

ecophenotypic variation in scleractinians; both deserve a wide audience.

Despite its omissions, the volume will have enduring value. Advances in tropical field biology are ultimately dependent upon the vision and energies of the rare scientist who establishes a research station and guides it through the early years of descriptive science. This is particularly true for coral reef research. Reefs are phenomenally diverse, and synthetic studies must rest upon a rich knowledge of taxonomy, distribution, and abundance. Reef scientists must applaud Klaus Rützler, the station's founder, for his efforts and the Smithsonian Institution for its farsighted policy of support for long-term tropical field studies. The establishment of the research station at Carrie Bow Cay and the detailed description provided in this volume cannot fail to stimulate research on coral reef biology and geology.

LEO W. BUSS

Department of Biology,
Yale University,
New Haven, Connecticut 06511

Metal-Metal Bonds

Multiple Bonds Between Metal Atoms. F. ALBERT COTTON and RICHARD A. WALTON. Wiley-Interscience, New York, 1982. xiv, 466 pp., illus. \$47.50.

The developing chemistry of metal-metal bonds is one of the major factors contributing to the rise of present-day inorganic chemistry. Within the broad spectrum of inorganic compounds and materials that contain metal-metal bonds, those with multiple bonds hold central positions. Cotton's discovery in 1964 of the quadruple bond in $\text{Re}_2\text{Cl}_8^{2-}$ caused the awakening of a new era in chemistry. If quadruple bonds can exist between metal atoms, what are the possibilities that pentuple and sextuple bonds may be formed, and what, too, for bonds of fractional order, such as 1.5 and 2.5? How short can metal-metal distances become, and how strong are metal-metal multiple bonds? Could a metal-metal quadruple bond be stronger than the triple bond in carbon monoxide? Can metal-metal multiple bonds provide reactive functional groups for inorganic reactions in a manner parallel to that that is well established for $\text{C}\equiv\text{C}$, $\text{C}\equiv\text{N}$ and $\text{C}\equiv\text{C}$ functions in organic chemistry? Aided by the powerful tools of automated x-ray diffractometers and a multitude of spectroscopic and calculational techniques, Cotton and his co-workers set

about studying metal-metal multiple bonds. This is the first comprehensive treatise written on the subject, sometimes referred to as "Cotton chemistry," though the appellation should not denigrate the many significant contributions of others such as Walton.

The first chapter of the book provides a general overview of the subject and traces its development. The second, third, and fourth chapters deal with quadruple bonds, and the fifth chapter deals with triple bonds. The chapters on quadruple bonds are divided into sections by element (Mo, Cr, Re, Tc, W), and the chapter on triple bonds is divided according to electronic configuration ($\sigma^2\pi^4$, $\sigma^2\pi^4\delta^2\delta^{*2}$). Then follow chapters on double bonds and compounds, such as Rh(II) and Pt(III) dimers, with close formal relationships to those with multiple bonds. In each of these chapters, the preparations, derivatizations, and reaction chemistry of the compounds are described. A chapter entitled "Physical, spectroscopic, and theoretical results" discusses structural and thermodynamic data, numerical electronic structure calculations, electronic spectra, vibrational spectra, and photoelectron spectra for the various types of compounds, as well as the diatomic molecule Mo_2 .

The book is well structured and written. Each chapter is referenced separately. There is an extensive index, and the table of contents is broken down in considerable detail. Consequently, the book is easy to use as a reference source. It will undoubtedly find its way onto the library shelves of most chemical institutions and inorganic and organometallic chemists. It will be used extensively in graduate-level chemistry courses. Most of all, it will provide a concise historical account of the childhood years of the chemistry of metal-metal multiple bonds.

MALCOLM H. CHISHOLM

Department of Chemistry,
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Books Received

Cell Kinetics and Cancer Therapy. Juliana Denekamp. Thomas, Springfield, Ill., 1982. xiv, 162 pp., illus. \$24.75. American Lecture Series Publication no. 1048.

Cell Regulation by Intracellular Signals. Proceedings of an institute, Nivelles, Belgium, July 1980. Stéphane Swillens and Jacques E. Dumont, Eds. Plenum, New York, 1982. x, 334 pp., illus. \$42.50. NATO Advanced Study Institutes Series A, vol. 44.

Cellular Biology of the Lung. Proceedings of a course, Erice, Sicily, Mar. 1981. G. Cumming and G. Bonsignore, Eds. Plenum, New York, 1982. viii, 488 pp., illus. \$57.50. Ettore Majorana International Science Series (Life Sciences), vol. 10.

Eukaryotic Viral Vectors. Papers from a conference, Cold Spring Harbor, N.Y., Dec. 1981. Yakov Gluzman, Ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., 1982. xviii, 222 pp., illus. \$32.

Evaluation of Diagnostic Systems. Methods from Signal Detection Theory. John A. Swets and Ronald M. Pickett. Academic Press, New York, 1982. xiv, 256 pp., illus. \$29. Academic Press Series in Cognition and Perception.

Image Analysis and Mathematical Morphology. J. Serra. Academic Press, New York, 1982. xviii, 610 pp., illus. \$99.50.

Models and Measurements of the Cardiac Electric Field. Proceedings of a symposium, Dresden, July 1980. E. Schubert, Ed. Plenum, New York, 1982. x, 232 pp., illus. \$35.

Modern Concepts of Oceanography. G. E. R. Deacon and Margaret B. Deacon, Eds. Hutchinson Ross, Stroudsburg, Pa., 1982 (distributor, Academic Press, New York). xiv, 386 pp., illus. \$45. Benchmark Papers in Geology, vol. 61.

The Molecular Biology of the Bacilli. Vol. 1, *Bacillus subtilis*. David A. Dubnau, Ed. Academic Press, New York, 1982. xii, 380 pp., illus. \$44. Molecular Biology.

The Newer Therapies. A Sourcebook. Lawrence Edwin Abt and Irving R. Stuart, Eds. Van Nostrand Reinhold, New York, 1982. x, 402 pp. \$18.95.

1982 National Education Directory. John T. Grunpenhoff and Betty Farley, Eds. Aspen, Rockville, Md., 1982. lxxiv, 484 pp., illus. \$49.50.

Nonmetallic Materials and Composites at Low Temperatures 2. Proceedings of a meeting, Geneva, Aug. 1980. Günther Hartwig and David Evans, Eds. Plenum, New York, 1982. xii, 400 pp., illus. \$49.50. Cryogenic Materials Series.

North Sea Oil and Environmental Planning. The United Kingdom Experience. Ian R. Manners. University of Texas Press, Austin, 1982. xii, 332 pp. \$37.50.

Principles and Applications of Soil Geography. E. M. Bridges and D. A. Davidson, Eds. Longman, New York, 1982. xii, 298 pp., illus. Paper, \$13.95.

Principles of Plant Pathology. J. G. Manners. Cambridge University Press, New York, 1982. viii, 264 pp., illus. Cloth, \$47.50; paper, \$17.95.

Prostatic Acid Phosphatase Measurement. Its Role in Detection and Management of Prostatic Cancer. Papers from a workshop, Oct. 1981. Leslie M. Shaw, Nicholas A. Romas, and Herman Cohen, Eds. New York Academy of Sciences, New York, 1982. viii, 148 pp., illus. Cloth or paper, \$30. Annals of the New York Academy of Sciences, vol. 390.

Psychological Aspects of Nuclear Developments. Report of the Task Force on Psychosocial Aspects of Nuclear Developments of the American Psychiatric Association. American Psychiatric Association, Washington, D.C., 1982. viii, 96 pp. Paper, \$12. Task Force Report 20.

Purposive Biology. Li Kung Shaw. Published by the author, P.O. Box 16427, San Francisco 94116, 1982. 360 pp., illus. Paper, \$15.

Pyrylium Salts. Syntheses, Reactions, and Physical Properties. Alexandru T. Balaban and six others. Academic Press, New York, 1982. xii, 434 pp., illus. \$59.50. Advances in Heterocyclic Chemistry, Supplement 2.

Rainforest Corridors. The Transamazon Colonization Scheme. Nigel J. H. Smith. University of California Press, Berkeley, 1982. xviii, 248 pp., illus. \$25.

The Rational Frontiers of Science. The Origins of Knowledge and Explanation in Science. M. Rocha e Silva. Krieger, Malabar, Fla., 1982. vi, 120 pp., illus. Paper, \$7.50.

Statistics Without Tears. A Primer for Non-mathematicians. Derek Rowntree. Scribner, New York, 1982. 200 pp., illus. \$12.95.

Synthetic and Degradative Processes in Marine Macrophytes. Proceedings of a conference, Bamfield, B.C., Canada, May 1980. L. M. Srivastava, Ed. Walter de Gruyter, New York, 1982. xiv, 296 pp., illus. \$60.

Techniques of Flavonoid Identification. K. R. Markham. Academic Press, New York, 1982. xii, 114 pp., illus. \$19.50. Biological Techniques Series.

Temporal Lobe Epilepsy, Mania, and Schizophrenia and the Limbic System. Papers from a symposium, Stockholm, June 1981. W. P. Koella and M. R. Trimble, Eds. Karger, Basel, 1982. x, 166 pp., illus. Paper, \$47.50. Advances in Biological Psychiatry, vol. 8.

Terpenoids and Steroids. Vol. 11, A Review of the Literature Published between September 1979 and August 1980. J. R. Hanson, Senior Reporter. Royal Society of Chemistry, London, 1982. xii, 144 pp., illus. \$94. A Specialist Periodical Report.

Therapeutic Selectivity and Risk/Benefit Assessment of Hypolipidemic Drugs. Giorgio Ricci, Rodolfo Paoletti, Francesco Pocchiari, and Dulio Poggolini, Eds. Raven, New York, 1982. xxii, 330 pp., illus. \$39.

Wasps of the Genus Trypoxylon Subgenus Trypaxylum in North America (Hymenoptera: Sphecidae). Rollin E. Coville. University of California Press, Berkeley, 1982. vi, 148 pp., illus. Paper, \$13. University of California Publications, Entomology, vol. 97.

Personnel Placement

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POSITIONS WANTED

Biochemist. Ph.D. (June 1983) desires postdoctoral research position related to membrane biochemistry/biochemical pharmacology (areas of experience). Vicinity of eastern or central Pennsylvania. Available July 1983. Box 301, SCIENCE. X

Biochemist-Microbiologist. Ph.D. 1978. Extensive experience in enzyme/protein chemistry. Regulatory aspects involving cAMP, calcium, calmodulin, receptors, cell-cell communication, membrane biology. Box 300, SCIENCE. X

Biochemist/Nutritionist. Experienced in enzyme purification and characterization; vitamin transport and assays; chemical and nutritional investigation of legumes; 5 years of teaching. Seeks position in industry, academia, or research institution. Box 299, SCIENCE. X

Biochemist/Physiologist. Ph.D., assistant professor, established investigator in lung research, lung injury, lipids, cellular physiology, endocrinology, publications in major journals, visiting professor, member APS, ASBC. Seeks research/teaching position. Box 302, SCIENCE. X

Desires challenging position utilizing master's degree in **biology** and extensive domestic and foreign field experience. Familiar with government procedures and paperwork. Fluent in Spanish. Write: 28 Flax Street, Dennis, Mass. 02638. X

Biomedical Communications. Published scholar; full professor; ongoing major research; NIH grantee for 6 years; experience with minority, international students. Seeks research/teaching in medical school, biology department. Box 297, SCIENCE. X

11/15, 12, 19

POSITIONS WANTED

Biotechnologist. Ph.D. Background in microbiology and biochemistry. Expertise in plant tissue culture, plant biochemistry, microbial selection, and enzyme purification. Two years of postdoctoral experience and more than 3 years of industrial experience in research and management. Planned and coordinated a new biotechnology program in addition to directing several outside university grants. Publications. Presently employed but seeking challenging change. Box 298, SCIENCE. X

Multidisciplinary Electronics Engineer, three degrees, 70 publications, U.S. citizen with 20 years of microwave, telecommunications, biomedical European experience in governmental/industrial research and international consulting; seeks North American position. Current research interest in biomedical, biomechanical topics. M. Brady, Box 154 Vinderen, Oslo 3, Norway; telephone (47 2) 148247. 11/5, 2

Ph.D. Engineering, P.E., water resources, hydrology, ecology, environmental chemistry. Many years of teaching, program leadership, and full-time research. Very strong executive manager. Box 295, SCIENCE. 11/5, 12, 19

Microbiologist. New Ph.D., with industry experience at B.S. level, desires research position in industry. Experience in monoclonal antibody production against viral antigens and development of immunoassays. Telephone: 515-233-4756, or Box 296, SCIENCE. 11/5, 12

Pesticide Residue Chemist. Experienced in pesticide residue analysis of animal feed, feed ingredients, fat and other agricultural commodities. Postdoctoral experience. Ph.D. (agronomy) and M.S. (organic chemistry). Telephone: 601-373-0264 after 5 p.m. CDT. Write: Box 267, SCIENCE. 11/5, 19; 12/3

Ph.D. Physicist seeks position, research and/or teaching. Areas of interest: general relativity, cosmology, quantum field theory, elementary particle physics, quantum gravity, foundations of physics. Decent office space a must. Résumé, references available upon request. Prefers western United States. V. B. Jhangiani, Department of Mathematics, University of California, Santa Barbara, Calif. 93106. 11/5, 12

Programmer/Analyst. M.S.E.E. 1964. Consulting and short-term contract programming, specializing in difficult engineering applications, microprocessor-based systems, data acquisition/analysis, and fast video image processing, using assembler as well as high level languages. P.O. Box 971, Amherst, Mass. 01004; telephone: 413-549-3994. X

POSITIONS OPEN

ANATOMY, FACULTY POSITION—The Department of Anatomy, Hahnemann University School of Medicine, has a faculty position available to begin 1 July 1983. The candidate should have teaching experience in microscopic and developmental anatomy. The candidate must have a significant record of research experience in cell biology to permit functioning as an independent investigator. Rank and salary depend upon qualifications and experience. Applicants should forward a résumé and the names of at least three references to: **Dr. Peter S. Amenta, Professor and Chairman, Department of Anatomy, Hahnemann University, 230 North Broad Street, Philadelphia, Pa. 19102.**

An Equal Opportunity/Affirmative Action Employer

ASSISTANT OR ASSOCIATE PROFESSOR—Tenure-track position in Anatomy Department beginning September 1983. Candidates should have Ph.D. with postdoctoral research experience and ability to obtain extramural grant support. Research interest in cell biology desired, especially in areas such as membrane structure and function, cell adhesion, and membrane glycoproteins. Individuals will participate in teaching in one of the areas of anatomy with ultimate development of a graduate course in their area of expertise. Superb research facilities available in new building. Send curriculum vitae, brief statement of research interests, and names of three references by 15 December to:

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

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POSITIONS OPEN

WASHINGTON UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF ANATOMY AND NEUROBIOLOGY

Applications are invited for positions available at the assistant, associate, and full professor level from candidates with research interests related to the nervous system. Particular attention will be paid to candidates with a strong background in cell and/or molecular biology. They may work in any discipline ranging from electrophysiology and morphology to biochemistry and genetics, but they must have a real interest in teaching medical students and graduate students. Applicants should send curriculum vitae, a statement of research and teaching interests, and the names of three references to: **Professor G. D. Fischbach, Department of Anatomy and Neurobiology, Washington University School of Medicine, 660 South Euclid, St. Louis, Mo. 63110. An Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR, tenure-track position available August 1983. Ph.D. in immunology with training in medical microbiology or mycology to teach undergraduate and graduate courses, conduct independent research, and supervise M.S. candidates. Clinical experience helpful. U.S. citizenship/permanent resident status required. Salary \$19,044 to \$22,896. Submit curriculum vitae by 31 January 1983 to: **Chairman, Microbiology Department, California State University, Long Beach, Calif. 90840. An Equal Opportunity/Affirmative Action/Title IX Employer.**

ASSISTANT PROFESSOR. Carleton College seeks a physiological psychologist for an initial 2-year appointment in a tenure-track position. The appointment will begin in September 1983, and applicants are expected to have received the Ph.D. by that time. Responsibilities include teaching two courses each of three terms (including physiological, introductory, laboratory, research methods), supervising student laboratory research, and training students in the use of a MINC laboratory computer. This person is also expected to continue an active research program and to involve Carleton's very able undergraduates in that work. Salary and benefits are competitive. Send curriculum vitae, three letters of recommendation, and a letter discussing teaching and research plans in the context of a liberal arts college to: **Dr. Neil Lutsky, Chairman, Department of Psychology, Carleton College, Northfield, Minn. 55057. An Equal Opportunity/Affirmative Action Employer.**

ASSISTANT/ASSOCIATE PROFESSOR—BIO-CHEMISTRY. Tenure-track position for a Ph.D. in biochemistry or chemistry; fall 1983. Applicants must have a strong commitment to teaching biochemistry at the undergraduate and graduate (M.S.) levels and to maintaining an active research program. Some teaching in freshman courses will also be assigned. Teaching and/or postdoctoral experience is desirable. San Jose State University has 24,000 students and 29 faculty in the department. Submit curriculum vitae, transcripts, and a statement of both teaching and research interests; have three letters of reference sent to: **John Neptune, Chemistry Department, San Jose State University, San Jose, Calif. 95192, by 15 December 1982. An Equal Opportunity/Affirmative Action Employer.**

A tenure-track **ASSISTANT PROFESSOR** is available for a Ph.D. biomedical chemist with postdoctoral experience. Expertise in natural products chemistry/pharmacognosy is required. A commitment to excellence in research and teaching is essential. Applications will be accepted until 1 December 1982 or until the position is filled. Contact: **Dr. Arthur D. Broom, Chairman, Department of Medicinal Chemistry, College of Pharmacy, University of Utah, Salt Lake City, Utah 84112. The University of Utah is an Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR OF CHEMISTRY. A tenure-track position is available for September 1983. The area in which the appointment will be made is unspecified; however, preference will be given to candidates from interdisciplinary areas, particularly electrochemistry, physical chemistry of polymers, organometallic chemistry, and biophysical chemistry. Strong interests and potential of excellence in both teaching and research are expected. Applications will be accepted up to 15 December 1982. Send résumé, three letters of recommendation, and summary of research plans to: **Dr. T. P. Fehner, Department of Chemistry, University of Notre Dame, Notre Dame, Ind. 46556. The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

ASSISTANT PROFESSOR OF BOTANY. Nine-month, tenure-track appointment beginning 1 September 1983 to engage in teaching and research in the Division of Life Sciences, University of Alaska-Fairbanks. Successful candidate will teach introductory botany and advanced courses. Research interest should emphasize field-oriented studies applicable to northern terrestrial environments. Applicants interested in plant-animal interactions are particularly invited. Curriculum vitae, graduate transcripts, and a list of five referees whom we may contact must be received by 15 January 1983. Reply to: **David F. Murray, Chairman, Botany Search Committee, Division of Life Sciences, University of Alaska, Fairbanks 99701.** *The University of Alaska is an Equal Opportunity/Affirmative Action Employer and Educational Institution.* Your application for employment with the University of Alaska may be subject to public disclosure if you are selected as a finalist.

The University of Minnesota, Department of Ophthalmology, is actively seeking a qualified Ph.D. in **IMMUNOLOGY** for a tenure-track appointment of **ASSISTANT PROFESSOR**. This individual will be provided laboratory space and support to apply the principles of immunology to ophthalmic research. Collaboration with a well-established immunology research center is available. Send résumé to: **Richard Lindstrom, M.D., Box 493 Mayo, University of Minnesota Department of Ophthalmology, Minneapolis, Minn. 55455.** *University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from qualified women and minorities.* Applications are due by 1 December 1982.

ASSISTANT PROFESSOR: INORGANIC CHEMISTRY. The Chemistry Department, Wesleyan University, invites applications for a tenure-track position in the general area of inorganic chemistry. Strong commitment to excellence in research and teaching at both graduate and undergraduate levels is essential. Send résumé, a short description of projected research, and names of three references to: **Bryan E. Kohler, Chairman, Department of Chemistry, Wesleyan University, Middletown, Conn. 06457.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, MOLECULAR BIOLOGIST DEPARTMENT OF BIOLOGY SYRACUSE UNIVERSITY

Applications for a tenure-track position are invited from individuals with doctoral training in molecular biology and postdoctoral research experience in an academic setting. Applicants with outstanding potential in all areas of molecular biology will be considered. Successful candidates will, in addition to carrying out a research program, teach courses to undergraduate and graduate students. Applications should include curriculum vitae (with publications and grant support), a statement of a proposed research plan, and the names of three scientists willing to write letters of recommendation. Applications should be sent by 1 February 1983 to: **Dr. Philip Dunham, Department of Biology, Syracuse University, Syracuse, N.Y. 13210.**

Syracuse University is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT SCIENTIST

Position for a scientist with extensive experience in membrane biology, protein biochemistry, and the use of biochemical and immunological techniques to study membrane structure and function. The job involves multidisciplinary research on the molecular mechanisms of cell-membrane excitability using ciliated protozoa. The work includes subcellular fractionation, the isolation of tissue-culture cell lines producing monoclonal antibodies, biochemical characterization of the antibodies, and their application in studies of cell-membrane excitability. Collaboration with electrophysiologists, electron microscopists, and other membrane biochemists is expected.

Minimum requirements: Ph.D. in molecular biology or related areas; 1 year of postdoctoral experience in monoclonal antibodies. Working knowledge of protozoan cell biology and experience in collaboration with electrophysiologists necessary. Available: 1 January 1983.

Salary: \$19,000 per annum; full-time, minimum of 40 hours per week.

Contact: **Wisconsin Job Service, 206 North Broom Street, Madison, Wisconsin 53706.** Telephone: 608-266-3678. This ad is not paid by Job Service funds.

POSITIONS OPEN

UPJOHN ASSISTANT PROFESSORSHIP OF MEDICAL SCIENCE AT BROWN UNIVERSITY. Brown University invites nominations and applications for the Upjohn Assistant Professor of Medical Science to teach pharmacology and do research in the Division of Biology and Medicine. This position is a 3-year appointment on the tenure-track, beginning 1 July 1983. Recipient of the position must have a Ph.D., M.D., M.D.-Ph.D., or D.V.M., 2 years of postdoctoral experience in pharmacology with demonstrated abilities in original research in either (i) the chemotherapy of proliferative or immunologic disorders or (ii) the autonomic pharmacology of cardiac or smooth muscle. In the area of autonomic pharmacology of cardiac or smooth muscle, research experience and facility in biochemical, pharmacological, and/or electrophysiological techniques is preferred in the areas of drug-receptor interaction, drug receptor characterization, or biochemical correlates of drug action on contractile properties of cardiac or smooth muscle. Teaching responsibilities will include participation in the teaching of pharmacology to medical students and the development of a course in the areas of expertise for undergraduate and graduate students. The holder of this position is expected to establish an externally supported research program, either independently or in collaboration with existing research groups. The research laboratory is to be located on campus. Candidates should submit their curriculum vitae, a résumé of their research interests, reprints of published papers, and the names of three references to: **Dr. Ralph P. Miesch, Box G, Division of Biology and Medicine, Brown University, Providence, R.I. 02912.** The deadline is 1 December 1982. *Brown University is an Equal Opportunity/Affirmative Action Employer and actively solicits applications from qualified women and minority groups.*

ANTICIPATED POSITION ASSISTANT PROFESSOR, MOLECULAR GENETICS

The Department of Microbiology, Louisiana State University (LSU), Baton Rouge, Louisiana, invites applications from individuals with an interest in regulation of gene expression and experience in the use of recombinant DNA techniques. The successful candidate will have at least 2 years of postdoctoral experience and the ability to develop an independent research program that is competitive for outside funding. This is an opportunity to join a department committed to excellence in research and teaching. Applicants should mail curriculum vitae, a statement of current and future research goals, and a list of three references by 1 February 1983 to: **Dr. M. D. Socolofsky, Chairman, Department of Microbiology, Louisiana State University, Baton Rouge, La. 70803.** *LSU is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN PHARMACOLOGY and appropriate clinical department. Opportunity to conduct fundamental research in Pharmacology Department and continue limited clinical activities. A new Clinical Pharmacology Program at the University of Florida is searching for a tenure-track faculty member. Applicant must be capable of establishing independent research program (preferably in cellular or molecular pharmacology) and will have responsibilities in teaching and patient care. Anticipated start date is 1 July 1983. 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 15 January 1983. *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN PHYSICAL CHEMISTRY AT IOWA STATE UNIVERSITY. Applications are invited for this position which is scheduled to open in summer 1983, but which can be filled later. All research areas in chemical physics will receive consideration. The essential requirement is truly outstanding potential for and commitment to excellence in research and teaching. Applicants should submit curriculum vitae, transcripts, a documented summary of past accomplishments, and an explicit statement of research plans and teaching objectives to: **Professor D. K. Hoffman, Chairman, Chemistry Department, Iowa State University, Ames, Iowa 50011.** They should also arrange for at least three letters of recommendation to be sent. Evaluation of applications will begin in January 1983. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA, SAN DIEGO, Department of Psychology, anticipates a position as **ASSISTANT PROFESSOR** in the area of **NEUROPSYCHOLOGY.** We seek a candidate with a Ph.D., who will be active in research and be able to teach a variety of areas such as language disorders, brain damage, diagnosis and treatment of brain injuries, or psychopharmacology at the undergraduate and graduate levels. Salary related to qualifications. Send résumé, reprints, and three letters of reference to: **Search Committee: Neuropsychology, Department of Psychology C-009, University of California, San Diego, La Jolla, California 92093.** Deadline for receipt of applications is 30 November 1982. *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT RESEARCH PHARMACOLOGIST

Must have general background in pharmacology and toxicology and specialized skill in neurophysiologic and neurochemical techniques necessary for drug dependence studies including experience setting up guinea pig ileum and mouse vas deferens preparations and determining Ca^{2+} uptake in brain synaptosomes. Salary: \$19,400, negotiable based on qualifications. Send résumé and letters of recommendation to: **B. Halperin, Pharmacology Department, University of California, San Francisco, Calif. 94143.** *An Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

THE UNIVERSITY OF MICHIGAN MEDICAL SCHOOL DEPARTMENT OF PHARMACOLOGY

ASSISTANT RESEARCH SCIENTIST position available in cardiovascular research, nontenured rank, grant-funded, for Ph.D. (pharmacology) with postdoctoral training in biochemical and cardiovascular pharmacology. The responsibility of the individual will be to perform basic research related to pharmacologic modification of ischemic myocardial injury. The successful candidate must show evidence of familiarity with the area and a record of publications in the pharmacologic and cardiovascular literature. He/she must be able to identify and define problems and to provide approaches to solutions through a scientific research process. The person selected will have responsibility for the training of junior investigators and will be expected to develop new research proposals and obtain support for new and/or continuing research activities. A proven ability to prepare results for publications and presentations at national meetings is an important asset. Send curriculum vitae and three letters of reference to: **Dr. Benedict Lucchesi, Professor, Department of Pharmacology, M6322 Medical Science Building I, The University of Michigan Medical School, Ann Arbor, Michigan 48109.** *A nondiscriminatory, Affirmative Action Employer.*

The Department of Genetics of The University of Texas M. D. Anderson Hospital and Tumor Institute has a state-supported opening at the **ASSOCIATE PROFESSOR** level. We seek an established molecular geneticist studying gene expression and regulation who will also interact with other somatic cell, developmental, and human genetics programs within the department. Graduate and postgraduate teaching opportunities are available. Applicants should send current curriculum vitae, a brief statement of research aims, and the names and addresses of five references to arrive before 15 December 1982 to:

Michael J. Siciliano, Ph.D.
Department of Genetics
The University of Texas M. D. Anderson Hospital and Tumor Institute
6723 Bertner
Houston, Texas 77030

An Equal Opportunity/Affirmative Action Employer

DEPARTMENT OF BIOLOGY UNIVERSITY OF HOUSTON

The Department of Biology, University of Houston, anticipates two tenure-track positions at the assistant or associate professor level beginning 1 September 1983; one in the area of **DEVELOPMENTAL BIOLOGY** and the other in the area of **EVOLUTIONARY BIOLOGY.** Responsibilities for both positions will include teaching at the graduate and undergraduate levels, supervision of graduate students, and development of a nationally competitive research program. Applicants should send curriculum vitae, selected reprints, and names and addresses of at least three references to: **Search Committee, Department of Biology, University of Houston, Houston, Texas 77004.** Deadline for applications will be 15 January 1983.

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POSITIONS OPEN

BIOCHEMIST-CELL BIOLOGIST. Position available for investigator with postdoctoral experience to participate in two ongoing areas of study: the study of myocardial metabolic changes during recovery from ischemia and the events that trigger cell proliferation. Independent research interests encouraged. Applicants should be experienced in enzyme assays, chromatography (HPLC), electrophoresis, cell culture, radioimmunoassays, and methods development. Faculty rank will depend on experience and academic qualifications. Applicants should include a résumé of research interests, curriculum vitae, bibliography, and the names of three references. *Women and members of minority groups are encouraged to apply.* Submit all application materials by 1 December 1982. **John Foker, M.D., Ph.D., Department of Surgery, Box 495 Mayo, University of Minnesota Hospitals, Minneapolis, Minn. 55455.** *The University of Minnesota is an Equal Opportunity Employer.*

BIOCHEMIST, Ph.D. Scientific and financial opportunity. Knowledgeable in protein isolation, purification, characterization. Creative, product-oriented individual for small, rapidly growing medical and surgical products company.

Helitrex Inc.
P.O. Box 2041
Princeton, N.J. 08540
Telephone: 201-329-3250

BIOCHEMISTRY—Two positions available immediately for studies on metabolic effects and regulation of alcohol and acetaldehyde metabolism; oxygen radical production by liver cells, microsomes, and purified MFO systems. Applicants should have a strong background in biochemistry or pharmacology. Please forward curriculum vitae and letters of recommendation to: **Dr. Arthur I. Cederbaum, Department of Biochemistry, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029.** *An Equal Opportunity Employer.*

TENNESSEE—CARDIOPULMONARY PHYSIOLOGIST, research associate, Department of Pediatrics, University of Tennessee College of Medicine, Knoxville Unit. Ph.D. and research experience required. Research in developmental hemodynamics and respiratory functions preferred. Position will remain open until filled. Rank and salary negotiable. Send curriculum vitae to: **Sachchida N. Sinha, M.D., Professor and Chairman, Department of Pediatrics, U-66, 1924 Alcoa Highway, Knoxville, Tennessee 37920,** or telephone: 615-971-3074. *An Affirmative Action/Title IX/Section 504 Employer.*

CELL BIOLOGIST

The Department of Zoology at Arizona State University invites applications for an anticipated tenure-track position at the **assistant professor** level, starting August 1983. Applicants must demonstrate the ability to conduct a vigorous research program in cell biology and have a strong commitment to teaching. Postdoctoral experience is expected. Preference will be given to candidates with research interests in the cytoskeleton, in membrane structure and function, or in cell regulation, but outstanding scientists in any area of cell biology will be considered. The person hired will be responsible for teaching an undergraduate course in histology and for developing courses in the candidate's area of interest. Curriculum vitae, a description of research interests and teaching experience, a list of publications, and names of three references should be received by 15 January 1983 and should be sent to: **Dr. Douglas E. Chandler, Department of Zoology, Arizona State University, Tempe, Arizona 85287.**

An Equal Opportunity/Affirmative Action Employer

CHEMICAL ENGINEERING AND PUBLIC POLICY

The Department of Chemical Engineering and the Department of Engineering and Public Policy at Carnegie-Mellon University are seeking a candidate for a joint appointment. Candidates must have strong credentials in Chemical Engineering and demonstrated research ability in the area of public policy. Areas of particular research interest include environmental systems and control, toxic substances, issues of safety and risk in process design, products liability, productivity and industrial automation, and regulatory issues in coal conversion technologies. Send résumé, list of publications, and names of three references to:

Dr. M. Granger Morgan
Department of Engineering and
Public Policy
Carnegie-Mellon University
Pittsburgh, Pa. 15213

POSITIONS OPEN

CELL BIOLOGIST

Loyola College, Baltimore, Maryland, is seeking a cell biologist with a background in ultrastructure to join the six-member biology staff of this private undergraduate institution. This is a full-time, tenure-track position at the assistant professor level or at higher level for an individual with more experience and willingness to assume chairmanship of the department. Candidates should have demonstrated excellence in teaching and research and have a commitment to undergraduate education. Applicants should send a complete résumé, including transcripts, a summary of research plans, a list of publications, and the names of three references, to:

Dr. Henry C. Butcher
Biology Department
Loyola College
4501 North Charles Street
Baltimore, Maryland 21210

Résumés received after 1 January 1983, may not be considered. *Affirmative Action Employer.*

UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

Keck Chair of Geological Sciences

The Department of Geological Sciences invites nominations and applications for the W. M. Keck Foundation Professorship in the Geological Sciences. We are seeking a geoscientist with a proven and distinguished record of research and teaching in any area of geology or geophysics. Preference will be given to candidates whose research is in structural geology or combines structure and geophysics.

The appointment is expected to be made by September 1983, and résumés, nominations, and letters of inquiry will be accepted until the chair is filled. Salary will be commensurate with the candidate's qualifications and experience.

USC is an Equal Opportunity/Affirmative Action Employer.

Contact:

Dr. Robert G. Douglas
Chairman
Department of Geological Sciences/SCI 165
University of Southern California
University Park-MS 0741
Los Angeles, Calif. 90089-0741

CHAIRPERSON DEPARTMENT OF BIOLOGICAL SCIENCES

Applications are invited for a position of department chairperson starting July–August 1983. The candidate is expected to provide leadership in teaching, research, and grant acquisition. The department has 14 faculty members and awards the B.S. and M.S. degrees. For more information, send a letter of inquiry by 1 December 1982 to:

Chairman, Search and Screen Committee
Department of Biological Sciences
Indiana University-Purdue
University at Fort Wayne
2101 Coliseum Boulevard, East
Fort Wayne, Indiana 46805

An Affirmative Action/Equal Opportunity Employer

POSITION OPEN: DIRECTOR, CENTRAL LABORATORY ANIMAL CARE PROGRAM. Management of a major university laboratory animal care program beginning 1 July 1983. The director will serve as interface among all colleges and departments using laboratory animals in their teaching and research programs and report to the vice president for research and the Laboratory Animal Care Committee. ACLAM Board-certification or eligibility is preferred. The director will supervise veterinarians, animal technicians, and caretakers, and pursue individual professional goals. Applicants should include the names of three references along with an up-to-date résumé and list of publications. Send application materials to: **W. J. Dorson, Jr., Engineering Center, Arizona State University, Tempe, Arizona 85287.** Closing dates for applications are 15 December 1982 and 15 January 1983.

POSITION OPEN: LABORATORY ANIMAL CARE VETERINARIAN. Position open 1 July 1983, for a half-time veterinarian who must be ACLAM Board-certified or eligible. Will report to the director of the Central Laboratory Animal Care Program. Applicants should include the names of three references and a current résumé. Send application materials to: **W. J. Dorson, Jr., Engineering Center, Arizona State University, Tempe, Arizona 85287.** Closing dates for applications are 15 December 1982 and 15 January 1983.

MARKETING DIRECTOR

INTOX LABORATORIES, located in **Little Rock, Arkansas**, is pleased to announce a major expansion of its toxicology laboratories. The expansion will be completed in early 1983 and will increase the INTOX facilities to over 75,000 square feet.

Available programs currently include:

**Teratology/Reproduction
Acute, Subchronic & Chronic Studies
Behavioral Toxicology
Genetic Toxicology
Neurotoxicology**

The expansion has stimulated the need for an individual to coordinate a major national/international marketing effort.

Positive attributes of a candidate will be:

- extensive experience and a record of accomplishments in marketing toxicology in the chemical or pharmaceutical industry
- thorough knowledge in the field of toxicology
- demonstrated interpersonal skills and capabilities for independent operation

Relocation to Arkansas is not required and a major corporate position including stock options is available for the suitable individual.

Please write in confidence to:



INTOX LABORATORIES
P.O. Box 3397
Little Rock, AR 72203
Attn: Karl P. Baetcke, Ph.D.

DIRECTOR OF FELLOWSHIPS

The Office of Scientific and Engineering Personnel (OSEP) of the National Research Council (NRC) invites applications for the position of Director of Fellowships. The closing date for applications is 15 November 1982.

In this position the incumbent will supervise activities and staff of the Fellowship Programs, arrange for evaluation of applications or placement, work with panels of scientists and engineers, maintain liaison with sponsors, and plan new fellowship programs.

Desired qualifications include a doctorate in the natural or social sciences, mathematics, or engineering; knowledge of how scholarly and scientific fields are structured and of the process of graduate education in these fields. Candidates should have demonstrated ability to work effectively with groups; good oral and writing ability; and knowledge of the situation of minorities and of international development. Experience required is at least 10 years of work beyond the doctorate as a faculty member in a doctorate-granting university or as a staff member of a government agency, foundation, or comparable organization with programs in graduate education.

Appointment to this position is planned for fall 1982; a part-time preliminary period of consulting, prior to arrival on the job, will be considered. The annual salary range is \$35,000 to \$40,000. Applications for this position, including curriculum vitae, description of especially relevant experience, and salary history, should be sent to:

Dr. William C. Kelly
Executive Director
Office of Scientific and
Engineering Personnel
National Research Council
2101 Constitution Avenue
Washington, D.C. 20418
An Equal Opportunity Employer

POSITIONS OPEN

CHAIRPERSON: ANATOMY. Howard University, College of Medicine, Washington, D.C., invites applications from individuals with demonstrated leadership in research, administrative experience, and commitment to education in the health sciences. The successful applicant will be expected to play a major role in expanding the graduate program and furthering interdisciplinary research. Send letter of interest with curriculum vitae and the names of at least three references to: **Dr. G.-M. Moolenaar, Anatomy Search Committee, Department of Physiology, Howard University, College of Medicine, Washington, D.C. 20059.** Closing date: 15 January 1983. *Howard University is an Equal Opportunity Employer.*

CHAIR, DEPARTMENT OF BOTANY. Provide creative administrative leadership, maintain an active research program, and teach in an area complementing departmental offerings. Candidates must have a Ph.D. or equivalent degree in a botanical area, academic administrative abilities, significant research publications, and a commitment to excellence in teaching. Send a letter of application, curriculum vitae, reprints of three research papers, and have three letters of recommendation sent by 15 December 1982 to: **Dr. Richard L. Hauke, Department of Botany, University of Rhode Island, Kingston, Rhode Island 02881.** *An Affirmative Action/Equal Opportunity Employer M/F.*

DEAN, COLLEGE OF ARTS AND SCIENCES (SEARCH REOPENED)

East Tennessee State University (ETSU), a regional institution of almost 10,000 students, invites nominations and applications for the position of dean in its largest college which consists of 17 departments with 200 faculty.

Qualifications: (i) an earned doctorate in an arts and sciences discipline; (ii) a notable record of teaching and research; (iii) appropriate administrative experience at least at the department chair level; (iv) effective interpersonal communication skills; (v) a demonstrated commitment to arts and sciences faculty and program development; (vi) evidence of leadership in professional activities and institutional or public service.

This is a 12-month position with salary in the \$38,000 to \$44,000 range, depending upon qualifications. Applicants must submit a letter of application and complete résumé by 28 November 1982. Nominations must be received by 19 November. Three letters of reference should also be sent after application. Address: **Personnel Department, P.O. Box 24,070A, East Tennessee State University, Johnson City, Tenn. 37614.** *ETSU is an Affirmative Action/Equal Opportunity Employer.*

DEVELOPMENTAL BIOLOGY Duties include teaching a course in developmental biology, a freshman level biology course, and department chairmanship. Requirements: an earned doctorate in biology, demonstrated ability in teaching, and evidence of potential in leadership and administration. Rank and salary are dependent upon qualifications. Letters of application (or nomination) and current academic résumé should be sent to: **Dr. Robert Bland, Department of Biology, College of St. Thomas, St. Paul, Minn. 55105,** before 1 February 1983. *The College is an Equal Opportunity/Affirmative Action Employer.*

The Department of Aeronautics and Astronautics, Stanford University, seeks an outstanding person for appointment to a regular **FACULTY POSITION** in the field of **EXPERIMENTAL STRUCTURES.** Salary and rank will be commensurate with experience and qualifications. The successful candidate should have proven his or her excellence in experimental research on the application of modern materials to lightweight structure, with emphasis on advanced composites. The position will offer the opportunity to develop and improve departmental structures laboratories and to interact with outside research organizations. A candidate should have interest in teaching. Industrial experience is also desirable.

In addition to guiding the research of advanced-degree students, responsibilities will include regularly scheduled graduate courses related to the specialty and occasional mechanics courses for undergraduate engineering students. *Stanford is an Affirmative Action Employer and welcomes applications from women and minority candidates.*

Inquiries should be made expeditiously to the chairman of the search committee: **Professor N. J. Hoff, Durand 355B, Department of Aeronautics and Astronautics, Stanford University, Stanford, California 94305.** Telephone: 415-497-2441.

POSITIONS OPEN

DIRECTOR OF PUBLIC PROGRAMS

The California Academy of Sciences is seeking an experienced administrator with strong organizational skills to oversee the education and exhibits departments of a major Natural History Museum. The director will be responsible for strong docent, lecture, and travel programs; and a rapidly developing exhibits program. The director will be one of a five-member staff executive team, and will report to the Executive Director, Frank H. Talbot. Responsibilities include long-range programs planning, grant development, budget planning, staff supervision, and interface between the education and exhibits departments and the scientific research departments. Ph.D. or equivalent experience is desired. Salary commensurate with education and experience. Museum experience is essential. Closing date for applications 31 December. Send letter of application with your curriculum vitae and names and addresses of three references to: **Nancy B. Dykes, Director of Administration, California Academy of Sciences, Golden Gate Park, San Francisco, California 94118.**

The University of Houston Central Campus is seeking a highly qualified D.V.M. (who also holds the M.S. or Ph.D. degree in one of the related medical sciences) to assume **FACULTY DIRECTORSHIP** of a recently completed 27,000 square feet Animal Care Facility (ACF) and three related smaller satellite facilities on or close to the campus and under the same federal license. Responsibilities will include the directorship of all ACF's and personnel (five full-time and six part-time) leading to accreditation of the facility. The other approximately 50 percent effort will be spent in fulfilling teaching and research pursuits. This person will hold full faculty status in a department most closely akin to his/her established academic expertise and will hold office and research space therein. Salary is open, competitive, and commensurate with experience. Only persons with both degrees, teaching experience, veterinary medical care administration experience, and proven research (grantsmanship) ability need apply. Please send résumé (including three names of qualified referees) to: **Animal Care Committee, attention: Robert L. Hazelwood, Department of Biology, University of Houston Central Campus, Houston, Texas 77004.** Closing date is 1 February 1983. *The University of Houston is an Equal Opportunity Employer.*

ECOLOGIST

The Department of Biology at West Chester State College invites applications for a full-time, tenure-track teaching/research position. We are seeking an aquatic ecologist with expertise in the areas of biological and chemical analysis of water and computer assisted modeling and analysis of ecosystems. Requirements include a Ph.D. and college teaching experience. Postdoctoral experience is desirable. Expected availability: fall 1983. Submit curriculum vitae, a complete set of undergraduate and graduate transcripts, and three letters of recommendation by 30 January 1983 to:

**Dr. Jack Waber, Chairman
Department of Biology
West Chester State College
West Chester, Pa. 19380**

Women and minorities are encouraged to apply. An Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION in nursery seedling physiology research available 1 January 1983. Design and lead nursery cooperative, working closely with industry and agency specialists. Assistant professor, 12-month basis, tenure-track. Ph.D. and 3 years of experience required. Salary: \$25,000 to \$27,000, dependent upon qualifications. Application closing date: 15 December 1982.

FACULTY POSITION in vegetation management research available 1 January 1983. Research on control of competing vegetation in conifer plantations, with emphasis on improved, environmentally acceptable techniques, with participation in continuing education programs. Associate professor, 12-month basis. Ph.D. and 4 years of experience required; \$35,000 to \$40,000 salary, dependent upon qualifications. Application closing date: 15 December 1982.

Send letter of application, curriculum vitae, transcripts, and three letters of reference by 15 December 1982 to: **Dr. John Gordon, Head, Department of Forest Science, School of Forestry, 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.

POSITIONS OPEN

QUEEN'S UNIVERSITY, DEPARTMENT OF MEDICINE, invites applications from **ENDOCRINOLOGISTS** with special expertise in diabetes to assume direction for the total program in diabetes within the department. Preference will be given to established investigators in the field of diabetes, but candidates who have recently finished their training and show exceptional promise with regard to a research career will be considered. Academic salary and rank commensurate with experience. *In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Candidates of both sexes are equally encouraged to apply.* Send curriculum vitae and names of three referees to: **Dr. E. R. Yendt, Chairman, Division of Endocrinology, Department of Medicine, Queen's University, Kingston, Ontario, Canada K7L 3N6.**

FACULTY POSITIONS

The Department of Microbiology, College of Medicine, University of California, Irvine, has openings for two assistant (or possibly associate) professors in the tenure-track series. Individuals with research interests and experience in the control of gene expression in microorganisms, viruses, cultured animal cells, or the immune response are invited to apply. Preference will be given to those using recombinant DNA methods in their research. Teaching duties will include courses presented to graduate and medical students. Send curriculum vitae and three letters of reference to: **Chairman, Microbiology Search Committee, Department of Microbiology, University of California, Irvine, Calif. 92717.** *An Affirmative Action/Equal Opportunity Employer.*

The University of Michigan Medical School, Department of Radiology, has on occasion open **FACULTY POSITIONS** within the department and its affiliated hospitals. Physicians filling these positions will take part in the programs of patient care, teaching, and research of the Department of Radiology. They will supervise the activities of house officers and aid in the teaching of house officers and medical students. Qualified applicants must be American Board of Radiology certified and Board-eligible. Previous training or work experience in an academic institution as well as demonstration of previous academic research and teaching experience are desirable. Academic rank will depend on qualifications and experience.

Interested applicants should contact: **William Martel, M.D., Acting Chairman, Department of Radiology, University of Michigan Medical School, Ann Arbor, Michigan 48109.** *A nondiscriminatory, Affirmative Action Employer.*

FACULTY POSITION is available in a developing Biology Department at Clarkson College, Potsdam, N.Y. Clarkson has well-established Ph.D. programs in chemistry, physics, mathematics, and engineering; and a young undergraduate program in biology. The new faculty member will be expected to play a central role in developing Biology's contribution to an interdisciplinary graduate program. The successful candidate should be capable of developing or maintaining a vigorous research program. Research area is open although molecular biology, biochemistry, cell biology, microbiology, biophysics, mathematical biology, or bioengineering could effectively interface with existing programs. Excellence in teaching is essential. Rank is open and salary is competitive. Send curriculum vitae with names and addresses of three references to:

**Sharon K. Hotchkiss
Department of Biology
Clarkson College
Potsdam, N.Y. 13676**

GEOLOGY POSITION AVAILABLE

Colby College is seeking a geologist to join the faculty in a tenure-track position for the fall semester 1983. Preference will be given to a person who has strong interests and training in geophysics and global tectonics, structural geology, and the applications of quantitative methods to geology. A joint appointment with teaching responsibilities in geology and physics is possible. Applicants should have a Ph.D. degree. A strong interest in undergraduate teaching and in research is essential. Applicants should respond with a résumé, transcripts, a description of research interests, and three letters of recommendation by 1 March 1983, addressed to: **Professor Donald Allen, Chairman, Geology Department, Colby College, Waterville, Maine 04901.**

Colby College is an Affirmative Action/Equal Opportunity Employer.

SENIOR BIOCHEMIST/ IMMUNO- CHEMIST

BIO-RAD LABORATORIES, a leading manufacturer of diagnostic products, has a position available for a senior researcher with expertise in immunoassay development, monoclonal antibody technology, hybridoma screening, protein chemistry, tissue culture techniques and tumor immunology. Position requires a Ph.D. in biochemistry, immunology or related field with postdoctoral research experience preferred. Candidate must possess excellent communication and organizational skills.

Please send resume with salary history to BIO-RAD LABORATORIES, Human Resources Department 80, 2200 Wright Avenue, Richmond, CA 94804. An equal opportunity employer.

BIO-RAD Bio-Rad Laboratories

PURDUE UNIVERSITY: Department of Psychological Sciences. Applications are invited for the following tenure-track positions at the assistant professor level: (i) **CLINICAL PSYCHOLOGIST** to teach clinical assessment of children and supervise child clinical practicum, (ii) **DEVELOPMENTAL PSYCHOLOGIST**, social development and/or infancy are preferred specialty areas, (iii) **HUMAN FACTORS SPECIALIST** who could qualify for a joint appointment in the School of Industrial Engineering, (iv) **QUANTITATIVE-MATHEMATICAL PSYCHOLOGIST** with solid mathematical background and interests in statistics and measurement, and (v) one or possibly two **SOCIAL-PERSONALITY PSYCHOLOGIST(S)** with strong theoretical background and interest in one or more applied fields, for example, health, human sexuality, environmental issues, gerontology, consumer issues. Broad knowledge and range of interests with strong research credentials and potential are essential qualifications for all of the above positions. Responsibilities include undergraduate and graduate teaching, supervision of graduate student research and, for position (i), clinical training and supervision. Three or possibly five of the above positions will be filled depending on the availability of funds.

Applications are also invited for a 1-year, non-tenurable position at the assistant professor level in **PERSONALITY PSYCHOLOGY**. Responsibilities include teaching in specialty area at undergraduate and graduate levels, teaching introductory psychology, and assisting in research training. Teaching experience and strong background in research are preferred qualifications.

Starting date for all positions is August 1983. Salaries and benefits are highly competitive. Send curriculum vitae, representative (p) reprints, and three letters of recommendation by 15 December 1982 to: **F. Robert Brush, Head, Department of Psychological Sciences, Purdue University, West Lafayette, Indiana 47907**. Clearly identify position(s) for which you wish to be considered. *Women and minority candidates are especially encouraged to apply.*

Purdue University is an Equal Opportunity/Affirmative Action Employer.

Microbiologist

San Francisco Bay Area

Stauffer Chemical Company, established in 1885, is a worldwide chemical manufacturing and research firm. Currently, we have an exceptional career opportunity for a qualified professional.

Requires a BS or MS in Biochemistry, one year's research experience that includes one or more of these areas: plant biochemistry, hormone action, immunology, electrophoresis or cell culture.

A competitive salary and fringe benefits package are offered. Qualified applicants, please forward a resume to: Ms. D. A. Walker, Stauffer Chemical Company, 1200 S. 47th Street, Richmond, CA. 94804 Equal opportunity employer.

Stauffer
CHEMICALS

An Equal Opportunity Employer

DEVELOPMENTAL THERAPEUTICS PROGRAM

The Division of Cancer Treatment, National Cancer Institute, National Institutes of Health, Public Health Service is seeking applicants for the position of Chief, Toxicology Branch to organize, plan, direct, and evaluate an Extramural Contracts Program involved in the investigation of the qualitative toxicities of potential antitumor agents and modalities in experimental animals. Research guidance provided for the development of organ specific toxicity assays and for investigations of the toxicity of second generation analogs. Toxicological assessments will be used in the preparation of investigational new drug applications. Continuous surveillance of the literature will be conducted for new developments in the field of toxicological evaluation of synthetic and natural products applicable to the needs of the Developmental Therapeutics Program.

Applicants should have advanced training at the Ph.D. level (or equivalent) in Pharmacology/Toxicology or closely related fields with extensive laboratory experience in Cytotoxic Drug Pharmacology and/or Toxicology for top consideration. Postdoctoral experience (or equivalent) in biomedical research and administration is required with

productivity being documented by publications, etc. Experience in administration of contracts preferred.

Position may be filled through Civil Service or Commissioned Corps of U.S. Public Health Service. Salary Range—\$39,689—\$57,500 depending on the qualifications of the applicant selected.

Position covered by Civil Service Requirement. Life insurance and health benefits offered. Duty Station—Silver Spring, Maryland. U.S. Citizenship required.

Submit application (Personal Qualifications Statement, SF-171) with names of three references, to: Ms. Sara Benesch, Personnel Management Branch, National Cancer Institute, Building 31, Room 3A32, National Institutes of Health, Bethesda, Maryland 20205. Applications must be received or postmarked by November 30, 1982. Call Ms. Benesch at (301) 496-6862 for further information.

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

ENVIRONMENTAL HEALTH BIOLOGIST. Full-time, tenure-track position. Candidate must have doctoral degree (or be near completion), teaching experience, and active research interests in pertinent field, for example, host defense mechanisms, homeostasis, adaptation physiology. Send curriculum vitae and four letters of recommendation by 15 January 1983 to: **Dr. Tee L. Guidotti, Head, Division of Occupational and Environmental Health, Graduate School of Public Health, San Diego State University, San Diego, Calif. 92182.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN ECOLOGY (REOPENED)

Applications are now being accepted for a tenure-track position in ecology, the appointment to be effective 16 September 1983. Duties will consist of both teaching and research on some fundamental aspect of the ecology of higher or lower plants. The teaching assignment will consist of undergraduate and graduate courses in plant ecology and related areas. The specific research area is open; however, preference will be given applicants whose research would complement other research programs in the department. Appointment will be on a 9-month basis and at the rank of assistant professor. A Ph.D. degree with specialization in ecology is required, and preference will be given applicants who have 1 or 2 years of postdoctoral research and/or teaching experience. Salary will be dependent upon qualifications and experience. Closing date for applications: 1 January 1983.

Applications and inquiries should be directed to:

Dr. Thomas C. Moore, Chairman
Department of Botany and Plant Pathology
Oregon State University
Corvallis, Oregon 97331

Applications must include curriculum vitae, reprints of research papers, transcripts of academic records, three letters of recommendation, and any other information considered pertinent by the applicant. Persons who have previously applied need only update their files.

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

GENETICIST AND NEUROBIOLOGIST CARLETON COLLEGE

Applications are invited for two tenure-track positions available September 1983 in the Department of Biology. One position is for a molecular eukaryotic geneticist. The other is for a neurobiologist. Responsibilities include teaching an upper-division course in genetics and neurobiology, respectively; a course related to her/his specialty; and involvement in a team-taught introductory course. The applicant's area of expertise will be important in the selection. The department is interested in persons with a commitment to teaching and research in the context of a liberal arts college. Applicants must have a Ph.D., and postdoctoral training is advantageous. Applications, including curriculum vitae, undergraduate and graduate transcripts, a summary of research goals, and three letters of professional recommendation, should be sent to: **Dr. J. L. Tymoczko, Department of Biology, Carleton College, Northfield, Minn. 55057,** by 15 December. *Carleton College is an Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGY RESEARCH POSITION. Positions available 1 July 1983 in postdoctoral series and faculty research series for Ph.D. to conduct basic and clinically oriented research related to the mucosal immune system, immunoregulation, mediators, oral vaccines, and gut allergy. Backgrounds in cellular immunology, immunogenetics, molecular biology, or protein chemistry preferred. Please send résumé to: **Dr. Martin Kagnoff, Department of Medicine, M-013, University of California, San Diego, La Jolla, Calif. 92093.**

UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES DEPARTMENTS OF MEDICINE AND BIOCHEMISTRY

Two positions available starting January through September 1983 for persons with strong background in **molecular biology and somatic cell genetics** for study on cellular aging; 2 to 3 years with salary, depending upon experience. Apply with curriculum vitae and names of three references to: **Dr. Sam Goldstein and Dr. Robert J. Shmookler Reis, Departments of Medicine and Biochemistry, Slot 604, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Ark. 72205.**

POSITIONS OPEN

GEOPHYSICAL FLUID DYNAMICIST/PHYSICAL OCEANOGRAPHER. Applications are solicited for a junior faculty position in ocean physics or dynamics to begin in the academic year 1983-1984. Areas of interest to the department include analytical, numerical, and laboratory modeling of physical processes and phenomena in the sea.

Yale University is an Equal Opportunity/Affirmative Action Employer and encourages women and members of minority groups to compete for this position.

Curriculum vitae, publications, and the names of three or more referees should be sent by 1 February 1983 to: **Karl K. Turekian, Chairman, Department of Geology and Geophysics, P.O. Box 6666, New Haven, Conn. 06511.**

HEAD, DEPARTMENT OF GENETICS AND DEVELOPMENT

The **UNIVERSITY OF ILLINOIS at URBANA-CHAMPAIGN** invites applications and nominations in its reopened search for the headship of this 20-person department. The candidate should be an active and accomplished scientist concerned with **SYNTHETIC EVOLUTIONARY PERSPECTIVES IN GENETICS AND DEVELOPMENT.** The person should have the capability for strong and creative leadership in research and curriculum development. The department offers B.S., M.S., and Ph.D. degrees within the School of Life Sciences. The appointment, with duties beginning August 1983, subject to budgetary approval, will be at the rank of professor and the salary is negotiable. Applicants should send curriculum vitae and the names of three references to: **Department of Genetics and Development, University of Illinois, 515 Morrill Hall, 505 South Goodwin Avenue, Urbana, Ill. 61801; telephone 217-333-7814.** All completed applications received before 20 December 1982 are assured consideration. *The University of Illinois at Urbana-Champaign is an Affirmative Action/Equal Opportunity Employer.*

DEPARTMENT HEAD, Department of Chemistry, North Carolina State University. Qualifications should include strong administrative ability and leadership, proven research ability, and a commitment to promoting good teaching and research program development. The department has 32 faculty members, 70 graduate students, major teaching responsibilities at the undergraduate level, and graduate programs leading to the M.S. and Ph.D. degrees. The anticipated starting date is 1 July 1983. Nominations and/or applications with the names of three references are requested by 15 December 1982 and should be sent to: **Dr. Richard R. Patty, Chairman, Search Committee, Department of Physics, North Carolina State University, Raleigh, N.C. 27650.** *An Equal Opportunity/Affirmative Action Employer.*

MEDICAL DIRECTOR OF BLOOD BANK—The Department of Pathology has an opening for a physician, Board-certified or eligible in pathology or other appropriate specialty boards, and eligible for licensure in Florida. Major responsibilities include supervising the immunohematology, hemotherapy, and paternity testing services at a 480-bed teaching hospital; teaching residents and medical students; and developing an independent research program. Salary and rank are commensurate with academic background and experience (assistant or associate professor) with anticipated starting date of 1 March 1983. Forward applications by deadline of 1 February 1983 to: **Juan C. Scornik, M.D., Associate Professor, Department of Pathology, Box J-275, JHMHC, University of Florida, Gainesville, Florida 32610.** *An Equal Employment Opportunity/Affirmative Action Employer.*

MICROBIOLOGIST—Middlebury College. Regular faculty appointment: instructor or assistant professor level, responsible for general microbiology, upper division microbiology laboratory course, supervision of undergraduate research, and as enrollments permit, a seminar of his/her choice. The successful candidate will be active in microbial research and interested in involvement in the introductory biology program. Preference given to candidates with no more than two years of full-time teaching experience. Ph.D. or all but dissertation required. **Position available 1 February or 1 September 1983.** Completed applications, including curriculum vitae, statement of teaching and research interests, all undergraduate and graduate transcripts, recommendations, and date available, must be postmarked by 3 December 1982. Three recent letters of recommendation should be sent directly to: **C. R. Landgren, Chairman, Department of Biology, Middlebury College, Middlebury, Vermont 05753.** Telephone: 802-388-3711, extension 2435. *An Equal Opportunity Employer.*

POSITIONS OPEN

IMMUNOLOGY/IMMUNOGENETICS ENDOCRINOLOGY MOLECULAR BIOLOGY AS RELATED TO DIABETES

The Banting and Best Department of Medical Research is seeking candidates for the position of **assistant professor** to be funded through **The Banting and Best Diabetes Centre**, University of Toronto. Two positions are available 1 July 1983 and will carry an initial appointment of 5 years at a competitive salary. Candidates should have a strong background in one or more of the areas of immunology/immunogenetics, endocrinology, or molecular biology and be prepared to develop a strong research program in one or more of the following areas: immunology as related to diabetes, mechanisms of insulin action or genetics as related to diabetes. Successful candidates will be expected to attract independent research grants and to spend at least 75 percent of their time in research. Teaching obligations will be minimal. Applicants should forward curriculum vitae, an outline of research interests, and the names of three references to: **Dr. David H. MacLennan, Professor and Chairman, Banting and Best Department of Medical Research, University of Toronto, 112 College Street, Toronto, Ontario, Canada M5G 1L6.**

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

TENURE-TRACK LIMNOLOGIST/AQUATIC ECOLOGIST POSITION in the Department of Fisheries and Wildlife, Utah State University (USU). Rank and salary competitive, commensurate with qualification. Successful applicant expected to teach, develop research and graduate program in limnology and aquatic ecology, and accept normal university assignments. Ph.D. required; teaching and research experience preferred. Contact: **F. H. Wagner, UMC 52, Utah State University, Logan, Utah 84322.** *USU is an Equal Opportunity/Affirmative Action Employer.*

MOLECULAR GENETICS. The deadline for applications for a tenure-track position in molecular genetics at the University of Massachusetts/Amherst is being extended to 1 December 1982. Candidates should have a strong background in eukaryotic gene expression with specific research interests in replication, transcription, translation, genetic regulation, molecular evolution, or development. The appointment for a plant molecular biologist will be in the Botany Department. Successful applicants will be expected to maintain an active research program, contribute to undergraduate and graduate teaching, and actively participate in the new Interdepartmental Graduate Program in Molecular and Cellular Biology. The position will be filled effective on or after 1 February 1983. Send résumé, brief statement of present and future research, and three letters of recommendation to: **Molecular Genetics Search Committee, Department of Botany, University of Massachusetts, Amherst, Mass. 01003.** *An Equal Opportunity/Affirmative Action Employer.*

NEUROBIOLOGY, RESEARCH ASSISTANT PROFESSOR

The Department of Cell Biology, The University of Texas Health Science Center at Dallas, is conducting a search for a research assistant professor with research experience focused on anatomical and physiological features of neurotransmitter systems in the mammalian nervous system. Qualifications include an M.D. or Ph.D. degree and at least 1 year of postdoctoral experience. Teaching responsibility in medical and graduate level neurobiology courses, as well as participation in departmentally based Graduate Program. Research interests should complement ongoing activities in the department. Please forward curriculum vitae, statement of research interests, and the names of three references by 1 January 1983 to: **Neurobiology Search Committee, Department of Cell Biology, The University of Texas Health Science Center, Dallas, Texas 75235.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL ASSISTANT: Ph.D. or equivalent degree in biochemistry, cell biology, molecular biology, or developmental biology. To study development of avian cornea and wound healing in ocular tissue. Send résumé and two references to: **Winston W. Y. Kao, Ph.D., Ophthalmic Research Laboratories, Department of Ophthalmology, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Mail Location Number 527, Cincinnati, Ohio 45267.** Telephone: 513-872-5151.

RESEARCH OPPORTUNITIES IN BIOTECHNOLOGY

Sterling-Winthrop Research Institute announces the expansion of its Microbiology Department to include a biotechnology section. We are seeking dynamic and creative scientists to work in the following areas:

MOLECULAR GENETICS

Experience in construction of cloning, vectors for expression of eukaryotic genes in *E. coli*, *B. subtilis* or yeast.

MOLECULAR BIOLOGY

Experience in cloning and expression of genes from RNA and DNA viruses.

MOLECULAR BIOLOGY

Experience in cloning and expression of genes from mammalian cells.

CELLULAR BIOLOGY

Experience in cell mediators involved in regulating immune responses.

The successful candidates will have a PhD or equivalent and 1–2 years related experience.

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

We offer an attractive salary and benefits package with the opportunity for professional growth. The Institute is located near Albany, N.Y. which is readily accessible to major summer and winter recreational activities. Please send your curriculum vitae including salary requirements in confidence to:

Mr. John G. Barry
Employment Administrator



STERLING-WINTHROP RESEARCH INSTITUTE

A Division of Sterling Drug, Inc.
Columbia Turnpike, Rensselaer, NY 12144

An Equal Opportunity Employer M/F/H

SUPERVISORY MEDICAL OFFICER

The Division of Heart & Vascular Diseases, National Heart, Lung, and Blood Institute, is seeking applicants for the position of Supervisory Medical Officer (Research) in the Cardiac Diseases Branch with an annual salary of \$51,353 and applicant may be eligible for bonus payments to Federal physicians.

The Cardiac Diseases Branch is responsible for the planning and administration of cardiac disease-oriented research, both clinical and fundamental. Its scope encompasses all forms of cardiac and peripheral vascular disease, exclusive of hypertension and the etiology of atherosclerosis. The staff is involved with regular and program project grants and with targeted programs; the latter involve special grant and contract programs with particular staff involvement. Currently, major targeted programs are in the area of Ischemic heart disease—the Specialized Centers of Research on ischemic Heart Disease, programs on sudden cardiac death and lethal arrhythmias, on fundamental processes associated with the protection of ischemic myocardium, methods of estimating the extent of ischemic myocardium, such predominantly in-hospital collaborative clinical trials as the Coronary Artery Surgery Study and the Multicenter Investigation for the Limitation of Infarct Size.

Applicant should have an M.D. or equivalent degree, and possess scientific and clinical experience in cardiovascular diseases. Postgraduate training and/or research experience in a biomedical science related to cardiovascular diseases and board certification in internal medicine are desirable. The position to be filled is in the Civil Service. However, individuals in the Public Health Service Commissioned Corps may submit a resume. Other interested applicants should file a Standard Form 171, Personal Qualification Statement, Curriculum Vitae and Bibliography to the NHLBI Personnel Office, National Institutes of Health, Public Health Service, 9000 Rockville Pike, Building 31, Room 5A34, Attn: Ms. Donna Pratt, Bethesda, Md. 20205 or call (301) 496-6477. The application deadline is November 30, 1982. NIH is an Equal Opportunity Employer.

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

NEUROPSYCHOPHARMACOLOGISTS

The Alcohol Research Center of The Salk Institute, under a training grant from the National Institute of Alcoholism and Alcohol Abuse, has positions available for postdoctoral training. U.S. citizens, with M.D., Ph.D., or equivalent degrees are invited to submit curriculum vitae, letters of support, and statements of specific interests. Positions, of 1 to 2 years duration, are available through 30 June 1987. Applications should be sent to: **Dr. Floyd E. Bloom, The Salk Institute, P.O. Box 85800, San Diego, California 92138. The Salk Institute is an Equal Opportunity/Affirmative Action Employer.**

PHYSIOLOGY/NEUROSCIENCES

A full-time position to teach courses in general physiology and neurosciences is available in a health professions college in Southern California. Applicants should have a Ph.D. in physiology or a related field and have a strong commitment to teaching and research. Please send curriculum vitae to:

Box 292, SCIENCE

PLANT BIOCHEMIST/MOLECULAR BIOLOGIST

The Department of Agricultural Biochemistry at the University of Nebraska-Lincoln invites applications and nominations for a 12-month, tenure-track faculty position in plant biochemistry or molecular biology, which will not augment, but rather complement the department's existing programs in photosynthetic C-metabolism and membranes, N₂ fixation, and host-specific pathotoxins. Although this position will primarily entail basic research within the Agricultural Experiment Station (75 percent), the appointee will also participate in the teaching program (25 percent). Salary and rank are open. Postdoctoral training is highly desirable. Send résumé and three letters of support by 1 February 1983 to: **Dr. R. Chollet, Department of Agricultural Biochemistry, University of Nebraska-Lincoln, Lincoln, Neb. 68583-0718. Telephone: 402-472-2936. An Equal Opportunity/Affirmative Action Employer.**

HARVARD UNIVERSITY PLANT ECOLOGIST

Applications and nominations are invited for a tenured professorship in plant ecology in the Department of Organismic and Evolutionary Biology of Harvard University. Position involves teaching and research in plant ecology. Candidates must have a substantial academic reputation and proven experience in ecological teaching and research. Preferred area of expertise: some aspect of field plant ecology, either at the population or community level.

Letters of application or nomination with curriculum vitae and three references should be sent by 1 December 1982 to: **Professor Otto T. Solbrig, Gray Herbarium of Harvard University, 22 Divinity Avenue, Cambridge, Mass. 02138.**

Harvard is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL FELLOW

Research institute is seeking Ph.D. (one or more). The successful applicant will participate in program project to study the growth, function, and aging of differentiated cells in culture. Knowledge of cell biology or biochemistry is necessary. Special consideration will be given to candidates with experience in culture or biochemical function of differentiated cells:

Send résumé and three letters of reference to:

**Personnel Office
W. Alton Jones Cell Science Center
Old Barn Road
Lake Placid, New York 12946**

An Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITIONS IN CARCINOGENESIS available immediately. Successful candidates will join an interdisciplinary research program emphasizing mechanisms of carcinogenesis by chemicals, radiation, and retroviruses and related areas such as molecular genetics, DNA repair, membranes, and tumor immunology. Beginning stipend is \$15,000; U.S. citizenship or permanent residency required. Persons soon to be awarded or holding recent Ph.D., M.D., or D.V.M. degrees are invited to write for information to: **Training Office, University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn. 37830. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

THE AUSTRALIAN NATIONAL UNIVERSITY invites applications for **POSTDOCTORAL FELLOW OR RESEARCH FELLOW** in the **RESEARCH SCHOOLS OF BIOLOGICAL AND PHYSICAL SCIENCES**. The successful applicant will join a multidisciplinary team, including Dr. S. B. Laughlin and Professor A. W. Snyder, working on neural principles in vision. A strong interest in developing the mathematical principles of visual processing is essential, while experience in image processing and physiological or behavioural techniques is desirable. Enquiries may be made to Professor A. W. Snyder, Department of Applied Mathematics, Research School of Physical Sciences. Salary in accordance with qualifications and experience within the ranges: research fellow \$22,430 to \$29,467 per annum; postdoctoral fellow grade 1 (at fixed point) \$19,333 to \$22,148 per annum. Current exchange rates: A\$1 = U.S.\$0.95 = UK\$5p. Appointment will be: research fellow initially up to 3 years with the possibility of extension to 5 years; postdoctoral fellow up to 2 years with the possibility of extension to 3 years. Reasonable appointment expenses are paid; superannuation; assistance with housing. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Applicants may obtain further particulars from: **The Registrar, The Australian National University, P.O. Box 4, Canberra, A.C.T. 2600, Australia**, with whom applications close on 30 November 1982.

POSTDOCTORAL POSITION for studies on molecular basis of maternofetal transfer of IgG: isolation and characterization of membrane Fc receptor. Background in protein chemistry, cell membrane chemistry, enzymology, or immunochemistry. Salary: \$17,000. Send curriculum vitae, description of research experience, and names and telephone numbers of three references to: **Dr. Max Schlamowitz, Department of Biochemistry, University of Texas System Cancer Center, 6723 Bertner Avenue, Houston, Texas 77030. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available for studies on phosphate accumulation and toxic chemical degradation by bacteria using recombinant DNA techniques. A Ph.D. (or equivalent) with experience in biochemical and biophysical techniques, microbial physiology, and genetics required. Only persons with experience in gene cloning and plasmid DNA manipulation need apply. Send curriculum vitae and names of three references to: **Dr. A. M. Chakrabarty, University of Illinois at Chicago, Department of Microbiology and Immunology, 835 South Wolcott, Chicago, Ill. 60612. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION in the mechanism of action of steroid hormone receptors. Studies will include biochemical and physiological aspects of receptors for 1,25-dihydroxyvitamin D and/or progesterone, depending on background and interest. Good opportunity for training in integrative cellular and molecular endocrinology. Prior biochemical experience helpful. Send résumé and list of references to: **Dr. M. R. Walters, Department of Physiology, Tulane Medical School, New Orleans, La. 70112.**

POSTDOCTORAL POSITION available immediately for a highly qualified person to examine the water relations of both ferns and desert succulents. Experience with anatomy, root physiology, mineral nutrition, and/or computing useful. Send letter with curriculum vitae and names of three references to: **Dr. Park S. Nobel, Department of Biology, University of California, Los Angeles, Calif. 90024.**

POSTDOCTORAL POSITION to work on the hormonal control of glycogen metabolism and protein phosphorylation. Experience in protein chemistry and peptide separation would be valuable. Please send curriculum vitae and have at least two letters of recommendation sent to: **Dr. Peter J. Roach, Department of Biochemistry, Indiana University School of Medicine, Indianapolis, Indiana 46223. Telephone: 317-264-2931. An Equal Opportunity/Affirmative Action Employer, M/F.**

POSTDOCTORAL POSITION available now to study the molecular properties of hydrogenase of methane-producing bacteria. A strong background in biochemistry is desirable, and experience with protein purification and characterization is preferred. See *Biochimica et Biophysica Acta* 594, 105 (1981) for subject areas. Send curriculum vitae and names of three references to: **Dr. J. S. Chen, Department of Anaerobic Microbiology, Virginia Polytechnic Institute and State University, Blacksburg, Virginia 24061.**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for recent Ph.D. in biochemistry, physiology, or endocrinology, to study the endocrine, physiological, and behavioral effects of the hypothalamic releasing hormone. Experience with the development of RIA, RRA, and HPLC techniques is necessary. Possible 3-year appointment. Send curriculum vitae and names of three references to:

**Dr. Ned Kalin
Psychiatry Service
William S. Middleton Memorial Veterans Hospital
2500 Overlook Terrace
Madison, Wis. 53705
Equal Opportunity Employer**

POSTDOCTORAL POSITION IN SWITZERLAND for biochemical characterization of membrane receptors and hormone stimulated adenylate cyclase systems. Applicants should have Ph.D. in biochemistry and background in isolation and characterization of membrane proteins is desirable. Salary: Swiss francs 45,000 per annum, plus benefits. Forward curriculum vitae, description of research interest, and names and addresses of three references to: **Professor F. R. Bühler, Department of Research and Department of Medicine, University Hospital, Kantonsspital CH-4031 Basel, Switzerland; telephone: 61-25 25 25, extension 162.**

POSTDOCTORAL POSITION available, for NMR study of anion and water transport across red-cell and other membranes. Experience with membrane or red-cell biochemistry and physiology highly desirable. The project offers an opportunity to learn NMR techniques in an established NMR laboratory. Standard NIH stipend. Send curriculum vitae and names of three references to: **Dr. Maurice Eisenstadt, Department of Medicine, Albert Einstein College of Medicine, Bronx, N.Y. 10461. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE position available to study biochemical mechanisms for responses of skin to ultraviolet and visible radiation. Research requires experience in analytical biochemical techniques and/or membrane biochemistry. Salary: \$18,000 to \$25,000, depending on qualifications. Please send curriculum vitae and names of three references to: **Irene E. Kochevar, Ph.D., Photomedicine Unit, Department of Dermatology, Harvard Medical School, Massachusetts General Hospital, Boston, Mass. 02114. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH TRAINING IN EXPERIMENTAL HEMATOLOGY. Support by NIH training grant. Nine participating research staff members. Dr. David E. Harrison is program director. Applicants must be U.S. citizens or have permanent residence visas. Preference to applicants with no more than 2 years of postdoctoral experience. For further information, call or write: **Training Office, Department S, The Jackson Laboratory, Bar Harbor, Maine 04609; telephone: 207-288-3371, extension 253.**

One year fixed-term position (**RESEARCH ASSISTANT/RESEARCH ASSOCIATE**) in forest genetics available 1 January 1983, to assist in population genetic studies of forest trees. M.S. or Ph.D. (preferred) in forest genetics or genetics, with experience in computer programming and writing scientific articles; \$15,000 to \$21,000 per year, depending on qualifications. Application closing date: 10 December 1982. Send résumé, three letters of reference, and transcripts to: **Dr. John C. Gordon, Head, Department of Forest Science, School of Forestry, 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.**

RESEARCH ASSOCIATE. Position for a Ph.D. in physiology available December 1982 to study central nervous system control of water and electrolyte metabolism. Background in neurophysiological techniques, catecholamine assays, or metabolism studies desirable. Opportunity for teaching in medical physiology course. Send curriculum vitae and names of references to:

**Dr. John R. Thornborough
Sophie Davis School of Biomedical Education
The City College of New York
138th Street and Convent Avenue
Science Building—Room J909
New York, N.Y. 10031**

An Equal Opportunity/Affirmative Action Employer

PRINCIPAL DEVELOPMENT CHEMIST

R & D Group Leader in Clinical Chemistry

This individual will supervise our growing Clinical Chemistry R & D Group. The position includes responsibility for technical and staff direction involving the supervision of Ph.D. scientists and technicians in the recommendation, development, and evaluation of new products. This position reports directly to the Division R & D Manager. The selected candidate will have a high level of technical expertise and a proven record of successful clinical product development and group supervision.

PRODUCT MARKETING MANAGER

Immunochemistry

The position includes responsibility for development and implementation of comprehensive worldwide marketing plans. In-depth knowledge of immunochemistry products and demonstrated performance in the domestic market is required. The position reports directly to the Division Marketing Manager and offers a high degree of visibility and potential.

The **Clinical Diagnostics Division** of Beckman is located just north of San Diego and offers a major salary, benefits, and relocation package for the selected candidates. Please respond in complete confidence to: J. Lindquist, Manager, Professional Staffing, Beckman Instruments, Inc., 6200 El Camino Real, Carlsbad, CA 92008. Equal Opportunity Employer M/F.

BECKMAN

RESEARCH FELLOW

ANALYTICAL MICROSCOPY

A post-doctoral research fellowship is available at the American Museum of Natural History in collaboration with the Mount Sinai School of Medicine. The research program focuses on the characterization of amphiboles in terms of those mineralogical properties that may impart biological activity. In particular, the basic relationships of geologic provenance, crystal habit and intergrowths, physical properties and crystal-chemical properties will be studied. The position offers a unique opportunity to develop and carry out analytical microscopy investigations on amphiboles that are important in geology and environmental medicine.

Applicants should have a PhD and a strong background in mineralogy/crystallography/crystal chemistry with working experience in analytical electron microscopy (AEM, STEM, TEM, HRTEM, SEM), single-crystal and powder X-ray diffraction, electron microprobe analysis and appropriate sample preparation techniques.

The initial appointment will be for one year, with possible continuation. The starting date is open. Candidates should send vitae and the names of three references to:

Dr. George E. Harlow
Dept. of Mineral Sciences

American Museum of Natural History

Central Park West at 79th Street
New York, New York 10024

An equal opportunity (M/F/H) affirmative action employer

CSIRO

AUSTRALIA TELESCOPE PROJECT PROJECT MANAGER A\$39,850 to A\$43,800 EPPING, N.S.W. AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The Organization has approximately 7400 employees, 2900 of whom are research and professional scientists, located in divisions and sections throughout Australia.

The federal government has decided to provide \$25 million to fund the construction by the CSIRO Division of Radiophysics of a new radiotelescope array to be known as the Australia Telescope. The telescope will include a linear array of new antennas at Culgoora (near Narrabri) in N.S.W., a new antenna at Siding Spring (near Coonabarabran) in N.S.W., and the existing 64-metre antenna at Parkes. The elements of the telescope will be connected by microwave links. The project is scheduled for completion in 1988, Australia's bicentennial year.

Applications are now being invited for the position of project manager, who will be responsible to the chief of the Division of Radiophysics for the overall management and co-ordination of the Australia Telescope Project. The appointee will be responsible for co-ordination of scientific input to the project, particularly the design of antennas, control systems, data communication links, low-noise receivers, and correlators. The appointee will also be responsible for supervision of the construction of the telescope. Following completion of the construction, it is envisaged that the appointee will continue as a leading member of the Division's research staff.

Applicants should possess a Ph.D. or equivalent qualifications, with an extensive background of relevant research experience and a record of outstanding achievement in scientific research. Experience in the management of projects in radioastronomy or related fields is highly desirable.

Appointment is offered on an indefinite basis. However, applicants interested in a term appointment will also be considered.

Australian Government superannuation benefits are available.

Dr. R. H. Frater, chief, Division of Radiophysics, would be pleased to discuss the position with potential applicants and receive advice concerning this appointment from people with a particular interest in the project.

Applications, in writing and stating full and personal and professional details, the names of at least three referees, and quoting reference Number A2402, should reach: **The Chief, CSIRO Division of Radiophysics, P.O. Box 76, Epping, N.S.W. 2121, Australia**, by 26 November 1982.

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 - ☐ \$103 air-surface delivery via Holland

- ☐ **Subscriber rates**
 - ☐ \$85 USA ☐ \$109 Canada ☐ \$112 Foreign
 - ☐ \$140 air-surface delivery via Holland

- ☐ Payment enclosed ☐ Bill me later

Name Please print

Address

City State Zip

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POSITIONS OPEN

GRADUATE RESEARCH PROFESSORSHIP IN COGNITIVE PSYCHOLOGY UNIVERSITY OF FLORIDA

Applications and nominations are invited for this distinguished senior faculty position. The successful applicant will be expected to be nationally recognized for his/her significant scientific contributions to human cognitive psychology. A secondary research area in developmental, social-personality, linguistics, computer sciences, or neuropsychology would be highly desirable. Send an updated curriculum vitae, a description of present and projected program of research and support levels, and confidential list of at least five references by 1 January 1983 to: **Professor Wilse B. Webb, GRP Search Committee, Department of Psychology, The University of Florida, Gainesville, Fla. 32611.** Additional information may be obtained by contacting **Professor Webb, telephone: 904-392-2007.** *The University of Florida is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE (Postdoctoral). Chesapeake Biological Laboratory is seeking research scientist with training and experience in environmental chemistry/toxicology to fill a permanent faculty position (nontenured). Successful candidate should have a strong background in the application of modern GC, HPLC, and GC/MS techniques as applied to the study of the environmental chemistry/toxicology of toxic organic chemicals. Individual selected will take primary responsibility for a GC/MS facility and participate in ongoing research programs as well as develop an independent research program in their own area of interest. Position offers promotion through faculty ranks. Salary commensurate with experience. Send résumé and three letters of reference to: **Dr. Jay C. Means, Chairman of Search Committee, Chesapeake Biological Laboratory, P.O. Box 38, Solomons, Maryland 20688-0038.** Closing date for receipt of applications: 3 December 1982. *The University of Maryland is an Affirmative Action/Equal Opportunity Employer.*

RESEARCH AND TECHNICAL POSITIONS. A biotechnology company in the greater Sacramento area of Northern California is seeking professional and technical staff in the areas of physical and organic chemistry, molecular biology, entomology-parasitology, immunology, and microbiology. Professional level applicants should have a doctoral degree and postdoctoral training. Applicants for technical positions should have a bachelor's degree or equivalent. Salary commensurate with experience. *An Equal Opportunity Employer.* Send résumé to: **Personnel Manager, P.O. Box 1227, West Sacramento, Calif. 95691-1227.**

RESEARCH VIROLOGIST. Biomedical research firm is seeking an individual with a Ph.D. who has 3 to 5 years of broad-based experience in virology. Experience in virus antigen and antibody preparation, cell culture with immunology background, and experience in monoclonal antibody production desired. Position involves directing on-going virus research and directing new research projects. Supervisory experience is required. Send curriculum vitae and names of three references to: **Microbiological Associates, Personnel Department, 5221 River Road, Bethesda, Md. 20816.** *An Equal Opportunity/Affirmative Action Employer.*

VETERINARY ANATOMIST. Tenure-track position available 1 January 1983; rank, salary, and starting date negotiable. Candidates should be knowledgeable in veterinary anatomy and have a broad academic background and research interest in basic medical science. The D.V.M. and an anatomically related Ph.D. or the equivalent are preferred. Half-time teaching includes instruction to veterinary medical students. The individual must develop a research program. Address inquiries and applications (curriculum vitae, three references, and description of teaching research interests) to: **Dr. William J. Banks, Screening Committee Chairman, Department of Anatomy, College of Veterinary Medicine and Biomedical Sciences, Colorado State University, Fort Collins, Colo. 80523.** Deadline for submission of application is 1 December 1982.

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

POSITIONS OPEN

RADIATION MICROBIOLOGY RESEARCH

A postdoctoral research position is available in a new research program investigating the genetic effects of low level (background) radiation.

Applicants should have an advanced degree in microbiology with a background in molecular genetics. An interest in radiation biology would be useful, but is not essential. To apply, please send resume to:



**Walter D. McFall
Box J-CHM-55
Employment & Placement
9700 S. Cass Avenue
Argonne, IL. 60439**
Affirmative Action Equal
Opportunity Employer

RESEARCH ASSOCIATE with Ph.D. degree wanted to run laboratory dealing with amino acid and hormone measurements for clinical investigative studies in diabetes, exercise, and nutrition.

Contact:

**Philip Felig, M.D.
Yale University School of Medicine
333 Cedar Street
New Haven, Conn. 06510**

RESEARCH ASSOCIATE. Immediate opening to study cell membrane proteins in relation to pathogenesis. Background in biochemistry or microbiology preferred. Send curriculum vitae and three letters of recommendation to: **I. van de Rijn Ph.D., Department of Microbiology and Immunology, Bowman Gray School of Medicine, 300 South Hawthorne Road, Winston-Salem, N.C. 27103.** *Affirmative Action/Equal Opportunity Employer.*

RESEARCH MICROBIOLOGIST

Norden Laboratories, subsidiary of SmithKline Beckman Corp. and leader in the animal health industry, has an immediate opening in our research and development area. As an important member of our biological research team, the research microbiologist will be responsible for developing a program in molecular biology directed toward bacterial and viral vaccines.

Applicants should have a Ph.D. in microbiology with 1 to 2 years of postdoctoral training in molecular genetics with the emphasis on utilization of eukaryotic and prokaryotic host systems for expression of specific proteins. Experience with standard recombinant DNA techniques and antigen identification techniques is preferred.

In addition to an attractive starting salary and monthly cost of living adjustments, Norden offers a comprehensive benefits package that is one of the finest in the industry. Interested applicants should send a résumé (including salary requirements) in confidence to:

**CONNIE SOUCIE
601 West Cornhusker Highway
Lincoln, Neb. 68521**

An Equal Opportunity/Affirmative Action Employer

SCIENCE EDUCATION/GENERAL EDUCATION

Assistant professor. Tenure position. Teach general education and science education courses. Position to be filled by September 1983.

Applicant should be at the doctorate level with an outstanding record for teaching undergraduates, a commitment for continuing in research, and an interest in science higher education. The applicant should also have a good science base with all grades in the upper quartile. Interested applicants should submit a résumé, and have all undergraduate and graduate transcripts sent to:

**Dr. Dean A. Rosebery, Head
Division of Science
Northeast Missouri State University
Kirksville, Mo. 63501**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE. A postdoctoral research associate position is available for a cellular physiologist to investigate both transcellular ion currents and intracellular ion concentration changes during the activation and early development of vertebrate eggs. Both the extracellular vibrating probe (*J. Cell Biol.* 63, 614) and recessed-tip intracellular ion-specific microelectrode techniques are being used in this research. The correlation between the transcellular current pattern and local glycoprotein domains is being studied using video-monitored fluorescence detection.

Some experience with electrophysiology is desired. Anticipated appointment is for 2 to 3 years. Starting salary \$14,500 per year. Closing date: 15 December 1982.

Send résumé and names of three references to: **Dr. R. Nuccitelli, Zoology Department, University of California, Davis, Calif. 95616.**

Equal Opportunity/Affirmative Action Employer

RESEARCH SCIENTISTS

Difco Laboratories, a world leader in products for the microbiology and biomedical laboratories, is expanding its research and development effort in the diagnosis of infectious disease. A number of new positions are available at the M.S. and Ph.D. levels of training and experience. Backgrounds of particular interest are pathogenic microbiology, molecular and medical aspects of animal virology, cell culture, protein biochemistry, immunochemistry, and immunology. Salaries will be commensurate with experience and background and include an excellent benefits program. Candidates should submit résumés, including salary history and requirements, and the names of three references in confidence to: **A. L. Lane, Vice President, Research and Development, Difco Laboratories, P.O. Box 1058A, Detroit, Mich. 48232.** *Equal Opportunity Employer, M/F.*

University-based institute for chemical analysis and material sciences seeks **SENIOR SCIENTIST** to conduct research, direct Ph.D. students, participate in seminars and lectures, and co-author and publish papers in the area of basic chromatographic science. Senior scientist will be specifically responsible for developing and conducting experiments in the separation of optical isomers, the synthesis and characterization of tailor made bonded phases for the high performance liquid chromatographic separation of proteins, and the theory and practice of reversed phase and ligand exchange chromatography. Applicant must have Ph.D. in chemistry, 4 years of research experience beyond the Ph.D., and at least 1 year of experience in the separation of optical isomers utilizing chromatographic procedures and 1 year of experience in the organic synthesis of tailor made bonded phases for high performance liquid chromatography. A strong background in chemical synthesis and gas/liquid chromatography is required. Also necessary are experience in training Ph.D. students and a record of publication in the areas of synthesis and chromatography. Hours: 40 hours per week; salary: \$30,000. Send résumé to: **Job Number 2580, Marie Molineux, Division of Employment Security, Hurley Building, Government Center, Boston, Massachusetts 02114.**

THEORETICAL NUCLEAR PHYSICIST

Tenure-stream assistant professor position for a person to conduct basic research in theoretical physics, with emphasis on heavy ion physics. Will also be expected to assist experimentalists with the design of experiments and the analysis of data and results. Must also be actively engaged in supervising and training postdoctoral research associates and graduate students. In addition, will teach introductory, advanced, graduate, and general education courses in physics.

Minimum qualifications include a Ph.D. degree with emphasis in theoretical nuclear physics, 2 to 4 years of postdoctoral research experience, and demonstrated ability to use large scale computing facilities to write and de-bug software used to model nuclear structure and reactions. Must also have proven ability to conduct a creative productive research program in the forefront of nuclear physics. Salary is \$27,500 per year on an annual (12-month) basis.

Send curriculum vitae and the names and addresses of at least three references to: **Michigan Employment Security Commission, Room 415 Immigration Unit, 7310 Woodward Avenue, Detroit, Mich. 48202.** Please indicate reference number 23782 on all replies and inquiries.

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POSITIONS OPEN

The Department of Comparative Medicine, Tufts University School of Veterinary Medicine, is recruiting a D.V.M., Ph.D., or M.D. **TOXICOLOGIST at the assistant professor level.** Candidates in all areas of basic or applied toxicology are encouraged to apply. Responsibilities will include: developing an active research program within the veterinary school, directing a course in toxicology, and participating in collaborative research programs within the biomedical institutions of Tufts. Interested candidates should send curriculum vitae plus the names of three references to:

Dr. C. L. Reinisch
Tufts University
136 Harrison Avenue
Boston, Mass. 02111

Rochester Institute of Technology Department of Biology

Anticipated position. **VERTEBRATE PHYSIOLOGIST**, Ph.D., assistant professor, tenure-track. To teach cell physiology and comparative anatomy and participate in human physiology and anatomy and general biology. Opportunity to teach a course in speciality and carry on research. Send curriculum vitae and three letters of recommendation to: **Department of Biology, Search Committee, Rochester Institute of Technology, One Lomb Memorial Drive, P.O. Box 9887, Rochester, New York 14623.** Application deadline is 15 December 1982. *Rochester Institute of Technology is an Equal Opportunity/Affirmative Action Employer.*

TRAVEL GRANTS

TRAVEL GRANTS FOR XV INTERNATIONAL CONGRESS OF GENETICS, NEW DELHI, 1983

The Genetics Society of America (GSA) has applied to several granting agencies for funds to support the travel of U.S. scientists to the XV International Congress of Genetics in New Delhi, India, 11 to 21 December 1983. A travel awards committee has been appointed to evaluate applications and recommend awards. Although the grants will be administered through the GSA, membership in the GSA is not required for allocation of an award. Selection will be based upon contribution to the Congress and professional benefit to be gained from attendance. Applications must be received by 1 February 1983. Application forms can be obtained from:

Dr. Rochelle Easton Esposito
Chairperson, GSA Travel Awards Committee
Department of Biology
University of Chicago
1103 East 57th Street
Chicago, Illinois 60637

PROGRAMS

DOCTORAL PROGRAM

The Department of Anatomy of the University of Iowa College of Medicine offers graduate programs leading to the Ph.D. degree in the areas of cell, cardiovascular, and reproductive biology, neurosciences, and hormone action. Both morphologic and biochemical research approaches are extensively used in the department. Teaching and research assistantships are available for qualified applicants. Currently, assistantships are for \$5700 plus tuition. For further information and application forms, write: **Director, Graduate Training, Department of Anatomy, BSB, The University of Iowa, Iowa City, Iowa 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*

The Rand Graduate Institute (RGI)

Invites applications for its doctoral degree program in policy analysis. Deadline for submitting applications for 1983-1984 is February 1, 1983. RGI is an integral part of The Rand Corporation. Its curriculum consists of interdisciplinary study, combined with compensated work, leading to the award of the Ph.D. in Policy Analysis. The Rand Graduate Institute is fully accredited by the Western Association of Schools and Colleges.

A master's degree, or equivalent post-bachelor's degree training and experience, is required for admission.

For more information concerning application procedures, write: The Rand Graduate Institute, 1700 Main Street, Santa Monica, California 90406, or telephone: 213/393-0411.

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TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS available in immunogenetics and immunochemistry at Washington University School of Medicine. Ongoing projects include: **Murine system:** structural study of normal and mutant Ia antigens, expression of Ia in subsets of normal cells, cloned T cells, and hybridomas, and role of carbohydrate in Ia function. **Human system:** Structure of HLA Class I and II antigens, molecular interactions in Class II subunits, and the structural basis of HLA-disease associations. Applicants with training in immunology and/or biochemistry preferred. Send curriculum vitae to: **Dr. Susan Cullen and Dr. Benjamin Schwartz, Box 8045, Washington University School of Medicine, St. Louis, Mo. 63110.** *An Equal Opportunity Employer.*

FELLOWSHIPS

POSTDOCTORAL AWARDS IN OCEAN SCIENCE AND ENGINEERING

Woods Hole Oceanographic Institution invites applications for 1-year postdoctoral scholar awards from new and recent doctorates in fields of biology, chemistry, engineering, geology, geophysics, mathematics, meteorology, and physics, as well as oceanography. Recipients of awards are selected on a competitive basis, with primary emphasis placed on research promise.

Fellowship stipend is \$21,500. Appointees are eligible for group health insurance and a modest research budget. Recipients are encouraged to pursue their own research interests independently or in association with resident staff. Completed applications must be received by 1 January 1983 for 1983-1984 awards. Awards will be announced by 1 March. Write for application forms to: **Dean of Graduate Studies, P.O. Box S, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543.**

Equal Opportunity/Affirmative Action Institution

POSTDOCTORAL RESEARCH FELLOWSHIP in viral immunopathology. Available immediately. Areas of interest are the roles of virus and host immune cellular responses in insulin dependent diabetes mellitus-like disease in mice. Interests and experience in either immunology or virology. *Women and minorities are encouraged to apply.* Send curriculum vitae with list of references with telephone numbers to: **Jacqueline Marceau, Department of Pathology, University of Vermont, Burlington, Vermont 05405.**

UNIVERSITY OF COLORADO VISITING FACULTY AND POSTDOCTORAL FELLOWSHIPS for research in ATMOSPHERIC AND CLIMATE DYNAMICS ENVIRONMENTAL AND ATMOSPHERIC CHEMISTRY ENVIRONMENTAL BIOCHEMISTRY AND GEOCHEMISTRY

One year awards offered by the Cooperative Institute for Research in Environmental Sciences (CIRES). Awards may be made to senior scientists, including those on sabbatical leave, or to recent Ph.D. recipients. Stipend is scaled to experience, and the program is open to scientists of all countries. CIRES is supported by NOAA and the University of Colorado. Applications for the 1983-1984 academic year awards should be sent to: **The Director, CIRES Visiting Fellows Program, Campus Box 449, University of Colorado, Boulder, Colorado 80309.** Include curriculum vitae, publications list, and a brief outline of the proposed research. In addition, applicants should request that three persons familiar with their qualifications send letters of recommendation. First consideration will be given to applications received by 1 December. Final application deadline is 15 February. *The University of Colorado is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP IN CARDIOVASCULAR PHARMACOLOGY

Project involves the molecular mechanism of regulation of cardiac contractility. The relationship among hormone receptors, protein phosphorylation, cyclic nucleotides, calcium transport, and slow calcium channels will be studied in isolated ventricular muscle cells. Applicants should submit their curriculum vitae and names of references to:

Dr. Stephen A. Rudolph
Department of Pharmacology
Case Western Reserve University
Cleveland, Ohio 44106

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FELLOWSHIPS

GRADUATE FELLOWSHIPS

Louisiana State University (LSU) Alumni Federation Fellowships are available on a competitive basis to prospective graduate students who intend to pursue a Ph.D. degree in microbiology. Awards include a stipend of \$10,000 per year (tax exempt), exclusion from all tuition and fees, and freedom from any teaching responsibilities. Applications must include: verbal and quantitative GRE scores; transcripts of all college work; three letters of recommendation; a brief narrative of the student's educational and research experience; an outline of educational goals; and a one- or two-page summary of a research proposal. Deadline: 1 February 1983. Send inquiries to: **Dr. Michael Orłowski, Graduate Advisor, Department of Microbiology, 508 Life Sciences Building, Louisiana State University, Baton Rouge, La. 70803.** *LSU is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP/RESEARCH ASSOCIATE

Two positions available from January and July 1983 respectively; each for 2 years to study biochemistry and molecular genetics of human glycolytic enzymes. Research would involve protein chemistry and biochemical genetics of hexokinase isozymes; and synthesis of cDNAs and isolation, cloning and characterization of normal and mutant genes of phosphofructokinase isozymes. Background in biochemistry and/or molecular biology essential. Send curriculum vitae to: **Dr. S. Vora, Columbia University, College of Physicians and Surgeons, 630 West 168 Street, New York, N.Y. 10032.** Telephone: 212-694-5895. *Columbia University is an Affirmative Action/Equal Opportunity Employer.*

LA TROBE UNIVERSITY, MELBOURNE, AUSTRALIA. LA TROBE RESEARCH FELLOWSHIPS 1983. Applications for research fellowships are invited from persons who have gained doctoral or equivalent qualifications within the last 5 years or so, or who anticipate gaining such qualifications by 30 June 1983. Applicants may propose a research project involving collaboration with La Trobe University research workers or teams. Two fellowships are available for offer in 1983. Each fellowship will be awarded for an initial period of 12 months with the possibility of renewal for a further maximum period of 12 months. Salary offered is at the rate of A\$18,068 a year. Enquirers should briefly indicate the research discipline of interest to them. Application must be made on the University forms available from the Staff Officer and completed forms marked 'Confidential' and addressed to: **The Staff Officer, La Trobe University, Bundoora, Victoria, Australia,** must reach the University no later than 28 February 1983.

POSTDOCTORAL POSITION available 1 January 1983 for research in clinical cytogenetics, especially in gene mapping with in situ hybridization techniques. Stipend is \$18,000. Send curriculum vitae and names and telephone numbers of two references to: **Dr. Charleen M. Moore, Department of Anatomy, The University of Texas Health Science Center at San Antonio, 7703 Floyd Curl Drive, San Antonio, Texas 78284.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIP available immediately in developmental biology of parasitic nematodes studying role of nutrients (particularly cobalamins, sterol, and lipids) and physicochemical factors on molting and differentiation in vitro. Background in biochemistry and culture techniques desirable. Send résumé, letter of interest, and names of three referees to: **Dr. Paul P. Weinstein, Department of Biology, University of Notre Dame, Notre Dame, Ind. 46556.**

MARKETPLACE

BIOTECHNOLOGY LABORATORY EQUIPMENT LIQUIDATION, including a custom designed fermentation system, miscellaneous laboratory equipment from hybridoma, peptide, and DNA laboratories. Fume hoods, incubators, centrifuges, roller-bottle racks, columns, and miscellaneous glassware. Reply to: **Box 291, SCIENCE.**

NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

OPENING DATE: November 1, 1982/CLOSING DATE: November 30, 1982

(All applications must be post marked before closing date)

ASSOCIATE DIRECTOR, NEUROLOGICAL DISORDERS NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE

The National Institutes of Health invites nomination and applications for the position of Associate Director, Neurological Disorders, National Institute of Neurological and Communicative Disorders and Stroke (NINCDS). This Institute conducts, fosters, and supports research and research training on the causes, prevention, diagnosis, and treatment of neurological, sensory, communicative, and muscle disorders. The Institute's efforts cover the spectrum of basic, applied, and developmental research. Programs under the responsibility of this position encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental neurological disorders, stroke and central nervous system trauma.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$54,755 to \$61,300 per annum (currently limited to \$58,500) depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

The mandatory qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist, GS-601, or equivalent combination of experience and training, which demonstrates a broad knowledge and understanding of major public health problems; and (2) have research experience and knowledge of research programs related to neurological disorders. In addition, candidates must meet the following managerial/executive qualifications: experience in the leadership/management or a basic or clinical 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 processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO/Affirmative Action objectives; (6) developing and implementing procedures for monitoring program performances, including periodic analysis and evaluation.

Candidates who meet the mandatory requirements will be further evaluated by the Search Committee on the following factors: managerial/executive qualifications in excess of mandatory level; scientific reputation/peer recognition; additional training and education in neurological disorders; and honors and awards indicative of outstanding contributions to the field of neurological disorders, and the degree to which they exceed the minimally qualified level of the mandatory managerial/executive qualifications.

Applications (Personal Qualifications Statement, SF-171) are to be sent to Helen Price, Personnel Specialist, Building 31, Room 8A25, NINCDS, National Institutes of Health, Bethesda, Maryland 20205. For further information contact Helen Price on (301) 496-6334. A current curriculum vitae and bibliography must accompany all applications. Applications of women, members of minority groups and handicapped individuals are especially solicited.

THE NATIONAL INSTITUTES OF HEALTH IS AN EQUAL OPPORTUNITY EMPLOYER.

NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

OPENING DATE: November 1, 1982/CLOSING DATE: November 30, 1982

(All applications must be post marked before closing date)

ASSOCIATE DIRECTOR, COMMUNICATIVE DISORDERS NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE

The National Institutes of Health invites nomination and applications for the position of Associate Director, Communicative Disorders, National Institute of Neurological and Communicative Disorders and Stroke (NINCDS). This Institute conducts, fosters, and supports research and research training on the causes, prevention, diagnosis, and treatment of neurological, sensory, communicative, and muscle disorders. The Institute's efforts cover the spectrum of basic, applied, and developmental research. Programs under the responsibility of this position encompass intramural laboratory research and extramural (grants and contracts) activities in communicative disorders.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$54,755 to \$61,300 per annum (currently limited to \$58,500) depending on qualifications. Candidates may be eligible for Physicians Comparability Pay up to \$10,000 per year. Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

The mandatory qualifications are: (1) meet the minimum educational requirements for Medical Officer, GS-602, or Health Scientist Administrator, GS-601, or equivalent combination of experience and training, which demonstrates a broad knowledge and understanding of major public health problems; and (2) have research experience and knowledge of research programs related to communicative disorders. In addition, candidates must meet the following managerial/executive qualifications: experience in the leadership/management or a basic or clinical 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 processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO/Affirmative Action objectives; (6) developing and implementing procedures for monitoring program performances, including periodic analysis and evaluation.

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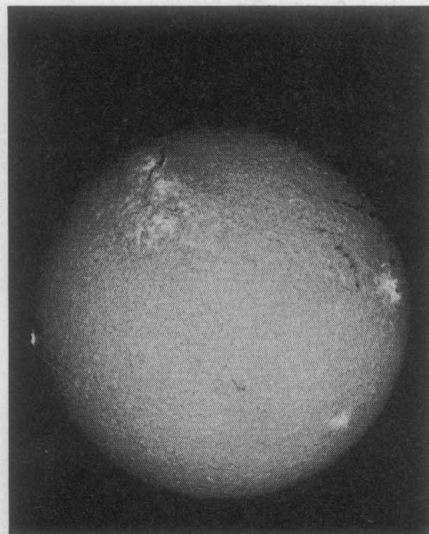
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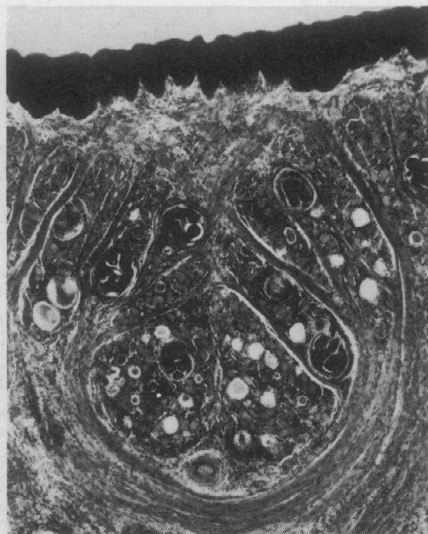
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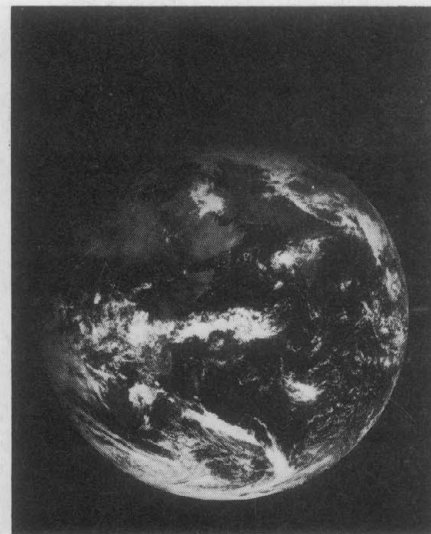
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Hydrogen-alpha photograph of solar flares. Sacramento Peak Observatory, Sunspot, N.M.



Photomicrograph of *trichinella spiralis* in muscle, 175 X. Tungsten-halogen source (3200 K) with KODAK WRATTEN Filter No. 58.



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