

turbellarians from the Netherlands, including descriptions of six new species. N. W. Riser reports on Coelogynoporidae from New England, the majority of them also newly discovered.

Under Nutrition and Reproduction, papers by J. B. Jennings and by G. L. Shinn deal with the physiological adaptations and diets of entosymbiotic neorhabdocoels. M. Benazzi and G. Benazzi Lentati discuss the relations between asexual fission and sexual reproduction in freshwater triclads.

Turbellaria, specifically planarians, have long been classical objects in the study of regeneration. The papers presented under the heading Regeneration and Differentiation refer to the problems of cell types, cell totipotency, and transdifferentiation and to biochemical processes related to regeneration.

The final section, Ultrastructure, includes a valuable review by R. M. Rieger of ultrastructural investigations of Turbellaria and several papers dealing with the fine structure of cilia, epidermis, parenchyma, eyes, copulatory organs, and spermatozoa of various turbellarian representatives.

It is interesting to note how far the study of the Turbellaria has progressed beyond the description of their morphology, distribution, classification, and general ecology, which were the center of attention in the early classical stages of turbellarian investigations.

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Ocean Imagery by Satellite

Spaceborne Synthetic Aperture Radar for Oceanography. Papers from a symposium, Laurel, Md., Mar. 1980. ROBERT C. BEAL, PAT S. DELEONIBUS, and ISADORE KATZ, Eds. Johns Hopkins University Press, Baltimore, 1981. 216 pp., illus. \$19.50. The Johns Hopkins Oceanographic Studies, No. 7.

This volume is an outgrowth of a symposium held to explore the potential of synthetic aperture radar (SAR) for oceanography. The book is built upon a specific set of experiments centered on a coastal region of North Carolina that was repeatedly observed by the Seasat satellite (August–October 1978). At one level the volume is self-contained, moving from an introduction to the relevant SAR technology through a review of the data base to a consideration of experimental results and conclusions. At another level it draws heavily on external

resources, appearing to be an extensive annotated bibliography to specialized aspects of the field. For this reviewer, the book is successful at both levels.

Following the introduction, there are five sections: Air-Sea Interactions and the SAR; Wind; Waves; Circulation; and Panel Discussion. Each of the first four sections is introduced by a concise summary by the editors of the principal results of each paper. The reader would be well advised to start with the introduction and then jump to the section on circulation, for it is very readable, provides a helpful perspective on the purpose and effectiveness of SAR oceanography, and introduces several of the more subtle considerations in qualitative fashion. The panel discussion is recommended next, for it outlines the conclusions and the problems discussed in the rest of the book. One should then progress section by section toward the beginning of the book, coming to grips finally with the theoretical material of the first section. The three papers in the section (Phillips, Kitaigorodskii, and Harger) are meant to provide a solid foundation for the work that follows; they could equally well serve as the basis for graduate-level courses in physical oceanography and SAR.

Several papers stand out. "Surface signs of internal ocean dynamics" (Mollo-Christensen) is an excellent description of phenomena observed by SAR imagery for which no theoretical model existed and which served as the impetus to outline and partially develop a suitable theoretical exploration of the internal waves in question. "Spatial evolution of ocean wave spectra" (Beal) is an overview of pioneering work at the Applied Physics Laboratory in wave-spectral analysis of SAR ocean data. It illustrates the potential of SAR to contribute to the solution of problems in wave dynamics, coastal bathymetry, and air-sea interaction. Striking color plates are used by Beal to present wave-directional spectral data.

There are many examples of SAR imagery in the book, together with a rather complete set of optically processed Seasat SAR data collected over the western North Atlantic. Identification of the location of images is concisely presented. The reader is left with the impression that digitally processed imagery is far superior to analog optically processed data. The editors have included a list of sources for Seasat SAR data products.

The book is unified but not neutered. Notation is not standardized, but symbol appendixes suffice. Several papers, notably those by Pierson, Ross, and Mollo-

Christensen, retain the distinct style of their authors, adding to the readability of the book. There is evidence of the editors' gentle hand in the introductions to the sections, in the organization of the papers, and in the understated tone of the conclusions. Typographical errors are nearly nonexistent.

In summary, the book provides an effective overview of the Seasat SAR experience. Portions of the book (for example the section on waves) could serve as an introduction to satellite oceanic observation as well as a concise description of some of the less well known circulation phenomena.

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Developments in the Theory of Fundamental Interactions. Proceedings of a school, Karpacz, Poland, (Continued on page 1426)

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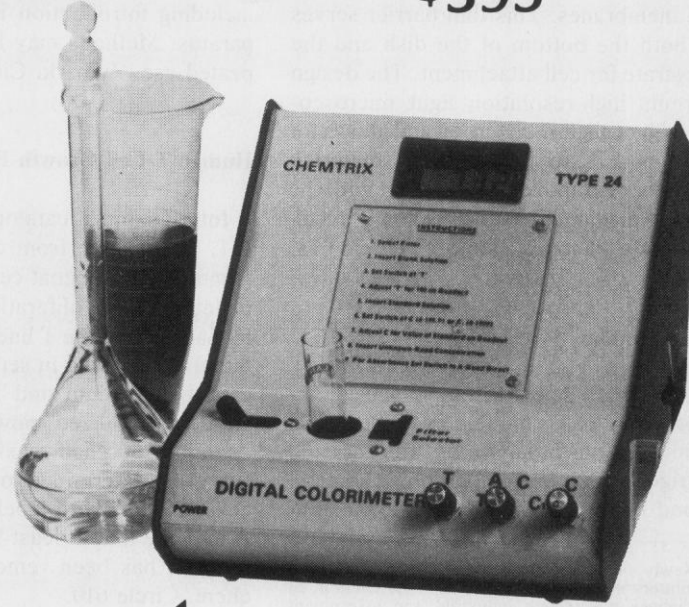
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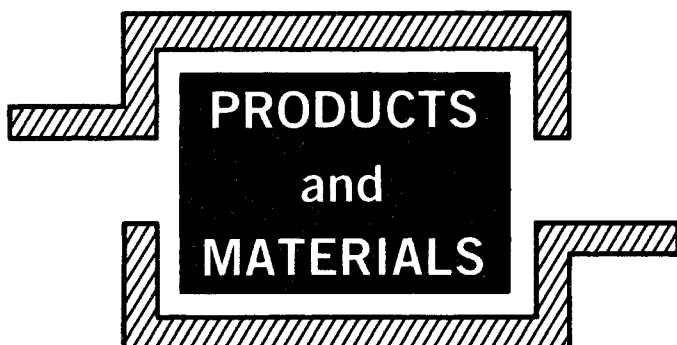
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Biochemicals offers an alphabetic index in addition to its table of contents. More than 5000 substances are included. U.S. Biochemical. Circle 618.

Triple Stage Quadrupole Instrument is a technical report devoted to the optimization of instrument parameters for collision-activated decomposition experiments analyzed with this GC/MS/MS/DS apparatus. Finnigan MAT. Circle 619.

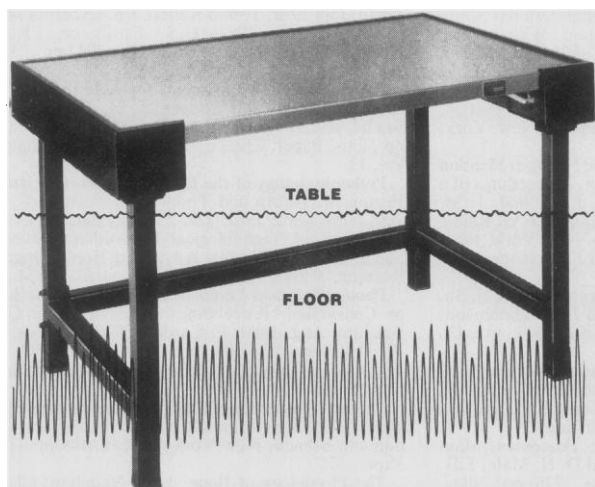
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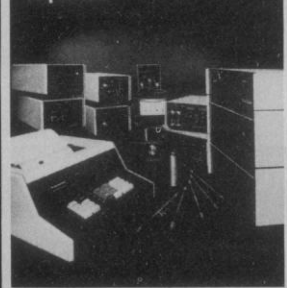


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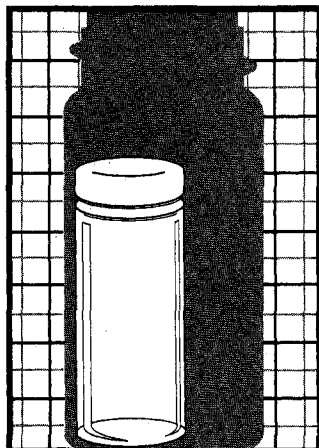
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Wilson's Disease. The Etiology, Clinical Aspects, and Treatment of Inherited Copper Toxicosis. Charles A. Owen, Jr., Noyes, Park Ridge, N.J., 1981. xx, 216 pp. \$28. Copper in Biology and Medicine Series.

Wind in Architectural and Environmental Design. Michele Melaragno. Van Nostrand Reinhold, New York, 1981. xx, 684 pp., illus. \$36.50.

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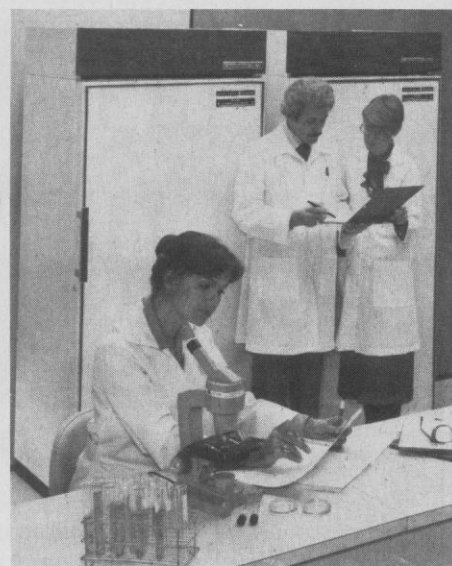
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Electron Microscopist. Currently supervises large, university-affiliated hospital diagnostic laboratory. EMSA-certified. Experimental pathology research background. Experience developing/supervising histochemistry and immunocytochemistry protocols at light and EM levels. Wishes to relocate to San Francisco Bay area. Box 61, SCIENCE. 3/12, 26

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ASSISTANT PROFESSOR OF BIOLOGICAL SCIENCES

Qualifications: Ph.D. in vertebrate zoology-mammalogy.

Responsibilities: Teaching introduction to biological sciences, biology of vertebrates (undergraduate), animal behavior, mammalogy (undergraduate/graduate level), and vertebrate ethology (graduate level). Teaching experience will be given consideration in the evaluation of all applicants. The applicant will be expected to develop an active research program and evaluations will be considered on either proven research ability or research potential. Tenure-track position.

Salary: Negotiable.

Date available: Anticipate August 1982.

Application: Forward application materials (official transcripts, curriculum vitae, and three letters of recommendation) to:

Dr. James D. Yarbrough, Professor and Head
Department of Biological Sciences
Mississippi State University
P. O. Drawer GY
Mississippi State, Miss. 39762

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Application deadline: 15 April 1982.

ASSISTANT PROFESSOR—TENURE STREAM CONDENSED MATTER THEORY

The Department of Physics and Astronomy of the University of Pittsburgh invites applications for an assistant professor position in condensed matter theory, beginning September 1982. This announcement represents the resumption of an earlier search.

Applications, including curriculum vitae, publication list, and letters of recommendation, should be sent to: **P. Stehle, Chairman, Department of Physics and Astronomy, University of Pittsburgh, Pittsburgh, Pa. 15260.**

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POSITIONS OPEN

ANTI-CANCER DRUG RESEARCH FACULTY POSITION

The Division of Biology has a tenure-earning position available at the **ASSISTANT PROFESSOR** level. The position will be available as of July 1982. Applications are invited from outstanding candidates who have an active research interest in cellular and molecular approaches to studies of the modes of action of anti-cancer drugs and the bases for selective toxicity. The successful candidate will be expected to direct research studies in a newly formed Anti-Cancer Drug Laboratory, pursue individual research related to this area, and participate in undergraduate and/or graduate teaching. Postdoctoral experience will be required. Application deadline is 7 April 1982. Submit curriculum vitae, three letters of reference, and a brief description of future research plans to:

Dr. Terry C. Johnson, Director
Division of Biology
Kansas State University
Manhattan, Kansas 66506

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ASSISTANT OR ASSOCIATE PROFESSOR

Individual will be expected to establish a strong program in pathogenic microbiology/molecular genetics. Experience with recombinant DNA techniques desired. Must be competitive for research funding. Opportunity to cooperate in ongoing programs in molecular and environmental research. Postdoctoral experience required; salary negotiable. Applicant should submit curriculum vitae and the names of five references by 1 May 1982 to: **Dr. Ronald Weiner, Department of Microbiology, University of Maryland, College Park, Md. 20742.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, PHARMACOGNOSY. Tenure-track position available fall 1982. Ph.D. required and postdoctoral research experience preferred. Essential is a strong commitment to teaching in undergraduate and graduate pharmacognosy/microbiology courses as well as to achieving excellence in collaborative/independent research and scholarly activity in pharmacognosy. Send curriculum vitae, an outline of research plans, and names of three references by 19 April 1982 to: **Dr. Alvin Segelman, Chairman, Department of Pharmacognosy, College of Pharmacy, Rutgers University, P.O. Box 789, Piscataway, New Jersey 08854.** *An Affirmative Action/Equal Opportunity Employer*

ASSISTANT PROFESSOR—VERTEBRATE PHYSIOLOGIST

Applications are invited for a tenure-track position as assistant professor (Ph.D. required), beginning fall 1982. A serious commitment to teaching and research is desired and the duties include: teaching comparative vertebrate physiology, human anatomy and physiology, with the opportunity to develop specialty courses in an area of expertise; directing master's research; and maintaining an active research program in an area of physiology. Experience in teaching an audio-tutorial course in anatomy and physiology is desirable. Send curriculum vitae, concise summary of research interests and goals, reprints, and three letters of recommendation by 2 April 1982 to: **Dale Jackson, Chairman, Department of Biology, The University of Akron, Akron, Ohio 44325.** *The University of Akron is a state university with approximately 25,000 students and is an Affirmative Action/Equal Opportunity Employer.*

CHAIRPERSON DEPARTMENT OF HUMAN BIOLOGICAL CHEMISTRY AND GENETICS THE UNIVERSITY OF TEXAS MEDICAL BRANCH IN GALVESTON

A chairperson is being sought for the Department of Human Biological Chemistry and Genetics. This is a large medical school department with Divisions of Biochemistry, Cell Biology, and Human Genetics. Qualifications of the chair should include an established reputation in research and teaching and the administrative ability to manage a complex department with teaching responsibilities in the medical and graduate schools. Applications or nominations should include curriculum vitae and bibliography and should be submitted by 1 June 1982 to: **Dr. William D. Willis, Jr., Chairman, Search Committee, Marine Biomedical Institute, 200 University Boulevard, Galveston, Texas 77550.** *Women and minorities are urged to apply. The University of Texas Medical Branch is an Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR Department of Biological Chemistry University of Maryland School of Medicine

A faculty position is available for a lipid chemist interested in joining a research program dealing with the mechanism of atherosclerosis. In addition to research, the successful candidate will be required to be involved in teaching medical and graduate students. Please send résumé and names of three references to: Dr. Adil E. Shamoo, Professor and Chairman, Department of Biological Chemistry, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, Maryland 21201. Deadline for applying is 31 March 1982.

ASSISTANT PROFESSOR Department of Biological Chemistry University of Maryland School of Medicine

A faculty position is available for a synthetic peptide chemist interested in joining an ongoing large research program dealing with the mechanism of ion transport. The research requires modification and synthesis of membrane bound ionophores and their analogs. Knowledge of peptide sequencing is needed also. In addition to research, the successful candidate will be required to be involved in teaching medical and graduate students. Please send résumé and names of three references to: Dr. Adil E. Shamoo, Professor and Chairman, Department of Biological Chemistry, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, Md. 21201. Deadline for applying is 31 March 1982.

ASSOCIATE (AGRONOMY). TEMPORARY POSITION. Minimum of master's in agronomy; conduct research in limited-till systems with winter and summer forage crop production; management of interplanted forage crop mixtures in permanent sods; monitoring soil moisture with neutron probe and supervising workers in research effort. Salary: \$18,000; 40 hours per week. Job Order Number 450392. *Equal Opportunity Employer.*

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The Department of Psychiatry, University of California, San Diego, is seeking faculty applicants for a position at the ASSISTANT PROFESSOR OR ASSOCIATE PROFESSOR level. The position requires a strong background and appropriate publication record in psychopharmacology and/or psychobiological research. At the assistant professor level, strong background and a beginning publication record are required. Research experience and evidence of productivity through scholarly publication are necessary at the associate professor level. The position requires documentable teaching, clinical, and administrative skills. Experience in a research-oriented academic inpatient setting is very desirable. Applicants with formalized training in psychobiological research will be preferred. To be considered for this position, candidates must qualify for medical licensure in the state of California.

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

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Send curriculum vitae by 31 March 1982 to:

Search Committee B
Department of Psychiatry
M-003

University of California, San Diego
La Jolla, California 92093

BIOLOGY—Assistant professors, 1-year temporary appointment starting September 1982. Teaching responsibilities include courses in ecology and histology in the fall. In the spring, an advanced course in ecology (field biology) is required and possibly a second course depending upon departmental needs. A Ph.D. and some teaching experience are expected. *Women and minorities are encouraged to apply.* Applicants should send curriculum vitae and names, addresses, and telephone numbers of three references to: Dr. M. J. Bradford, Department of Biology, Lafayette College, Easton, Pa. 18042. *An Equal Opportunity Employer, M/F.*

POSITIONS OPEN

BIOLOGY. Keuka College has a tenure-track teaching position in zoology starting in fall 1982. Teaching areas are cell biology, comparative physiology, and genetics, plus additional involvement in other zoology courses. Ph.D. preferred. Appointment probably at assistant professor level, but rank and salary are based on qualifications. Keuka College is a small, independent liberal arts college for women located in the Finger Lakes Region of New York. Send résumé and three letters of recommendation by 16 April 1982 to: **Biology Search Committee, Dr. James E. White, Keuka College, Keuka Park, N.Y. 14478.** *Affirmative Action/Equal Opportunity Employer.*

CHEMISTRY. Keuka College has a tenure-track teaching position in chemistry-physics starting in fall 1982. Teaching areas include physical chemistry, general physics, laboratory coverage of varied introductory chemistry courses, and, potentially, development of general science course based on technological applications in the modern world. Ph.D. preferred. Appointment probably at assistant professor level, but rank and salary are based on qualifications. Keuka College is a small, independent liberal arts college for women located in the Finger Lakes Region of New York. Send résumé and three letters of recommendation by 16 April 1982 to: **Chemistry Search Committee, Dr. James E. White, Keuka College, Keuka Park, N.Y. 14478.** *Affirmative Action/Equal Opportunity Employer.*

CLINICAL PATHOLOGIST/ASSOCIATE DIRECTOR OF CLINICAL LABORATORIES: University of California, Los Angeles (UCLA), Department of Pathology, is seeking an experienced, Board-certified clinical pathologist for responsibilities as associate director of the Comprehensive University Hospital Laboratories and clinical pathology training programs. Experience is required in teaching and clinical laboratory management. Expertise in data automation is desired. Appointment will be at the assistant/associate professor levels, depending on qualifications. Send curriculum vitae to: George S. Smith, M.D., Director, Clinical Laboratories, UCLA Center for Health Sciences, Los Angeles, Calif. 90024. *UCLA is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are encouraged to apply.*

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FACULTY POSITION/ ANATOMY

The Department of Anatomy is seeking applications for a tenure track position at the rank of Assistant or Associate Professor. Candidates for this position will be expected to teach gross anatomy in the first year, with the possibility of added teaching responsibility of the neuroanatomy in the second year. Experience and interest in teaching gross anatomy to medical students is essential.

Candidates shall demonstrate research productivity commensurate with the rank sought. Although no specific research focus is preferred of the candidate, the Department has strength in developmental biology, reproductive biology, neurobiology, radiobiology and ultrasound and cardiovascular research.

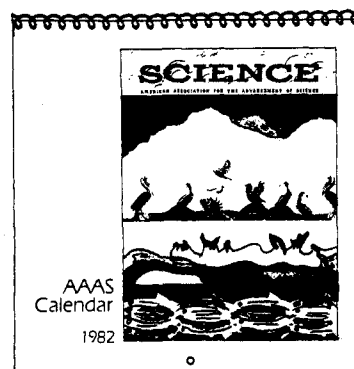
A PhD or MD degree is essential. Postdoctoral research experience is preferred but not essential. The starting date for this position is July 1, 1982. Qualified applicants are encouraged to send their curriculum vitae and references to: J. ROBERT TROYER, PhD, PROFESSOR and CHAIRMAN, DEPARTMENT OF ANATOMY.



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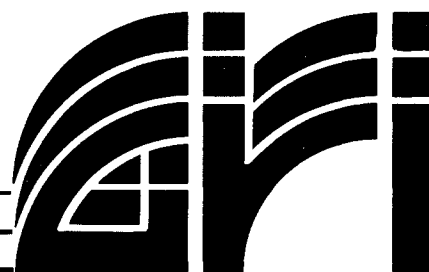
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The mandatory professional/technical qualifications for the position require that candidates: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601, or equivalent combination of experience and training, as defined by the U.S. Office of Personnel Management Handbook X-118 (Qualifications Standards for Positions under the General Schedule) which is available in Federal personnel offices; and (2) have research experience and knowledge of research programs in one or more areas related to the treatment of cancer. The managerial/executive qualifications are: experience in the leadership/management of a research program, demonstrating competence to assume leadership responsibilities in: (1) assuring that national and agency goals and priorities are considered in carrying out the functions and responsibilities of the organization; (2) establishing and maintaining relationships with key individuals and groups outside the organization; (3) directing and guiding programs and projects, including long-term and short-term planning and establishing objectives and priorities; (4) establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; (5) developing and implementing procedures for monitoring program performance, including periodic analysis and evaluation; and (6) developing processes and overseeing activities to implement EEO objectives and to assure the fair and equitable employment of qualified persons.

Candidates who meet the mandatory requirements will be evaluated by the Search Committee on the following factors: scientific reputation/peer recognition; training and education; and honors and awards, and the degree to which they exceed the minimally qualified level of the mandatory professional/technical and managerial/executive qualifications. Additional information may be obtained from Ms. Dreama Chapman, Supervisory Personnel Management Specialist, NCI, (301) 496-6862.

Applications (Personal Qualifications Statement, SF-171) are to be sent to the above individual at this address: **National Cancer Institute, Building 31, Room 3A34, Bethesda, Maryland 20205.** A current curriculum vitae and bibliography must accompany all applications. Applications of women and/or minority group members are especially solicited.

The National Institutes of Health is an EQUAL OPPORTUNITY EMPLOYER. Applications must be postmarked no later than March 31, 1982.



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Candidates for the positions below should possess a Bachelor's or Master's Degree equivalency and the requisite specified experience. Also required are excellent written and oral communication skills as well as a knowledge of statistical analysis and computerized data reduction.

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The successful applicant will be able to design and execute experimental protocols to evaluate the efficiency of new compounds as plasma lipid modifying agents. Expertise in lipoprotein methodology and metabolism at the cellular and whole animal levels is desirable.

BIOCHEMICAL PHARMACOLOGY

These positions require training in biochemical techniques in areas such as receptor binding, biogenic amines and peptide biochemistry; these being used in the determination of biochemical mechanism of drug action in small laboratory animals.

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The successful candidate will participate in the testing of compounds to determine mechanism of action and effects upon the autonomic nervous system. Experience is desired in monitoring blood pressure, heart rate and related parameters in laboratory animals.

IMMUNOPHARMACOLOGY

This position involves performing a variety of biochemical and immunologic laboratory procedures. Experience in techniques such as leukocyte purification and culturing, other tissue culture techniques, spectroscopy, liquid scintillation counting, protein purification and antibody production and characterization is desired.

Interested, qualified applicants should forward resume, transcripts, references and salary requirements to: Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS, PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Road, Ann Arbor, Michigan 48105

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POSITIONS OPEN

BIOCHEMIST with interest and previous work in metabolism of lipoproteins. Position involves independent and collaborative research in a program concerned with the metabolic basis of genetic dyslipoproteinemias and atherosclerosis in nonhuman primates. Candidate must have Ph.D. in biochemistry or related field and have completed at least 3 years of postdoctoral research in this area with publications in refereed journals on lipoprotein metabolism. Must also demonstrate capability for independent research combined with willingness to work as part of a team. Send curriculum vitae, including bibliography, statement of research interests and career goals, and the names of three references, to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.**

We are an Equal Opportunity/Affirmative Action Employer.

THE AMERICAN HEALTH FOUNDATION seeks a **Ph.D. BIOORGANIC CHEMIST** with postgraduate experience in chemical carcinogenesis as an **AMERICAN CANCER SOCIETY FELLOW FOR PREVENTIVE ONCOLOGY**. The candidate should be familiar with advanced methodology in environmental and chemical carcinogenesis. As an independent investigator, the fellow will be responsible for laboratory studies to be conducted under the terms of this 5-year, ACS-sponsored project. Applicants should submit curriculum vitae, bibliography, and references to: **Dr. Ernst L. Wynder, President, American Health Foundation, 320 East 43 Street, New York, N.Y. 10017.** An Affirmative Action/Equal Opportunity Employer.

CARDIAC ELECTROPHYSIOLOGIST

A postdoctoral position will be available in the Foundation for Cardiovascular Research starting 1 July. Salary negotiable, depending on experience. Candidates with microelectrode experience are invited to submit their curriculum vitae and request that two letters of recommendation be sent separately to:

**Richard S. Cosby, M.D.
201 North El Molino, Suite 100
Pasadena, California 91101**

An Affirmative Action/Equal Opportunity Employer

CHAIRPERSON-DEPARTMENT OF RADIO-THERAPY—The Mount Sinai School of Medicine, New York City. The position holds additional title of radiotherapist in chief of the Mount Sinai Hospital. Position involves teaching, research, clinical activities, and administrative responsibilities at this major teaching medical center. Curriculum vitae are invited from highly qualified individuals. Reply to: **Jack G. Rabinowitz, M.D., Chairman, Search Committee, THE MOUNT SINAI MEDICAL CENTER, One Gustave L. Levy Place, New York, N.Y. 10029.** An Equal Opportunity Employer.

DIRECTOR INSTITUTE of IMAGING SCIENCES

POLYTECHNIC INSTITUTE OF NEW YORK has received a founding challenge grant of \$1 million for a new educational and research effort in imaging sciences. We seek a dynamic individual to direct this broad-based program, to build interdisciplinary research teams of scientists and engineers, and to raise industrial funds to match the founding grant.

Qualifications should be appropriate for a senior-level academic appointment. Experience in industry an asset. Nominations/résumés should be submitted by 1 April 1982 to:

**Dean Bernard J. Bulkin
Imaging Sciences
Search Committee
Polytechnic Institute of New York
333 Jay Street
Brooklyn, New York 11201
Equal Opportunity Employer,
M/F/H/V**

Polytechnic

POSITIONS OPEN

CELL BIOLOGIST

The Department of Molecular and Cellular Biology at National Jewish Hospital/National Asthma Center in Denver has an opening for a **CELL BIOLOGIST** with at least 2 years of postdoctoral experience, who studies the eukaryotic cytoskeleton and membrane systems. Individuals with related interests will be considered. The Center is affiliated with the University of Colorado Medical School and the University of Colorado, Boulder; the accepted candidate will hold an assistant or associate professorship with appropriate teaching obligations. Please send curriculum vitae, a statement of research interests, and the names of three references to: **H. V. Rickenberg, Chairman, Department of Molecular and Cellular Biology, National Jewish Hospital/National Asthma Center, 3800 East Colfax Avenue, Denver, Colorado 80206.**

CHAIRMAN, DEPARTMENT OF ENTOMOLOGY. Iowa State University invites nominations and applications for chairman, Department of Entomology. Ph.D. in entomology with broad experience in at least two of these areas: teaching, research, and extension. Nominations and applications accepted through 15 April 1982. Send curriculum vitae and names and addresses of four references. Send applications to: **Harold Stockdale, Chairman, Search Committee, Insectary Building, Iowa State University, Ames, Iowa 50011. Telephone: 515-294-1101.**

Iowa State University is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR, DEPARTMENT OF PHYSIOLOGY UNIVERSITY OF CINCINNATI COLLEGE OF MEDICINE

The University of Cincinnati College of Medicine is seeking a new director for the Department of Physiology. The College of Medicine enters 192 medical students per year and is part of the University of Cincinnati, which is a comprehensive urban state university with an enrollment of 35,000 students.

There are presently 13 full-time faculty members and 10 additional members with joint appointments. The department has a strong graduate program and offers a wide variety of graduate courses.

Candidates for the position should have a strong and productive research program, be interested in medical and graduate education, and have demonstrated some administrative abilities. The position is available immediately. Applicants for the position should send a résumé and names of three references to: **Dr. Jerry B. Lingrel, Chairperson, Search Committee, Department of Microbiology and Molecular Genetics, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Cincinnati, Ohio 45267.**

An Equal Opportunity/Affirmative Action Employer

DIRECTOR COASTAL ECOLOGY LABORATORY LOUISIANA STATE UNIVERSITY (LSU)

LSU is seeking a director for its Coastal Ecology Laboratory, a major research division of the university's Center for Wetland Resources. A staff of 30, including 12 Ph.D.'s, is employed by the Laboratory. The director will be expected to administer existing research programs and develop/conduct new activities, primarily by obtaining support from governmental agencies and the private sector. A joint teaching appointment with the Center's graduate-only Department of Marine Sciences is possible. The candidate must be a nationally recognized scientist with a distinguished record of administrative leadership, scholarly activity, grant-and-contract program development, and administration. A Ph.D. in biological or physical science with a strong interest in applied ecology is mandatory.

Salary is commensurate with qualifications, but compensation in the range of \$40,000 to \$60,000 for a 12-month appointment is anticipated. A candidate qualifying at the top levels of this range may also be considered for concurrent appointment as an **LSU FOUNDATION DISTINGUISHED PROFESSOR**. Such appointment includes supplemental funds for research and administrative support.

Applications should be received by 15 April 1982. The starting date is negotiable, but appointment during 1982 is preferred. Applications (including curriculum vitae, names of at least three references, and a brief statement of research interests or experience) should be sent to: **Dr. Jack R. Van Lopik, Dean, Center for Wetland Resources, Louisiana State University, Baton Rouge, La. 70803; telephone: 504-388-6710.**

LSU is an Equal Opportunity/Affirmative Action Employer.

NATIONAL VISION RESEARCH INSTITUTE OF AUSTRALIA
Research Centre for Optometry and the Visual Sciences

Applications are invited for appointment to the position of
DIRECTOR OF THE INSTITUTE

The Institute was founded in 1972 by Australian optometrists as a national centre for research in optometry and the visual sciences. It devotes the whole of its resources to research with the primary aim of furthering understanding of the disorders of vision and their treatment. The Institute has a firm commitment to research that will elucidate fundamental mechanisms so that a substantial part of its research programme is concerned with the processes of vision. The Institute also has a policy that it should identify an area of work offering a challenging set of problems and develop a coordinated research programme attacking those problems at several levels of inquiry. The present programme is concerned with the postnatal development of vision and the developmental disorders of vision and involves a set of interrelated neurobiological, psychophysical, and clinical studies. However, the policy of a coordinated programme of work does not preclude other areas of research which presently include studies of refractive errors, regeneration of the corneal endothelium, ocular motility, and comparative visual physiology.

The Institute is closely associated with the Victorian College of Optometry and through it affiliated to the University of Melbourne. In order to facilitate close cooperation with the department of optometry and other departments of the University, an agreement with the University provides that the director of the Institute may also be appointed a professorial associate of the University with the title of professor.

Applicants must have an established record of research in either the visual sciences or the clinical sciences and have a capacity to lead and administer a vigorous and enterprising research programme. Applicants need not hold an optometric qualification, but if the successful applicant does not have optometric qualifications it would be expected that he/she would appoint senior staff with appropriate qualifications to be responsible for the programme of clinical investigations.

Salary: \$A43,904.

Closing date for applications: 15 May 1982.

Further details, including details of the application procedure and conditions of appointments, are available from: **The Secretary, Board of Administration, 386 Cardigan Street, Carlton, Victoria 3053, Australia.** Applications should be addressed to: **The Chairman, Board of Administration,** at the above address and should be marked confidential.

CSIRO

FISHERIES BIOLOGIST
A\$24,951 to A\$33,616 per annum
(TWO POSITIONS)
DIVISION OF FISHERIES RESEARCH
MARINE LABORATORIES
CRONULLA, N.S.W.
AUSTRALIA

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

GENERAL: The CSIRO Marine Laboratories, which includes the Division of Fisheries Research and the Division of Oceanography, is Australia's principal marine research institution, employing about 200 scientists and support staff, investigating the physical, chemical, and biological features, including fisheries, of the oceans around Australia. The main Laboratory is at Cronulla, Sydney, with smaller laboratories in Brisbane and Perth. Two well-equipped chartered vessels (53 meters and 43 meters) are available for research.

The Sydney activities will be transferred to new laboratories to be constructed on a deep waterfront site in Hobart, Tasmania, and appointees must be prepared to transfer to Hobart at any time after December 1982. The Australian Government has also agreed to the acquisition by CSIRO of a modern oceanographic ship to replace the presently chartered *Sprightly*.

DUTIES: The interests of the division encompass marine biology and ecology and ocean productivity and the population dynamics of commercial and potentially commercial fish, crustaceans, and molluscs. The Australian Fishing Zone receives special attention.

A **BIOLOGIST** is sought to lead a research team to investigate the fish resources of the temperate waters of southeastern Australia. The appointee will identify suitable new areas for investigation and coordinate the current research investigations on squid, jack and blue mackerel, Australian salmon, and some demersal resources.

A **SECOND BIOLOGIST** will join a team studying tropical pelagic resources (especially *Carangidae*), of the North West Shelf area. These are currently the subject of an intensive study of the ecology of multispecies fish communities.

QUALIFICATIONS: A Ph.D. or equivalent qualification in fisheries biology, ecology, or dynamics with demonstrated research ability in fisheries science at a senior level. Experience in research leadership an advantage. Ability to work effectively at sea essential.

TENURE: Fixed term appointments of 3 to 5 years. Superannuation benefits available.

APPLICATIONS: In writing, quoting reference numbers A2395/A4521 and giving full personal particulars including details of qualifications and experience, copy of academic transcript, and the names of at least two professional referees, should reach:

The Acting Chief
 Division of Fisheries Research
 CSIRO
 P.O. Box 21
 Cronulla, N.S.W. 2230, Australia

by 26 March 1982.

Pharmaceutical Research

Ph.D. Level Ann Arbor, Michigan

A major expansion program at the Warner-Lambert/Parke-Davis Pharmaceutical Research Division has resulted in the establishment of a number of employment opportunities. All positions below are located in Ann Arbor, Michigan at our modern facilities, adjacent to the University of Michigan campus, which are exclusively devoted to the discovery and development of new drugs.

Qualified applicants will have the equivalent of a Ph.D. and up to three years post-doctoral experience in one of the following research areas:

ATHEROSCLEROSIS

The successful applicant must have demonstrated accomplishment in the area of lipoprotein biochemistry, particularly in analyses of apolipoproteins by state of the art techniques (including isoelectric focusing, immunochromatography, gel filtrations and chromatography). The candidate must be able to design experiments and interpret results in relations to pharmacological effects on lipoprotein metabolism at both the cellular and whole animal levels.

BIOCHEMICAL PHARMACOLOGY

This position requires an understanding of the physiology, biochemistry, and pharmacology of the molecular events involved in neuronal transmission. Training in biochemical techniques in areas such as receptor binding, biogenic amines, peptide biochemistry, and the determination of biochemical mechanism of drug action in small laboratory animals is desired.

CARDIAC PHARMACOLOGY

The successful applicant will participate in the implementation of research programs aimed at the discovery and development of therapeutic agents for cardiac diseases, requiring application of conceptual knowledge of cardiovascular physiology and pharmacology, with specialized knowledge in the area of ischemic heart disease.

NEUROPHARMACOLOGY

This position requires the application of electrophysiological methods in the discovery of novel psychotherapeutic agents. The ideal candidate will have expertise ranging from intracellular microelectrodes to quantitative EEG in intact animals (primarily primates), with emphasis on neuropharmacological manipulations.

IMMUNOPHARMACOLOGY

The successful candidate will participate in a drug discovery program directed toward chronic immunological disorders with emphasis on rheumatoid arthritis. Experience is required in a variety of *in vitro* and *in vivo* immunological techniques including leukocyte purification and culturing immunoenzymatic procedures and antibody production.

All of these positions require excellent communication skills as well as scientific recognition and proven writing ability as evidenced by publications. In addition, all require the ability to initiate independent research while interacting within interdisciplinary project teams.

Interested qualified applicants should forward curriculum vitae together with references and salary requirements to: Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/ PARKE-DAVIS, PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Rd., Ann Arbor, Michigan 48105. Alternatively these may be delivered in person at the April 1982 FASEB meeting. An Equal Opportunity Employer M/F/H

**WARNER
 LAMBERT**

POSITIONS OPEN

DIRECTOR CANCER RESEARCH INSTITUTE UNIVERSITY OF CALIFORNIA, SAN FRANCISCO (UCSF)

Candidates are invited to apply for the directorship of the Cancer Research Institute at UCSF. The Institute conducts fundamental and applied research in normal and abnormal cell biology and neoplasia, as well as clinical and educational programs in cancer and related diseases.

Applicants should submit curriculum vitae, bibliography, and the names of four referees to:

Robert B. Jaffe, M.D., Chairman
Cancer Research Institute Search Committee
Reproductive Endocrinology Center
University of California, San Francisco
San Francisco, California 94143

UCSF is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.

ENDOCRINOLOGIST, assistant professor (tenure-track) of zoology, to begin September 1982. To teach vertebrate endocrinology and a large survey-type biology course for nonmajors; applicant expected to carry on a productive, externally funded research program, optimally in conjunction with the University Marine Program. Qualifications: Ph.D. required; teaching experience and publication record desirable. Submit résumé and three letters of recommendation by 20 April 1982 to: **Chairman, Search Committee, Zoology Department, Spaulding Life Science Building, University of New Hampshire, Durham, N.H. 03824.** The University is an Affirmative Action/Equal Opportunity Employer.

ENVIRONMENTAL SCIENCES. Faculty position—section chief to become vacant in spring 1982. Ph.D. in environmental chemistry or related field required. Provide leadership to water, air and organic chemistry, and water microbiology analysis units; interact with state and federal agencies. We seek an established scientist with research (publications) and administrative experience. Concurrent faculty appointment at appropriate rank in University of Wisconsin—Madison academic department, depending on qualifications. Send résumé, list of publications, and names, addresses, and telephone numbers of three references to: **Dr. R. H. Laessig, Director, State Laboratory of Hygiene, 465 Henry Mall, University of Wisconsin—Madison, Madison, Wisconsin 53706.** Application deadline is 1 May 1982.

An Equal Opportunity/Affirmative Action Employer

ENVIRONMENTAL STUDIES: BROWN UNIVERSITY. Eighteen-month appointment, beginning January 1983, to teach undergraduate classes in environmental policy and to direct the Center for Environmental Studies. Area of specialization open; appropriate terminal degree or equivalent experience required. Letter of application, curriculum vitae, and two letters of recommendation should be sent prior to 7 April 1982 to: **Harold R. Ward, Director, Center for Environmental Studies, Brown University, Box 1943, Providence, R.I. 02912.** *An Equal Opportunity Employer.*

ENZYMOLOGIST—PROTEIN CHEMIST. A postdoctoral research position is available to study interrelationships between enzyme structure and function. Experience in several of the following areas is desirable: enzyme kinetics, protein modification, ORD, CD, fluorimetry, difference spectrophotometry, protein sequence analysis, HPLC, amino acid analysis, and immunochemistry. Send résumé, publications list, and the names of three references to: **Dr. L. F. Hass, Department of Biological Chemistry, The Milton S. Eshelby Medical Center of The Pennsylvania State University, Hershey, Pa. 17033.** *Equal Opportunity/Affirmative Action Employer.*

EVOLUTIONARY/POPULATION BIOLOGIST

The Department of Biology of The University of Chicago seeks an evolutionary or population biologist for appointment to its faculty at the tenured or pretenured level. Send curriculum vitae, statement of research interests, and names of three references by 15 April 1982 to: **Evolution/Population Search Committee, The Department of Biology, The University of Chicago, 1103 East 57 Street, Chicago, Illinois 60637.** The University of Chicago is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

Applicants are sought for positions as **FACULTY MEMBERS** at all levels in a medical school department of academic pathology in anatomic and clinical pathology and in basic research including DNA cloning, immunochemistry, tissue culture, and cell biology. All applicants for clinical positions must be AC- or CP-certified and have a commitment to research. Applicants with proven track records in obtaining grant support will be given first consideration. Interested applicants should send their curriculum vitae and bibliography to: **Dr. Stewart Sell, Chairman, Department of Pathology and Laboratory Medicine, University of Texas Medical School at Houston, 6431 Fannin, P.O. Box 20708, Houston, Texas 77030.** *Equal Opportunity Employer.*

FACULTY POSITIONS

The Department of Zoology and Physiology, Louisiana State University (LSU), invites applications for four tenure-track positions, starting August 1982, in the following areas: **DEVELOPMENTAL BIOLOGY, VERTEBRATE SYSTEMS PHYSIOLOGY, CELL/MOLECULAR BIOLOGY, and GENETICS.** Successful candidates must demonstrate potential for initiating an extramurally funded research program. Establishment of an active graduate program and an excellence in undergraduate teaching are expected. Curriculum vitae, selected reprints, and three letters of reference should be sent to: **Chairman, Department of Zoology and Physiology, Louisiana State University, Baton Rouge, Louisiana 70803-1725.** Preference will be given to those applications received by 29 March 1982. *LSU is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN RUMINANT NUTRITION. Applications are invited from persons with a Ph.D. degree with strong training in ruminant nutrition and related areas. Responsibilities include basic and applied research and teaching at graduate and undergraduate levels. Apply with résumé to: **Dr. S. A. Ewing, Head, Department of Animal Science, 101 Kildee Hall, Iowa State University, Ames, Iowa 50011.** *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION OPEN

Associate/assistant professor of surgery, Division of General Surgery, available in The University of Texas Medical School of Houston. A full-time tenure-track faculty position is open for an individual with training and demonstrated excellence in burn surgery:

- 1) Board-certification, or
- 2) Board-eligibility required.

Applications, accompanied by curriculum vitae and full list of publications, should be addressed to: **Box 73, SCIENCE.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION, DEPARTMENT OF PATHOLOGY, UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL. To begin after 1 July 1982. Rank and salary will depend upon the qualifications of the candidate. Teaching and research responsibilities in the area of thrombosis, hemostasis, and/or arteriosclerosis. The candidate must be capable of developing an individual research program as well as participating in current programs. A joint appointment is possible with an appropriate basic science or clinical department, depending upon the qualifications of the candidate. The Ph.D. and/or M.D. degree and at least 3 years of postdoctoral experience are required. *We are particularly interested in the recruitment of female and minority candidates.* Applicants should send their curriculum vitae, an outline of research objectives, and three references to: **John B. Graham, M.D., Department of Pathology, Preclinical Education Building 228-H, University of North Carolina, Chapel Hill, North Carolina 27514.** *Affirmative Action/Equal Opportunity Employer.*

RESEARCH INSTRUCTOR. Nontenured position available 1 July 1982 requires Ph.D. in biochemistry or molecular biology, postdoctoral training, additional research experience, and refereed current publications in studies of effects of chemical carcinogens and radiation on DNA. Selected candidate expected to develop strong independent research program in chemical carcinogenesis and DNA replication and to participate in teaching program. *We are especially interested in qualified women and minority applicants.*

Send curriculum vitae, brief statement of research interests, and three letters of recommendation by 31 March 1982 to: **J. W. Grisham, M.D., Professor and Chair, Department of Pathology, University of North Carolina at Chapel Hill, Chapel Hill, N.C. 27514.** *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITIONS NEUROPHARMACOLOGY AND TOXICOLOGY

Tenure-track faculty positions are available in newly expanded Department of Pharmacology with modern research facilities. Candidates should be committed to developing a strong, independent, funded research program in some aspect of biochemical or molecular neuropharmacology or toxicology, and should be able to teach in these disciplines. Rank is open, but assistant professor is the likely level of appointment. The Department of Pharmacology is part of a young and growing university with one of the most comprehensive health and research centers in the Southeast. Complete curriculum vitae, including a brief statement of research interests and plans, and three letters of recommendation should be sent to: **Dr. Elias Meezan, Chairman, Department of Pharmacology, University of Alabama—Birmingham, Schools of Medicine and Dentistry, University Station, Birmingham, Alabama 35294.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS

One or two tenure-track positions at the beginning assistant professor level with appointment during the summer months of 1982. A Ph.D., M.D., or D.D.S. degree is required with competence in teaching microscopic and gross anatomy to medical or dental students. Preference will be given to those with advanced postdoctoral research experience and a good record of research productivity. The ability to contribute to advanced courses in the Anatomy Graduate Program and the potential for establishing an independently funded research program will be important factors in selection. Existing strengths of the department lie in reproductive biology, cell biology, neurobiology, and genetics.

Send curriculum vitae with list of publications, a description of research and teaching interests, and names, addresses, and telephone numbers of three references to:

Dr. Erle K. Adrian, Jr.
Department of Anatomy
The University of Texas
Health Science Center at San Antonio
7703 Floyd Curl Drive
San Antonio, Texas 78284

An Equal Opportunity/Affirmative Action Employer

FACULTY POSITION IN BIOLOGY: Tenure-track, assistant professor, at small liberal arts college with a Catholic tradition. Ph.D. required, postdoctoral teaching, and broad background in biological sciences. Responsibilities include undergraduate teaching in the following areas: comparative anatomy and physiology, animal behavior, ecology, botany, and biology for nonmajors. Starting date is 29 August 1982. Application deadline: 1 April 1982. Send curriculum vitae, transcripts, and three references to: **Dr. Frank Jaszcz, Jr., Chairman, Search Committee, Mount Mercy College, 1330 Elmhurst Drive, NE, Cedar Rapids, Iowa 52402.** Telephone: 319-363-8213, extension 215. *Mount Mercy College is an Equal Opportunity/Affirmative Action Employer.*

MEDICINAL CHEMISTRY AND PHARMACOGNOSY FACULTY POSITION. College of Pharmacy at The Ohio State University. Assistant professor level, tenure-track appointment, effective 1 July 1982. Applicants should have strong commitment to teaching at the undergraduate and graduate levels and to the development of a vigorous research program in medicinal chemistry and pharmacognosy. Ph.D. should be in medicinal chemistry, pharmacognosy, natural products chemistry, organic chemistry, or related disciplines with synthetic expertise and postdoctoral experience desirable. Applicant should submit detailed curriculum vitae, list of publications, and summary of research interests and have three letters of recommendation transmitted to: **Duane D. Miller, Acting Chairman, Division of Medicinal Chemistry and Pharmacognosy, College of Pharmacy, The Ohio State University, Columbus, Ohio 43210.**

MUSEUM: DIRECTOR. The Chicago Academy of Sciences seeks a specialist in the fields of natural history and ecology to serve as its director, beginning by September 1982. The successful applicant will have the Ph.D. degree, experience in the design of museum exhibits, and administration, as well as an interest in ongoing field research. The Chicago Academy of Sciences was founded in 1857 and is one of the oldest scientific institutions in the Midwest. Allowance for hardship moving. *The Chicago Academy of Sciences is an Equal Opportunity Employer.* All replies confidential. **Box 79, SCIENCE.**

DEAN
College of Social and Behavioral Sciences
University of South Florida (USF)

The University of South Florida invites nominations and applications for the position of dean of the College of Social and Behavioral Sciences, beginning fall 1982. The University of South Florida is a comprehensive university with 25,000 students, and campuses in Tampa, St. Petersburg, Sarasota, and Fort Myers and is one of the nine universities of the State University System of Florida with Colleges of Arts and Letters, Business Administration, Education, Engineering, Fine Arts, Medicine, Nursing, New College of USF, Natural Sciences, Social and Behavioral Sciences, a Graduate School, and School of Continuing Education. The University's mission and accomplishments have emphasized teaching, research, and public service activities responsive to the needs of a growing metropolitan area and consistent with the traditions of a university of substance. The University offers baccalaureate degrees in 80 fields, master's in 66 fields, the doctorate in 10 disciplines, and the M.D. degree.

The College of Social and Behavioral Sciences is one of the largest and most vital within the University, and spans basic and applied research, and traditional scholarship and professional preparation. It has a strong interdisciplinary focus both within the college and between it and other colleges within the University. The rapidly developing 15-county service area of the University, centering upon the Tampa Bay area, provides a natural laboratory for many of the research and professional programs of the college. The college currently offers the B.A. in 13 areas and the B.S.W. in social work. It offers the master's of arts in 10 areas plus the M.P.A. in public administration and the M.S.W. in social work. It currently has one Ph.D. program offered in psychology with programs in clinical community, experimental, and industrial organizational psychology. Further expansion of the number of Ph.D. programs in the college is planned. Currently there are 174 teaching and research faculty within the college, of whom 154 are tenured or tenure-earning. The student enrollment within the college is approximately 3500. The Human Resources Institute, a complex research and service operation oriented around the community, houses five research centers.

Candidates should bring to this position: a demonstrated capacity for academic leadership at the college level; successful leadership experience at the departmental, collegiate, or university level; an earned doctorate in a relevant field; and a record of scholarly and teaching accomplishments worthy of a senior level faculty appointment in the college. They should be able to demonstrate an understanding of the place of social and behavioral science disciplines in a major metropolitan university, a commitment to faculty involvement both in research and creative activities as well as in teaching, and an understanding of the role of faculty and administration in the shared governance of the institution.

Nominations or applications, including curriculum vitae and the names of five references, should be sent before 26 March 1982 to: **Professor Richard C. LeBarba, Chair, Dean Candidate Screening Committee, College of Social and Behavioral Sciences, Office of the Vice President for Academic Affairs, ADM 226, University of South Florida, Tampa, Florida 33620.** The University is particularly interested in encouraging applications and inquiries from women and minority candidates.

Salary is negotiable.

The University of South Florida is an Affirmative Action/Equal Opportunity Employer and encourages applications from minorities and women. According to Florida law, applications and meetings regarding applications are open to the public on request.

MIT FACULTY OPENING IN OCEAN ENGINEERING

Applications are invited from highly qualified individuals with a commitment to teaching and research in areas of hydrodynamics related to ocean engineering and naval architecture. Teaching responsibilities include participation in undergraduate and graduate subjects in marine hydrodynamics, numerical analysis and computer applications. Desirable qualifications include a broad knowledge of experimental, analytical and numerical fluid mechanics and its application to the field of ocean engineering.

An immediate need exists for an individual with expertise and interest in the field of numerical ship hydrodynamics to participate in an active research program in this area. However, the long-term career interests of candidates may appropriately be in other aspects of marine hydrodynamics, including viscous flows, cavitation, lifting surfaces, wave resistance of ships, wave-body interactions, and stochastic hydrodynamics. An appointment at the assistant professor level is anticipated.

Appointment begins 1 September 1982. Applications from all qualified candidates are welcome. Minorities and women are encouraged to apply. Applications, including a resume, references, and copies of abstracts of publications, should be sent to:

Prof. T. Francis Ogilvie
Department Head
Department of Ocean Engineering
Bldg. 5-228
Massachusetts Institute of Technology
Cambridge, MA 02139

MIT is an equal opportunity/affirmative action employer.

MIT

Infectious Disease Microbiology

Ph.D Level Antibiotics

The Pharmaceutical Research Division of Warner-Lambert has an immediate opening to participate in the discovery, evaluation and development of novel antibacterial drugs in our expanding Research Division.

The successful applicant will have:

- A PhD or equivalent with formal training in microbiology or related science
- A minimum of two years experience in a recognized infectious disease laboratory involving the evaluation of new anti-infective agents and a thorough familiarity with the latest techniques, concepts and technology in this area.
- Experience with computerized readouts and data processing and retrieval
- Experience with assays of antibacterial drugs in body fluids and tissues and metabolite separation
- Ability to participate in the development of novel *in vitro* and *in vivo* test methods for the discovery of novel anti-infective drugs and subsequent use in the clinic
- Administrative and communication skills with the ability to motivate the staff to high levels of scientific performance and to interact with other scientists in the Antibiotics Group, Pharmacology, Chemistry, Toxicology, Clinical Research and extramural programs
- Ability to represent the company within the scientific community

Our research facilities, adjoining the University of Michigan campus in Ann Arbor, Michigan, are among the finest and best equipped in the world and are devoted exclusively to the discovery and development of new drugs.

Join the exciting Research and Development team at Warner-Lambert in this very key position and enjoy outstanding compensation and environment. Send your resume and salary history/requirements in confidence to: **MS. M. Wolin, Human Resources, Representative, WARNER-LAMBERT/PARKE-DAVIS, PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Rd., Ann Arbor, Michigan 48105.** An Equal Opportunity Employer M/F/H

**WARNER
LAMBERT**

POSITIONS OPEN

University of Michigan Medical School, Department of Family Practice, has a unique opportunity for residency-trained **FAMILY PHYSICIANS** who are seeking further clinical experience while beginning a career in academic family practice. Appointment as instructor allows such junior faculty to participate in patient care while gaining experience and involvement in teaching, administration, and research. Applicants should write a personal letter and send a copy of their curriculum vitae to: **Terence C. Davies, M.D., Professor and Chairman, Department of Family Practice, University of Michigan Medical School, B1952 Clinical Faculty Office Building, Ann Arbor, Michigan 48109.** Code 09. *A nondiscriminatory, Affirmative Action Employer.*

IMMUNOLOGIST

Tenure-track position at assistant/associate professor level: Ph.D., D.V.M., or M.D. and postdoctoral training. Candidate must have demonstrated ability to initiate and sustain a creative research program and skill in teaching at the professional and graduate level. Preferred areas of interest are molecular immunology-immunogenetics, mechanisms of immune regulation, macrophage differentiation, and regulation of cellular interactions. This is an opportunity to join an expanding Department of Microbiology and Immunology with excellent resources for faculty research. Available 1 July 1982. Send curriculum vitae, three letters of reference, and summary of research plans to: **Alan M. Kaplan, Ph.D., Chairman, Department of Microbiology and Immunology, University of Kentucky College of Medicine, MN-524 Medical Center, Lexington, Kentucky 40536-0084.**

MOLECULAR GENETICISTS

Tenure-track position at assistant professor level: Ph.D., D.V.M., or M.D. and postdoctoral training. Candidate must have demonstrated ability to initiate and sustain a creative research program and skill in teaching at the professional and graduate level. Preferred interests are mechanisms of gene expression at the molecular level in either prokaryotic or eukaryotic systems, molecular basis of genetic diseases, and molecular basis of microbial pathogenicity. This is an opportunity to join an expanding Department of Microbiology and Immunology with excellent resources for faculty research. Available 1 July 1982. Send curriculum vitae, three letters of reference, and summary of research plans to: **Alan M. Kaplan, Ph.D., Chairman, Department of Microbiology and Immunology, University of Kentucky College of Medicine, MN-524 Medical Center, Lexington, Kentucky 40536-0084.**

POSTDOCTORAL POSITIONS

The University of Kentucky College of Medicine has postdoctoral positions available within the Department of Medical Microbiology and Immunology for individuals interested in the study of murine mammary cancer cells with emphasis on the surface membrane and components involved in cell adhesion.

All interested postdoctoral applicants should send complete curriculum vitae and the names of three references to: **Dr. Marion Steiner, Department of Medical Microbiology and Immunology, University of Kentucky College of Medicine, MN-524 Medical Center, Lexington, Kentucky 40536-0084.**

The University of Kentucky is an Equal Opportunity Employer, F/M.

POSTDOCTORAL POSITION

Postdoctoral position in nucleic acid chemistry and molecular virology is immediately available for studies on the structure and replication of herpesvirus DNA. Candidates should have a Ph.D., M.D., or D.V.M. with interest in understanding how these viruses establish the transformant and latent states during infection. Research involves the use of hydrodynamics, gel electrophoresis, restriction endonuclease digestions, nucleic acid hybridizations, and electron microscopy in studying the regulation of DNA synthesis in herpesvirus-infected cells and/or exploring the structure of both human and equine herpesvirus-DNA. A background in nucleic acid biochemistry, cell biology, genetics, or recombinant DNA technologies is advisable. Salary is competitive and for a 2-year minimum. Send curriculum vitae and names of three references to: **Dr. Robert J. Jacob, Department of Medical Microbiology and Immunology, MN-524 Medical Center, University of Kentucky, A. B. Chandler Medical Center, Lexington, Kentucky 40536-0084.**

The University of Kentucky is an Equal Opportunity Employer, F/M.

POSITIONS OPEN

FACULTY POSITION—Cancer research assistant professor, tenure track, pathology. Applicant must be qualified to conduct independent research (> 50 percent time), participate in teaching, and supervise residents performing hospital autopsies (30 percent). Tumor bank, advanced capabilities for tumor immunology and hybridoma laboratory available. Competitive salary. Send curriculum vitae, statement of research interest, and references to: **Dr. Roger D. Smith, Chairman, Department of Pathology, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Cincinnati, Ohio 45267.**

GENETICS

POSTDOCTORAL POSITIONS available in molecular biology of corn and tobacco. Preference will be given to persons with experience in cloning and other molecular techniques. Send résumé and three letters of reference by 1 June 1982 to:

**Dr. C. S. Levings, III
Department of Genetics
North Carolina State University
Raleigh, N.C. 27650**

An Affirmative Action/Equal Opportunity Employer

GENETICIST. The Biology Department at Sweet Briar College has a tenure-track position at the assistant professor level available starting September 1982. Teaching responsibilities include genetics, alternate year courses in microbiology and development, and participation in the introductory biology course. The Ph.D. is required and previous teaching experience is preferred. Please submit curriculum vitae, three letters of recommendation, and transcripts to: **Dr. Joanne Rosinski, Chair, Biology Department, Sweet Briar College, Sweet Briar, Virginia 24595,** by 9 April 1982. *Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGIST. The Department of Microbiology invites applications for a tenure-track position at the assistant professor level starting September 1982. Applicants should have a Ph.D. and postdoctoral experience in immunology. The successful applicant will be expected to teach an undergraduate and a graduate immunology course, participate in other teaching functions of the department, supervise graduate students, and develop a productive, independent research program in immunology. Competitive salary. Submit curriculum vitae, academic transcripts, a statement of research interests, and names of at least three references by 10 April 1982 to: **Dr. Bruce L. Nicholson, Chairman, Department of Microbiology, University of Maine at Orono, Orono, Maine 04469.** *The University of Maine is an Equal Opportunity/Affirmative Action Employer.*

INSECT PHYSIOLOGIST—BIOCHEMIST. Postdoctoral research associate position available beginning June 1982 to work on hormonal controls of development and reproduction of phycitid moths. Training and experience in biochemistry and tissue culture strongly desired. Application deadline is 15 May 1982. For details, contact: **Dr. Victor Brookes, Department of Entomology, Oregon State University, Corvallis, Oregon 97331.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973. Applications from females and minorities are encouraged.*

PHARMACOLOGIST—Harvard Medical School/Massachusetts General Hospital is seeking a pharmacologist in the Anaesthesia Department at the professorial level. Field of expertise should be in the area of molecular pharmacology with a strong background in physical chemistry and molecular biology and a demonstrated interest in these problems. Interested persons should send current curriculum vitae to: **Benjamin G. Covino, Ph.D., M.D., Chairman, Ad Hoc Committee, Brigham and Women's Hospital, 75 Francis Street, Boston, Mass. 02115.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

PROJECT ASSOCIATE. Ph.D. in nutritional sciences required. Work on purification and characterization of fatty acid binding protein from lung tissue. Applicant should have skills in protein isolation, characterization, and immunological techniques. Experience working with lipogenic enzymes and ability to develop new techniques using high-performance liquid chromatography. Full-time position: 40 hours per week; \$14,500 per year. Position available immediately. Send curriculum vitae to: **Sath Menon, Wisconsin Job Service, 206 North Broom Street, Madison, Wis. 53703.** Telephone: 608-266-2341. *An Equal Opportunity/Affirmative Action Employer.* This advertisement is not paid for by Job Service funds.

POSITIONS OPEN

MARINE POLICY

Small, rapidly growing, national capital area company invites applications for positions at all levels. Must have technical background and experience/interest in marine policy issues. Areas of concern: waste disposal, ocean minerals, coastal management, and other relevant marine issues. Individuals with strong drive to succeed are encouraged to apply. Send résumé to: **SEAMOcean, Inc., P.O. Box 1627, Wheaton, Maryland 20902.**

NEUROBIOLOGY POSTDOCTORAL POSITION available 1 September 1982 to study electrophysiology of synaptic transmission and neuronal excitability control using in vitro hippocampal slice preparation. Two-year position; salary commensurate with experience. Send curriculum vitae, letter outlining research background and interests, plus names of three references to: **B. E. Alger, Physiology Department, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, Md. 21201.** Closing date: 15 April 1982.

NEUROSCIENCE POSTDOCTORAL POSITION now open in program devoted to the study of the functional organization and connectivity of parietal association cortex in monkeys. Background in single-cell neurophysiology or primate behavior preferred. Experience with small computers or animal surgery desirable. Starting date: spring/summer 1982; 2-year appointment on NIH research grant. Send curriculum vitae, brief description of research experience and interest, and names of three references by 15 April to: **Dr. James C. Lynch, Department of Anatomy, University of Mississippi Medical Center, 2500 North State Street, Jackson, Miss. 39216.** *An Equal Opportunity/Affirmative Action Employer.*

PATHOLOGY POSITION available at University of Kansas Medical Center. A clinical pathologist is sought for service in new university hospital blood bank, liaison with hematology. Emphasis on research and teaching-service. Requirements: M.D. degree, pathology Board-eligibility, and interest in research. Preferences: pathology Board-certification, recent medical school teaching experience, and productivity in biomedical research. Salary negotiable depending upon academic level applied for. Send inquiries or curriculum vitae by 1 May 1982 to: **H. Clarke Anderson, M.D., Professor and Chairman, Department of Pathology and Oncology, Kansas University Medical Center, 39th and Rainbow, Kansas City, Kansas 66103.** *Equal Opportunity/Affirmative Action Employer.*

The **DEPARTMENT OF PATHOLOGY** at the University of Pittsburgh School of Medicine wishes to recruit a member for its Division of Experimental Pathology. The position will entail research and teaching to medical students and to graduate students. There are ample clinical opportunities for research programs needing them. The major areas of interest in the division are immunology and tumor biology. The level of academic appointment will be commensurate with the candidate's qualifications. Reply with curriculum vitae to: **Thomas J. Gill, M.D., University of Pittsburgh School of Medicine, Department of Pathology, Room 716 Scaife Hall, Pittsburgh, Pa. 15261.** *An Equal Opportunity/Affirmative Action Employer.*

PATHOLOGY. Research associate to work on biochemistry of blood proteins and mechanisms of blood coagulation and fibrinolysis. M.D. or Ph.D. Must have minimum of 3 years of experience working with fibrinogen, factor XIII, fibronectin, and coagulation pathophysiology. Available April 1982. Send curriculum vitae and two letters of reference to: **Dr. Jan McDonagh, Department of Pathology, Beth Israel Hospital, 330 Brookline Avenue, Boston, Mass. 02215.** *Affirmative Action/Equal Opportunity Employer.*

PEDIATRIC CARDIAC SURGEON

Lansing, Michigan—Ingham Medical Center and Michigan State University

Board-eligible or -certified by American Board of Thoracic Surgery. Experience in academic pediatric cardiac surgery program required. Position involves academic appointment, an integral role in private practice cardiovascular surgery group, and institutional responsibility for pediatric cardiac surgery program. Academic requirements include program development; teaching and training of medical and nursing students and house officers; and direction or participation in research programs. Contact: **Park W. Willis, III, M.D., Chairman, Pediatric Cardiac Surgery Search Committee, B 220 Life Sciences, Michigan State University, East Lansing, Mich. 48824.**

Surface Chemist

Senior Level

The Chemical Division of American Cyanamid is seeking a senior level Surface Chemist to augment the progressive efforts of its Discovery Research Department.

Successful applicant must be an eminently recognized authority in Surface Chemistry with a Ph.D. in Surface or Physical Chemistry and 5—10 years of leading edge research experience in solid-liquid and liquid-liquid interfacial phenomena, microemulsion, characterization of solid surfaces, etc.

The preferred candidate will demonstrate a superior record of publications and be expected to manage a Surface Chemistry laboratory and initiate innovative programs in surface science.

We are located in Stamford, Connecticut, just 40 miles from New York City on the Long Island Sound. We offer excellent compensation, benefits and a challenging, stimulating environment. Please send curriculum vitae with references to: Dept. S2,

Ms. Linda Buggy
Employment Supervisor
Stamford Research Laboratories
1937 West Main Street
Stamford, Connecticut 06904



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• Biochemist • Biophysicist • Microbiologist

**You'll work in a creative environment
where our scientists are dedicated
to exploring new ideas.**

Becton Dickinson Research Center, part of a billion dollar multinational health care company, has three expansion-created career opportunities at its attractive sunbelt facility.

Biochemist

Responsibilities include preparation and characterization of microcapsules; developing methods for the covalent modification of the microcapsule and initiate development of model assay systems.

Background must include a Ph.D. in Biochemistry or Organic Chemistry with post doctoral experience and knowledge of liposome/lipid vesicle preparation or other microencapsulization techniques. Immunoassay development experience helpful.

Biophysicist

Responsibilities will include conducting research and development in therapeutic monitoring for advanced drug delivery systems utilizing biomedical transducer technology. You will also be in charge of technology evaluations and feasibility demonstration of drug delivery and monitoring systems using invasive and non-invasive techniques.

A Ph.D. in Biophysics or equivalent with 2 or more years experience in advanced medical instrumentation and research and development with focus on clinical chemistry or drug monitoring are required. A strong background in engineering concepts and biomedical applications is essential.

Microbiologist

Responsibilities will include developing characterization methodologies to apply monoclonal antibodies to the biochemical elucidation of organisms specific determinants. You will also establish parameters for and assist in the growth of viral and bacterial organisms.

A Ph.D. in Microbiology or Virology with relevant post doctoral experience including a strong background in protein chemistry with knowledge of carbohydrate and lipid characterization are required.

We offer an excellent salary and outstanding benefits including relocation assistance and the opportunity to be a major contributor in the dynamic health care field. Please send your resume and list of references to: **Mr. F. Richard Wilson, Human Resources Department, Becton Dickinson Research Center, P.O. Box 12016, Research Triangle Park, North Carolina 27709.** An equal opportunity/affirmative action employer.

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POSITIONS OPEN

PHYSICIAN SCIENTIST—Opportunity to conduct fundamental research in basic science department and engage in limited clinical activities. A new Clinical Pharmacology Program in the Department of Pharmacology and Therapeutics at the University of Florida is searching for an assistant professor-level, tenure-track faculty member with major responsibilities in research and teaching. Anticipated starting date is 1 September 1982. Area of basic research is unrestricted but special consideration given to individuals whose work relates to **CELL BIOLOGY**. Position requires an M.D., eligibility for Board-certification, and includes active dual appointment in appropriate clinical department with commensurate salary. Applicants may apply by sending curriculum vitae, outline of academic interests, and names of three references to: **Warren Ross, M.D., Box J-267, JHM Health Center, Gainesville, Florida 32610**, by 1 May 1982. *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION. Available 1 July 1982 for research on the biochemistry and structure of the thick filaments of invertebrate muscles. Background in contractile protein biochemistry essential; interest in structural studies helpful. Send curriculum vitae, brief statements of research experience and interests, and names of three references to: **Dr. Rhea J. C. Levine, Department of Anatomy, The Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL/RESEARCH ASSOCIATE position open for neurophysiologist to study the mechanism of seizure discharges in cerebral tissue in vitro. Position open in April; candidate required to join not later than September 1982. Required: training in electrophysiology and excellent recommendations. Experience in working with surviving cerebral tissue slices desirable. Salary appropriate to experience. Send inquiries with curriculum vitae and names of three professional references to either: **Dr. James McNamara, VA Epilepsy Center, Durham, N.C. 27705**, or **Dr. George G. Somjen, Department of Physiology, Duke University, Durham, N.C. 27710.** *Equal Opportunity Employer.*

POSITIONS OPEN

PHYSIOLOGICAL PSYCHOLOGIST. Holy Cross College has a 1-year, non-tenure-track position for a physiological psychologist beginning in fall 1982. There is a strong possibility that a tenure-track position will be available the following year. Teaching responsibilities will include physiological psychology, an advanced laboratory course in physiological psychology, experimental psychology, statistics, and possibly introductory psychology. Candidates must have a strong commitment to undergraduate teaching and research and should have a Ph.D. or be near completion of the degree. Rank and salary are open. Curriculum vitae, three letters of recommendation, and reprints of publications should be sent to: **Dr. Danuta Bukatko, Department of Psychology, College of the Holy Cross, Worcester, Mass. 01610.** Applications should be received by 1 April 1982. *Holy Cross is an Equal Opportunity/Affirmative Action Employer.*

PLANT GENETICIST—Assistant/associate professor, tenure-track, starting 16 August 1982. Candidates must be able to teach introductory and advanced course in plant genetics. Candidates with expertise in cytology-cytogenetics are preferred. Candidates must have proven research ability and will be expected to maintain a vigorous research program supported by outside funds. Send résumé, statement of research interest, copies of all transcripts, and have three letters of reference sent to: **Professor D. E. Talburt, Chairman, Department of Botany and Bacteriology, S.E. 401, University of Arkansas, Fayetteville, Ark. 72701.** Closing date for applications is 16 April 1982. *The University of Arkansas is an Equal Opportunity/Affirmative Action Institution.*

PLANT SCIENTIST. Applications are invited for a tenure-track teaching position in biology to begin 16 August 1982. Candidates should have Ph.D. or equivalent, broad biological training, and skills in both TEM and SEM electron microscopy. Send letter of application, curriculum vitae, transcripts, and three letters of reference to: **Dr. Ewell A. Stowell, Biology Department, Albion College, Albion, Michigan 49224.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

Applications are invited for a full-time teaching position in **PHYSIOLOGY** at St. George's University, School of Medicine, Grenada, West Indies. Previous teaching experience at medical school level is necessary and preference will be given to candidates able and willing to take responsibility for the coordination of the cardiovascular, respiratory, and renal sections of the course. Clinical teaching opportunities are available to qualified candidates. Rank and salary according to experience and qualifications. The successful candidate should be prepared to take up the position in early August 1982, or as soon as possible thereafter.

Applications should be sent to:
Foreign Medical School Service Corporation
One East Main Street
Bay Shore, New York 11706

POSTDOCTORAL POSITION available in August 1982 for research in the molecular basis of insulin action. Possible projects include purification and characterization of the component proteins responsible for recognizing insulin and mediating its biological effect. A background in biochemistry and/or cell biology is essential. Send curriculum vitae and the names of three references to: **Dr. Paul Pilch, Department of Biochemistry, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.** *An Equal Opportunity Employer, M/F.*

POSTDOCTORAL RESEARCH ASSOCIATE: MOLECULAR IMMUNOBIOLOGY. To investigate membrane molecules regulating the immune response. Strong background in immunobiology—chemistry and genetics is encouraged. Preference will be given to applicants with experience in recombinant DNA techniques and hybridoma technology. Salary negotiable. Send curriculum vitae and have three letters of recommendation sent to: **Dr. Jack Silver, Department of Microbiology and Public Health, Giltner Hall, Michigan State University, East Lansing, Mich. 48824.**

An Affirmative Action/Equal Opportunity Institution

The
SPACE TELESCOPE SCIENCE INSTITUTE (ST ScI)
operated by
**THE ASSOCIATION OF UNIVERSITIES FOR RESEARCH
IN ASTRONOMY (AURA)**
for
**THE NATIONAL AERONAUTICS AND SPACE
ADMINISTRATION (NASA)**
requires a
CHIEF, RESEARCH SUPPORT BRANCH

The chief will manage the Research Support Branch of the Space Telescope Science Institute. He/she will report to the director of the ST ScI and will direct a technical support staff of approximately 25 scientists, research assistants, laboratory technicians, and data aids.

The position requires the following: a Ph.D. or equivalent degree with a background in astronomy or physics; publication of significant scientific papers in refereed journals; a record of distinguished instrument development; a high degree of initiative; and judgment and scholarly competence.

The incumbent may be granted tenure according to AURA policies regarding such applicants. The requirements for tenure are equivalent to those for appointment to associate or full professor levels at major academic institutions.

The incumbent is expected to carry out an active research program and maintain an awareness of state of the art development in instrumentation for astronomical research.

The responsibility of the Research Support Branch include:

- Establishment staffing and supervision of laboratories and supervision of research assistants and data aids to support the ST ScI staff research activities,
- Investigation of advanced instrument concepts to the level required to advise NASA on the desirability of their use on ST, and
- Evaluation of ST overall system performance to the level required to advise NASA regarding the need for repair or refurbishment of ST systems components.

The salary, terms, and level of appointment will be commensurate with the appointee's qualifications and background.

The Institute is located on the Homewood Campus of The Johns Hopkins University in Baltimore, Maryland.

An application (or nomination) consists of a résumé, including a statement of relevant experience, a bibliography, a statement of research interests, and the names of three references. Applications should be received by 30 March 1982. **The Space Telescope Science Institute, Homewood Campus, Baltimore, Maryland 21218.** *An Equal Opportunity/Affirmative Action Employer, M/F/H.*

VACANCY ANNOUNCEMENT

National Institutes of Health Public Health Service Department of Health and Human Services

The National Institutes of Health invites nominations and applications for the position of **DIRECTOR, NATIONAL INSTITUTE OF DENTAL RESEARCH**. This is a Civil Service position in the Senior Executive Service with a salary range of \$54,755 to \$58,500 per annum. The person selected may be eligible for Physician's Comparability pay up to \$10,000 per year. A one-year probationary period must be served if the individual selected is not currently in the Senior Executive Service.

The Director, National Institute of Dental Research, provides leadership and direction for the national program relative to oral diseases and disorders. The Institute's staff embraces over 400 employees with a budget in excess of \$72 million.

Further information about the position and qualification requirements may be obtained by contacting **Mrs. Bonnie R. Kalberer at 301-496-6971**. Applications (SF-171, Personnel Qualifications Statement) accompanied by a current curriculum vitae and bibliography should be submitted to Mrs. Kalberer at: **NIDR Personnel, Building 31, Room 2C-23, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland 20205.**

Applications must be postmarked not later than March 31, 1982. (The SF-171 form is available at all Federal Personnel Offices and Job Information Centers.) Applications from women and minority group candidates are solicited.

AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

PLANT ANATOMIST. An assistant professor, tenure track, is sought to teach plant anatomy, to participate in undergraduate biology courses, and to develop a graduate course in the applicant's area of interest. A research program is to be developed in experimental plant anatomy or in a related area. Funds and a modern laboratory are available to help the applicant initiate his/her research. Utah State University, Biology Department, has 55 faculty and about 100 graduate students. Departmental research strengths are in the areas of ecology and physiology-biochemistry. The University is located in a beautiful mountain valley that is noted for its quality and diversity of recreational opportunities.

Send curriculum vitae, summary of research and teaching plans, and three letters of reference by 15 April to:

Dr. Neal Van Alfen
Chairman, Search Committee
Biology Department UMC 45
Utah State University
Logan, Utah 84322

Utah State University is an Equal Opportunity/Affirmative Action Employer.

PLANT BIOCHEMIST

A 10-month tenure-track position (rank open) is available in the Department of Botany at the University of Maryland. Candidates should have a Ph.D. with emphasis in some area of plant biochemistry. Areas of particular interest are cellular metabolism and energetics, biomembranes, and molecular biology. Position includes undergraduate- and graduate-level teaching and development of an independent research program. Applications shall consist of a résumé with statement of research objectives, graduate transcripts, representative reprints, and four letters of reference solicited by the applicant and should be sent to: **Dr. G. W. Patterson**, Department of Botany, University of Maryland, College Park, Md. 20742. Closing date: 1 May 1982 or until a suitable candidate is selected, whichever is later.

An Equal Opportunity/Affirmative Action Employer

PLANT ECOLOGIST

Plant ecologist. Tenure-track position beginning 1 September 1982 to teach undergraduates in plant ecology, forest ecology, and introductory environmental science; to participate in an interdisciplinary environmental science program at the Miner Center satellite campus in Chazy, N.Y.; and to participate in team research on forest ecosystems. Preference will be given to candidates with strengths in forestry, fire ecology, and statistics. Send letter of application with résumé by 2 April 1982, and arrange to send three letters of reference to: **Dr. James C. Dawson**, Institute for Man and Environment, State University of New York, Plattsburgh, N.Y. 12901. Telephone: 518-564-2178. *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately in stem cell biology to study the regulation of human melanoma clonogenic growth. Background in cell culture required and experience in biochemical, immunochemical, or biochemical pharmacology techniques preferred. Salary: \$14,500. Send résumé and names of three references to: **Dr. Frank Meyskens**, University of Arizona, Department of Medicine, Arizona Health Sciences Center, Tucson, Ariz. 85724. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION to study regulation of molybdenum metabolism in *Escherichia coli*. Research involves microbial physiology, enzymology, immunological methods, and radiolabeling of bacterial cultures. Starting date: July 1982 or sooner. Send curriculum vitae and names of references to: **Dr. Nancy K. Amy**, Department of Nutritional Sciences, University of California, Berkeley, Calif. 94720.

POSTDOCTORAL RESEARCH ASSOCIATE. Applications are invited from persons with expertise in cell biology, biochemistry, or carbohydrate chemistry. Areas of interest include (i) synthesis, distribution, and properties of surface-associated glycosaminoglycans and proteins as a function of oncogenic transformation; (ii) role of extracellular matrix components in the altered adhesive properties of transformed cells; (iii) analysis of cell surface properties by flow cytometry; and (iv) chemical transformation of cells.

Send curriculum vitae and three letters of recommendation to: **Dr. Susan P. Hawkes**, Michigan Molecular Institute, 1910 West St. Andrews Road, Midland, Mich. 48640. *An Equal Opportunity Employer.*

LEADER, ELECTRONICS DIVISION

The Office of Naval Research is seeking an outstanding individual to serve in this Senior Executive Service position.

The Leader, Electronics Division, supervises a staff of senior Scientific Officers in the management of a \$30M contract R&D program directed toward enhancing Navy and Marine Corps operational effectiveness. Scientific and technical areas of concern include electronic structure and excitations, electron transport, semiconductor electronics, surface and interface electronics, microwave devices and materials, superconducting electronics, systems theory, antennas, and electromagnetic wave propagation (including solar, magnetospheric, ionospheric, and atmospheric effects).

Candidates must have PhD or equivalent in EE or Physics plus high accomplishment in the performance and management of R&D.

Salary dependent upon qualifications; however, current Federal pay cap limits salary to \$58,500.

Interested persons should send a Standard Form 171, Personal Qualifications Statement (available at Federal Job Information Centers) by 30 April 1982 to:

OFFICE OF NAVAL RESEARCH
Code 722, Room 823
800 North Quincy Street
Arlington, VA 22217
Reannouncement #81-30-A (S)

For further information and required supplemental forms, call (202) 696-4705.

U.S. Citizenship Required

An Equal Opportunity Employer

Microbiologist

The Fermentation Development Department, Medical Research Division of the American Cyanamid Company, has an opening for a Ph.D. Microbiologist interested in developing commercial processes for products of modern genetic technology.

The successful candidate will have a strong background in molecular biology with experience in nucleic acid biochemistry and a solid understanding of molecular genetics as well as metabolic pathways.

American Cyanamid offers a competitive salary and benefits package, including a dental and savings plan. Please send resume with salary history to: Ms. K. McDevitt, Professional Employment Coordinator, Dept. S 313, Medical Research Division.



CYANAMID

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Pearl River, N.Y. 10965

An Equal Opportunity Employer m/f

POSITIONS OPEN

Position available, **INTERFERON RESEARCH**. Studies on the purification, characterization, and mechanisms of action of interferons and their pharmacokinetics. Ph.D. in biochemistry or related areas with three plus years of research experience with interferons as documented by record of publications are required. Also, experience in protein purification and characterization, mRNA isolation and translation in *Xenopus* oocytes. Experiences in working with animals is desirable. Send curriculum vitae to: Box 72, SCIENCE.

PLANT TAXONOMIST. Tenure-track position at associate or assistant professor level for teaching and research. Available 1 September 1982. Teaching responsibilities include courses in dendrology (for forestry students) and vascular plant taxonomy. Individual must have a commitment to graduate education and to developing and supporting a modern research program in plant systematics. Qualifications include a Ph.D. in plant taxonomy or closely allied discipline with research experience in plant systematics. Send résumé, copies of published work, transcripts, and the names of at least three professional references who have been asked to write supporting letters to: Dr. Douglas Gellinas, Chairman, Department of Botany and Plant Pathology, University of Maine, Orono, Maine 04469. Application deadline: 31 March 1982. *The University of Maine is an Equal Opportunity/Affirmative Action Employer.*

TWO POSTDOCTORAL POSITIONS available, one in electrophysiology/biophysics and the second in molecular biology/biochemistry of photoreceptors. The duties of the first position are to do electrophysiological studies on *Drosophila* mutants with altered photoreceptor function. Previous experience with intracellular recordings required; fully equipped electrophysiology setups available. The objective of the second research project is to isolate and characterize genes involved in photoreceptor function in *Drosophila*, particularly the putative rhodopsin gene. The research requires genetic, cytogenetic, and molecular biological approaches. Training in recombinant DNA technology or monoclonal antibody techniques helpful. NIH stipend. Send curriculum vitae, description of research experience and interests, and names of three references to: Dr. William L. Pak or Dr. Edward Strobel, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available for studies at the molecular level concerning (i) initiation, direction, and timing of DNA replication in cultured mammalian cells; (ii) relationship between transcriptional activity and DNA replication; and (iii) origins of replication in mammalian DNA. Send curriculum vitae and have two letters of reference sent to: Dr. Carl Schildkraut, Department of Cell Biology, Albert Einstein College of Medicine, Bronx, New York 10461.

POSTDOCTORAL RESEARCH ASSOCIATE. Position available immediately in the application of surface-enhanced Raman spectroscopy to biomolecules (proteins and photosynthetic preparations). Experience in Raman spectroscopy and/or electrochemistry desirable. Salary: \$15,000 per year with possible second-year renewal. Send curriculum vitae and names of three references to: Dr. Therese M. Cotton, Department of Chemistry, Illinois Institute of Technology, 3255 South Dearborn Street, Chicago, Illinois 60616. *An Affirmative Action/Equal Opportunity Employer.*

QUANTITATIVE SILVICULTURE/ FOREST ECOLOGY YALE UNIVERSITY

Assistant professorship at the School of Forestry and Environmental Studies in the general area of forest productivity and yield. The successful applicant will have Ph.D.-level training in forest biology, ecology, and silviculture as well as in the mathematical methods useful for the analysis of forest stand dynamics. Duties include the development of an active research program and teaching our graduate and professional students. To apply, send a letter of application, curriculum vitae, transcripts, copies of any publications, and at least three letters of recommendation to: Clark S. Binkley, Search Committee Chairman, School of Forestry and Environmental Studies, Yale University, 205 Prospect Street, New Haven, Conn. 06511, by 1 April 1982. *Yale University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

POSTDOCTORAL POSITIONS, EVOLUTIONARY MOLECULAR BIOLOGY. Mobile repetitive elements in archaeobacteria (February 1982 *Nature*), archaeobacterial gene structure, *Caenorhabditis* repetitive DNA's, 5S rRNA phylogenies. Begin July to October; \$15,000 to \$17,000 with increment. Cloning, sequencing experience desirable. Curriculum vitae, three letters, and unofficial transcripts to: Dr. W. Ford Doolittle, Biochemistry, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4H7.

POSTDOCTORAL POSITIONS available immediately to study regeneration of maize, wheat, and soybeans from cell and tissue cultures. Background in cell culture, biochemistry, and plant science required. Interested applicants send curriculum vitae, transcripts, and names of three references to: Dr. Thomas K. Hodges, Department of Botany and Plant Pathology, Purdue University, West Lafayette, Indiana 47907. *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH BIOCHEMIST to work with principal investigator on biochemical reactions of folic acid and vitamin B12. Candidate must have background in general biochemical work on enzymatic assays. Previous experience in the folic acid field is desirable. Salary: \$16,000 to \$17,050, depending on qualifications. Submit names of references and résumé to: Dr. E. L. R. Stokstad, Department of Nutritional Sciences, University of California, Berkeley, Calif. 94720. Position available 1 June 1982. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL RESEARCH POSITION in pharmacology to help develop cardiovascular and neurophysiological techniques to study the effects of antihypertensive and other agents on carotid baro- and chemoreceptor function. Experience in electrophysiological recording and perfusion techniques helpful. Two-year appointment, renewable; starting date: summer or fall 1982. Send curriculum vitae and three letters of reference to: Dr. W. R. Wooles, Department of Pharmacology, School of Medicine, East Carolina University, Greenville, N.C. 27834. *An Equal Opportunity Employer through Affirmative Action.*

POSTDOCTORAL SCIENTIST position in our recently established Population Genetics Laboratory. Primary responsibility will be to a project directed by Dr. Bennett Dyke, involving computer modeling of demographic and mating structure of small human populations. Applicant must have training in population genetics and demography, and have facility with a high-level computer language on a large computer; experience with microcomputers would also be helpful. Opportunities exist also to do research on the population genetics of our large baboon colony. Salary without previous postdoctoral experience: \$16,536. Send résumé, university transcripts, statement of research interests and career goals, and the names and addresses of three references to: Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.

RESEARCH ASSOCIATE. Studies of fibronectin and fibrin and interactions of plasma components, using physical techniques. Ph.D. with experience either in physical chemistry or proteins or in research in hemostasis/thrombosis. Dr. Jan Hermans, Department of Biochemistry, University of North Carolina, Chapel Hill, N.C. 27514. *Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE (postdoctoral) position available to study mechanisms of action and metabolism of cardiovascular toxin. Applicant must have experience in CELL CULTURE SYSTEMS, preferably smooth muscle and endothelial cells. Send curriculum vitae and names of three references to: Dr. Paul J. Boor, Department of Pathology, University of Texas Medical Branch, Galveston, Texas 77550. *An Equal Opportunity/Affirmative Action Employer.*

TEACHING POSITION IN BIOLOGY/ECOLOGY. Deep Springs College, a very selective, 2-year liberal arts college located on a working cattle ranch in the high desert near Bishop, California, combining academic study, physical labor, and self government, seeks an individual or couple to teach beginning courses in biology/ecology and possibly geology or chemistry. Ph.D. and teaching experience preferred. Teaching opportunity for spouse in another field. Contact: Dr. Christopher Breiseth, Deep Springs College, via Dyer, Nevada 89010.

POSITIONS OPEN

RESEARCH ASSOCIATE IN NEUROBIOLOGY

Postdoctoral research in anatomy and physiology of primate visual system. Send curriculum vitae before 15 April 1982 to: Dr. L. Benevento, Department of Anatomy, University of Illinois College of Medicine, P.O. Box 6998, Chicago, Ill. 60680. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.*

SCIENCE, TECHNOLOGY, AND SOCIETY. Temporary (3-year) position; Ph.D. required, preferably in the biological or life sciences, excellent full-time teaching experience, and evidence of research. Responsibilities involve teaching courses at the undergraduate level on the social impacts of science and technology. The College of General Studies has no major but instructs all Rochester Institute of Technology students in a liberal education curriculum. Please send curriculum vitae, dossier, and names of three references by 5 April 1982 to: Dr. Rodney Bailey, College of General Studies, Rochester Institute of Technology, Rochester, New York 14623.

SEDIMENTOLOGY UNIVERSITY OF MINNESOTA

The Department of Geology and Geophysics invites applications for a tenure-track faculty position in recent sediments at the rank of assistant professor. Opportunities exist for interaction with the Limnological Research Center and with active research programs in paleoecology, paleomagnetism, stratigraphy, hydrogeology, and low-temperature geochemistry, as well as with the St. Anthony Falls Hydraulic Laboratory. Ph.D. and strong interest in research and teaching interests, transcripts, and three letters of recommendation should be sent by 26 April to:

Dr. Anita L. Crews
Sedimentology Search Committee
Department of Geology and Geophysics
University of Minnesota
108 Pillsbury Hall
Minneapolis, Minn. 55455

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

SENIOR RESEARCH ASSOCIATE POSITION IN PROTEIN CRYSTALLOGRAPHY

Protein crystallographer with Ph.D. and extensive research experience, to direct investigation into use of synchrotron radiation in this field at Stanford Synchrotron Radiation Laboratory; scientific/working knowledge in design of complex computer-controlled data acquisition systems. Projects include (i) development of a fast multiwire area detector system, for efficient protein crystallographic data acquisition at multiple x-ray wavelengths across elemental absorption edges, to investigate use of enhanced anomalous scattering for phase determination; (ii) design and implementation of a tunable high-intensity wiggler beam-line and rotation camera system, optimized for macromolecular crystallography, for high-speed/high-resolution photographic data collection; and (iii) improvements to existing CAD-4 diffractometer system. In addition to pursuing own structural studies in biophysics, responsibilities include development of above national facilities, advising visiting user groups, and coordinating facility improvements. Additional projects include development of an energy-dispersive EXAFS spectrometer and to investigate kinetic EXAFS studies in biophysics and materials science. Physics background and experience in anomalous scattering techniques and synchrotron radiation research desirable. Extensive experience in electronic, mechanical, software, and x-ray optics design essential. Salary determined by years of applicable experience with a range from \$34,000 to \$36,000.

Send résumé to: Mary C. Clark, Bechtel International Center, P.O. Box 5816, Stanford University, Stanford, Calif. 94305.

ZOOLOGIST. Kalamazoo College has a 1982-1983 sabbatical replacement position for an individual to offer ethology and a nonmajors science course, as well as share responsibility for zoology and introductory ecology courses. Ph.D. preferred; salary dependent upon experience. Private, undergraduate liberal arts college with 1400 students. Candidates should submit résumé, transcripts, and three letters of recommendation by 15 April 1982 to: David A. Evans, Chairman, Department of Biology, Kalamazoo College, Kalamazoo, Michigan 49007. *An Equal Opportunity/Affirmative Action Employer.*

ANNOUNCEMENT

NATIONAL EYE INSTITUTE FELLOWSHIP PROGRAM IN BIOMETRY AND EPIDEMIOLOGY

The Office of Biometry and Epidemiology, National Eye Institute, in Bethesda, Maryland, offers a two-year fellowship in biometry and epidemiology for candidates who have completed an accredited 3-year ophthalmology residency program. Salary will range from 30 thousand to 35 thousand and will be commensurate with the level of training and experience. Candidates must be U.S. citizens or resident aliens who would be eligible for citizenship within four years.

The fellowship includes participation in the planning, protocol development, conduct, data analysis, and scientific monitoring of single- and multi-center clinical trials and other epidemiological studies. The program also provides for study through postgraduate courses and seminars, in a) the general principles of research, b) the methodology of clinical trials, c) basic statistics, d) the principles and practice of epidemiology, and e) introduction to the use of computers. About 70-80% of the time is spent obtaining practical experience in clinical trials and epidemiologic research with the other 20-30% allocated to the study program.

Interested persons should contact
Karen Wright, NEI Personnel Office, Bldg. 31, Room 6A23
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The **MINISTRY OF NATURAL RESOURCES**, research section, seeks a specialist in population dynamics to develop, in cooperation with other scientists, research programs that will contribute significantly to knowledge of the processes governing changes in wildlife population to be incorporated into management strategies and programs. The section currently conducts research on moose, deer, various carnivores, and waterfowl and has interest in nongame, small game, and furbearer species. Location: Maple, Ontario, Canada.

Qualifications: Ph.D. in biology or in mathematics and statistics, plus a proven record of productive research; demonstrated ability to initiate and carry out scientific research and analyse and report results in refereed publications; knowledge of population dynamics and of statistical analyses essential; and experience in field data collection an asset.

Salary commensurate with scientific status.

Please submit application, quoting file NR-33/82, by 30 April 1982 to: **Ministry of Natural Resources, Personnel Services Branch, Room 4601, Whitney Block, Queen's Park, Toronto, Ontario, Canada M7A 1W3.**

NOTE: In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.

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MEETING

NATO ADVANCED STUDY INSTITUTE: PHOTO-PHYSICS AND PHOTOCHEMISTRY IN THE VACUUM ULTRAVIOLET, 15 to 28 August 1982, Lake Geneva, Wisconsin. Director: Dr. S. P. McGlynn, Louisiana State University. Associate directors: Dr. G. L. Findley, Louisiana State University, and Dr. R. H. Huebner, Argonne National Laboratory. For application materials, write: Miriam L. Holden, Office of Public Affairs, Argonne National Laboratory, Building 362 H309, 9700 South Cass Avenue, Argonne, Ill. 60439. Application deadline: 15 May 1982.

TRAINEESHIPS

VIROLOGY

POSTDOCTORAL TRAINEESHIPS in biochemical genetics of phage and tumor viruses at The University of Michigan Medical School are now available through an NIH-funded interdisciplinary program. Research areas include animal cell transformation, tumor virus and phage DNA replication and recombination, regulation of gene expression, and virus-cell interactions. Applicants need not have previous research experience in virology. Submit curriculum vitae and a list of three references to: Virology Postdoctoral Training Program Committee (Department of Biological Chemistry), or to one of the following faculty: Dr. William R. Folk, Dr. G. R. Greenberg (Department of Biological Chemistry); Dr. William Brockman, Dr. D. I. Friedman (Microbiology); Dr. M. Levine (Human Genetics), The University of Michigan Medical School, Ann Arbor, Mich. 48109.

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POSTDOCTORAL TRAINEESHIPS IN NEURAL AND BEHAVIORAL SCIENCES

Traineeships are available in anatomy, pharmacology, physiology and biophysics, psychology, zoology, and related disciplines through an interdisciplinary USPHS-NIMH Neurobehavioral Sciences Program Grant. Applicants should have a strong commitment to research in the neural and behavioral sciences. Applications, consisting of a statement of research interests, curriculum vitae, and three references, must be made by 1 May 1982. Apply to: The Neural and Behavioral Sciences Committee, 201J Gilmore Hall, The University of Iowa, Iowa City, Iowa 52242. The University of Iowa is an Equal Opportunity Employer.

PROGRAMS

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DOCTORAL PROGRAM—PATHOLOGY

The Pathology Department, New York Medical College, invites applicants for its Ph.D. program. Interdisciplinary environment with major research areas including pulmonary, renal, cardiovascular, neurological and endocrine disease, and carcinogenesis. Tuition remission and some stipends available for qualified students. For applications, write:

Graduate Program Director
Department of Pathology
New York Medical College
Valhalla, New York 10595

CONFERENCE

REGULATORY GENES IN HIGHER ORGANISMS. A conference focused on genes, in higher plants and animals, that regulate the developmentally specific expression of other genes will be held 18 to 21 July 1982 at Alta, Utah. The number of participants will be limited in order to facilitate informal interaction. For further information, contact: W. J. Dickinson, Department of Biology, University of Utah, Salt Lake City, Utah 84112.

GRADUATE STUDY

Ph.D. IN BASIC MEDICAL SCIENCES

Applications are now being accepted for September 1982 entrance into the graduate program leading to the Ph.D. with specialization in anatomy, biochemistry, microbiology/immunology, pharmacology, or physiology. A Ph.D.-M.D. track is available for exceptionally qualified students. This program accepts qualified students after only 3 years of undergraduate study. Tuition is waived. Stipend is \$5000 per year. Application deadline: 30 April. For further information write:

Dr. Edwin R. Hughes, Director
University of South Alabama
MSB 1015
Mobile, Alabama 36688

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP at the University of Michigan, Nuclear Medicine Division. Research will involve development of monoclonal antibodies to tumor-specific surface antigen and their use in radioimmunoassay of cancer. Ph.D. in immunology or biochemistry with experience in hybridoma technology is required. Salary: \$20,000. Send résumé and three letters of recommendation to: M. B. Khazaeli, Ph.D., University of Michigan Medical Center, Division of Nuclear Medicine, Box 021, Ann Arbor, Mich. 48109. The University of Michigan is an Equal Opportunity/Affirmative Action Employer.

Fellowship in Cardiovascular Pathology

A postdoctoral fellowship in cardiovascular pathology is available in the Department of Pathology of Northwestern University Medical School and Northwestern Memorial Hospital. The program is balanced and includes training in cardiovascular pathology through the study of material obtained from autopsy and surgical pathology, as well as involvement in special collaborative studies with the Sections of Cardiology and Cardiovascular Surgery. Emphasis is on correlation of pathological material with invasive and noninvasive cardiac graphics. Special studies involving electron microscopy of endomyocardial biopsies, and immunofluorescence and vascular perfusion studies are in progress or development. Opportunity for study of pediatric and congenital heart disease is available. Research activity will include experimental study of basic mechanisms of myocardial injury. Three or more years of training in anatomic pathology is a prerequisite. Submit letter of application, curriculum vitae, and names of three references by 15 April 1982 to: Dr. D. G. Scarpelli or Dr. C. E. Ganote, Department of Pathology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611. Telephone: 312-649-8144. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP available through a National Institute of Health Training Grant for the study of phagocyte biochemistry with special emphasis on oxygen-mediated mechanisms of injury. The position is open to U.S. citizens and permanent residents who have an M.D. or Ph.D. Send curriculum vitae and names of three references to: Stephen J. Weiss, M.D., Simpson Memorial Institute, University of Michigan, 102 Observatory, Ann Arbor, Mich. 48109.

POSTDOCTORAL FELLOWSHIP available to work with a group interested in the functional relationship between the central nervous system and the immune response. Background in cellular immunology or neurobiology preferable. Current research involves the influence of the neuroendocrine systems, autonomic nervous system, and specific areas of the brain on maturation and regulation of immune function. Please send curriculum vitae and the names of three references to: Dr. Tom Roszman, Department of Medical Microbiology and Immunology, College of Medicine, University of Kentucky, MN-524 Medical Center, Lexington, Kentucky 40536-0084.

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FELLOWSHIPS

POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS for M.D. or Ph.D. graduates are available in the areas of endocrinology, metabolism, and diabetes under the guidance of one of 13 training faculty in six basic or clinical departments of Emory University School of Medicine. Send curriculum vitae, area of research interest, and names of two references by 15 April 1982 to: Dr. Mario DiGirolamo, Program Director, Emory University School of Medicine, 69 Butler Street, Atlanta, Georgia 30303. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIPS: CELL ADHESION AND RECOGNITION. Candidates with training in biochemistry, cellular and developmental biology, immunohistochemistry, and/or immunology should be interested in the molecular basis of specific cell-cell or cell-substrate adhesion. Problems include: cellular interactions during morphogenesis; role of endogenous lectins; platelet-collagen adhesion. Send curriculum vitae and references to: S. H. Barondes, M-003, University of California, San Diego, School of Medicine, La Jolla, Calif. 92093. Equal Opportunity/Affirmative Action Employer.

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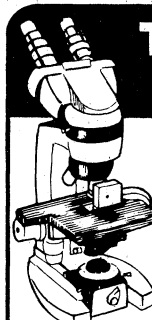
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The deadline for receipt of applications is August 1, 1982. For information and application please write: Lois Kochanski, FAES, 9101 Old Georgetown Road, Bethesda, Maryland 20814.

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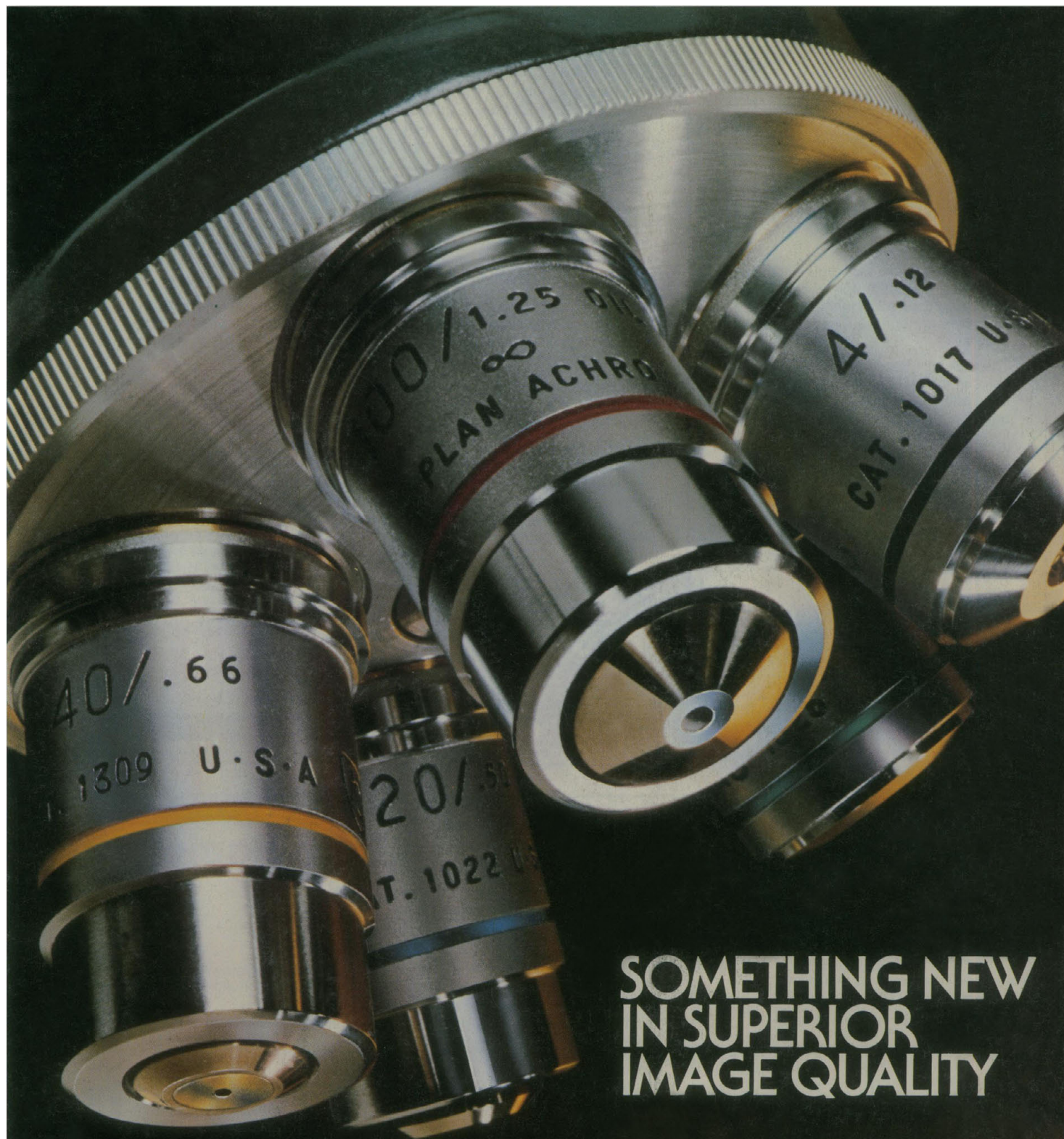
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