Employer.**

GENETICIST

Carleton College has an opening for a geneticist for a 1-year appointment beginning 1 September 1982. Responsibilities include an upper division genetics course, involvement in a team-taught introductory course for the major, and a course related to his/her speciality (microbiology, development, neurobiology, and so forth).

Applications, including curriculum vitae, undergraduate and graduate transcripts, and three letters of professional recommendation should be sent to: **Professor G. J. C. Hill, Chairman, Biology Department, Carleton College, Northfield, Minn. 55057.** Closing date is 7 July 1982. *Carleton College is an Equal Opportunity/Affirmative Action Employer.* Senior faculty with continuing interest in teaching are encouraged to apply.

OVERSEAS OPPORTUNITIES IN SAUDI ARABIA

Two positions open for 1- to 2-year assignments at King Faisal University, Dammam, Saudi Arabia.

Position I—High-level technical adviser to assist in planning and implementation of a comprehensive Clinical Engineering Program for the medical school and the teaching hospital as well as to provide long-range planning for academic programs in biomedical engineering. B.A. in electrical engineering, M.B.A. or master's in business administration desirable. Experience in operation of a Clinical Engineering Program.

Position II—High-level medical research administration specialist to assist the dean and the medical staff in the planning and implementation of medical research programs. Ph.D. or D.Sc.; 8 to 10 years of senior management in medical-academic environment.

Good salary plus allowances, fringe benefits, travel, overseas tax advantage, dependent education allowances.

For complete job descriptions write or call: **Robert E. Johnson, Education Development Center, 55 Chapel Street, Newton, Mass. 02160; telephone: 617-969-7100.**

THE UNIVERSITY OF TEXAS AT DALLAS—BIOLOGY PROGRAMS periodically seeks **POSTDOCTORAL APPLICANTS** interested in pursuing research in collaboration with faculty. Applicants should have interest and experience in one of the following areas: mechanisms of transposition, regulation of B-lactamase synthesis in *Escherichia coli*, cloning and analysis of Pseudomonas toxin genes; biophysical studies of DNA-binding proteins (utilizing circular dichroism, neutron diffraction, and/or NMR techniques); ultraviolet photobiology of eukaryotic cells; characterization of mammalian mitochondrial mutants. Please send two résumés to:

**Dr. R. C. Clowes
Programs in Biology
The University of Texas at Dallas
P.O. Box 688
Richardson, Texas 75080**

Indication of sex and ethnicity for Affirmative Action statistical purposes is requested but not required.

POSITIONS OPEN

FACULTY POSITION—PHYSICAL OCEANOGRAPHY

Tenure-track assistant professor faculty position is available in the Department of Oceanography, Florida State University. This is a new position funded by the state of Florida. It is a part of a growing research program in the geophysical sciences which, in addition to the Department of Oceanography, includes the Departments of Meteorology and Mathematics and the Geophysical Fluid Dynamics Institute. Both observationalists and theoreticians are invited to apply; candidates with considerable experience may apply at higher academic ranks. Please send curriculum vitae, a brief statement of research interests, selected reprints, and names of four references to: **Dr. Doron Nof, Chairman, Physical Oceanography Search Committee, Department of Oceanography, Florida State University, Tallahassee, Fla. 32306. Florida State University is an Equal Opportunity Employer with an Affirmative Action Program.**

University of Michigan Medical School, Department of Anesthesiology, may have from time to time, several positions available at the **INSTRUCTOR THROUGH PROFESSOR** level. Board-certified or -eligible anesthesiologist qualified to obtain Michigan licensure. Research, clinical, and didactic experience necessary. Reply to: **Box 164, SCIENCE. A nondiscriminatory, Affirmative Action/Equal Opportunity Employer. Code 48HO.**

MAMMALIAN GENETICIST—The Institute for Cancer Research of the Fox Chase Cancer Center has a position available for an individual to be responsible for genetic management of central institutional animal colony (chiefly mice) and of individual research colonies utilized by staff scientists in a modern facility. Inbred, congenic, mutant strains and nude mouse genotypes. Duties include management of breeding programs, proposal and creation of new stocks, screening for new mutants, importation, genetic testing, and genetic records. Candidates should send detailed curriculum vitae, including employment and salary history, to: **Director of Personnel, FOX CHASE CANCER CENTER, 7701 Burholme Avenue, Philadelphia, Pa. 19111. Equal Opportunity/Affirmative Action Employer.**

MICROBIOLOGIST. Assistant professor, Ph.D., starting September 1982 or January 1983. Added interest in virology or some other aspect of molecular biology. Will teach courses in microbiology and other areas of specialization and in general biology. Send curriculum vitae and complete transcripts, including three letters of recommendation, by 15 July 1982 to: **Dr. Herbert F. Lamp, Chairperson, Biology Department, Northeastern Illinois University, 5500 North St. Louis Avenue, Chicago, Illinois 60625. An Affirmative Action/Equal Opportunity Employer.**

PHYSIOLOGICAL PLANT ECOLOGY. Two research positions at assistant professor level available in 1982–1983. Applicants should have several years of postdoctoral experience with evidence of substantial original research in either of the following: (i) photosynthetic physiology with emphasis on gas exchange as it relates to water and/or nutrient stress, skill in construction and maintenance of relevant equipment in laboratory and field, or (ii) plant population ecology, preferably with interest in reproductive physiology. Successful applicants will be responsible to Dr. C. B. Osmond, Director of Bioresearch Center, for development of strong research into fundamental aspects of stress physiology, production and reproduction in desert vegetation. Salary commensurate with qualifications and experience; full benefit package. Send résumé and letter of application, postmarked by 15 July 1982, to: **Personnel Office, Desert Research Institute, University of Nevada System, P.O. Box 60220, Reno, Nevada 89506. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS available immediately for research in neurocardiovascular, biochemical, and molecular pharmacology. The latter includes regulation of cell proliferation and differentiation, drug and hormone-receptor interactions, and drug metabolism/pharmacogenetics. Salary is based on current NIH guidelines and is commensurate with experience. U.S. citizenship or permanent visa required. Second-year funding probable. Send curriculum vitae and names of three references by 1 August 1982 to: **Dr. Raymond W. Ruddon, Chairman, Department of Pharmacology, University of Michigan Medical School, M-6322 Medical Science I, Ann Arbor, Michigan 48109. A nondiscriminatory, Affirmative Action Employer. Code PD-1.**

POSITIONS OPEN

PHYSICAL ANTHROPOLOGIST

U.S. ARMY NATICK RESEARCH AND DEVELOPMENT LABORATORIES NATICK, MASSACHUSETTS 01760

This is a career position in the Federal Service. Salary range: \$28,245 to \$36,723, commensurate with education and experience. Ph.D. or master's preferred.

Responsibilities include: conducting of research programs in physical anthropology, anthropometry, and human engineering; maintenance of data base on anthropological characteristics of Army personnel; and development of sizing systems for military clothing.

The Natick Laboratories are located 20 miles west of Boston. This position is in the competitive service and is limited to citizens of the United States.

Send résumé and salary history to:

**U.S. Army Natick
R & D Laboratories
Attention: DRDNA-BCR
(Edward Hays)
Natick, Mass. 01760**

The Federal Government is an Equal Opportunity Employer.

POSTDOCTORAL POSITION AVAILABLE IN HEPATOCARCINOGENESIS

A postdoctoral position in hepatocarcinogenesis will be available as of 30 June 1982 to study various aspects of the pathobiology and ontogeny of hepatocellular carcinoma and cholangiocarcinoma in experimental animals. Particular emphasis will be placed on investigating the biological effects of promoting agents on specific populations of preneoplastic hepatocytes and bile ductule cells in culture and in vivo.

Send curriculum vitae and three letters of recommendation to:

**Dr. Alphonse E. Sirica
Department of Anatomy
University of Wisconsin Medical School
1300 University Avenue
Madison, Wisconsin 53706**

BAYLOR COLLEGE OF MEDICINE DEPARTMENTS OF CELL BIOLOGY, NEUROLOGY AND THE PROGRAM IN NEUROSCIENCE POSTDOCTORAL RESEARCH ASSOCIATES

Postdoctoral positions available immediately for studies into the molecular biology of muscle gene expression. The study will involve the analysis of specific regulatory proteins to DNA sequences of developmental interest, cloning and sequencing of structural gene domains, and related in vitro transcription experiments.

Applicants should hold a Ph.D. degree with relevant experience in molecular biology or biochemistry. Salary is competitive with fringe benefits.

Send résumé and letters of recommendation to either: **Dr. Henry F. Epstein, or Dr. Robert J. Schwartz, Program in Neuroscience, NB 302, The Neurosensory Center, Baylor College of Medicine, Houston, Texas 77030. An Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE position available to study functional membrane properties in blood platelets and megakaryocytes. Experience in membrane glycoprotein analysis, preparation and purification of antibodies to membrane proteins, radio-labeling of proteins, and receptor-ligand binding assays desirable. Competitive salary and fringes, with funding of annually renewable appointments for at least 3 years. Send curriculum vitae, a description of research experience and interests, and names of three references to: **Jonathan L. Miller, M.D., Ph.D., Department of Pathology, State University of New York-Upstate Medical Center, Syracuse, N.Y. 13210. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

PHYSIOLOGIST

The Department of Physiology at the University of South Alabama College of Medicine is seeking applicants for a tenure-track position. The applicant must have demonstrated an ability to design and teach the neurophysiology portion of human physiology, as taught to the freshman medical students. In addition, preference will be given to applicants who have demonstrated productive and innovative research programs. The level of appointment will be commensurate with the qualifications and experience of the applicant. Application should include curriculum vitae and names of three individuals who can be contacted relative to the applicant's training and past experience. Position will be open 1 October 1982, and no applications will be accepted after 15 August 1982. All applications should be mailed to: **Aubrey E. Taylor, Professor and Chairman, Department of Physiology, University of South Alabama College of Medicine, Mobile, Ala. 36688. The University of South Alabama is an Equal Opportunity Employer.**

POSTDOCTORAL POSITION available August 1982 for research on various aspects of the migration and regulation of B cells in the mucosal immune system. Background in cellular immunology essential. Experience with hybridoma technology, T cell cloning, or lymphocyte migration highly desirable but not essential. Send résumé and names of three references immediately to: **Dr. Julia Phillips-Quaglia, Department of Pathology, New York University (NYU) Medical Center, 550 First Avenue, New York, N.Y. 10016. NYU is an Equal Opportunity/Affirmative Action Employer.**

TWO POSTDOCTORAL POSITIONS available immediately in the areas of (i) regulation of membrane structure/function, (ii) biochemistry of epithelial cell differentiation, and (iii) transport studies using membrane vesicles. Those interested should send their curriculum vitae and names of three references to: **Dr. Julia E. Lever, Associate Professor, Department of Biochemistry and Molecular Biology, University of Texas Medical School, P.O. Box 20708, Houston, Texas 77025. The University of Texas is an Equal Opportunity Employer.**

PRESIDENT

New Mexico Institute of Mining and Technology

The Regents of the Institute are seeking a person of outstanding ability to serve as its President. Nominations are invited for candidates who have demonstrated exceptional dedication to excellence in teaching and research in science and engineering. Background and an advanced degree in one of those areas are desirable. Experience in administration of an organization dedicated to good research and teaching is important. Preference will be given to applications submitted before August 31, 1982. Applications and letters of nominations should be sent to:

**Chairman, Presidential Search Committee
New Mexico Institute of Mining and Technology
Socorro, New Mexico 87801**

Inquiries will be held in confidence. New Mexico Tech is an equal opportunity/affirmative action institution.

POSITIONS OPEN

PLANT MOLECULAR BIOLOGIST

Assistant professor, nontenure stream. Applications are invited from individuals having expertise in molecular evolution and genetic engineering in plants, with special emphasis on evolution of mitochondrial genomes and cytoplasmic male sterility. Knowledge of DNA cloning, restriction analysis, and sequencing techniques essential. Position offered subject to availability of funds. In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Send curriculum vitae and the names of two referees by 15 July 1982 to: **Dr. W. C. Leggett, Chairman, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1.**

POSTDOCTORAL AQUATIC ECOLOGIST. Recent Ph.D. with a strong background in experimental and quantitative aspects of field-oriented community ecology with special expertise in aquatic consumer trophic levels. Research projects to include ecological impacts of acid deposition, use of ecological indicators to assess environmental quality, and restoration of disturbed aquatic communities. Send curriculum vitae, transcripts, summary of research interests, and three letters of reference to: **Dr. John H. Fitch, Director, Environmental Science Department, Massachusetts Audubon Society, Lincoln, Mass. 01773. Deadline for applications: 1 July 1982. Equal Opportunity Employer.**

POSTDOCTORAL POSITION in genetics for research in one or more of the following areas: (i) expression of lysosomal hydrolases in mammals, (ii) physiological effects of genetic variation in mouse sperm enzymes, and (iii) development of immunological contraceptives based on sperm enzymes. Applicants should have experience with electrophoresis and spectrophotometry. Laboratory directed by **Dr. John L. Vandenberg. Send curriculum vitae, university transcripts, statements of current research interests and career goals, and the names and addresses of three referees to: Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284. We are an Equal Opportunity/Affirmative Action Employer.**

The University of California, Irvine, Department of Psychiatry and Human Behavior, has faculty openings for the following positions:

- 1) **PROFESSOR to direct Research Program in Visual Imaging of the Brain.** Candidates must have an M.D. degree and extensive experience in:
 - a) Cerebral glucography with positron emission tomography;
 - b) Visual evoked potential topography;
 - c) Computerized bioelectric data collection and analysis;
 - d) Electrophysiology of cognitive dysfunctions;
 - e) Experience in nociceptive research.
 Professorial level appointees in the University of California must have achieved national recognition for their research and have demonstrated an extensive publication record. Teaching duties required.
- 2) **PROFESSOR to direct Research and Educational Program and Biological Resource Laboratory.** Candidates must have a Ph.D. degree in one of the biological or chemical sciences and have:
 - a) A proven ability to organize and lead international symposia in the neurosciences;
 - b) An extensive record of publications which demonstrates outstanding editorial expertise;
 - c) An ability to review and write grant applications;
 - d) Familiarity with most aspects of psychopharmacology;
 - e) Expertise in organizing cooperative national and international investigative biological resource programs.
 Professorial level appointees in the University of California must have achieved national recognition and have demonstrated an extensive publication record. Teaching duties required.

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

Send curriculum vitae and letters of reference to:

**Dr. Lawrence Sporty
Vice Chairman
Department of Psychiatry and Human Behavior
California College of Medicine
University of California
Irvine, Calif. 92717**

before 2 July 1982.

POSITIONS OPEN

POSTDOCTORAL POSITION IN REPRODUCTIVE BIOCHEMISTRY. Probably available 1 July 1- to 3-year appointment. Biochemical research on sperm maturation in the epididymis. Experience in enzymology, metabolism, or reproductive physiology preferred. Availability dependent upon funding. Send résumé and two references to: **Dr. Edmund R. Casillas, Chemistry Department, Box 3C, New Mexico State University, Las Cruces, N.M. 88003. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION to study the metabolism of several classes of drugs, including three antihistamines (synthesis of reference metabolite also involved). Experience in drug metabolism, metabolite identification, gas and/or liquid chromatography, and GC/MS desirable. Prefer degree in organic chemistry or biochemistry with strong organic background. Should have the desire to learn pharmacology and participate in a variety of pharmacological studies. Submit résumé and three letters of recommendation to: **Dr. R. Craig Kammerer, Department of Pharmacology, University of California Los Angeles, School of Medicine, Los Angeles, California 90024. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately to study functional correlates of drug and toxic effects on the primate visual system. Background in visual psychophysics or physiology required. Computer experience helpful. Send curriculum vitae and three letters of recommendation to: **Dr. William Merigan, Department of Ophthalmology, Box RBB, University of Rochester Medical Center, Rochester, N.Y. 14642.**

POSTDOCTORAL (research associate) position open for experimental and/or theoretical work on the conformation of nucleic acids. Please send curriculum vitae and three letters of recommendation to: **W. Curtis Johnson, Department of Biochemistry and Biophysics, Oregon State University (OSU), Corvallis, Oregon 97331. No decision before 30 June 1982, but closing may be extended. OSU is an Affirmative Action/Equal Opportunity Employer which complies with Section 504 of the Rehabilitation Act of 1973.**

GROUP MANAGER, PHARMACOLOGY

A recent promotion has created an immediate opportunity for a **GROUP MANAGER** of our Inflammation Section of Pharmacology. The ideal candidate will have a Ph.D. in pharmacology and a minimum of 5 years of industrial background. Requirements include in-depth experience in inflammation, management of personnel, and excellent oral and written communication skills.

Excellent benefits and competitive salary complement this professionally challenging opportunity. A. H. Robins is headquartered in a southern metropolitan atmosphere within convenient commuting distance to Washington, D.C., the seashore, and the mountains.

Interested candidates should send résumé, including salary requirements, to:

**Manager, Personnel
Research & Development Division
A. H. Robins Company
1211 Sherwood Avenue
Richmond, Va. 23220**

POSITIONS OPEN

FACULTY POSITION

Anesthesiology Department is seeking a Ph.D. with background in pharmacology, physiology, or biochemistry for tenure-track position as **Director of Research Laboratories** in Sunbelt region at a major health sciences center with excellent laboratory facilities and equipment. A record of excellence in scientific achievement demonstrated by publications, grants, independent research, and attainment of senior faculty level in an academic or research oriented institution is required. Candidate must have ability to work effectively with clinical faculty, to help design and carry out research, obtain funding, and participate in resident physician teaching. Applicants should send curriculum vitae, selected reprints, and three letters of reference to: **Noel W. Lawson, M.D., Chairman, Search Committee, Department of Anesthesiology, Texas Tech University Health Sciences Center, 3601 4th Street, Lubbock, Texas 79430. An Equal Opportunity Employer.**

MEMBRANE BIOLOGIST CELL BIOLOGIST

Postdoctoral position available 1 September 1982 for structural studies of red cells infected with the human malarial parasite *Plasmodium falciparum*. Candidates must have experience with transmission electron microscopy and freeze fracture techniques. Experience with membrane isolation and biochemical analysis of membranes desirable.

Send three letters of recommendation, curriculum vitae, and a statement of research interests to:

**Dr. Irwin W. Sherman
1140 Batchelor Hall
University of California
Riverside, Calif. 92521**

POSTDOCTORAL ASSOCIATE. Applications are invited for a research position in HPLC. The research involves method development and investigation of structure-retention relationships. A Ph.D. in analytical chemistry and experience in HPLC of amino acids, peptides, and related compounds are required. Salary will be \$1225 per month, plus fringe benefits. Send résumé and three letters of recommendation to: **M. Noe, Iowa Department of Job Service, ALCU, 1000 East Grand Avenue, Des Moines, Iowa 50319.**

POSTDOCTORAL POSITION available for research on cell biology of sickled erythrocyte membranes. Expertise in membrane glycoproteins and/or endothelial cells in culture desirable. Some laboratory teaching in one of the anatomy courses will enhance future job prospects. Send curriculum vitae and names of three references by 30 June to:

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

An Equal Opportunity/Affirmative Action Employer

NEUROBIOLOGY RESEARCH CENTRE THE UNIVERSITY OF SYDNEY Research in Developmental Neurobiology

The Australian Government has established this Centre under the directorship of Dr. M. R. Bennett, F.A.A. Research projects are aimed at elucidating the mechanisms which govern the development of motor and sensory neurons, together with their synaptic connections. Applicants are now invited for several positions in neuroimmunology and electrophysiology at the research fellow and postdoctoral fellow levels.

Neuroimmunologists should have expertise in one or more of the techniques of monoclonal antibodies, cell separation (FACS), cytochemistry, and tissue culture. Electrophysiologists should have expertise in one or more of the techniques of intracellular recording from embryonic or cultured cells, intracellular staining of cells by iontophoresis, power-spectral analysis, and the patch-clamp. Research fellows may be joined in their project(s) by postgraduate students. Excellent facilities are provided together with supporting technical staff.

Salary range for research fellows is A\$20,963 to A\$27,539 and for postdoctoral fellows, A\$18,068 to A\$20,171. Appointments in first instance from 3 to 6 years.

Applications should include detailed curriculum vitae, bibliography (and three selected recent reprints), together with the names and addresses of three referees. These should be sent by 30 June 1982 to: **Dr. M. R. Bennett, Neurobiology Research Centre, The University of Sydney, N.S.W. 2006, Australia.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH APPOINTMENTS are occasionally available in the Departments of **Biochemistry, Biophysics and Medical Physics, Botany, Microbiology and Immunology, Molecular Biology, Physiology-Anatomy, and Zoology, at the University of California at Berkeley, Berkeley, Calif. 94720.** Appointments are normally made for 1 year, but with the possibility of renewals for a maximum of two more years. A description of the research interests of the faculty in each department is available from that department upon request, and highly qualified persons are invited to apply directly to the faculty member with whom they wish to work. If no position is available with that faculty member, the application may be circulated to others in the same or other departments with similar research interests. Applications should include a résumé, a brief statement of research interests and goals, and the names and addresses of three references. *The University of California is an Affirmative Action Employer.*

POSTDOCTORAL RESEARCH BIOCHEMIST to work with principal investigator on the study of in vivo kinetics of lipid metabolism in rats. Candidate must have Ph.D. in biochemistry or related area, and background in animal metabolism and surgery and experience in using tracer methods for in vivo kinetic studies are necessary. Salary range of \$15,936 through \$19,848, depending on qualifications. Research grant with funding approved through March 1985. Position available 1 September 1982. Application deadline: 15 July 1982.

Apply to: **Dr. M. A. Williams, University of California, Department of Nutritional Sciences, 225 Morgan Hall, Berkeley, Calif. 94720.**

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

POSTDOCTORAL RESEARCH POSITION available for biochemical and developmental studies of the acetylcholine receptor and a synaptic peripheral membrane protein of 43,000 molecular weight present in high concentrations on the cytoplasmic side of *Torpedo* postsynaptic membranes and at the rat neuromuscular junction. Please send curriculum vitae and names of three references to: **S. C. Froehner, Department of Biochemistry, Dartmouth Medical School, Hanover, New Hampshire 03756; telephone: 603-646-2791. Dartmouth is an Affirmative Action/Equal Opportunity Employer.**

Postdoctoral Research Training (renal/cardiovascular). M.D. or Ph.D. degree required; positions (two) available 1 September 1982. Areas of research training: pathogenic mechanisms in experimental renovascular hypertension and myocardial ischemia; control mechanisms for renin-angiotensin-aldosterone system; control of myocardial metabolism and energy production. Contact: **James O. Davis, M.D., Chairman, Department of Physiology, University of Missouri School of Medicine, Columbia, Mo. 65212. An Equal Opportunity/Affirmative Action Employer.**

TWO RESEARCH ASSISTANTS NEEDED, one with training and field experience in herpetology; one with training in plant population biology; both require master's degree and computer programming experience. Salary range between \$13,000 and \$16,000. Provide curriculum vitae and four references:

**Dr. J. W. Gibbons (Herpetology) or
Dr. R. R. Sharitz (Plant Ecology)
Savannah River Ecology Laboratory
Drawer E
Aiken, S.C. 29801**

An Equal Opportunity/Affirmative Action Employer

SCIENTIFIC DIRECTOR for a **Laboratory for Cell Analysis** at the University of California, San Francisco. Candidate must provide academic and administrative leadership for the laboratory. Responsibilities entail establishing collaborative research projects, allocating resources, teaching analytical cytology, supervising personnel, and obtaining additional funding for the laboratory. M.D., Ph.D., or equivalent advanced degree required, with several years of practical experience in analytical cytology, including the operation and maintenance of cytometric instrumentation, and the design, execution, and interpretation of cytometric experiments. The candidate must be an investigator with sound scientific achievements in the laboratory and a thorough familiarity with both theoretical and practical aspects of cell analysis. Send letters of interest, curriculum vitae, and names of persons who may be contacted as references to: **Daniel P. Stites, M.D., Chairman, Search Committee, Department of Laboratory Medicine, M-506, University of California, San Francisco, San Francisco, Calif. 94143.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION is available for 1 to 3 years to study the electrophysiology and anatomy of the basal ganglia and related thalamic structures. Applicant should have a Ph.D. with experience in extra and intracellular recording techniques, histological methods, as well as some knowledge of computer applications in electrophysiology. Send curriculum vitae, abstract of thesis, and references to: **Dr. Mario Dalsass, Neurology Service (127), VA Medical Center, East Orange, N.J. 07019.**

RESEARCH ASSOCIATE, Ph.D. to participate in study relating metabolism to cellular functions of retinal neurons. Experience in neurobiology and electron microscopy essential; familiarity with biochemical methods an asset. Approximate starting salary: \$17,500 per year. Available 1 August. Send curriculum vitae and names of three references to: **Dr. Paul Witkovsky, Department of Ophthalmology, New York University Medical Center, 550 First Avenue, New York, N.Y. 10016.**

RESEARCH ASSOCIATE, Ph.D., biochemistry, biology, endocrinology, or related background. Position involves the study of factors regulating bone formation in vitro and the purification of newly discovered growth factors. Salary competitive. Send curriculum vitae to: **Dr. E. Canalis, Endocrinology, Saint Francis Hospital and Medical Center, 114 Woodland Street, Hartford, Connecticut 06105.**

A **RESEARCH ASSOCIATE** position is vacant for a biochemist with expertise in protein chemistry and structure to join a multidisciplinary team investigating the enzyme systems involved in the generation and control of toxic metabolites from chemical carcinogens. The salary is approximately DM50,000 per year. Applications to: **Professor Dr. F. Oesch, Pharmakologisches Institut der Universität Mainz, Obere Zahlbacher Strasse 67, 6500 Mainz, BRD.**

TRANSPLANTATION IMMUNOLOGIST to supervise research efforts of a 5-year NIH grant involving the immunologic monitoring of renal transplantation patients. Position as a research assistant professor in a nontenured track. Will eventually be expected to develop independent funded research. Candidate should provide curriculum vitae and names of references to: **Charles B. Anderson, M.D., Department of Surgery, Washington University School of Medicine, 4960 Audubon Avenue, St. Louis, Missouri 63110.**

SYMPOSIA

Overlapping meetings during 12 to 17 July 1982 on a campus near London: **8th International Subcellular Methodology Forum: MEMBRANE-LOCATED RECEPTORS, and NATO Advanced Research Workshop (by invitation): METHODOLOGY FOR NEURORECEPTORS.** Information: **Dr. E. Reid, Robens Institute, University of Surrey, Guildford GU2 5XH, United Kingdom (telephone: 0483-71281; telex: 859331), or Dr. D. J. Morré, Purdue University (telephone: 317-494-1388).**



**ANNOUNCEMENT OF
PUBLIC MEETING ON:
Enhancing Biological
Production of Ammonia
from Atmospheric Nitrogen
and Soil Nitrate**

- An international symposium will bring together scientists from laboratories around the world to discuss and integrate research in the areas of biological N₂ fixation, biological denitrification, and utilization of fixed nitrogen by plants. Emphasis will be on symbiotic systems with application to enhancement of agricultural productivity.
- The symposium will be held at Granlibakken Resort, Lake Tahoe, California, 12 to 16 September 1982 (limited to 100 participants).
- For information, contact:
**Suzanne L. Black
Plant Growth Laboratory
University of California
Davis, California 95616**
- Supported in part by a grant from the National Science Foundation and the College of Agricultural and Environmental Sciences, University of California, Davis.

**DIRECTOR OF TOBACCO
AND HEALTH
RESEARCH INSTITUTE
UNIVERSITY OF KENTUCKY
LEXINGTON, KENTUCKY**

Candidates for the position of Director of the University of Kentucky Tobacco and Health Research Institute are being sought. The Tobacco and Health Research program was established to facilitate a multidisciplinary research effort designed to address the tobacco and health issue. The institute coordinates and administers the program through the university's colleges and departments. The Director of the Institute is responsible for the general administration of the institute, research program planning and development, and oversight of the technical and research support services of the institute. To qualify for the position, candidates should possess a Ph.D. or M.D. degree, have significant experience in research related to tobacco and health issues, experience in administration, and have suitable academic credentials to qualify for a faculty appointment in the university. Nominations for candidates should be submitted by June 22, 1982 to:

**Graduate Deans Office
359 Patterson Office Tower
UNIVERSITY OF KENTUCKY
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**GASTROINTESTINAL
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The Merck Institute for Therapeutic Research is seeking an innovative and creative scientist for the Gastrointestinal Pharmacology Department.

The selected individual will pursue research in Gastroenterology involving either gut motility or biochemistry related to gastrointestinal function. The applicant we seek should have a doctorate degree in a relevant discipline, postdoctoral training and a strong record of publication.

Published work should reflect the ability to perform creative and independent research. Previous experience relating to the discovery and development of new therapeutic agents is desirable, but not essential.

The Merck Institute has always provided an exceptional environment for research which includes, among other things, adequate laboratory space, modern equipment and technical support. Our research facilities are located in a rural setting, 25 miles northwest of Philadelphia.

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NATIONAL SCIENCE FOUNDATION

**Director, Division of Information
Science and Technology**

The Directorate for Biological, Behavioral and Social Sciences is seeking qualified applicants for the position of **director, Division of Information Science and Technology**. The incumbent manages the division responsible for funding research in support of basic and applied research in the areas of information science, information technology, and information impact. The person selected will receive either a permanent career appointment or a rotational appointment (requiring leave of absence from current employment). This position is part of the Senior Executive Service with a salary ranging from \$56,936 to \$59,119 (currently limited to \$58,500 per annum).

Qualification requirements include: (i) Ph.D. or equivalent professional experience in a field related to the purview of the division; (ii) substantial research contributions, as evidenced in publications, or innovative leadership in research administration in a field related to information science, including the information, computer, behavioral, and mathematical sciences, linguistics, economics, or communication engineering; (iii) experience in the planning of diverse scientific research programs; (iv) experience coordinating with representatives of scientific and academic communities, including industrial and/or academic researchers and those responsible for the administration of research and educational institutions; and (v) supervisory and managerial experience, including supervision and development of professional and support staff involved in diverse endeavors.

Applicants should contact **Margaret Cademartori (telephone 202-357-7857)** to request announcement EPB 82-20 for a permanent appointment or announcement EPB 82-30 for a rotational appointment. Announcements contain qualification requirements and instructions concerning the supplemental narrative required with SF-171 as application. Send SF-171 and narrative to: **National Science Foundation, Executive Personnel Section, Room 212, 1800 G Street, NW, Washington, D.C. 20550 (attention: EPB 82-20 or EPB 82-30)**. Applications must be received by 16 July 1982.

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COURSES

SHORT COURSE ON LASERS AND MICROBEAMS

13 to 17 September 1982. **Laser Microbeam Program (LAMP)**, Department of Developmental and Cell Biology, University of California, Irvine, Calif. 92719. Contact: M. W. Berns at above address or telephone: 714-833-6291. Tuition fee: \$500.

A minicourse will be given at the NIH-sponsored Biotechnology Resource Facility. The course will consist of lectures and laboratory exercises on the operation and construction of a laser microbeam, lasers, laser interactions with cells and tissues, laser microsurgery in cell biology and developmental biology, and diagnostic and clinical applications of lasers. Students will gain hands-on experience in laser operation, tissue culture, microirradiation of cell organelles, and embryonic systems.

The University of Southern California (USC)

announces THE 1982 SUMMER PROGRAM— CATALINA MARINE SCIENCE CENTER (CMSC) Catalina Island

Two courses, 5 weeks each, designed for graduate students and advanced undergraduates. Enrollment may be in any or all courses. Students live on Catalina Island but have access to Southern California area by USC shuttle boats. For information, contact: Dr. Richard C. Brusca, Director of Academic Program, CMSC, University of Southern California, Los Angeles, Calif. 90007. Telephone: 213-743-2019.

Session II (12 July to 13 August):

KELP FOREST ECOLOGY

Dr. Valrie Gerard (plus numerous guest instructors, including Drs. W. North, J. Estes, M. Tegner, R. Bray, M. Foster, G. Jackson, and R. McPeak)

NEUROBIOLOGY

Dr. Alvin Siger (plus numerous guest instructors, including Drs. K. Lukowiak and J. Weeks)

Note: substantial financial aid is available.

FELLOWSHIPS

POSTDOCTORAL RESEARCH FELLOWSHIPS IN DIABETES-METABOLISM. Applications for 1983 are being considered for NIH-sponsored postdoctoral research fellowships in the following areas: hormonal control of glucose, ketone body and amino acid metabolism; insulin, glucagon and somatostatin secretion; insulin receptors and insulin action. For information, write: John Gerich, M.D., Director, Endocrine Research Unit, Mayo Medical School/Mayo Clinic, Rochester, Minnesota 55905. An Equal Opportunity/Affirmative Action Institution.

IMPERIAL CANCER RESEARCH FUND RESEARCH FELLOWSHIP

Applications are invited for a 3-year postdoctoral appointment to work with Dr. M. F. Greaves on human leukaemia associated membrane proteins. The project involves raising monoclonal antibodies against hybrid cells selected for the expression of particular membrane glycoproteins or chromosomal translocations. Experience in immunology and tissue culture is desirable.

Candidates should be free to take up the position by October 1982. Salary range: £8,787 to £10,837 (inclusive of London Allowance), with entry according to qualifications and experience.

For further information, contact: Dr. M. F. Greaves (telephone: 01-242 0200, extension 378). Applications with full curriculum vitae and the names and addresses of two referees should be sent to: Secretary, Imperial Cancer Research Fund, Lincoln's Inn Fields, London WC2, England (if possible quoting reference 70/82).

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS IN REPRODUCTIVE SCIENCES

Fellowships are available through an NIH-funded interdepartmental training program in reproductive biology, biochemistry, and endocrinology. Numerous faculty participate in the program, and research interests include testicular biochemistry, epididymal physiology, endometrial and luteal function, fertilization, hormone receptors, and gonadotropin and steroid chemistry and mechanism. These are National Research Service Awards, and only U.S. citizens and permanent residents are eligible for appointment. For further information, please write: Dr. J. David Puett, Program Director, Department of Biochemistry, Vanderbilt University, Nashville, Tennessee 37232. An Equal Opportunity Employer.

POSTDOCTORAL RESEARCH FELLOWSHIP.

One full-time research position is available for an individual with an interest in joining a group studying hepatitis B-like viruses in endangered species of animals. The research is directed toward an understanding of the physical features of viral DNA and the structure of viral polypeptides. Applicants must have a Ph.D., M.D., or D.V.M. and a strong background in biochemistry and virology, and preferably have had experience in DNA sequencing techniques. The position is available 1 September 1982 for a period of 2 years and the stipend is commensurate with NIH guidelines. Applicants should send curriculum vitae and the names of three individuals for reference to: Dr. Michael Worley, Research Department, San Diego Zoo, P.O. Box 551, San Diego, Calif. 92112.

PROGRAMS

CAREER CHANGE

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

POSTDOCTORAL TRAINING PROGRAM IN SENSORY PHYSIOLOGY AND PSYCHOPHYSICS

Applications are invited to a new program, supported by NINCDS, for advanced research training in sensory physiology and psychophysics. Candidates should be committed to a research career, be U.S. citizens or permanent residents, and hold a doctorate degree. Ph.D., M.D., D.D.S. (D.M.D.), or D.V.M.

Preceptors and their areas of research include: Dr. Randolph Blake (vision psychophysics), Dr. Peter Dallos (auditory physiology), Dr. Christina Enroth-Cugell (vision physiology), Dr. Albert Farman (development of olfactory and taste receptors), Dr. Robert Gesteland (olfactory physiology), Dr. Barry Peterson (vestibulo-ocular interactions), Dr. Richard Rogers (osmotic receptors and taste), Dr. J. Peter Rosenfeld (pain mechanisms), Dr. Robert Suckler (vision psychophysics and aging), and Dr. Frederic Wightman (psychoacoustics).

Appointments are available for 2 to 3 years beginning 1 July 1982, with a salary ranging from \$13,380 to \$14,040. Applicants should complete the application for an individual NRSA and send to: Dr. Albert I. Farman, Department of Neurobiology and Physiology, Northwestern University, Evanston, Ill. 60201. Northwestern University is an Affirmative Action/Equal Opportunity Employer.

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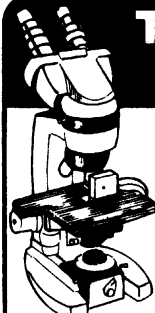
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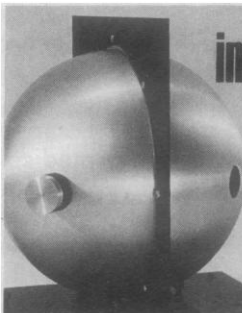
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- Supervision of laboratory personnel as required

The qualified candidate will possess a Ph.D. or equivalent in Immunology, Biochemistry or Cell Biology, and research experience in sterile techniques, preferably in mammalian cell culture. 1-year post-doctoral research experience in immuno-chemistry, protein biochemistry or immunoassay development considered a plus.

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ENDOCRINOLOGISTS

Sterling-Winthrop Research Institute announces the expansion of its endocrin research efforts. We are seeking innovative and resourceful Endocrinologists who are interested in developing a state-of-the-art drug discovery program in areas of endocrin control of calcium and/or potassium metabolism, endocrin control of benign and malignant tumor growth and neuroendocrinology.

The successful candidates will have a PhD or equivalent with at least 2 years of experience in endocrin research. Special consideration will be given to candidates with experience in drug discovery research.

We provide a project team approach to research which offers opportunities for interaction within the department of endocrinology and with other scientific disciplines.

We offer an attractive salary and benefit package with opportunity for career growth and an expanding commitment to scientific research. Institute is located near Albany, New York which is the center of major summer and winter recreational activities.

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John G. Barry
Employment Administrator

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DIRECTOR RESEARCH & DEVELOPMENT

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We are seeking a Ph.D. Microbiologist or Biochemist with industrial experience or at least 2-3 years post-doctorate experience to become involved in a key research program aimed at increasing antibiotic yields in a streptomyces fermentation. The individual we seek will have:

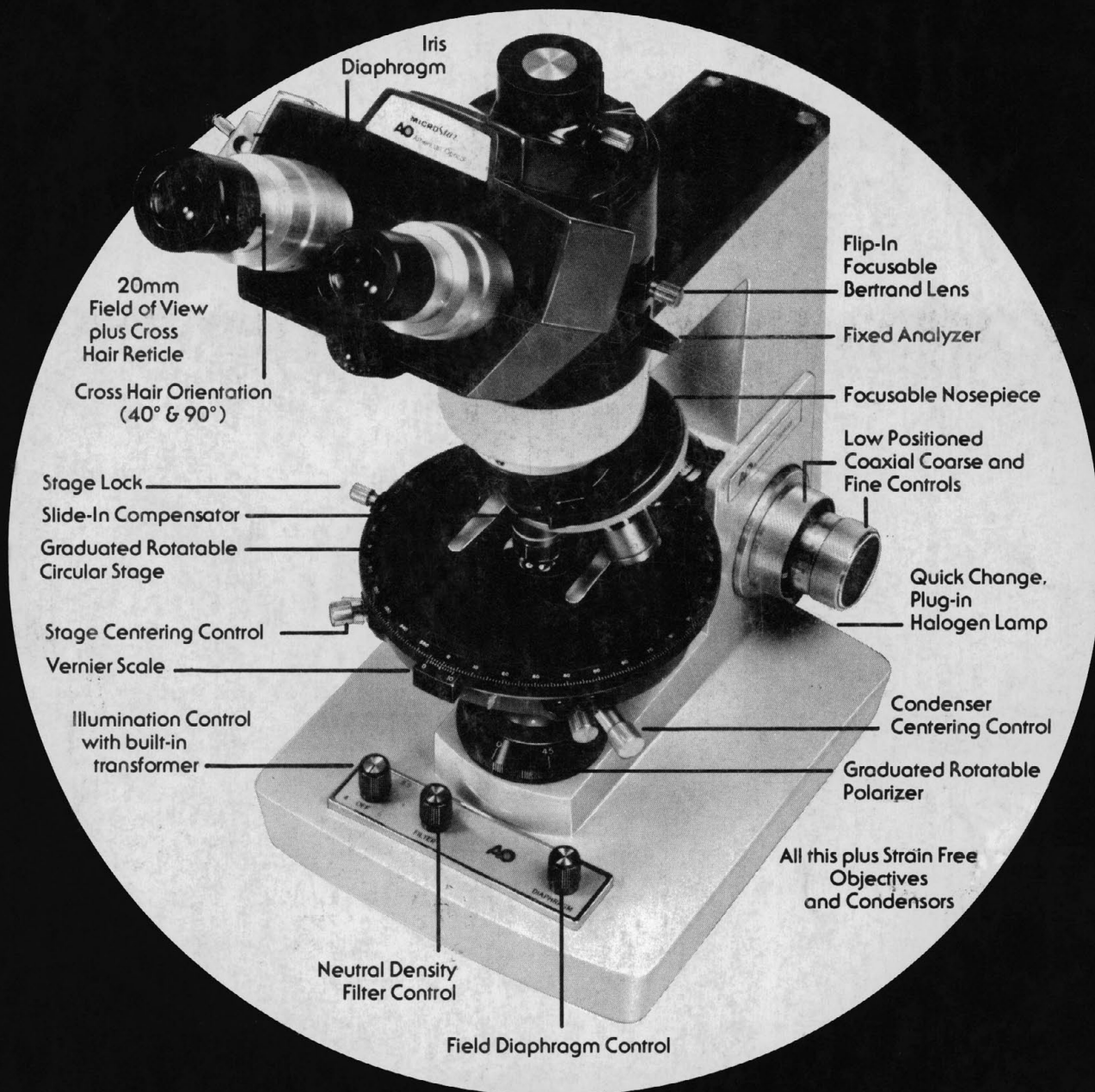
- Ability to characterize growth requirements of current and new strains.
- Knowledge of metabolic regulation to compare differences among strains.
- Ability to develop new screening procedures for selection of mutants.
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