

more taxa will be stable in samples of future data sets. Phenetic summaries, though, seem to depend as well on the stability in sampling of characters unique to each taxon. This concern with the results of future studies on the same taxa is not unique to the authors' view of systematics, but their treatment is refreshingly realistic and productive. Other systematic issues discussed include the roles of parsimony, fossils, and ontogenetic sequences in systematic inference, how the results of different studies might be combined, and "gradistic" classification.

Nelson and Platnick arrive at their general view of systematics by removing it from a historical perspective. They are no more willing to leave systematics timeless than will be many readers, but they are not prepared to allow paleontology its usual large role in assigning dates to branching points. Instead, they suggest the possibility of dating speciation events by relating cladograms to geotectonic events. The second half of the book deals with the complexities of such an enterprise. The authors present interesting arguments against the feasibility of determining how particular distributional patterns arise and advocate looking instead for patterns of distribution common across taxa. A historical sketch details the authors' contention that this was, indeed, the dominant approach to biogeography before Wallace and Darwin led it off in other directions. A treatment of biogeographic component analysis is the core of Nelson and Platnick's argument that the historical relationships among areas of endemism can be predicted from the cladistic relationships of the resident faunas. Such predictions are endangered by incomplete sampling of taxa, but a bigger problem for cladistic biogeography may be that posed by widespread taxa. Indeed, one of the more intriguing possibilities suggested by Nelson and Platnick's treatment of biogeography is that biogeographers might be divided into schools more fundamentally by how they choose to treat widespread taxa than by which mechanisms they prefer for their historical scenarios. It would be a mistake to pass off this cladistic approach to biogeography as simply the latest statement of the vicariance school; it is too innovative a treatment, clarifying too many basic issues, to permit easy labeling. But the authors are hampered by a lack of data that might illustrate their approach. It is sobering to realize that only Brundin's classic study of austral midges is complete enough.

Nelson and Platnick have attempted

an ambitious program here, and I find it generally successful. They articulate a fundamental view of what systematics and biogeography are about, a view that helps place in perspective past approaches to these subjects. They depart from previous treatments in many ways, but perhaps most in suggesting that the continued and principled evaluation of evidence is an integral part of both biogeography and systematics. Another major departure is the tone of the book; the authors only rarely slip into the contentious and partisan voice of recent systematic literature. The book's major fault is its relatively scanty bibliography. Critically lacking are references to similar ideas in the literature, especially those of Estabrook and Throckmorton. Nor are references given for the portions of this book that have been previously published. This, together with some passages that are overly cryptic (such as the discussion of how probabilities are calculated), will diminish the usefulness of the book for the novice. Advanced students and professionals, though, will find here the first truly fascinating treatment of systematics and biogeography to appear in years.

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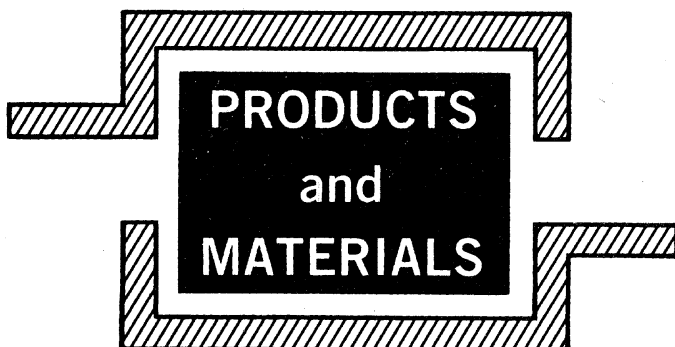
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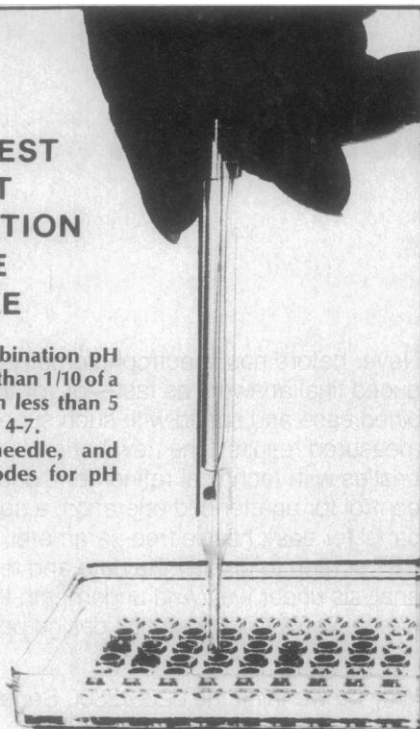
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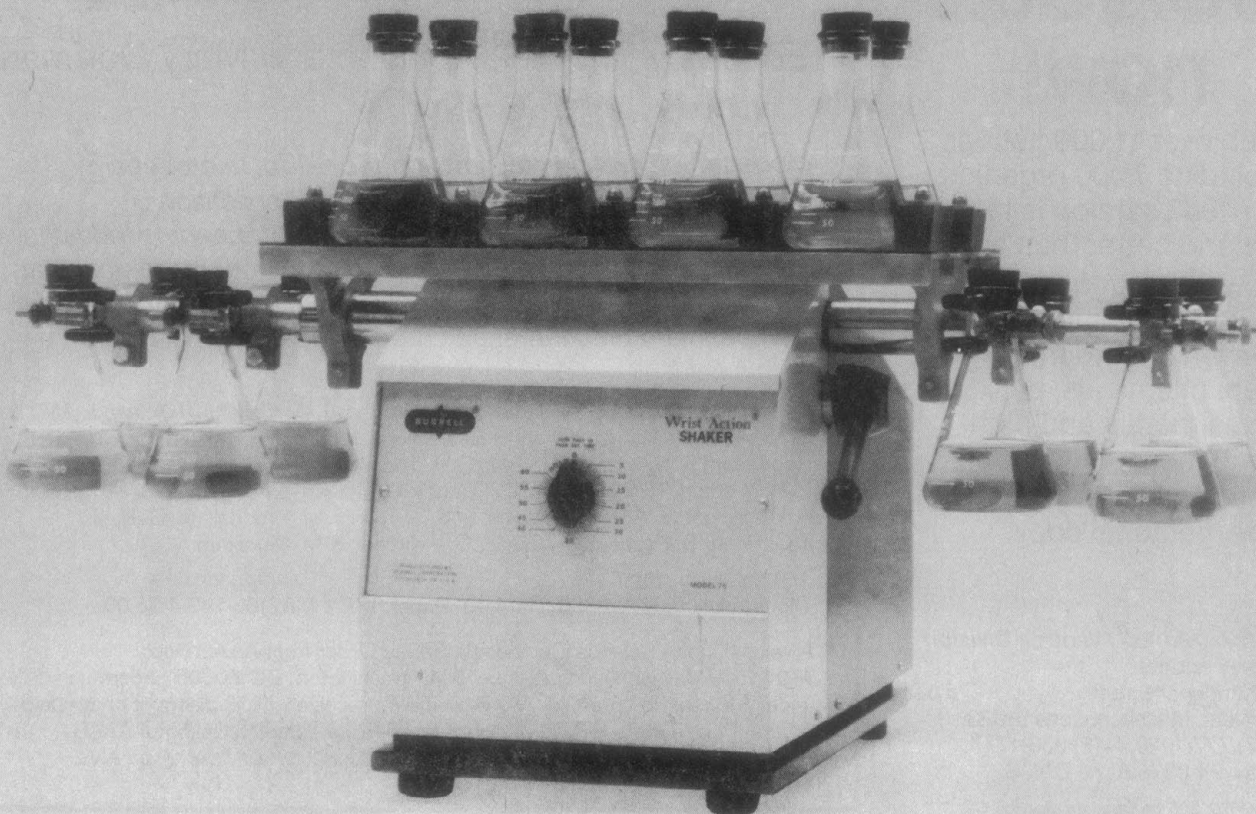
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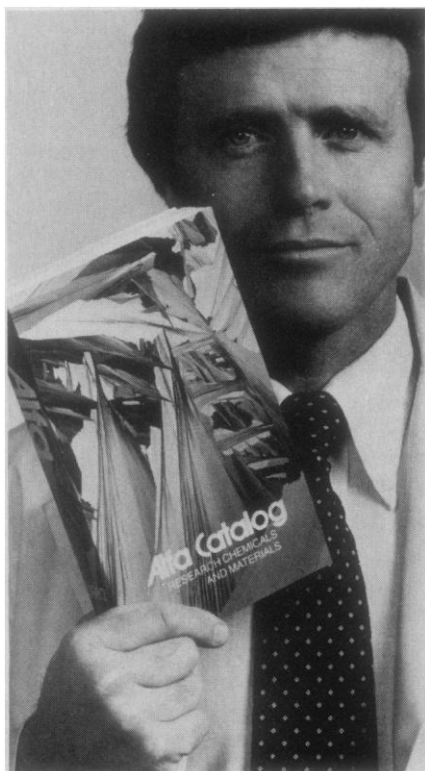
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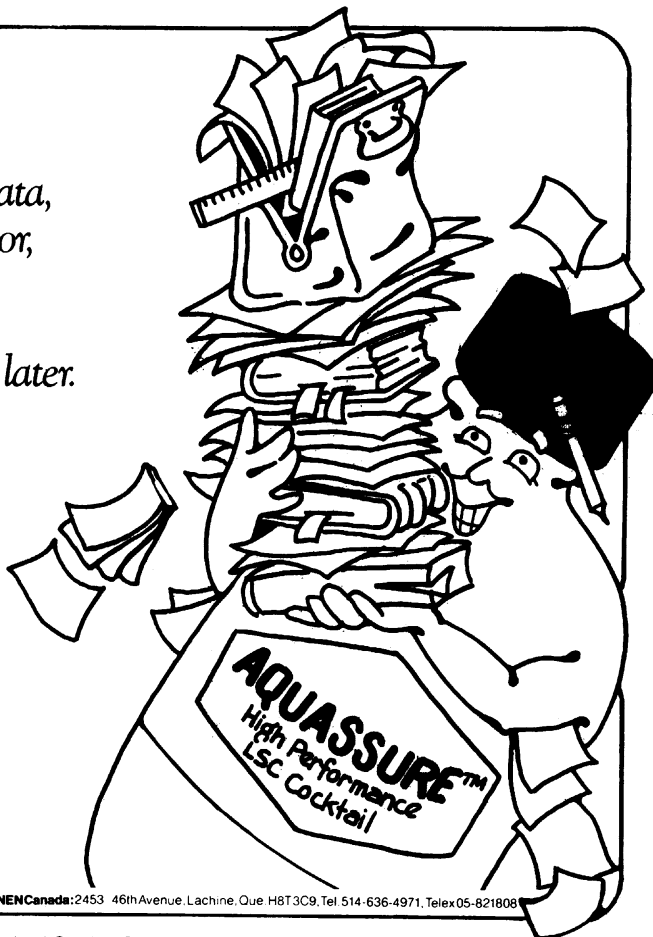
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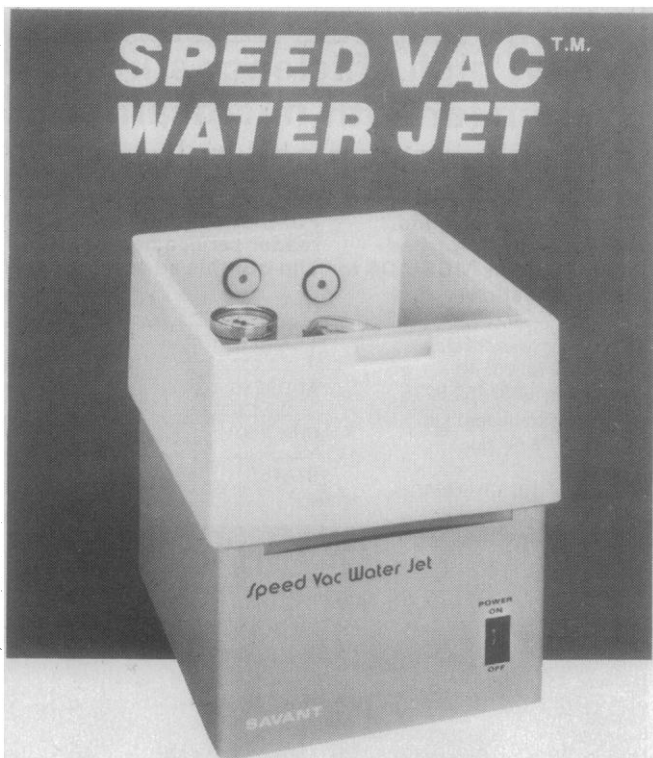


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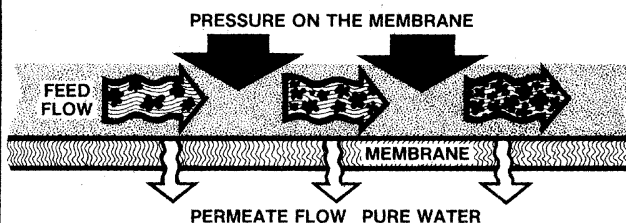
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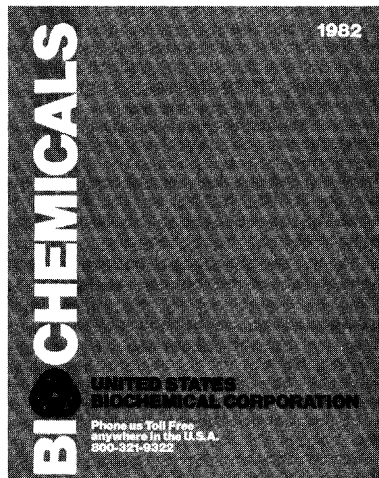
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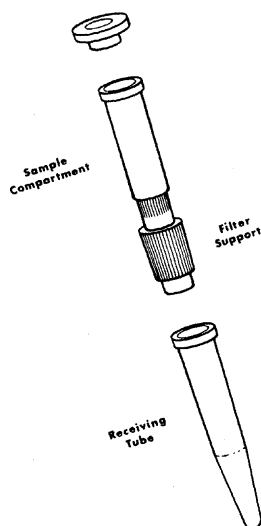


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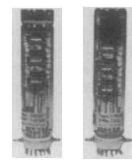
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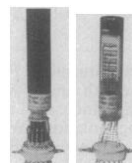
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POSITIONS WANTED

Biophysicist/Plant Physiologist (Ph.D.). Extensive research background in plant development and photobiology. Seeks position at a university or in industry. Box 284, 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. 11/13, 20, 27; 12/4, 11, 18

Editor/Biochemist, Ph.D. Experienced editor and writer of international publication. Extensive knowledge in endocrinology, RIA, nonisotopic immunoassays, clinical laboratory sciences. Desires new affiliation with biomedical, clinical, industrial, or publishing institution. Box 291, SCIENCE. X

Histochemist. Experience in histology, histopathology, histoenzymology, fluorescence microscopy, and electron microscopy. Extensive research experience. Seeking position in university, industry, or as a supervisor in histopathology in hospital laboratory. Box 282, SCIENCE. X

Immunologist/Biochemist, M.A. 1980. Five years of research experience in murine immunogenetics, biochemistry, and tissue culture. Skills include T and B cell differentiation assays, enrichment of lymphocyte subpopulations by numerous procedures, and SDS-PAGE of radiolabeled cellular proteins. Several publications. Seeks industrial position in San Diego. Box 286, SCIENCE. X

POSITIONS WANTED

Nutritional Biochemist, Ph.D.; 11 years of academic/industrial experience. Excellent accomplishments contributed strongly to corporate growth. Seeks challenging position. Box 290, SCIENCE. X

Physiologist/Pharmacologist, Ph.D. Experience in reviewing IND's and NDA's. Seeking position in corporate regulatory affairs or related position. Substantial background in research. Box 285, SCIENCE. X

Plant Ecologist, D.Phil. 1972. Wide ecological interests, excellent teaching references, two books, ten papers (vegetation analysis, biostatistics, population dynamics, seed biology). Seeks post at American university or research institute. Write: Box 287, SCIENCE. X

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. 11/13, 20, 27; 12/4

Toxicologist, Ph.D. Four years of industrial experience in managing human clinical studies, acute, subchronic and chronic animal studies, and regulatory affairs. Seeking managerial position. Box 276, SCIENCE. X

Toxicologist/Physiological Chemist (Ph.D.). Research and administrative background; industrial, product liability, and regulatory experience. Desires significant responsibility in toxicology/health impact assessment/regulatory compliance with major corporate organization. Reply to: Box 288, SCIENCE. X

Translator. Scientific/technical subjects preferred, free-lance basis. German/English, vv. R. Jessl, Orleansstrasse 56, 28 Bremen 1, West Germany. Telephone: 0421-447913. X

Zoologist-Anatomist Ph.D.—Electron Microscopist (TEM and SEM). Desires academic position where training and experience can be utilized in both teaching and research, microscopic anatomy and cell fine structure. Publications. Box 283, SCIENCE. X

POSITIONS OPEN

ASSISTANT PROFESSOR, tenure-stream. Department of Medical Genetics seeks applications from M.D.'s or Ph.D.'s with postdoctoral training and strong background in molecular genetics of eukaryotes or the application of molecular genetics to medical or related problems. Appointee is expected to lead research program in area of expertise and participate in the teaching of molecular and cell biology. Applications should include a résumé and the names and addresses of three referees, and should be sent to: **Dr. Andrew Becker, Department of Medical Genetics, University of Toronto, Toronto, Ontario, Canada M5S 1A8**. Closing date: 31 December 1981.

ASSISTANT PROFESSOR

**Tenure-Track
Medical School
Department of Physiology**

... To work in a respiratory physiology group in an area related to cellular physiology, biophysics, and/or biochemistry of the lungs or respiratory system. Competitive salary, comprehensive benefits. Send curriculum vitae and names of three references to: **Dr. R. E. Forster, Chairman, Department of Physiology, University of Pennsylvania, School of Medicine, Philadelphia, Pa. 19104**. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ARID LANDS ECOLOGIST— ASSOCIATE DIRECTOR

The Laboratory of Biomedical and Environmental Sciences, University of California at Los Angeles (UCLA), invites applications for the senior position of **ARID LANDS ECOLOGIST and ASSOCIATE DIRECTOR** of the Laboratory's program in **ECOLOGICAL**. The position carries with it a joint appointment on the tenure-track level in the Department of Biology, UCLA. Candidates are sought in the field of **TERRESTRIAL ECOLOGY OF ARID REGIONS**, with expertise in **DESERT ENVIRONMENTS** preferable. The successful candidate will be expected to head the laboratory's ecology program and undertake some administrative duties in the overseeing of Department of Energy support for this program; the position reports to the director of the laboratory. Some teaching is expected of the position, in the Department of Biology. Program and equipment funds are sufficient to support a vigorous research program; this is an 11-month appointment with concomitant salary. Send curriculum vitae, synopsis of recent and current research activities and interests, and three references before 18 December 1981 to: **Arid Lands Ecologist Search Committee, c/o Dr. Martin L. Cody, Department of Biology, University of California, Los Angeles, Calif. 90024**. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT CURATORS (PALEOBIOLOGY)

Field Museum of Natural History invites applications for two career-track positions at the assistant curator level. Applicants' research interests may be in any collection-related area of vertebrate or invertebrate paleobiology, including paleobotany. Applicants need not be taxonomic specialists; we encourage applications from a wide variety of subdisciplines including, but not restricted to, taphonomy and paleoecology. Successful applicants will be expected to develop an active research program and to participate in the Museum exhibition and education programs. Candidates must have a Ph.D. in a paleobiological field. Please send curriculum vitae, copies of publications, and names of three references to: **Dr. John R. Bolt, Department Chairman, Department of Geology, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, Ill. 60605**. *An Equal Opportunity Employer*

Applications are invited for each of two 3-year appointments as **ASSISTANT PROFESSOR** beginning August 1982. We seek candidates holding the Ph.D. with some experience in teaching and research. Primary areas of interest include microbiology, molecular genetics, electron microscopy, and neurobiology. Applicant's background should include at least two of these interests. Secondary areas of interest include prokaryotic biology, invertebrate zoology, immunology, and virology. Applicants should send curriculum vitae, including a publication list and a statement concerning interests and objectives in teaching and research, and have three letters of recommendation sent to: **Dr. Patricia Johnson, Chairman, Biology Department, Vassar College, Box 377, Poughkeepsie, N.Y. 12601**. Application deadline: 15 December 1981. *Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSORSHIP to teach introductory and/or advanced undergraduate course, fall 1982. Two- or 3-year appointment. Submit curriculum vitae and three references to: **Search Committee, Department of Biology, University of Virginia, Charlottesville, Va. 22901**. *Affirmative Action/Equal Opportunity Employer*

Applications are invited for a tenure-track position at the **ASSISTANT PROFESSOR** level in the Department of Engineering-Physics-Systems at Providence College. Responsibilities will include undergraduate teaching and program and course development in one or more of the following concentration areas: instrumentation and computation science, energy management, and applied systems science. A strong educational background in physics and applied science and a Ph.D. in one of the above multidisciplinary areas are required. Research experience is desirable. Date of appointment is September 1982. Applicants should send a letter of application, a résumé, and a list of three references to: **Dr. Stephen J. Mecca, Chairman, Department of Engineering-Physics-Systems, Providence College, Providence, Rhode Island 02918**. *Providence College is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR AND ASSISTANT OR ASSOCIATE AGRONOMIST

The Department of Agronomy and Range Science invites applications for an assistant or associate professor/assistant or associate agronomist position at the University of California/Agricultural Experiment Station, Davis, Calif. Research should focus on integrative crop physiology and ecology as they relate to factors limiting performance of crop plant communities. The candidate will be expected to develop an active research program pertaining to agronomic crops in California. Teaching duties will include one or two courses in either the undergraduate agronomy or plant science programs and/or the agronomy graduate program. A Ph.D. in a suitable field is required. The level of appointment will be commensurate with the candidate's experience. Send a statement of research interests, curriculum vitae, transcripts, list of publications, and names of three references by 26 February 1982 to:

R. L. Travis, Search Committee Chair
Department of Agronomy and Range Science
University of California
Davis, Calif. 95616

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

University of Michigan Medical School, Department of Pharmacology, seeks candidates for tenure-track positions at the level of **ASSISTANT, ASSOCIATE AND/OR FULL PROFESSOR** in the following areas: regulation of mammalian cell division and differentiation, action of growth factors and hormones in tissue growth and development, and cancer pharmacology. Applicants should have a Ph.D. or M.D. degree and 2 years of postdoctoral experience. Responsibilities include development of a strong research program and teaching of graduate and medical students. Send curriculum vitae, résumé of past and present research and teaching efforts, grant support, and names of three references to: **Chairman, Search Committee, Department of Pharmacology, University of Michigan Medical School, M6322 Medical Science I Building, Ann Arbor, Michigan 48109.** Deadline for application is 1 February 1982. A nondiscriminatory, Affirmative Action Employer. Codes 24FO, 25FO, 26FO.

DEPARTMENT OF ANATOMY UNIVERSITY OF MINNESOTA

A tenure-track **ASSISTANT PROFESSORSHIP** will be available in the department beginning 1 September 1982. The successful candidate will help teach dental gross anatomy, and possibly histology, and will participate in graduate teaching and training. Applicants should have a minimum of 2 years of postdoctoral training and have a strong, productive research program able to be funded through external sources. The area of research can be in one or more of the following areas: biomechanics, specifically related to mastication and the temporomandibular joint; cell biology, using either salivary glands or bone as model systems; developmental biology at the cellular level with an emphasis on development related to the oral cavity; or neurobiology, specifically related to the cellular basis of trigeminal pain. Applicants should send their most recent curriculum vitae and three letters of reference to:

Chairman, Dental Anatomy Search Committee
4-135 Jackson Hall
321 Church Street, SE
Minneapolis, Minnesota 55455

Deadline for receipt of applications is 1 February 1982.

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

ASSISTANT PROFESSOR—ORGANIC AND INORGANIC CHEMISTRY THE JOHNS HOPKINS UNIVERSITY

The Johns Hopkins University, Chemistry Department, invites applications for two tenure-track assistant professorships to begin on 1 July 1982. Preference will be given to outstanding candidates in the fields of organic and inorganic chemistry. Please send curriculum vitae and a summary of research plans, and arrange for three letters of recommendation to be transmitted to: **Dr. Dean W. Robinson, Department of Chemistry, Johns Hopkins University, Baltimore, Md. 21218.** *The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF ANIMAL BIOLOGY. The Laboratories of Anatomy, School of Veterinary Medicine, University of Pennsylvania, invite applications for a tenure-track position at the assistant professor level to begin in summer 1982. Candidates must have advanced degree(s) and postdoctoral experience, and must demonstrate potential to develop an independent research program in neuroscience, animal behavior, or vertebrate functional morphology. Teaching experience is required and evidence of excellence in teaching is desirable. Teaching responsibilities will be in gross anatomy and histology. Applicants should submit complete curriculum vitae and a brief description of their current and future research program to: **Dr. Richard Miselis, Laboratories of Anatomy, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa. 19104.** *An Equal Opportunity/Affirmative Action Employer.*

The Department of Environmental Sciences, University of Virginia, invites applications for three tenure-track **ASSISTANT PROFESSORSHIPS** beginning September 1982:

- Climatology/meteorology,
- Environmental chemistry/geochemistry, and
- Water resources/hydrology.

Applicants should have a Ph.D. and expect to teach undergraduate and graduate level courses in their area of specialization and to pursue a vigorous research program within the context of an interdisciplinary department. Curriculum vitae, a brief statement of research interests, and names of three individuals who may be contacted for references should be sent to: **George M. Hornberger, Department of Environmental Sciences, Clark Hall, University of Virginia, Charlottesville, Virginia 22903.** *The University of Virginia 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 OPHTHALMOLOGY. Applicants should have a strong commitment to research and education in the subspecialty of corneal and external diseases. This academic position requires completion of an approved 3-year residency program in ophthalmology, fellowship in corneal-external diseases, Board-certification, teaching and research experience, and administrative ability. Send inquiries and curriculum vitae to: **Stephen J. Ryan, M.D., Chairman, Department of Ophthalmology, University of Southern California School of Medicine, Doheny Eye Foundation, 1355 San Pablo Street, Los Angeles, Calif. 90033.** *Affirmative Action/Equal Opportunity Employer.*

TENURE-TRACK POSITION

The Biology Department of Loyola University of Chicago invites applications for an **ASSISTANT (OR ASSOCIATE) PROFESSOR** level position in **PHYSIOLOGY.** A Ph.D. is required and postdoctoral experience preferred. Research area open although special consideration will be given to those with demonstrated research in cellular physiology, physiological ecology, or sensory physiology.

Teaching responsibilities may include: comparative physiology, general and cellular physiology, and graduate courses in area of expertise.

Curriculum vitae, reprints, future research plans, and three letters of recommendation should be sent to:

Chairperson, Search Committee
Biology Department
Loyola University of Chicago
6525 North Sheridan Road
Chicago, Illinois 60626

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

The Department of Medical Microbiology is seeking applicants for a tenure-track appointment at the level of **ASSOCIATE PROFESSOR OR ASSISTANT PROFESSOR** to begin no later than 1 July 1982. Applicants should be qualified to teach immunology to medical students and be prepared to participate in courses at the undergraduate and graduate level. Candidates are also expected to develop an active research program. Preference will be given to those who have experience at the cellular, molecular, and genetic level in the study of the immune response. For full consideration, curriculum vitae, together with a list of publications, a brief description of research interests, and the names of three references, should be sent by 1 January 1982 to:

Professor Stanley Falkow, Chairman
Department of Medical Microbiology
Sherman Fairchild Building, D307
Stanford University
Stanford, Calif. 94305

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

BIOCHEMIST. Tenure-track assistant professorship beginning September 1982, contingent on funding, in an ACS-accredited department with ten chemists. An interdisciplinary B.S. degree in biochemistry is offered. Duties include teaching undergraduate courses in biochemistry and chemistry. Candidates with interests in all areas of biochemistry will be considered; preference will be given to those with interests in metabolic or enzyme studies. Ph.D. and postdoctoral experience required. Strong commitment to teaching and ability to develop a research program are expected. Send application, three letters of recommendation, and transcripts to: **Biochemistry Faculty Search Secretary, College of Arts, Sciences and Letters, The University of Michigan-Dearborn, Dearborn, Mich. 48128.** *A nondiscriminatory, Affirmative Action Employer.*

The Department of Biology at Georgia State University invites applications for an anticipated tenure-track position (assistant professor) in **virology/immunology** (starting date: September 1982). Expertise in molecular aspects of animal viruses is preferred. Candidates should have postdoctoral experience and demonstrated potential for independent research. The successful candidate will be expected to teach undergraduate courses in virology and immunology and a graduate course in area of specialization. Salary will be commensurate with qualifications. Applications, including curriculum vitae, reprints, a statement of research plans, and names of three references, should be sent to: **Faculty Search Committee, Department of Biology, Georgia State University, University Plaza, Atlanta, Georgia 30303.** Deadline for receipt of application is 1 February 1982. *Georgia State University is an Equal Educational Opportunity Institution and is an Equal Opportunity/Affirmative Action Employer in compliance with Title IX and other Civil Rights laws.*

The Department of Biology at Georgia State University invites applications for an anticipated tenure-track position (assistant professor) in **microbial genetics** (starting date: September 1982). Individuals with expertise in molecular cloning techniques may be given preference. Candidates should have postdoctoral experience and demonstrated potential for independent research. The successful candidate will be expected to teach an undergraduate course in general genetics and a graduate course in microbial genetics. Salary will be commensurate with qualifications. Applications, including curriculum vitae, reprints, a statement of research plans, and names of three references, should be sent to: **Faculty Search Committee, Department of Biology, Georgia State University, University Plaza, Atlanta, Georgia 30303.** Deadline for receipt of application is 1 February 1982. *Georgia State University is an Equal Educational Opportunity Institution and is an Equal Opportunity/Affirmative Action Employer in compliance with Title IX and other Civil Rights laws.*

BIOMEDICAL RESEARCH LABORATORY ANIMAL TECHNICIAN. Opening for biomedical research laboratory animal technician. The applicant accepted will assume primary responsibility for a new research facility specially designed to meet current AAALAC requirements. Desired qualifications include: B.S. degree in biology, physiology, or other medical specialties; certification as an AALAS technologist (or eligibility for certification); and experience. Salary dependent upon qualifications. Send résumé to: **Personnel Department, Arizona State University, Tempe, Arizona 85281.**

POSITIONS OPEN

ASSISTANT PROFESSOR IN PHYSICAL CHEMISTRY AT IOWA STATE UNIVERSITY—Applications are invited for this tenure-track position which is scheduled to start in summer or fall 1982. The primary requirement is outstanding potential for, and commitment to, excellence in research and teaching. Although all research areas will receive careful consideration, any area of theoretical dynamics will be given special attention. Applicants should submit curriculum vitae, transcripts, a documented summary of past accomplishments, and an explicit statement of research plans and teaching objectives, and they should request at least three letters of recommendation to be sent. Applications should be sent to: **Professor Klaus Ruedenberg, Chemistry Department, Iowa State University, Ames, Iowa 50011**, before 1 January 1982. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

The Department of Preventive Medicine and Biometrics, School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Md., is seeking applicants for the following position:

ASSOCIATE PROFESSOR OF BIOSTATISTICS
Qualifications are an M.D. or Ph.D. with experience in teaching biostatistics, administration, and research. Expertise should be reflected by a number of publications in reviewed scientific journals. Experience with ADP of biomedical and demographic data is essential. Responsibilities include teaching, research, consultative assistance in biostatistics, and planning and development of curricula and specific courses of study for the department. Incumbent will supervise medical students, graduate students, and postdoctoral assistants at the tutorial level. Send applications to: **Director of Civilian Personnel/Manpower, Chairman, Department of Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20014**. Telephone: 301-295-3170. Applications will not be returned.

The Uniformed Services University of the Health Sciences is an Equal Opportunity Employer.

BOTANY. One-year replacement, 1982–1983 academic year. Instructor/assistant professor to teach a diverse selection of courses, including general botany and plant physiology. Application deadline: 15 January 1982. Send curriculum vitae and names of three references to: **R. J. Thomas, Search Committee, Department of Biology, Bates College, Lewiston, Maine 04240**. *Bates is an Equal Opportunity Employer.*

CELL BIOLOGIST

The University of North Carolina at Chapel Hill invites applications for a junior or senior faculty position in the Department of Anatomy and Laboratories for Cell Biology. Applicants should have postdoctoral research experience and demonstrated excellence in any area of cell biology. Preference will be given to research in cell surface or membrane biology, cellular neurobiology, or biology of the cytoskeleton. Teaching opportunities will be in medical histology, neurobiology, human gross anatomy, or graduate level cell biology. Send curriculum vitae, a brief description of research plans, and the names of three references to: **Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, School of Medicine, 111 Swing Building 217H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514**.

An Equal Opportunity/Affirmative Action Employer

ELECTRON MICROSCOPIST/CELL BIOLOGIST

The University of North Carolina at Chapel Hill invites applications for a junior or senior faculty position in the Department of Anatomy and Laboratories for Cell Biology. Applicants should have postdoctoral research experience and demonstrated excellence in electron microscopy and cell biology, preferably in the application of freeze fracture, energy dispersive analysis of x-rays (EDAX), or image reconstruction techniques. Duties will be to teach a graduate course in electron microscopy and to direct the departmental electron microscope facilities. Send curriculum vitae, a brief description of research plans, and the names of three references to: **Dr. Charles R. Hackenbrock, Chairman, Department of Anatomy, School of Medicine, 111 Swing Building 217H, University of North Carolina at Chapel Hill, Chapel Hill, North Carolina 27514**.

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

ASSOCIATE PROFESSOR/BRAIN PEPTIDE RESEARCH. The University of California, Los Angeles, Department of Medicine, and Center for Ulcer Research and Education invite applications for a faculty position of **adjunct associate professor of medicine**. Applicants must be Ph.D. or M.D. with several years of research experience in the area of effects of brain peptides on the gastrointestinal tract. Applicant must have published extensively and shown recent ability to obtain competitive grant funding in this field. The appointee would also be expected to teach trainees and students in this specialty. Salary approximately \$32,000, varying with qualifications. Send letters of application and curriculum vitae, no later than 14 December, to:

Dr. John Walsh

**Center for Ulcer Research and Education
VA Wadsworth Hospital Center 691/151H
Building 115, Room 217
Los Angeles, Calif. 90073**

The University of California is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are urged to apply.

THE UNIVERSITY OF CHICAGO DIVISION OF THE BIOLOGICAL SCIENCES

The Department of Pharmacological and Physiological Sciences is considering faculty appointments from qualified candidates with research interests in the area of neurobiology. *From the time of its original charter, the principle of the University of Chicago has been to appoint scholars without regard to race, color, religion, sex, or national origin.* Please have three professional persons write us concerning you and send your résumé together with your most significant publications to:

**Alfred Heller, Professor and Chairman
Department of Pharmacological and
Physiological Sciences
The University of Chicago
947 East 58 Street
Chicago, Illinois 60637**

CHAIRMAN OF THE DEPARTMENT OF DERMATOLOGY

Texas Tech University School of Medicine is accepting applications for the position of chairman of the Department of Dermatology. The candidate should be professionally mature and experienced in the clinical service, teaching, and research aspects of academic dermatology. The appointee will be responsible for all academic programs and faculty appointments at the four Regional Academic Health Centers in Lubbock, El Paso, Amarillo, and the Permian Basin at Odessa. Applications will be considered until 1 March 1982. Please send inquiries and curriculum vitae to:

**David J. Hentges, Ph.D., Chairman
Dermatology Chairman Search Committee
Department of Microbiology
School of Medicine
Texas Tech University Health Sciences Center
Lubbock, Texas 79430**

ELECTRON MICROSCOPY ASSISTANT

Successful applicant will have a B.S. or M.S. degree in biological science, and 2 to 3 years of experience in TEM or SEM. Position will entail maintenance of two microscopes and ancillary equipment, training and assistance of faculty and graduate students in specimen preparation, instrument operation, and photographic processing. Send résumé and three letters of recommendation to: **Robert L. Smith, Department of Entomology, University of Arizona, Tucson, Ariz. 85721**. Closing date: 27 November 1981. *Equal Opportunity/Affirmative Action Employer.*

FACULTY APPOINTMENT IN CELLULAR BIOCHEMISTRY. The Department of Chemistry at the University of Oregon intends to make an assistant or associate professor appointment in fall 1982 to augment a multidisciplinary program in cell and molecular biology. The main focus of the program will be the molecular basis of cellular regulation including, but not limited to, the areas of immunology, gene expression, cellular recognition, and organelle biogenesis. Applications should be sent to: **Cell Biochemistry Search, Department of Chemistry, University of Oregon, Eugene, Oregon 97403**. They should include curriculum vitae, three letters of reference, a summary of research accomplishments and teaching experience, and a statement clearly describing research goals. The closing date for applications is 15 January 1982. *The University of Oregon is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

University of Cape Town (UCT), Chair in Analytical Science. Applications are invited for the above post which will be vacant from 1 January 1983. Preference will be given to a candidate who is actively engaged in original research in some branch of analytical science and has a genuine interest in teaching this subject. Relevant experience outside a university will be a recommendation. Appointment, depending on qualifications and experience, will be made on the salary scale R20,040 to R20,850 x 900—R26,250 per annum. Staff benefits include a 75 percent rebate of tuition fees for dependents at UCT, generous study leave privileges, an annual bonus of nearly 1 month's salary, a housing subsidy scheme subject to government regulations, pension fund, medical aid, and group life assurance. Applicants should submit curriculum vitae stating present salary, research interests and publications, the date duty could be assumed (if this is later than 1 January 1983) and the names and addresses of three referees. Further information should be obtained from: **Registrar (attention: Appointments Office), University of Cape Town, Rondebosch, 7700, South Africa**, by whom applications (quoting reference number AQ./9.) must be received not later than 15 January 1982 (extended closing date). *The University's policy is not to discriminate in the appointment of staff on the grounds of sex, race, or religion. Further information on the implementation of this policy is obtainable from the registrar.*

CHAIRPERSON DEPARTMENT OF BIOLOGICAL SCIENCES

Applications are invited from individuals with demonstrated competence in teaching, research, and administration for an anticipated position for appointment 1 July or 15 August 1982 as chairperson of a department with 14 faculty members. Curricula lead to the B.S. and M.S. degrees. The candidate is expected to provide academic leadership and to generate grant support for teaching and research. Specialization in animal physiology is preferred but not required. Curriculum vitae, transcripts, three letters of recommendation, and supportive materials are to be forwarded by 5 January 1982 to: **Chairman Search Committee, Department of Biological Sciences, Indiana University—Purdue University at Fort Wayne, 2101 Coliseum Boulevard, East, Fort Wayne, Indiana 46805**.

An Affirmative Action/Equal Opportunity Employer

CHEMIST. Our Research Chemicals Division seeks someone for sales/customer service, and also as an assistant to the general manager. The position involves customer contact (both personal and by telephone); zero to 5 years of experience. A good college record, graduate studies, and some professional/commercial experience are valuable pluses. Write to: **President, Pfaltz & Bauer, Inc., 375 Fairfield Avenue, Stamford, Conn. 06902** (a division of Aceto Chemical Co., Inc.).

DEAN OF GRADUATE STUDIES AND RESEARCH

The University of Miami invites nominations and applications for the position of Dean of Graduate Studies and Research.

The Dean of Graduate Studies and Research is charged with the administration of graduate studies and research over diverse programs and concentrations. Candidates for this position should hold an earned doctorate and be eligible for appointment at the professorial rank in a department, have experience in graduate teaching and the supervision of doctoral research, familiarity with granting agencies, and demonstrated administrative ability in a complex research university.

The University of Miami is a private university enrolling 18,000 students in undergraduate, graduate, and professional programs. It comprises the College of Arts and Sciences, the Schools of Business Administration, Continuing Studies, Education and Allied Professions, Engineering, and Architecture, Law, Medicine, Music, and Nursing, the Rosenstiel School of Marine and Atmospheric Science, and the Graduate School.

Nominations and applications should be submitted by 1 December 1981 to:

**Harry P. Schultz, Chairman
Search Committee for the Dean
of Graduate Studies and Research
P.O. Box 248006
University of Miami
Coral Gables, Florida 33124**

The University of Miami is a private, independent, international university and an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

DIRECTOR OF RESEARCH (Physician/Scientist), CUYAHOGA COUNTY HOSPITAL. (a teaching hospital of Case Western Reserve Schools of Medicine & Dentistry). New position in our teaching facility is responsible for the coordination of research programs of the Cuyahoga County Hospital system. Reporting directly to the president of the County Hospital system, duties will include: coordinating and developing research projects at departmental and divisional levels; enacting policies adopted by the Board of Governors for the Center for Research of the County Hospital system; developing long-range planning of research facilities; staffing meetings and functions of the Board of Governors of the Center for Research, and participating in recruitment and evaluations of scientific staff. Active research and teaching opportunities in the area of personal interest and experience are encouraged. Patient care responsibilities are not required of the director. Joint appointment with the Cuyahoga County Hospital and with Case Western Reserve University, School of Medicine, at an appropriate academic rank will be awarded. Candidates must have a proven record of experience in directing a research program. Interested candidates may forward curriculum vitae to: **Vincent R. Kaval, Vice President, Planning and Development, Cuyahoga County Hospital, 3395 Scranton Road, Cleveland, Ohio 44109. An Equal Opportunity Employer.**

EM FACILITY DIRECTOR

ASSOCIATE SPECIALIST position available immediately to head an electron microscope laboratory. Applicants should have demonstrated experience in running a multiuser facility. Familiarity with DNA spreading and heteroduplex mapping preferred. A minimum of 5 years of experience in training and teaching users of the EM300 and EM400 is essential. Salary: \$23,340 plus benefits.

Applicants should send a résumé by 27 November to: **Search Committee, Hooper Foundation, University of California, Third and Parnassus (S-412), San Francisco, Calif. 94143.**

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

DARTMOUTH COLLEGE Department of Biological Sciences

The Department invites applications from all qualified persons for two positions:

- 1) **Developmental Biology of Animals**, assistant professor, tenure-track, 3-year initial appointment.
- 2) **Aquatic Ecology**, research instructor, two calendar years.

Each appointment begins 1 July 1982. Because of Dartmouth's dual commitment to education and scholarship, we seek persons with strength in both teaching and research.

Candidates for the position in developmental biology should have at least 2 years of postdoctoral experience. We expect the developmental biologist to teach a course in vertebrate embryology, an advanced course in his or her research area, as well as to participate in an introductory course in cell biology or organismal biology and in an active graduate research program.

Candidates for the position in ecology should have completed their Ph.D. by the start of the appointment. We expect the ecologist to teach a course in aquatic ecology and an advanced course or seminar in his or her research area, as well as to participate in an introductory course in ecology. The teaching obligation can be fulfilled in two of the four terms of the year, leaving half the year open for research at Dartmouth.

Applications for the positions should include full curriculum vitae, reprints of all publications, statements of proposed research and teaching activities, and the names of at least three referees from whom letters of recommendation have been requested. Applications and letters of recommendation should be sent by 1 December 1981 to:

**Secretary
Search Committee
Department of Biological Sciences
Dartmouth College
Hanover, N.H. 03755**

Dartmouth is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

FACULTY POSITIONS in organic chemistry and inorganic chemistry. Applications or nominations are invited for openings in the Department of Chemistry at Massachusetts Institute of Technology (MIT). Applicants should have demonstrated ability to do exceptional independent research in chemistry. Appointment will probably be at the assistant professor level, but applications and nominations for other levels will be considered. Candidates should submit curriculum vitae, a publication list, and a description of research interests and have three letters of recommendation sent not later than 15 February 1982 to: **Professor J. L. Kinsey, Room 18-399, MIT, Cambridge, Mass. 02139. MIT is an Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION IN INDUSTRIAL HYGIENE/AIR POLLUTION

Applications are invited for a tenure-track position at the assistant professor level. Available fall 1982. A Ph.D. is required. The successful candidate will be expected to develop a research program with grant support and to teach at both the graduate and undergraduate levels. Send résumé, three letters of recommendation, and summary of research plans by 1 January 1982 to: **Dr. L. Harold Stevenson, Department of Environmental Sciences and Microbiology, McNeese State University, Lake Charles, La. 70609. McNeese is an Equal Opportunity/Affirmative Action Employer.**

IMMUNOCHEMIST/ COMPLEMENTOLOGIST Ph.D. OR M.D.

Tenure-track position in tumor-immunology at Baylor College of Medicine. Send curriculum vitae and bibliography to:

Box 266, SCIENCE

Baylor is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

FACULTY POSITION—MOLECULAR BIOLOGY/MOLECULAR GENETICS

Any level, tenure-track or tenured position, depending on qualifications. Our highest priority is to expand our ongoing research in the area of **molecular biology** with emphasis on the use of recombinant DNA techniques to study the dynamics of gene regulation in eukaryotes. We are part of the Detroit Medical Center, a consortium of hospitals, clinics, and one of the largest medical schools in the country. The Biochemistry Department is housed in modern, spacious, and well-equipped facilities. The salary for this position is highly competitive.

The successful applicant will be expected to participate in the teaching of medical students as well as graduate students and establish a vigorous research program.

Applicants should send curriculum vitae, description of research interests, and the names of three references to: **Dr. Ray K. Brown, Chairman, Department of Biochemistry, Wayne State University, School of Medicine, 540 East Canfield Avenue, Detroit, Mich. 48201.**

FACULTY POSITION IN BIOLOGICAL SCIENCES at the Hopkins Marine Station of Stanford University

Applications are invited for an appointment in the Department of Biological Sciences of Stanford University, to be resident at the Hopkins Marine Station in Pacific Grove, California. The position is without restrictions as to rank although preference will be given to candidates at the assistant professor level. The position involves both teaching and research. The Station wishes to appoint someone with substantial competence in marine zoology or marine phycozoology, but whose research interests relate to ecological or comparative physiological problems. All applicants must include curriculum vitae, a statement of research interests, and a list of three people from whom letters of reference will be sought. Applications should reach: **C. S. Pittendrigh, Hopkins Marine Station, Pacific Grove, Calif. 93950**, by 15 December 1981. *Stanford University is an Equal Opportunity Employer.*

NATIONAL SCIENCE FOUNDATION DIRECTOR, DIVISION OF EARTH SCIENCES

The National Science Foundation (NSF) is seeking qualified applicants for the position of Director, Division of Earth Sciences. The person selected will receive either a permanent career appointment or a 2-year rotational appointment. Persons interested in a leave of absence from their current employment are encouraged to apply for the rotational appointment. This position is part of the Senior Executive Service with a salary currently limited by law to \$50,112 per annum.

Duties of the position involve managing a division responsible for funding research in the earth sciences. Incumbent assesses research needs and trends, presents plans for future development, determines funding requirements, prepares and justifies budget estimates, balances program needs, allocates resources, oversees evaluation of proposals and recommendations for awards and declinations, supervises staff, and represents NSF to relevant external groups. Qualification requirements include (i) supervisory and managerial experience for the achievement of organizational objectives through subordinates; (ii) a Ph.D. or equivalent professional experience or a combination of education and equivalent experience in the earth sciences or closely related field; (iii) substantial research experience and strong evidence of scholarship in the earth sciences, or closely related field, including published research results; (iv) experience in the planning of multidisciplinary research programs in the field of earth sciences; and (v) experience coordinating with representatives of scientific and academic communities.

Applicants should contact **Margaret Cademartori**, telephone: 202-357-7857, to request announcement EPB 82-1 for a permanent appointment or announcement EPB 82-11 for a rotational appointment. Announcements contain qualification requirements as well as instructions concerning the preparation of the supplemental narrative required with the SF-171 as application. Send SF-171 and narrative to: **National Science Foundation, Executive Personnel Branch, Room 212, 1800 G Street, NW, Washington, D.C. 20550. (Attention: EPB 82-1 or EPB 82-11).** Applications must be received by 15 January 1982.

Equal Opportunity Employer

Technical Analyst

Major international trading organization seeks technical analyst to monitor and evaluate a broad spectrum of high tech and scientific developments. Must be able to communicate evaluations and applications to nontechnical business people. Some graduate experience in chemical/electrical engineering or physics is preferred. Position is located in midtown Manhattan.

Send résumé and salary history in confidence to: **A. Sugihara**



C. Itoh & Co. (America) Inc.
270 Park Avenue
New York, N.Y. 10017
An Equal Opportunity Employer,
M/F

POSITIONS OPEN

FACULTY POSITION DEVELOPMENTAL BIOLOGY THE JOHNS HOPKINS UNIVERSITY

The Department of Biology invites applications for a tenure-track position in the area of developmental biology. The research interests of this department and of the Carnegie Institution, which is located on this campus, include genetic, cellular, and molecular aspects of development. We are seeking a person whose research involves one or more of these areas and who will participate in our teaching of developmental biology. Excellent laboratory facilities will be located in a building now under construction. Send curriculum vitae, bibliography with reprints of relevant publications, and a statement of proposed research to:

Dr. Allen Shearn, Chairman
Developmental Biology Search Committee
Department of Biology
The Johns Hopkins University
Baltimore, Maryland 21218

In addition, please arrange to have three letters of recommendation sent to the above address. Applications will be accepted until 31 January 1982.

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

FACULTY POSITION. Assistant professor, tenure-track position, open in botany and genetics starting 8 January 1982. Ph.D. required. Specialization in higher vascular plant taxonomy/systematics with a strong orientation toward fieldwork required. Must also be qualified to teach general and advanced genetics. Related teaching and research experience required.

To be considered for the above position, a standard application form may be obtained from, and must be returned by 4 December 1981, to:

Personnel Office
Eastern Michigan University
112 S Welch Hall
Ypsilanti, Michigan 48197
Telephone: 313-487-3430

Curriculum vitae, sample publications, and letters of recommendation from at least three references should be sent to:

Dr. Herbert H. Caswell, Jr.
Head, Biology Department
Eastern Michigan University
Ypsilanti, Michigan 48197

Eastern Michigan University is an Affirmative Action/Equal Opportunity Employer and Educational Institution.

MICROBIOLOGY—BIOCHEMISTRY. One-year nonrenewable appointment starting 1 September 1982 to replace faculty member on leave. Ph.D. expected. Primary responsibilities are to teach microbiology in the fall term and biochemistry in the spring term. Send résumé, transcripts, and names of three references to: **Lawrence R. McManus, Chairman, Department of Biology, Hamilton College, Clinton, N.Y. 13323.** Women and members of minorities are encouraged to apply. Hamilton College is an Equal Opportunity Employer.

DIVISION OF BIOLOGICAL SCIENCES UNIVERSITY OF GEORGIA

The Division of Biological Sciences is recruiting a **MOLECULAR BIOLOGIST** whose primary research focus will be in higher plant systems. This faculty appointment, which is available in September 1982, may be in any appropriate department of the Division (for example, Biochemistry, Botany, Genetics, Microbiology). Responsibilities include developing an independent research program and teaching at the graduate and undergraduate levels and strong interaction with the plant molecular biology group. Applicants are expected to have postdoctoral experience. Applicants should forward curriculum vitae, reprints, and statement of research plans and also arrange to have four letters of recommendation sent to:

Joe L. Key, Chairman
Division of Biological Sciences
Room 400, Biological Sciences Building
University of Georgia
Athens, Georgia 30602

Screening of applicants will begin on 1 December 1981, with a closing date of 11 January 1982. Applicants for a similar position advertised earlier by our Botany Department will be considered for this position also. *The University of Georgia is an Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

FACULTY POSITIONS IN EUKARYOTIC MOLECULAR BIOLOGY

Applications are invited for several tenure-track faculty positions at the assistant or associate professor level in the Department of Molecular Biology at the Northwestern University Medical and Dental Schools. Applicants should have a Ph.D. degree in molecular biology, biochemistry, genetics, or a related area, or an M.D. or D.D.S. degree, and also have several years of postdoctoral training. Candidates having research experience in eukaryotic gene structure, function, and replication, eukaryotic molecular genetics and the control of gene expression, or eukaryotic cell regulation and development are especially encouraged to apply. The successful applicants will be expected to establish a vigorous independent research program and to participate in the teaching of graduate, medical, and dental courses and in the training of graduate and postdoctoral students. Applicants should send complete curriculum vitae, a brief description of previous research and teaching experience and of future research and teaching interests (three to four pages), a bibliography and reprints of significant published work or preprints of manuscripts in press, and recommendations from at least three references by 31 December 1981, to:

Dr. Robert H. Rownd, Chairman
Department of Molecular Biology
Northwestern University
Medical and Dental Schools
303 East Chicago Avenue
Chicago, Illinois 60611

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

FACULTY POSITIONS BIOLOGY/AGRICULTURE

Applications are invited for two anticipated positions at assistant professor level for appointment 1 July or 15 August 1982.

AGRICULTURE. Preferred candidates would have an agronomy or animal science specialty, interest in counseling agriculture majors, and interest in some administrative activity. Half-time teaching responsibility in introductory agriculture and related courses would depend upon the appointee's training and skills.

PHYSIOLOGIST. Preferred candidates would have the Ph.D. and a specialty area in comparative animal physiology. Teaching assignments would be in introductory human anatomy/physiology and advanced courses in the area of specialization. An active research program is expected.

Interested persons should initiate three letters of recommendation and send curriculum vitae, transcripts, and other support materials such as statement of teaching/research interests to: **Dr. William Davies, Chairman, Department of Biological Sciences, Indiana University—Purdue University at Fort Wayne, 2101 Coliseum Boulevard, East, Fort Wayne, Indiana 46805.**

Closing date for applications is 5 January 1982.

An Equal Opportunity/Affirmative Action Employer

University of Missouri—St. Louis
Faculty Position
School of Optometry



The University of Missouri—St. Louis is seeking two faculty members with O.D./Ph.D.'s or Ph.D.'s working in the areas of ocular physiology, especially the cornea, and binocular vision/ocular motility.

Specific responsibilities will include teaching courses in visual science to optometry students and conducting research.

Evidence of scholarly research activities, in the form of published articles in refereed journals and papers presented at professional meetings, will be heavily weighted, as will evidence of teaching ability. Postdoctoral research experience is desirable.

Rank and salary will be commensurate with experience. The date of appointment is negotiable. Letters of application with current résumés, including names of three references, should be submitted no later than 15 February 1982 to:

Dr. Jerry L. Christensen
Dean, School of Optometry
University of Missouri—St. Louis
8001 Natural Bridge Road
St. Louis, Missouri 63121

The University of Missouri is an Equal Employment and Education Opportunity Institution.

POSITIONS OPEN

HEAD, BIOLOGY DEPARTMENT. University of Northern Iowa (11,000 enrollment) invites applications for the position of Biology Department head. The department, with 18 faculty, 166 undergraduate, 20 graduate majors, and a strong service program, offers majors leading to baccalaureate, master's, and specialist degrees. Duties are primarily administrative but also require instruction and research; administrative experience and a professional record of teaching and scholarly activity are necessary. Area of specialization is not a major consideration. The candidate should be qualified for tenured appointment at the associate professor or professor rank. Expected 9-month salary range: \$30,000 to \$37,500. Send curriculum vitae, letter of application, and names and addresses of four references (one outside applicant's home institution) by 15 January 1982 to: **Dr. Clifford G. McCollum, Dean, College of Natural Sciences, University of Northern Iowa, Cedar Falls, Iowa 50614.**
An Equal Opportunity/Affirmative Action Employer

IMMULOK, INC., a leader in immunodiagnostics R & D, offers the following career opportunities: **IMMUNOCHEMIST,** Ph.D. or M.S. Supervisory position involving production of monoclonal antibodies and development of RIA and ELISA systems. **CELL BIOLOGIST,** M.S. or B.S. Four technical positions open for individuals with solid tissue culture experience. Salaries negotiable based on qualifications and experience. Applicants should send résumés to: **Dr. L. D. McClain, 1019 Mark Avenue, Carpinteria, Calif. 93013.**

MARINE SCIENTIST. Anticipated opening July 1982. Two-year renewable appointment to teach oceanography and marine ecology to liberal arts undergraduates. Coastal location, laboratory, offshore research trips. Qualifications: Ph.D., teaching experience, research interests, commitment to liberal arts. Write: **Benjamin W. Labaree, Director, Williams College—Mystic Seaport Program, Mystic Seaport Museum, Mystic, Conn. 06355.** *An Equal Opportunity/Affirmative Action Employer.*

MEDICAL OFFICER

The Pan American Health Organization is seeking an individual to serve as a leader of the Regional Field Malaria Research Project to design adaptive methods for malaria control/eradication and to study the problems of multiresistant anophelines to insecticides. A medical degree with advanced studies in epidemiology or a related discipline is required as well as a master's degree in public health. The duty station for this point is in Tapachula, Mexico, and a very good knowledge of Spanish is required. Interested candidates, please send résumé to:

PAN AMERICAN HEALTH ORGANIZATION
Department of Personnel
525 23rd Street, NW
Washington, D.C. 20037

MICROBIOLOGIST/VIROLOGIST. A tenure-track teaching position with a part-time appointment in research is now available in a growing state-supported 4-year college. Teaching requirements include basic virology and systems-oriented clinical virology. Preference will be given to individuals interested in developing correlation between cystic fibrosis and viral susceptibility. Please send letter of application, curriculum vitae, and names of three referees to: **Robert S. Conrad, Ph.D., Chairman, Search Committee, The Oklahoma College of Osteopathic Medicine and Surgery, P.O. Box 2280, Tulsa, Okla. 74101-2280.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE. Two positions are available. One state-funded position involves examining lipid metabolism in patients with cystic fibrosis and cardiovascular disease and requires research experience in lipid analysis. Salary is negotiable. A second position, funded by a NIH grant, involves examining calcium metabolism and phagocytic response of PMN leukocytes isolated from patients with cystic fibrosis. Research experience in leukocyte isolation, phagocytic analysis, and cellular ion transport is highly desirable. Salary for this position is set at \$15,900. To apply, indicate position desired and applicable qualifications and submit curriculum vitae with names and addresses of two references by 1 February 1982 to: **Martin Banschbach, Ph.D., Director, Molecular Medicine Research Center, The Oklahoma College of Osteopathic Medicine and Surgery, P.O. Box 2280, Tulsa, Okla. 74101-2280.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FACULTY POSITIONS IN BIOLOGY

The Department of Biology is expanding its programs in developmental and cellular biology and invites applications for several faculty positions (assistant, associate, or full professor). We also are searching for a senior-level scientist with TEM and SEM experience and knowledge of the application of microprobe analysis. Applicants are expected to have a commitment to high-quality education and independent research. Ph.D. degree is required and postdoctoral experience is preferred.

Please send curriculum vitae, a two-page summary of proposed research, and names of at least three references to: **Dr. H. W. Sauer, Head, Department of Biology, Texas A & M University, College Station, Texas 77843.** Applications are requested by 5 January 1982. *Texas A & M is an Affirmative Action/Equal Opportunity Employer.*

MOLECULAR GENETICIST

The Department of Biology, University of California, San Diego, invites applications for a tenure-track faculty position in the general area of molecular biology/molecular genetics. Salary and rank will be commensurate with qualifications and experience. The nontenured appointee must have had postdoctoral training and is expected to conduct a vigorous research program. The tenured appointee must already have made significant contributions to this field and is expected to continue a vigorous research program. Applicants should send curriculum vitae and a list of publications. The position will be available beginning September 1982. Send applications before 11 December 1981 to:

**Elizabeth Misel
Molecular Geneticist Search Committee
University of California, San Diego
Department of Biology B-022
La Jolla, California 92093**

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

NEUROSCIENTIST

Assistant or associate professor level to head a Basic Research Program within a Clinical Department. Dual appointment in basic sciences possible and the environment is stable. The main research concerns cerebral ischemia. Applicants should be skilled in cellular energetics, metabolism, and membranes, or bring other special talents which bear directly upon this problem. Well established laboratory with sophisticated technical support. Salary competitive. Five percent teaching commitment. Send curriculum vitae and three letters of reference to: **Jewell L. Osterholm, M.D., Professor and Chairman, Department of Neurosurgery, Jefferson Medical College and Hospital of Thomas Jefferson University, 1025 Walnut Street, Philadelphia, Pa. 19107.** *An Equal Opportunity/Affirmative Action Employer.*

PHYSICAL CHEMISTRY—ASSISTANT PROFESSOR. The Department of Pharmaceutical Chemistry, University of California, San Francisco, has a tenure-track position in physical chemistry for an assistant professor. Outstanding applications from more senior scientists will also be considered. Preference will be given to individuals whose research interests include studies of molecular interactions of biological importance. Curriculum vitae, summary of research plans, and three letters of reference should be sent to: **Dr. Manfred E. Wolff, Chairman, Department of Pharmaceutical Chemistry, University of California, San Francisco, Calif. 94143.** *The University of California is an Affirmative Action/Equal Opportunity Employer; women and minorities are encouraged to apply.*

PLANT BIOLOGIST. The Biology Department has a tenure-track position available at the assistant professor level starting August 1982 in plant molecular biology. The applicant will be expected to contribute to an undergraduate botany course and develop a graduate course in his/her area of specialty. The appointee is also expected to maintain a vigorous research program. Applicants should have a Ph.D. or equivalent. Send curriculum vitae, transcripts, and a brief statement of teaching and research interests and have three letters of recommendation sent to: **Dr. David Spencer, Chairman, Search and Screen Committee, Department of Biology, Indiana University—Purdue University at Indianapolis, P.O. Box 647, 1201 East 38 Street, Indianapolis, Ind. 46223.** *An Affirmative Action/Equal Opportunity Employer.* The closing date is 18 December 1981.

POSITIONS OPEN

MARINE SCIENCE UNIVERSITY OF MIAMI

The University of Miami is searching for a **DEAN** who will serve as the **DIRECTOR** of its oceanographic and atmospheric Institution which has 86 full-time faculty, 162 graduate and 305 undergraduate students, and a \$14 million budget. The main function of this position is to provide leadership to a thriving, multidisciplinary community of oceanographic researchers and students, including biological, chemical, physical, and geological oceanographers, ocean engineers, atmospheric scientists, and specialists in marine affairs. The person who directs this Institution will be expected to promote its aims and provide liaison with federal agencies as well as private foundations and to encourage new programs to meet the needs of both developed and developing nations, especially those of the Caribbean and South America.

Applications, including a current professional résumé, nominations, and further information should be sent to: **Dr. Norman G. Einspruch, Chairman of the RSMAS Dean Search Committee, University of Miami, School of Engineering and Architecture, P.O. Box 248294, Coral Gables, Florida 33124.** Nominations and applications desired by 15 December 1981. Position will remain open until filled.

An Equal Opportunity/Affirmative Action Employer

PHARMACOLOGIST. Ohio University has an opening for a full-time, tenure-track faculty position in the College of Osteopathic Medicine and the Department of Zoology and Microbiology. Applicants should have an earned Ph.D. or equivalent and at least 1 year of postdoctoral experience. Although preference will be given to candidates with training and expertise in neuropharmacology, candidates from other specialties are encouraged to apply. In addition to instructing osteopathic medical students and graduate students, the successful candidate is expected to develop a strong independent research program. Collaborative opportunities exist in several areas including: biochemical pharmacology and endocrinology, cellular neurobiology, neurogenetics, spinal cord physiology, developmental neurobiology, striated and smooth muscle physiology, and ultrastructures and membrane transport. Earliest starting date is 1 July 1982.

Ohio University is located in picturesque southwestern Ohio in a small, quiet university town. Salaries are competitive and cost of living, including housing, is moderate. Recreational opportunities abound in many nearby state parks and national forests.

Letters of application, curriculum vitae, a brief description of proposed research program, and three letters of recommendation must be received by 31 January 1982. Address to: **Dr. Ronald Portanova, Chairperson, Pharmacology Search Committee, Ohio University, College of Osteopathic Medicine, Irvine Hall, Athens, Ohio 45701.** *Ohio University is an Affirmative Action/Equal Opportunity Employer.*

PHYSICAL OCEANOGRAPHER/ METEOROLOGIST

The City College of City University of New York (CUNY)

The Department of Earth & Planetary Sciences invites applications for a possible opening in physical oceanography and/or meteorology. The appointment would start September 1982. Applicants should have completed the Ph.D. by the time of appointment. The individual hired will be required to teach undergraduate and graduate courses in physical oceanography and meteorology as well as develop and maintain an active research program. Participation will be expected in the development and supervision of programs in physical oceanography.

Rank and salary commensurate with experience. Send résumé, transcripts, and three letters of reference by 31 March 1982 to:

**Professor Dennis Weiss, Chairman
Department of Earth & Planetary Sciences
The City College of CUNY
Convent Avenue at 138th Street
New York, N.Y. 10031**

An Equal Opportunity/Affirmative Action Employer

RESEARCH PROGRAM DIRECTORSHIP POSITIONS IN THE INSTITUTE OF BEHAVIORAL SCIENCE, UNIVERSITY OF COLORADO, BOULDER

Senior-level distinguished behavioral scientists are being sought for 3 ongoing research programs. The positions are those of Program Director; each involves appointment to half-time research position in the Institute and to tenured academic position in relevant department in College of Arts & Sciences. Persons with national reputation and strong and continuing record of research accomplishment are desired. Each director will be responsible for administration of a research program, strengthening its resources, providing leadership and programmatic direction to other faculty in the program, and achieving national prominence for the research effort.

One program is the Research Program on Population Processes, an interdisciplinary research unit concerned with a broad range of issues relevant to population.

A second program is the Center for Research on Judgment and Policy, an interdisciplinary research unit concerned with judgment and decision-making processes involved in public policy formation and with developing ways to facilitate and improve the policy-making process.

The third program is the Research Program on Environment and Behavior, an interdisciplinary research unit concerned with understanding the response of individuals, communities and societies to natural and human-made hazards and to shortages of natural resources.

Behavioral scientists from any relevant discipline are encouraged to apply for any of the 3 positions as director. Minimum salary: \$40,000.

The Institute of Behavioral Science is composed of a small number of programs committed to interdisciplinary research on problems of significance to society. It emphasizes research that permits regular faculty to pursue basic and applied contributions and maintains a special concern for the policy implications of empirical work. The Professional Staff of the Institute includes about 40 Ph.D.s, nearly all of whom have regular academic appointments. The main disciplines represented in the Institute are psychology, sociology, anthropology, political science, economics and geography.

Since appointments to these positions will also involve appointment to an academic department, recruiting will be carried out jointly by the Institute and the department most relevant to the candidate's background and qualifications. Appointment as Program Director will be for 4 years.

Applicants should write to: **Dr. Richard Jessor, Director, Institute of Behavioral Science, University of Colorado, Box 483, Boulder, CO 80309.** Please specify which opening the application is for, indicate the relevance of your background, and include a current curriculum vitae with the names of at least 4 persons familiar with your work.

The University of Colorado is an affirmative action/equal opportunity employer. Applications must be postmarked by January 15.

POSITIONS OPEN

POSTDOCTORAL ASSOCIATE position (NIH-funded) available immediately for studies on basic processes of embryonic differentiation and cell transformation by chemical agents. Experience in EM, RIA of hormones on biotransformation of agents desirable, not required. Send curriculum vitae and names and telephone numbers of three references to: **M. K. Sanyal, Ph.D., Department of Obstetrics and Gynecology, Yale University Medical School, New Haven, Conn. 06510.**

POSTDOCTORAL FELLOW IN IMMUNOLOGY/BIOCHEMISTRY to conduct research elucidating several aspects of Kupffer cell function. Experience in culture techniques, radiolabeling, autoradiography, proteolysis, peptide isolation and analysis will be helpful. Salary: \$14,000 plus fringe benefits. Send résumé and two letters of recommendation to: **Dr. Henry Gans, Coordinator for Research and Development, VA Medical Center, 1900 East Main Street, Danville, Illinois 61832. Telephone: 217-442-8000, extension 303.**

An Equal Opportunity Employer

POSTDOCTORAL FELLOW IN IMMUNOLOGY knowledgeable in the methodologies of humoral and cell-mediated immunity to study the effects of gut-derived antigens in human and experimental liver disease. Experience in cell culture and biochemical procedures necessary. Salary: \$14,000 plus fringe benefits. Send résumé and two letters of recommendation to: **Dr. Henry Gans, Coordinator for Research and Development, VA Medical Center, 1900 East Main Street, Danville, Illinois 61832. Telephone: 217-442-8000, extension 303.**

An Equal Opportunity Employer

POSTDOCTORAL FELLOW OR RESEARCH ASSOCIATE INTERFERON RESEARCH

Position available immediately for a candidate with a Ph.D. in molecular biology or biochemistry. Knowledge of gene cloning, mRNA isolation, cDNA synthesis, in vitro protein synthesis, and nucleic acid hybridization are highly desirable. The successful candidate will participate in studying the mechanisms regulating the synthesis of human fibroblast interferon and the anti-proliferative effects of interferon. Send curriculum vitae and a list of references to: **Dr. J. J. Greene and Dr. P. O. P. Ts'o, Director, Division of Biophysics, School of Hygiene and Public Health, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, Md. 21205.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available fall 1981 to study the role of B lymphocyte surface immunoglobulin in the immune response. Candidate should have experience in cellular immunology and/or immunochromatography and protein chemistry. Salary commensurate with experience. Applicants should send their curriculum vitae plus at least two letters of recommendation to: **Personnel/Manpower Directorate, Attention: Dr. Fred Finkelman, Department of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland 20814. Curriculum vitae will not be returned. An Equal Opportunity/Affirmative Action Employer.**

ADVANCED POSTDOCTORAL POSITION leading to a faculty appointment for a physiologist or biochemist interested in exercise research with a group presently investigating the interrelationships of exercise, diet, and serum lipoproteins. Research opportunities in muscle metabolism, energy use, and cardiovascular physiology also exist. Salary is \$18,000 to \$22,000, depending on qualifications. Send curriculum vitae and bibliography to: **P. N. Herbert, M.D., Division of Nutrition and Metabolism, Brown University Program-in-Medicine, The Miriam Hospital, 164 Summit Avenue, Providence, R.I. 02906.**

POSTDOCTORAL POSITION available immediately for recent chemistry Ph.D. with a strong interest in biological molecules. The position is for the synthesis of **MEMBRANE-ACTIVE PEPTIDES** and requires experience and efficiency in preparative organic chemistry. Familiarity with physicochemical experimentation is desirable. Send curriculum vitae and the names of two references to:

**Dr. Balthasar F. Gisin
Department of Biological Chemistry
University of Maryland
School of Medicine
660 West Redwood Street
Baltimore, Maryland 21201**

POSITIONS OPEN

INTERNATIONAL LABORATORY FOR RESEARCH ON ANIMAL DISEASES (ILRAD) NAIROBI KENYA

Applications are invited from suitably qualified candidates for:

POSTDOCTORAL FELLOW REFERENCE NUMBER PDF/L3/81/1

A position is available from 1 January 1982 for 2 years to improve laboratory technology in the study of trypanocidal drugs in vitro. Applicants must have Ph.D. (or equivalent) in science or pharmacology, practical experience in cultivating African trypanosomes and various mammalian cells in vitro, solid knowledge of organic chemistry, and must be capable to apply above background to the project without further training on the cultivation of trypanosomes. The successful candidate will work on the joint programme with the collaboration of Cell Biology Laboratory (ILRAD), Kenya Trypanosomiasis Research Centre and GTZ-supported Chemotherapy of Trypanosomiasis Research Project/Ministry of Agriculture. This is an international post and the salary will be paid in U.S. dollars.

Applications identified with reference number and including curriculum vitae, summary of Ph.D. thesis, and three references, should be sent by 11 December 1981 to:

**Chief Personnel Officer
ILRAD
P.O. Box 30709
Nairobi, Kenya**

POSTDOCTORAL POSITION IN HEPATOCARCINOGENESIS available immediately to study the pathobiology and ontogeny of hepatocellular and cholangiocarcinoma. The position requires a strong background in cell isolation and tissue culture techniques. Send curriculum vitae and letters of recommendation to: **Dr. Alphonse E. Sirica, Department of Anatomy, University of Wisconsin Medical School, 1300 University Avenue, Madison, Wis. 53706.**

POSTDOCTORAL POSITION IN FETAL AND NEONATAL BIOLOGY. Fields of investigation include the physiology, biochemistry, and pharmacology of the cardiovascular, respiratory, renal, endocrine, and central nervous systems. Emphasis is on both experimental and theoretical (mathematical modeling) studies. The fellowship commences 1 July 1982 and is available for 2 years. Please send curriculum vitae and bibliography to: **Dr. Lawrence D. Longo, Division of Perinatal Biology, School of Medicine, Loma Linda University, Loma Linda, Calif. 92350.**

POSTDOCTORAL POSITION beginning 1 April to 1 September 1982 for electron microscopy investigations of retinal degeneration in avian species. Expertise in ultrastructural analysis of RPE and photoreceptor relationships desirable. Send curriculum vitae to: **Dr. K. V. Fite and Dr. J. R. Smyth, Tobin Hall, University of Massachusetts, Amherst, Mass. 01003. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS available in structural and physical biochemistry, molecular genetics, microbial physiology, animal virology, tumor biology, and cell biology. For specifics, write to: **Postdoctoral Coordinator, Department of Biochemical Sciences, Princeton University, Princeton, N.J. 08544. Princeton University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION at the University of California, Irvine, in the laboratory of Dr. G. Wesley Hatfield to work on: (i) the regulation and molecular genetics of the isoleucine-valine regulon in *E. coli* K12, or (ii) the molecular cloning and somatic cell genetics of the asparagine synthetase gene in CHO cells, or (iii) the molecular cloning of human genes of clinical significance. Experience in recombinant DNA and/or somatic cell genetics techniques desirable. Send curriculum vitae to:

**Dr. G. Wesley Hatfield
University of California, Irvine
College of Medicine
Department of Microbiology
Irvine, Calif. 92717**

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

A 2-year **POSTDOCTORAL POSITION** is available on 1 April 1982 to study protein synthesis during the cell cycle and during development of the acellular slime mold *Physarum polycephalum*. Experience with two-dimensional gel electrophoresis and with protein purification is essential. Send curriculum vitae, transcripts, and names of three references to: **Dr. John J. Tyson, Department of Biology, Virginia Polytechnic Institute and State University, Blacksburg, Va. 24061, by 31 December 1981. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION (assistant specialist) available 18 January 1982 to isolate and characterize compounds determining ice nucleation in bacteria. Applicants should have previous experience in appropriate fields involving cell fractionation, membrane biochemistry, and protein isolation and characterization. The position is for 20 months and salary will be commensurate with experience. Send résumé and names of references to: **Dr. S. E. Lindow, Department of Plant Pathology, University of California, Berkeley, Calif. 94720, by 31 December 1981.**

The University of California is an Affirmative Action Employer.

POSTDOCTORAL POSITION in peptide neuropharmacology, available immediately. Background should include one or more of the following: brain lesions, transmitter release, behavioral pharmacology, peptide chemistry, receptor biochemistry, radioimmunoassay, immunohistochemistry, and tissue culture. Send curriculum vitae and names of three references to: **Dr. David R. Burt, Department of Pharmacology, University of Maryland School of Medicine, Baltimore, Md. 21201.**

POSTDOCTORAL RESEARCH ASSOCIATE. Positions are available 1 January 1982 to study the molecular biology of the papillomaviruses. Experience in nucleic acid biochemistry is desired. Appointment is for 2½ years with salary following NIH guidelines. Send curriculum vitae and three letters of reference to: **Dr. W. D. Lancaster, Department of Pathology, Georgetown University School of Medicine, 3900 Reservoir Road, NW, Washington, D.C. 20007.**

POSTDOCTORAL RESEARCH POSITIONS available immediately for Ph.D.'s in toxicology, pharmacology, or biochemistry. Research interests of laboratory include basic mechanisms of chemically induced toxicities in mammalian systems. Innovative research or bioactivation of drugs and environmental chemicals both in vivo and in vitro. Send curriculum vitae and three letters of reference to:

**Dr. Raymond D. Harbison, Director
Division of Interdisciplinary Toxicology
University of Arkansas for Medical Sciences
4301 West Markham—Slot 521
Little Rock, Ark. 72205**

An Equal Opportunity Employer

PROVOST

The University of Miami invites nominations and applications for the position of Provost and Executive Vice President.

The individual selected will be the chief academic officer of the University and its principal administrator under the president. Candidates should have outstanding academic credentials and show the capacity for leadership. Both scholarly achievement and administrative experience will be considered in the selection process.

The University of Miami is a private university enrolling 18,000 students in undergraduate, graduate, and professional programs. It comprises the College of Arts and Sciences, the Schools of Business Administration, Continuing Studies, Education and Allied Professions, Engineering and Architecture, Law, Medicine, Music, and Nursing, the Rosenstiel School of Marine and Atmospheric Science, and the Graduate School.

Nominations and applications should be submitted by 1 December 1981 to:

**Clarence G. Stuckwisch, Chairman
Search Committee for the Provost
and Executive Vice President
P.O. Box 248006
University of Miami
Coral Gables, Florida 33124**

The University of Miami is a private, independent, international university and an Equal Opportunity/Affirmative Action Employer.

**UNIVERSITY OF WISCONSIN
MADISON
CENTER FOR HEALTH SCIENCES
DEPARTMENT OF PHYSIOLOGY**

A faculty position at the Assistant Professor level is currently available. Applications are invited primarily from persons with post doctoral experience and demonstrated interest in endocrinology or neuroendocrinology at the cellular or systems level. Participation is expected in the teaching programs of the Department, which includes courses to undergraduate, graduate and medical students. Interested candidates should submit curriculum vitae, complete bibliography, statement of research interests and have letters of reference from three individuals sent to:

**Dr. Richard C. Wolf
Dept. of Physiology
UNIVERSITY OF WISCONSIN MADISON
1300 University Ave.
Madison, WI 53706**

To receive full consideration applications should be received by 12/15/81. The university is an equal opportunity affirmative action employer. Women and minorities are encouraged to apply.

**THE UNIVERSITY OF IOWA
VICE PRESIDENT FOR
ACADEMIC AFFAIRS
AND DEAN OF THE FACULTIES**

James O. Freedman has been appointed President of the University of Iowa effective April 1, 1982. He and Acting President D. C. Spriestersbach have authorized the resumption of the search begun last Fall but suspended during the presidential search, to fill the office of Vice President for Academic Affairs and Dean of the Faculties.

The Vice President for Academic Affairs and Dean of the Faculties is the chief educational officer of the University concerned with all academic programs; all faculty and academic administrative appointments and promotions; collegiate budgets; and faculty welfare including affirmative action. The Vice President for Academic Affairs and Dean of the Faculties is expected to provide leadership and guidance in all academic endeavors throughout the University, reporting to the President. While working with the President, collegiate deans, and faculty, the Vice President will have responsibility for improving the quality of University-wide undergraduate, graduate and professional educational programs. Although administrative experience may be a highly desirable qualification, it is not an absolute prerequisite. More important, the Vice President for Academic Affairs must have achieved professorial rank and be a scholar and teacher of acknowledged accomplishment.

The position will be available July 1, 1982. Screening will begin immediately. Please send nominations or applications including resume to:

**Professor Lawrence E. Gelfand
Chair of Search Committee
101 Jessup Hall
University of Iowa
Iowa City, Iowa 52242**

The University of Iowa is an equal opportunity and affirmative action employer.

**Medical
Research
Opportunities**

Cutter Laboratories, Inc., a leader in the manufacture of a broad range of medical and biological products for health care markets world-wide, is currently seeking professionals to fill the following openings at our new R & D center near San Francisco.

RESEARCH NUTRITIONIST

This bench research position carries primary responsibility for animal studies supporting our basic nutritional research program which centers on parenteral routes of administration of various nutrients intended to both maintain homeostasis as well as provide therapeutic benefit. Alternate formulations or composition for existing or new products requires extensive animal testing to assess feasibility and efficacy, and animal investigations of synthetic preparations encompasses all aspects of nutritional science. Requires knowledge equivalent to 1-2 years post graduate level college courses in Nutrition, Physiological Chemistry and Nutritional Biochemistry plus 4-6 years related experience including small animal surgery and total parenteral nutrition.

**PRINCIPAL RESEARCH
PHYSIOLOGIST**

Provides independent, expert scientific leadership directed towards the design and conduct of research of existing or new products and fields of interest to Cutter. Experimental evaluation of the efficacy of new or existing biological products, development of methods for estimation of potential indications for such products, collaboration with other senior scientists in such endeavors and review of the physiological merit of proposed research and products. Instruction and direction of junior and technical staff. Requires knowledge equivalent to 4-6 years post graduate level coursework and laboratory research in Physiology or related discipline including post doctoral laboratory investigations plus 3-5 years of increasingly responsible research activity to include demonstrated ability to direct a research project through all phases.

Please send your resume in confidence with salary history to **Dean Gallinatti, Cutter Laboratories, Inc., 4th & Parker Streets, P.O. Box 1986, Berkeley, California 94701.** A comprehensive benefits package, including relocation, provided.

We are an equal opportunity employer M/F/H

 **CUTTER
Laboratories, Inc.**

**MANAGER
Rheumatology/Inflammation
Research**

Our pharmaceuticals division is seeking an experienced Rheumatologist to plan, organize and conduct a basic pre-clinical research and drug development program in the field of Rheumatoid Arthritis and other inflammatory diseases. The successful candidate will integrate the research activities of Senior Investigators trained in Cell Biology, Biochemistry, Immunology and Pharmacology in the development of a relevant research program leading to the discovery of novel, efficacious and safe drugs for clinical use in the treatment of rheumatic diseases.

Candidates for this position must have a Ph.D./M.D. or Ph.D. with post-doctoral training in Rheumatology and at least 10 years experience devoted to research in Rheumatology, some of which has been with the pharmaceuticals industry. Active, creative research in Rheumatology as evidenced by a list of recent publications in reputable journals is also required. Candidates must also offer evidence of excellent managerial and written communication skills.

We offer attractive salary, liberal benefits program and a pleasant suburban location in WESTCHESTER COUNTY, NEW YORK.

Qualified individuals are requested to submit detailed resume, in strict confidence, along with SALARY HISTORY AND REQUIREMENTS, to: Loretta Alaburta, CIBA-GEIGY Corporation, Saw Mill River Road, Ardsley, New York 10502. We are an equal opportunity employer/male and female.

CIBA—GEIGY

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately (1 year, renewal possible) for recent chemistry Ph.D. with a strong interest in biological molecules. The position is in the synthesis and/or chemical modification of biologically relevant peptides. Familiarity with preparative organic chemistry, chromatography, and spectroscopy is required. Send curriculum vitae and names of two references to:

Dr. Balthasar F. Gisin
Department of Biological Chemistry
University of Maryland
School of Medicine
660 West Redwood Street
Baltimore, Maryland 21201

POSTDOCTORAL POSITION to work on secretion of proteins across bacterial membranes. Background in protein synthesis or membrane biochemistry required. Send curriculum vitae and names of references to:

Dr. Bernard D. Davis
Bacterial Physiology Unit
Harvard Medical School
Boston, Mass. 02115

TWO POSTDOCTORAL RESEARCH ASSOCIATE and **ONE RESEARCH ASSISTANT** positions are available under industrial sponsorship in the area of genetic manipulations of microorganisms for secondary oil recovery. One postdoctoral research associate position available in the study of microbial degradation of 2,4,5-T and dioxins under an EPA grant. Candidates must have extensive research experience in biochemical and biophysical techniques including gas and high pressure liquid chromatography, gel electrophoresis, electron microscopy of DNA, including heteroduplex analysis, and so forth, in addition to microbial physiology and genetics. Salary negotiable. Please apply with copies of résumé and three letters of recommendation. Applications must arrive prior to 5 December 1981. Starting date: 1 January 1982. Send all letters to: **Dr. A. M. Chakrabarty, University of Illinois Medical Center, Department of Microbiology and Immunology, 835 South Wolcott, Chicago, Ill. 60612. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITION available to study energy metabolism of anaerobic bacteria. Ph.D. in biochemistry, microbiology, or related subject, and experience in bioenergetics, ion gradients, and anaerobic microorganisms desirable. Please send curriculum vitae and names of three references to: **Dr. Eva R. Kashket, Department of Microbiology, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE—Ph.D.

Position available immediately for organic chemist, toxicologist, or biochemist. Experience in HPLC, organic syntheses, steroid metabolism, chemical or hormone carcinogenesis. Salary: \$16,080 to \$17,000, depending on experience. Send résumé and three references to: **Dr. Jonathan J. Li, Department of Urologic Surgery, Box 394 Mayo, University of Minnesota, 420 Delaware Street, SE, Minneapolis, Minn. 55455. The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.**

Rensselaer Polytechnic Institute seeks a scholar to serve as **RESEARCH PROFESSOR** for its Center for the Study of the Human Dimensions of Science and Technology. The successful candidate will have an established record of publication and the ability to maintain an active research program while working with others to promote the growth of the Center. He or she should have a demonstrated ability to work with existing faculty to develop and obtain funding for projects on the social impact of science and technology, related social policy questions, and problems in the history, sociology, and philosophy of science and technology. Appointment may be at the associate or full professor level. Funds are available for an additional person to be recruited under appropriate Equal Opportunity procedures. Applications are welcomed from engineers, scientists, humanists, or social scientists. These should include a letter of interest, résumé, and list of references. Send to: **David L. Ellison, Director, Human Dimensions Center, School of Humanities and Social Sciences, Rensselaer Polytechnic Institute, Troy, New York 12181, by 15 December 1981.**

Rensselaer Polytechnic Institute is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

RESEARCH ASSOCIATE, Department of Human Genetics. To establish the nucleotide sequence and extended genomic clones of the human globin gene cluster in order to understand the molecular defects in hereditary persistence fetal hemoglobin (HPFH) and related disorders. Candidates must have expertise in nucleic acid sequencing techniques and computer analysis of data as well as proven skill in having successfully worked with globin genes or closely analogous systems. Ph.D. in area of biochemistry required. Full-time position with salary of \$17,000 per year. Interested applicants should send their résumés to: **Job Service Technical Unit, State Labor Department, Hartford, Conn. 06115, and refer to J.O. Number 262491.**

RESEARCH SCIENTIST I (Grant)—Study local lipid metabolism and axonal transport of enzymes in peripheral nerve using biochemical and/or quantitative EM autoradiographic methods. Ph.D. in biochemistry or neurobiology. Salary: \$19,000. Send curriculum vitae to: **Personnel Position Number 252, Dr. Robert Gould, New York State Institute for Basic Research, 1050 Forest Hill Road, Staten Island, N.Y. 10314. Affirmative Action/Equal Opportunity Employer, M/F/H.**

RESEARCH SPECIALIST

Seeking an individual who will be responsible for the development and application of immunological, chromatographic, and spectroscopic procedures for anti-tuberculosis and anti-hypertensive drugs. The techniques of gas-liquid chromatography, high pressure liquid chromatography, ultraviolet spectroscopy, and fluorophotometric spectroscopy will be applied in the measurement of levels of drugs and their important metabolites in biological samples. Qualifications include a Ph.D. degree in chemistry. Minimum salary of \$14,518.40. Applicants should send curriculum vitae to: **Georgia State Employment Service, 1 Peachtree Street, NE, Atlanta, Georgia 30303. Control Number 74112.**

STAFF OFFICER, ENERGY ENGINEERING

The National Research Council seeks applicants for the position of staff officer for the Energy Engineering Board. Responsibilities include management of committees and review panels dealing with energy engineering issues, including projects on synfuels plant safety and advanced nuclear reactors. Applicants must have a M.A. or Ph.D. in engineering, a related scientific field, or equivalent work experience in energy studies, plus five or more years of experience in energy studies. Applicants must have demonstrated ability in managing study projects effectively and in report preparation and writing. Applicants should submit résumés to: **Dennis F. Miller, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418. An Equal Opportunity Employer.**

THEORETICAL CHEMIST

Applications are invited for a tenure-track position in the Department of Chemistry, Washington University, St. Louis, Missouri. Preference will be given to applicants at the assistant professor level, but appointment as associate or full professor will be considered for candidates with demonstrated distinguished research and teaching accomplishments. Applicants are requested to submit (by 1 February 1982) curriculum vitae and a statement of research interests, and to arrange to have three letters of recommendation sent to:

Professor William D. Phillips
Department of Chemistry
Washington University
Campus Box 1134
St. Louis, Missouri 63130

Washington University is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF SASKATCHEWAN CROP DEVELOPMENT CENTRE Tissue Culture Research

A research scientist-adjunct professor is required to initiate research in tissue culture applications to grain crop species. Collaboration with plant breeders, geneticists, and physiologists will be emphasized.

Salary will be commensurate with experience and qualifications.

Send curriculum vitae including citizenship status, and names of three references to: **Dr. H. M. Austenson, Director, Crop Development Centre, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.**

POSITIONS OPEN

Applications are invited for the position of **SENIOR RESEARCH ASSOCIATE** in the Cooperative Institute of Marine and Atmospheric Studies (CIMAS), University of Miami.

In cooperation with the director of CIMAS, the successful applicant will develop and carry out programs in climate research relevant to NOAA missions and university research and educational interests. This person will also be expected to provide research guidance and will assist in development of support for junior research personnel in his area of competence.

Applicant should possess a doctorate in atmospheric science plus substantial experience in execution and leadership of research in the areas of boundary layer modeling and applied climatology. Proven competence in program assessment and development is also required. Salary range: \$40,000 to \$45,000 per annum.

The Cooperative Institute for Marine and Atmospheric Studies, CIMAS, is a joint venture between the University of Miami and the National Oceanic and Atmospheric Administration (Atlantic Oceanographic and Meteorological Laboratories) and Southeast Fisheries.

Inquiries should be addressed to: **The Director, CIMAS, 4600 Rickenbacker Causeway, Miami, Florida 33149. Telephone: 305-350-7385. The University of Miami is an Equal Opportunity Employer.**

TOXICOLOGY—Applications are invited for a position as assistant or associate professor (tenure-track) from individuals with a strong commitment to excellence in both research and teaching. Applicants should possess a Ph.D. degree in toxicology or related discipline and research interests in the toxicological aspects of free-radical reactions, peroxides, and/or cellular toxicology. Submit curriculum vitae and the names of three references by 1 January 1982 to: **Dr. Paul Hochstein, Director, Institute for Toxicology, School of Pharmacy, University of Southern California, 1985 Zonal Avenue, Los Angeles, Calif. 90033. An Equal Opportunity/Affirmative Action Employer.**

ARIZONA STATE UNIVERSITY (ASU) VERTEBRATE PHYSIOLOGICAL ECOLOGIST

We invite applications for a tenure-track position with a starting date of 15 August 1982. Appointment will be made at **ASSISTANT** or **ASSOCIATE** level depending on qualifications (Ph.D. required). The successful candidate should demonstrate excellence in a research program that blends field and laboratory approaches. Appointee will participate in undergraduate and graduate courses that require a broad background in vertebrate zoology. Send résumé, including statement of research interests and three letters of recommendation, to: **Dr. James Collins, Department of Zoology, Arizona State University, Tempe, Arizona 85287, before 15 January 1982.**

ASU is an Equal Opportunity/Affirmative Action Employer.

PROGRAMS

ADVANCED PROGRAM IN CLINICAL NEUROPSYCHOLOGY. The Clinical Psychology and Neurosciences & Education Programs of Teachers College, Columbia University, cosponsor a new competency-based program in clinical neuropsychology. Enrollment may be full-time or half-time. Study is individualized, based on an assessment of current competencies and the specification of those that are to be acquired. Supervised clinical practicum is required. Candidates must hold a doctorate in psychology and be eligible for licensure. Contact: **Dr. Ursula Kirk or Dr. Catherine Best, Neurosciences & Education, Box 142, Teachers College, Columbia University, New York, New York 10027.**

ADVANCED PROGRAM IN NEUROSCIENCES & EDUCATION. This new interdisciplinary, competency-based program is designed to develop the skills required to integrate and apply knowledge of the neural bases of behavior to problems and issues in education and rehabilitation. Professionals from educational and health-related fields may enroll on a full-time or half-time basis. Study is individualized, based on an assessment of current competencies and the specification of those that are to be acquired. Supervised practicum is required. Candidates must hold a doctorate and be eligible for certification/licensure in their specialty area. Contact: **Dr. Ursula Kirk or Dr. Catherine Best, Neurosciences & Education Program, Box 142, Teachers College, Columbia University, New York, New York 10027.**

HOFFMANN-LA ROCHE

Associate Scientist

Hoffmann-La Roche, one of the world's leaders in Biotechnology Research, has a career opportunity in its Molecular Genetics Department.

The successful candidate will maintain cell lines in culture, perform bioassays, and participate in the isolation of proteins.

Qualifications: B.S. Degree plus six years' experience, or M.S. with three years' experience, in cell culture, liquid chromatography, radioimmunoassay, and electrophoresis.

Roche offers outstanding fringe benefits and an environment that encourages professional growth. Only responses including present salary will be acknowledged. Please send resume to: Mrs. Eleanor M. Malone, Professional Placement Specialist.



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ORGANIC CHEMISTS

Openings are available at New England Biolabs, Inc. new laboratory in Beverly, Massachusetts, USA.

Experience with solid-phase synthesis of defined oligodeoxyribonucleotides by phosphite or phosphotriester methods essential.

Send curriculum vitae to N.E. Biolabs, Inc., 283 Cabot Street, Beverly, MA 01915, USA.



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DIRECTOR OF PRE-CLINICAL RESEARCH

Allergan Pharmaceuticals, located in southern California, world leader in the manufacture of ophthalmic and dermatologic products seeks Director to head up the Pre-Clinical Research Group.

The successful candidate will have a PhD in preferably pharmacology, medicinal chemistry, or biochemistry with established track record of 7-10 years pharmaceutical/research experience. Responsibilities will include achievement of innovative research in pharmacology, medicinal chemistry, biochemical, or microbiological research areas.

Allergan offers a substantial salary and benefits package and an atmosphere that encourages both personal and professional growth plus the sunshine and lifestyle available in southern California. For professional consideration, contact LaDonna Johnsrud at:



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Renal Pharmacologist/Physiologist

Norwich-Eaton Pharmaceuticals, a division of a Fortune 500 corporation, is committed to the development of pharmaceuticals and OTC drug products.

To assist us with our research efforts we are seeking a Renal Pharmacologist/Physiologist to conduct research in the field of hypertension. Candidate should have a doctorate with a minimum of 2 years post doctoral training and have a strong background in hormonal regulation of salt and water metabolism. Specific experience with renal hemodynamics, water and ion transports and hormone measurements is desirable.

Our research facilities are located in a remarkably complete city of 10,000 within an hour of major shopping, cultural and educational facilities.

Please submit resume with reprints or copies of preprints to: Jane Belansky

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Division Morton Norwich

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Norwich, New York 13815

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PROGRAMS

Predocutorial Training in Behavioral Genetics. The Institute for Behavioral Genetics (IBG), University of Colorado, Boulder, is seeking applicants for its **predocutorial training program**. Application deadlines are 1 December 1981 and 1 March 1982. This program is supported in part by a training grant from the National Institute of Mental Health. Contact: **Dr. Robert Pomin, IBG, Box 447, University of Colorado, Boulder, Colorado 80309; telephone: 303-492-7362.** *The University of Colorado is an Equal Opportunity/Affirmative Action Employer.*

CONVOCATION

The Ernest Witebsky Center for Immunology, State University of New York at Buffalo, announces the **Eighth International Convocation on Immunology** to be held 14 to 17 June 1982, at the Buffalo Marriott Inn, Amherst, New York. The theme of the program, "Regulation of the Immune Response," will include presentation of papers by distinguished scientists internationally recognized as experts on the topics: systemic immunoregulatory mechanisms; mucosal immunoregulatory mechanisms; immune regulation to exogenous antigens; and implications in clinical disease states. Further information may be obtained by contacting: **Dr. James F. Mohn, Director, The Ernest Witebsky Center for Immunology, Room 210 Sherman Hall, State University of New York at Buffalo, Buffalo, New York 14214. Telephone: 716-831-2848.**

TRAINEESHIPS

RESEARCH TRAINEESHIP IN CLINICAL IMMUNOLOGY. Open to Ph.D. or M.D. Available immediately. **Dr. Dennis Carson and Dr. John Vaughan, Scripps Clinic and Research Foundation, La Jolla, California 92037.**

ASSISTANTSHIPS

PREDOCUTORAL TEACHING AND/OR RESEARCH ASSISTANTSHIPS IN BIOCHEMISTRY AND MICROBIOLOGY. Areas of research include immunology, membrane biochemistry, microbial ecology, microbial physiology, molecular genetics, plant biochemistry, virology and applied areas of biotechnology, genetic engineering, microbial control of insects, food quality and phospholipid vesicles as drug carriers. Contact: **Dr. W. E. Magee, Head, Department of Bacteriology and Biochemistry, University of Idaho, Moscow, Idaho 83843.** *Affirmative Action/Equal Opportunity Employer.*

FELLOWSHIPS

RESEARCH FELLOWSHIPS IN NUTRITION available immediately for 1 to 3 years at Memorial Sloan-Kettering Cancer Center (MSKCC) and collaborating institutions. New NIH Training Grant offers fellowships in basic and clinical sciences related to nutrition and various biomedical problems, particularly cancer. Only U.S. citizens or foreign nationals with permanent resident or immigrant visas eligible. Write to: **Richard S. Rivlin, M.D., Chief, Nutrition Service, MSKCC, 1275 York Avenue, New York, N.Y. 10021.**

POSTDOCTORAL FELLOWSHIPS IN CARDIOPULMONARY BIOMEDICAL ENGINEERING

Two positions funded by NIH training grant and open to U.S. citizens or permanent residents with Ph.D. or M.D. degree available immediately. Research program emphasizes control of breathing and cardiac output. Stipends range from \$13,380 to \$17,040, depending on previous postdoctoral experience. Send curriculum vitae and three letters of reference to: **Dr. F. S. Grodins, Department of Biomedical Engineering, University of Southern California, Los Angeles, California 90007.** *An Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS—Visual Science

Applications for NRSA fellowships are being accepted by the Eye Research Institute of Retina Foundation. These fellowships are available only to American citizens or persons with permanent resident status. Preceptors and programs are: Biochemistry—A. Adler, B. Chakrabarti, C. Cintron, L. Reif-Lehrer; Immunology—M. Abelson, M. Allan-Smith, C. S. Foster; Morphology—C. Cintron, I. K. Gipson, K. R. Kenyon; Neuroscience—A. R. Adolph, P. H. Hartline, T. Hirose, D. M. Snodderly, J. Weiter, R. Zuckerman; and Bioengineering and Biomaterials—M. G. Doane, G. T. Feke, M. F. Refojo. A brief brochure describing the training program in detail is available. Write to the preceptor of interest at:

**Eye Research Institute of Retina Foundation
20 Stanford Street
Boston, Mass. 02114**

POSTDOCTORAL FELLOWSHIPS

Postdoctoral fellowships are available in the Department of Molecular Biology and Biochemistry at the University of California, Irvine. These fellowships are for 1 or 2 years under the sponsorship of the following faculty members: R. Davis: biochemical genetics of *Neurospora*; G. A. Granger: cell and molecular mechanisms operative in cellular immunity; B. A. Hamkalo: eukaryotic chromosome structure and function; H. Y. Fan: animal virology nucleic acid studies in murine leukemia viruses; B. Levy-Wilson: structure of transcriptionally active chromatin in higher cells; J. E. Manning: gene sequence organization in eukaryote DNA, electron microscopy; B. J. McCarthy: biochemistry and genetics of development, biochemical evaluation; W. D. Nunn: regulation of membrane lipid metabolism, genetic approaches; W. M. Stanley, Jr.: protein biosynthesis in eukaryotic cells; K. K. Tewari: nucleic acids of chloroplasts and other organelles; E. K. Wagner: nucleic acids and molecular biology of herpesvirus replication; R. C. Warner: mechanism of genetic recombination; and C. A. Woolfolk: general microbiology, enzymology. For further information, contact or write to: **Yvonne King, The Department of Molecular Biology and Biochemistry, University of California, Irvine, California 92717.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

NIDA-supported **POSTDOCTORAL FELLOWSHIPS** in behavioral pharmacogenetics of drug abuse. Fellows may conduct research and receive training in the application of behavioral and quantitative genetics to neuropharmacology, neurochemistry, neurophysiology, metabolism and experimental or clinical psychology as related to problems of drug and alcohol abuse. Research preceptors are at the School of Medicine, Departments of Pharmacology, Psychiatry, and Biochemistry, at the School of Pharmacy, and at the Institute for Behavioral Genetics of the University of Colorado. Standard NIH postdoctoral salaries (\$13,400 to \$18,780). Available 1 January 1982. Interested individuals with Ph.D., M.D., or equivalent degrees should write to: **Richard A. Deitrich, Ph.D., Department of Pharmacology, C 236, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colo. 80262.** *The University of Colorado is an Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS IN ZOOLOGY. The Department of Zoology at the University of Florida announces one or two postdoctoral research positions starting August 1982. The duties of the appointments (\$15,000 for 12 months, renewable for a second year) will be to establish an effective research project in **comparative, ecological, or evolutionary zoology.** The department will provide a list of faculty and their recent publications upon request. Candidates should submit the names of three referees, curriculum vitae, abstract of dissertation, and a proposal of their intended research, which should include a statement of the appropriateness of the University of Florida for the research. Direct inquiries and submit applications to:

**Dr. Brian K. McNab
Chairman, Postdoctoral Search Committee
Department of Zoology
University of Florida
Gainesville, Fla. 32611
Telephone: 904-392-1178**

Application deadline 1 February 1982.
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FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP in CLINICAL PHARMACOLOGY LABORATORY. The Division of Clinical Pharmacology, Jefferson Medical College, Thomas Jefferson University, welcomes applications from individuals with a Ph.D. in pharmacology, pharmacetics, toxicology, or analytical chemistry for a postdoctoral position in the division's laboratory. Stipend will be approximately \$18,000 per year, plus full university benefits. Interested persons should be available to start between January and June 1982. Duration of the fellowship will be at least 1 year. Contact: **Dr. Brian N. Swanson, Assistant Director, Division of Clinical Pharmacology, THOMAS JEFFERSON UNIVERSITY, Room 502, Main Building, 11th and Walnut Streets, Philadelphia, Pa. 19107. Telephone: 215-928-6086.** *Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS to begin 1 July 1982 are available in the Laboratory of Neuroendocrinology of the Brain Research Institute, University of California, Los Angeles (UCLA), School of Medicine. Training is offered in developmental, aging, electrophysiological, behavioral, or pharmacological aspects of the neuroendocrinology of reproduction in the laboratory of A. Arnold (Psychology), R. George (Pharmacology), R. Gorski, J. Lu, C. Sawyer, A. Taylor, D. Whitmoyer, or E. Zimmermann (Anatomy). Applications should be submitted prior to 1 February 1982 to any of the above faculty. Additional information may be obtained from: **Dr. Roger Gorski, Department of Anatomy, UCLA School of Medicine, Los Angeles, California 90024.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP in basic and clinical immunology, Medical University of South Carolina. Position available 1 July 1982 for M.D. and/or Ph.D. Salary commensurate with experience. We are a highly motivated department with more than 70 publications last year and we provide an interdisciplinary environment for research. Research training is available in immunogenetics, cellular immunology, immunochemistry, cancer immunology, immunology of aging and clinical immunology, and so forth. We also provide an intellectually stimulating and unique geographic (located on the coast and offering year-round fishing, golfing, sailing, hunting, and tennis) environment. Contact:

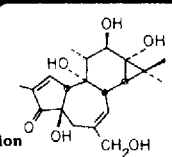
**H. Hugh Fudenberg, M.D., Chairman
Department of Basic and Clinical
Immunology and Microbiology
Medical University of South Carolina
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To 110,000 x g (25,000 RPM)

Let's face it. A machine that is used to produce force shouldn't communicate only in terms of RPM. It's somewhat like a car without a speedometer or odometer.

That's why we taught the new MICRO-25 to talk RCF. You simply key in the g-force desired, rotor number, acceleration and deceleration characteristics, run time and temperature. The instrument does the rest. You can even specify the force at any given point in your sample tube. And the continuously displayed $G \times \text{minute}$ parameter gives you a direct readout of the entire centrifugal field applied during the run, enabling straightforward experimental replication.

The MICRO-25's computer and its many operational and computational features are just part of the story. There are significant mechanical innovations as well. Like a speed control system with ± 5 RPM accuracy. And an infrared temperature detector that

enables rotor temperature control to $\pm 0.5^\circ\text{C}$.

If you're considering the purchase of a high speed centrifuge, consider a high force machine instead. Send for complete information.

- Up to 50 stored programs ■ Multiple segment program capability for stepped centrifugation
- Continuous display of set and actual run conditions ■ Superior speed control, ± 5 rpm
- Rotor recognition ■ Infrared rotor temperature detector, $\pm 0.5^\circ\text{C}$ control ■ Safety cover interlock system ■ Automatic overspeed protection ■ Delayed start feature ■ Absolute containment



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The AO One-Ten is everything you could ever want in a laboratory microscope, complete to the smallest detail. Because you design it yourself! □ We call it a total microscope "system" because the building-block design allows you to add components for specific capabilities: phase contrast, fluorescence, dual view, multi-view photomicrography, and more. □ Superb AO optics result in a crisp, flat image over a full 20 MM. field of view. No one offers more. And the One-Ten delivers magnificent illumination from a bright,

clean-burning tungsten halogen bulb with continuously variable intensity control. It's the easiest to change tungsten halogen lamp on any lab scope. □ Human engineering is the hallmark of the One-Ten. Convenient, up front controls regulate the illumination source, field diaphragm and neutral density filter. A unique, focusable nosepiece permits the stage to remain secure and vibration-free. A comfortable low positioned coaxial coarse and fine focusing control plus an exclusive

optical system are designed to eliminate fatigue. And the infinity corrected objectives face away from the user, permitting unobstructed access to the specimen. □ Why not custom design your own laboratory scope for your specific operation? For a demonstration of the ultra-versatile One-Ten see your AO dealer or representative or write for our brochure: American Optical, Instrument Division, Box 123, Buffalo, NY 14240. The flexible One-Ten has cameras and TV adapter for video systems.



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