

one hand and plasma physics on the other. One of the keystones of modern plasma physics, the concept of Landau damping, was first experimentally verified in detail via the study of incoherent scatter from the ionosphere. This is but one example of the pivotal role space research has had in the historical development of plasma physics as a discipline.

Compare this quiescence to the explosive energy releases discussed in the chapter on solar flares and the magnetospheric substorms mentioned in several chapters. In both cases energy stored in the form of magnetic fields is virtually instantaneously converted to particle and photon energy. Crucial to most theories of both of these phenomena is the concept of magnetic field reconnection. A separate and quite lengthy chapter is devoted to this process. After diligently reading through it, however, I am left with a double Chinese restaurant syndrome—hungry for more but nervous at the same time. Magnetospheric reconnection has to be considered a prime problem for both the theorist and the experimentalist. For example, although a *prima facie* case for reconnection has been made, definitive observations are lacking and we are not even sure where on the front side of the magnetosphere reconnection occurs.

One remarkable asset of solar system exploration is the ability to compare magnetospheres of different dipole moments and subject to different solar wind conditions. Several excellent chapters deal with the magnetospheres of all the inner planets plus Jupiter and are followed by a summary chapter in which general principles of comparative magnetospheres are presented in a very clear manner.

The editors admit to the omission of a chapter on the auroral acceleration region recently discovered at an altitude of about one Earth radius. The detailed exploration and ultimate understanding of this region may be as important as reconnection and I regret the absence of this topic.

The book is an excellent resource for graduate and undergraduate courses in upper atmosphere and space research. Many excellent figures have been produced which conceptualize complex interactions and three-dimensional systems. The fact that the physics has not been diluted assures that many chapters will continue to be useful reviews, even in fast-changing fields, for many years.

MICHAEL C. KELLEY

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Books Received

Advances in Biomedical Engineering. Vol. 7. J. H. U. Brown, Ed. Academic Press, New York, 1979. xiv, 242 pp., illus. \$25.

Advances in Pharmacology and Chemotherapy. Vol. 16. Silvio Garattini, A. Goldin, F. Hawking, I. J. Kopin, and R. J. Schnitzer, Eds. Academic Press, New York, 1979. xii, 302 pp. \$31.

Advances in Polymer Science. Vol. 31. H.-J. Cantow and 13 others, Eds. Springer-Verlag, New York, 1979. iv, 180 pp., illus. \$46.20.

The Burmese Cat. Robine Pocock, Dorothy Silkstone Richards, Moira Swift, and Vic Watson. Scribner, New York, 1979. x, 182 pp. + plates. \$12.95.

Cancer Chemotherapy. Howard E. Skipper. Published for American Society of Clinical Oncology by University Microfilms International, Ann Arbor, Mich., 1979. Vol. 2, On Reducing Treatment Failures Due to Overgrowth of Specifically and Permanently Drug-Resistant Neoplastic Cells. xiv, 54 pp. Paper, \$7.75. Vol. 3, Idealized Hypothetical Illustrations of the Effects of Specifically Drug-Resistant Leukemia Cells on End-Results Achievable with Single Drugs and Combinations. xiv, 84 pp., illus. Paper, \$9.25.

The Cancer Patient. Social and Medical Aspects of Care. Barrie R. Cassileth, Ed. Lea and Febiger, Philadelphia, 1979. xii, 332 pp., illus. Paper, \$12.50.

Development of Therapeutic Agents for Sickle Cell Disease. Proceedings of a meeting, Paris, July 1978. Jean Rosa, Yves Beuzard, and John Hercules, Eds. North-Holland, Amsterdam, 1979 (U.S. distributor, Elsevier, New York). xviii, 262 pp., illus. \$44. INSERM Symposia, No. 9.

The Diagnosis and Treatment of Alcoholism. Jack H. Mendelson and Nancy K. Mello, Eds. McGraw-Hill, New York, 1979. x, 406 pp. \$17.50.

Electroanalytical Chemistry. A Series of Advances. Vol. 11. Allen J. Bard, Ed. Dekker, New York, 1979. xii, 370 pp., illus. \$45.

Energy for Industry. A Collection of Scientific and Engineering Papers Concerned with Utilising Energy with Maximum Efficiency in Industry. Paul W. O'Callaghan. Pergamon, New York, 1979. xxii, 412 pp., illus. \$50.

The Functions of Language and Cognition. Grover J. Whitehurst and Barry J. Zimmerman, Eds. Academic Press, New York, 1979. xiv, 314 pp., illus. \$21.

Genesis on Planet Earth. The Search for Life's Beginning. William Day. House of Talos Publishers, East Lansing, Mich., 1979. xiv, 408 pp., illus. \$9.95.

Genetic Control of Autoimmune Disease. Proceedings of a workshop, Bloomfield Hills, Mich., July 1978. Noel R. Rose, Pierluigi Bigazzi, and Noel L. Warner, Eds. Elsevier/North-Holland, New York, 1979. xiv, 466 pp., illus. \$50.

Group Psychotherapy. Practice and Development. Baruch Levine. Prentice-Hall, Englewood Cliffs, N.J., 1979. xvi, 332 pp. \$12.95.

Handbook of Analytical Control of Iron and Steel Production. T. S. Harrison. Horwood, Chichester, England, and Halsted (Wiley), New York, 1979. 602 pp., illus. \$99.50. Ellis Horwood Series in Analytical Chemistry.

The Invertebrates. R. McNeill Alexander. Cambridge University Press, New York, 1979. viii, 562 pp., illus. Cloth, \$49.50; paper, \$16.95.

Kin and Communities. Families in America. Proceedings of a symposium, Washington,

D.C., June 1977. Allan J. Lichtman and Joan R. Challinor, Eds. Smithsonian Institution Press, Washington, D.C., 1979. 336 pp. Cloth, \$17.50; paper, \$7.95. Smithsonian International Symposia Series.

Laboratory Text for Organic Chemistry. A Source Book of Chemical and Physical Techniques. Daniel J. Pasto and Carl R. Johnson. Prentice-Hall, Englewood Cliffs, N.J., 1979. xvi, 542 pp., illus. Paper, \$15.95.

Mammals. Their Latin Names Explained. A Guide to Animal Classification. A. F. Gotch. Blandford Press, Poole, Dorset, England, 1979 (U.S. distributor, Sterling Publishing Company, New York). 272 pp., illus. \$13.95; library edition, \$10.99.

Man and the Water Hyacinth. Godofredo G. Monsod, Jr. Vantage Press, New York, 1979. x, 48 pp. \$4.95.

Notes from the Nordic Spring Symposium on Atomic Inner Shell Phenomena. Geilo, Norway, Apr. 1978. J. M. Hansteen and R. Gundersen, Eds. University of Bergen Department of Physics, Bergen, Norway, 1979. Two volumes. Vol. 1, Extended Resumes. xxvi, 134 pp., illus. Vol. 2, Lecture Notes. viii, 208 pp., illus. Paper.

Oncogenic Viruses and Host Cell Genes. Proceedings of a seminar, Lake Yamanaka, Japan, Sept. 1977. Yoji Ikawa and Takeshi Odaka, Eds. Academic Press, New York, 1979. xx, 492 pp., illus. \$25.

Pathophysiology of Cerebral Energy Metabolism. Proceedings of a symposium, Belgrade, Sept. 1977. B. B. Mršulja, Lj. M. Rakić, I. Klatzo, and Maria Spatz, Eds. Plenum, New York, 1979. x, 476 pp., illus. \$42.50.

A Perspective of Environmental Pollution. M. W. Holdgate. Cambridge University Press, New York, 1979. x, 278 pp., illus. \$35.

Phenology of Cultivated Rhododendrons in the Lower Mainland of British Columbia. L. Keith Wade. University of British Columbia Botanical Garden, Vancouver, Canada, 1979. viii, 226 pp., illus. Paper, \$8.25. Technical Bulletin No. 10.

RPG II with Business Applications. Stanley E. Myers. Reston (Prentice-Hall), Reston, Va., 1979. xvi, 592 pp., illus. \$17.95.

Saharan Dust. Mobilization, Transport, Deposition. Papers from a workshop, Gothenburg, Sweden, Apr. 1977. Chister Morales, Ed. Published for the Scientific Committee on Problems of the Environment of the ICSU by Wiley, New York, 1979. xviii, 298 pp., illus. Paper, \$33. SCOPE 14.

Schistosomiasis IV. Condensations of the Selected Literature, 1963-1975. Donald B. Hoffman, Jr., and Kenneth S. Warren, Eds. Hemisphere, Washington, D.C., 1978. Two volumes, xvi, 538 pp. \$90.

Technology Transfer in Industrialized Countries. Proceedings of a conference, Estoril, Portugal, Nov. 1977. Sherman Gee, Ed. Sijthoff & Noordhoff, Alphen aan den Rijn, The Netherlands, 1979. xiv, 450 pp. \$35.

Theoretical Computer Science. Papers from a conference, Aachen, Germany, Mar. 1979. K. Weihrauch, Ed. Springer-Verlag, New York, 1979. viii, 324 pp., illus. Paper, \$16. Lecture Notes on Computer Science, vol. 67.

The World Energy Book. An A-Z, Atlas and Statistical Source Book. David Crabbe and Richard McBride, Eds. MIT Press, Cambridge, Mass., 1979. 260 pp., illus. Paper, \$12.50. Reprint of the 1978 edition.

A World of Children. Daycare and Preschool Institutions. Nancy M. Robinson, Halbert B. Robinson, Martha A. Darling, and Gretchen Holm. Brooks/Cole, Monterey, Calif., 1979. xiv, 250 pp., illus. Paper, \$8.95.



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Geneticist, Ph.D. Seeks teaching or research position for fall 1980. Teaching experience in genetics, biostatistics, and introductory biology. Research experience in nonchromosomal inheritance. Box 16, SCIENCE. X

Boston. Nonstress position, literature research, clerical, light typing, or other. Supportive job atmosphere. Biochemistry imbalance. Degree. High IQ. Box 332, SCIENCE. X

Medicinal/Pharmaceutical Chemist. Ph.D. 1975. Background in organic synthesis/instrumentation. Dermatology research experience. Seeks industrial research position. Telephone: 415-561-2370. Or write: W. G. Reifenrath, 310 Channing Way, San Rafael, California 94903. 1/18, 25

Experienced Pathologist (Board-certified) is looking for a position (Colorado or California preferred, but not a condition). Box 17, SCIENCE. X

Pathologist (Board-certified) with the rank of tenured professor, experienced in anatomical pathology and teaching, and with excellent research track, seeks responsible position. Box 18, SCIENCE. X

Physician-Pharmacologist/Toxicologist. (M.D., Ph.D.), research background, industrial and regulatory experience. Desires significant responsibility in toxicology/health impact assessment with major corporate organization. Reply to: Box 333, SCIENCE. 1/18, 25; 2/1

POSITIONS OPEN

ANATOMY: TENURE-TRACK POSITION

The Department of Anatomy at Duke University School of Medicine invites applications from persons with, or imminently expecting, a Ph.D. (not necessarily in anatomy), qualified to participate in teaching introductory medical gross anatomy. Evidence of a strong research commitment and an interest in graduate training required. Desirable research interests include comparative vertebrate (especially primate) anatomy, paleoprimateology (including hominid paleontology), experimental approaches to functional anatomy, mathematical modeling, and morphometrics. Appointment to begin 1 July 1980. Send curriculum vitae, three letters of recommendation, and a letter describing research and teaching interests to:

William Hylander
Search Committee
Department of Anatomy
Box 3011
Duke University Medical Center
Durham, North Carolina 27710

Deadline for applications: 15 April 1980.
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ASSISTANT CURATOR for biological resource collections. Ph.D. required with broad background in systematics; emphasis on vertebrates preferred. Curating experience and training in SELGEM helpful. Involvement in all aspects of collections management, including specimen preparation, cataloging, and maintenance; management of loans, correspondence, and library materials; and employee supervision. A modest research program is expected. Salary: \$11,196 (9 months) with possibility of summer income. Begins 1 September 1980. Application deadline: 15 February 1980. Submit curriculum vitae and have three references sent directly to: Dr. Arthur H. Harris, Laboratory for Environmental Biology, University of Texas at El Paso, El Paso, Texas 79968. *An Equal Opportunity Employer.*

ASSISTANT PROFESSOR, Ph.D., broadly trained in biology with strong teaching interests, background for human anatomy and physiology and so forth, beginning August 1980. Full-time position for 1 year with possibility of renewal. Send curriculum vitae, complete transcripts, and three letters of reference by 20 February 1980 to: Chairman, Department of Biology, College of St. Catherine, St. Paul, Minn. 55105. *An Equal Opportunity/Affirmative Action Employer.*

Tenure-track position for Ph.D. **ASSISTANT PROFESSOR** to teach a laboratory course in anatomy of higher plants, a field course in taxonomy of higher plants, and general biology. Send curriculum vitae, transcripts, and three letters of reference by 1 March to: Dr. W. R. West, Department of Biology, University of Richmond, Richmond, Va. 23173.

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Division of Applied Mathematics, Brown University, Providence, R. I. 02912, has TWO **ASSISTANT PROFESSOR VACANCIES:** (i) a 3-year position with special interests in biomedical science applications of mathematics in general and, preferably, of dynamical systems in particular; and (ii) a 3-year tenure-track position with special interests in either scientific computation and mathematical software or applied probability and statistics. Send curriculum vitae and names of three references to: Professor Walter Freiberger, Chairman, before 1 February 1980.

An appointment as **ASSISTANT PROFESSOR** for a 3-year term is available in the Department of Biochemistry, College of Medicine, University of Saskatchewan. Applicants must have a Ph.D. and/or M.D. degree. Salary will be approximately the floor of the assistant professor rank. Send curriculum vitae (including university transcripts) and names of three referees to: Dr. J. D. Wood, Head, Department of Biochemistry, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0. Effective date of appointment: negotiable.

VISITING ASSISTANT PROFESSOR IN BIOLOGY. Sabbatical replacement; 15 August 1980. Ph.D. degree expected; to teach introductory biology courses; background in vertebrate zoology, physiology, general genetics. Facilities for research available. Send curriculum vitae, list of graduate courses and publications, statement of teaching interests, and three letters of recommendation by 15 February to: Dr. F. Schwalm, Biological Sciences, Illinois State University, Normal, Ill. 61761. *Equal Opportunity/Affirmative Action Employer.*

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University of Washington: Tenure-track, **ASSISTANT PROFESSOR** position available in the Animal Behavior Program, Department of Psychology. We are looking for the best possible scientist with interests in one or more of the following areas: computer modeling and quantitative analysis of ethological or sociobiological processes; sociobiology; laboratory ethology; neuroethology; or behavior genetics. Advanced degree need not be in psychology, but candidates must be capable of teaching basic level courses such as statistics. Send brief statement of research interests, curriculum vitae, reprints, and three letters of recommendation to: Dr. David P. Barash, Department of Psychology, University of Washington, Seattle, Washington 98195. *Women and minorities urged to apply.* Application deadline: 1 March 1980. *The University of Washington is an Equal Opportunity/Affirmative Action Employer.*

Biochemistry Department invites applications for an anticipated tenure-track opening at the level of **ASSISTANT OR ASSOCIATE PROFESSOR.** Candidates with research interests in the area of eukaryotic molecular genetics/nucleic acid biochemistry, such as chromosome organization, gene expression and regulation, protein biosynthesis, and related fields, are preferred. Responsibilities include teaching, supervision of graduate students, and development of an independent research program. Demonstrated originality and productivity in research, as well as a strong commitment to teaching, will be the chief criteria of selection. *Applications from women and minority candidates are encouraged.* Salary competitive, depending on experience. Please submit résumé, publication list, outline of future research plans, and names of three referees to: Dr. Robert A. Zimmermann, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003 by 1 March 1980. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF BIOLOGICAL OCEANOGRAPHY

Tenure-track research and teaching position available August 1980, in interdisciplinary graduate center specializing in coastal oceanography. Applicant's research should be concerned with marine plankton ecology; teaching involves a graduate course in biological oceanography. Send credentials and three letters of recommendation by 1 February 1980 to: Dr. Charles F. Wurster, Marine Sciences Research Center, State University of New York at Stony Brook, Stony Brook, L.I., N.Y. 11794. *Equal Opportunity/Affirmative Action Employer.*

Health Studies Department invites applicants for **ASSISTANT OR ASSOCIATE PROFESSOR** (pending funding) in **BIOMEDICAL SCIENCES.** The department has active, interdisciplinary programs focusing on the study of health behaviour, disease prevention, and health promotion. Applicants should have a Ph.D. or equivalent in the biomedical or behavioral sciences, an established research record, and interest in teaching undergraduate and graduate courses in disease process and such areas of expertise as psychosomatics, physiology of chronic disease, or biosocial determinants of health status. Appointment to start September 1980 or sooner. Apply to: J. A. Best, Ph.D., Chairman, Department of Health Studies, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1.

ASSISTANT PROFESSOR PHYSIOLOGY AND BIOPHYSICS

The Department of Physiology and Biophysics at the University of Vermont College of Medicine invites applications for a tenure-track position. Applicants should have Ph.D. in physiology and/or biophysics and two or more years of postdoctoral training, or the M.D. degree and equivalent research training. Candidates must demonstrate outstanding teaching ability and excellence in independent research, and have strong commitments to both activities. The successful candidate will be expected to fulfill modest teaching responsibilities in medical, undergraduate, and graduate courses with distinction, and to establish a vigorous and productive independent research program which merits extramural support. Preference will be given to those whose research areas complement, but do not duplicate, those of the existing faculty. Send letters of application, curriculum vitae, a brief description of career goals and proposed research program, and names of three references to: Norman R. Alpert, Chairman, Department of Physiology and Biophysics, University of Vermont College of Medicine, Burlington, Vermont 05405. *The University of Vermont is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF ECOLOGY

The Department of Biology at Clark University invites applications for a tenure-track position in field ecology that is expected to be available for September 1980. Candidates with postdoctoral experience are preferred. The candidate should be prepared to conduct an independent research program and teach courses in principles of ecology, quantitative methods, and other appropriate courses at the undergraduate and graduate levels. Deadline date for applications is 1 March 1980. Applications should include curriculum vitae with career objectives and names of at least three references and should be submitted to: **Dr. V. Ahmadian, Chairman, Biology Department, Clark University, Worcester, Mass. 01610.** *Clark University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF GEOLOGY—PALEONTOLOGIST/BIOSTRATIGRAPHER

A tenure-track position in biostratigraphy and one or more of invertebrate paleontology, micropaleontology, and paleoecology. Qualifications: recent Ph.D., preferably with some postdoctoral research or teaching experience, and an interest in biostratigraphic or paleoecologic problems in western or Arctic Canada. Submit résumé and three letters of reference by 29 February 1980 to: **William Barnes, Department of Geological Sciences, University of British Columbia, 6339 Stores Road, Vancouver, British Columbia, Canada V6T 2B4.**

ASSISTANT/ASSOCIATE PROFESSOR—IMMUNOLOGY. Fall 1980. Tenure-track position. Ph.D. required. Postdoctoral experience and strong biochemistry background desirable. Primary teaching duties in immunology and pathogenic microbiology. Expect participation in M.S. program. Salary dependent on level at which position is filled: assistant professor: \$14,500 to \$16,000; associate professor: \$16,000 to \$17,500. Send résumé, transcripts, and three reference letters to: **Chairman, Department of Microbiology and Biochemistry, Idaho State University, Pocatello, Idaho 83209.** Application deadline: 29 February 1980. *Equal Opportunity/Affirmative Action Employer, M/F.*

ASSISTANT PROFESSOR OF MICROBIOLOGY

Teaching responsibilities may include introductory microbiology and a course in area of specialization. Research area open, but preference will be given to individuals working in biochemistry, immunology, physiology, or genetics. The Ph.D. degree and relevant postdoctoral experience are required. Candidates must be able to maintain an independently funded research program. Applicants should submit, by 15 February 1980, curriculum vitae and copies of recent publications and have three letters of reference sent to: **Dr. Henry C. Reeves, Microbiology Search Committee, Department of Botany and Microbiology, Arizona State University, Tempe, Ariz. 85281.**

Arizona State University is an Equal Opportunity/Affirmative Action Employer. All appointments are based on merit principles without regard to race, color, religion, sex, age, national origin, or handicap.

ASSISTANT PROFESSOR. Anticipated tenure-track position in the general area of PLANT GENETICS. Ph.D. required; postdoctoral experience and demonstrated ability to obtain extramural funding desirable. Establishment of an active research program is expected. Teaching duties will include an undergraduate course in the area of plant genetics, a graduate course in area of specialization, and participation in general botany or biology courses. Send curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. Charles A. Schexnayder, Chairman, Botany Department, Louisiana State University, Baton Rouge, La. 70803.** Closing date for receipt of application materials: 15 March 1980. *An Equal Opportunity/Affirmative Action Employer.*

University of Florida seeks an **ASSOCIATE IN MEDICINE.** Research position in biochemistry investigating lipoprotein structure and function. A Ph.D. in biochemistry or equivalent degree and experience in lipoprotein research are required. Appointment for 1 year with reappointment optional. Salary range: \$15,000 to \$18,000. Recruiting deadline: 1 March 1980. Anticipated starting date: 1 April 1980. Contact: **W. R. Fisher, M.D., Ph.D., Department of Medicine, University of Florida, Box J-226, JHMHC, Gainesville, Florida 32610.**

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POSITIONS OPEN

ASSISTANT PROFESSOR IN MICROBIOLOGY

VIROLOGIST with veterinary training or veterinary interests to accept primary responsibility for the teaching of preclinical virology to the students of veterinary medicine. Will maintain an active research program in the molecular, genetic, or biochemical aspects of viral pathogenesis and participate in a graduate program. Tenure-track.

Send résumé and the names of three referees to:

Chairman

**Department of Molecular Biology and Microbiology
Tufts University School of Medicine
Tufts University School of Veterinary Medicine
Tufts University School of Dental Medicine
136 Harrison Avenue
Boston, Mass. 02111**

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ASSISTANT PROFESSOR OF PHARMACEUTICS AND PHARMACEUTICAL CHEMISTRY

A position is available beginning 1 July 1980 at the earliest, for an individual specializing in the mechanistic and pharmacokinetic aspects of drug and toxicant distribution, metabolism, and elimination. Such a person must have concomitant analytical expertise to conduct such studies. The position requires the Ph.D. degree, an interest in teaching both undergraduate and graduate students, and a commitment to develop an independent research program. Salary will be commensurate with experience. Send curriculum vitae with the names and addresses of three individuals to be used as references to: **Dr. Theodore Sokoloski, College of Pharmacy, The Ohio State University, 500 West 12 Avenue, Columbus, Ohio 43210.**

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ASSISTANT/ASSOCIATE PROFESSORS OF PHYSIOLOGY

Two positions in the Department of Physiology are immediately available for biomedical physiologists having a Ph.D. or M.D. degree and two or more years of productive postgraduate experience. Preference will be given to a respiratory, digestive, or renal physiologist in one position; to a cellular physiologist with biophysical expertise in the other. Responsibilities include vigorous research productivity, team-teaching in nursing, medical and/or graduate physiology survey courses, M.S./Ph.D. teaching and supervision in area of specialty. Salary and rank are based on qualifications.

Appointments will be in both the School of Medicine and the College of Science and Engineering; they can be filled upon selection or by 1 July 1980. Deadline for applications is 15 February 1980.

Qualified and interested applicants should submit curriculum vitae and names of three references to: **S. N. Kolmen, Ph.D., Chairman, Department of Physiology, WRIGHT STATE UNIVERSITY SCHOOL OF MEDICINE, Dayton, Ohio 45435.** *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

BIOCHEMIST—The Department of Biological Chemistry of the University of Maryland School of Medicine has a regular faculty position (assistant or associate professor) for an individual having an active research program in mammalian cell membrane-bound proteins or related areas. Responsibilities will include the teaching of basic and clinical biochemistry courses to medical and graduate students. Send curriculum vitae and names of three references to: **Dr. Adil E. Shamoo, Professor and Chairperson, Department of Biological Chemistry, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, Maryland 21201.** *An Equal Opportunity Employer.*

BIOLOGY assistant professor (tenure-track), Division of Natural Sciences and Mathematics, Mount Mercy College (a small, liberal arts college committed to teaching). Teaching responsibilities will include genetics and biology for nonmajors. Also assist in human anatomy and physiology for nurses and develop an embryology course for biology majors. Ph.D. in biological sciences required; previous teaching experience desirable. Position open fall (late August) 1980. Application deadline: 28 February 1980. Send complete résumé, three letters of recommendation, and complete transcripts to: **Dr. Chris L. Thoms, Chairman, Department of Biology, Mt. Mercy College, Cedar Rapids, Iowa 52402.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF PSYCHOLOGY

Regular faculty position. Candidates must be in at least one of the following areas: (i) **PSYCHOPHARMACOLOGY**, (ii) **PSYCHOPHYSIOLOGY**, and (iii) **BEHAVIORAL TOXICOLOGY**. Candidates expected to develop productive research program, actively pursue research grant funding, direct Ph.D. student research, and teach graduate courses. Position includes teaching of undergraduate courses in experimental psychology and statistics. Candidates must have both basic and applied research interests, and should have interest in areas of research with direct relevance to human populations (for example, aging, alcohol, drug dependency, autonomic functioning, mood alteration, seizure disorders, and so forth). Submit curriculum vitae, letter describing research plans, reprints, and three letters of reference to: **Dr. Robert Berman, Psychology Department, Wayne State University, Detroit, Mich. 48202.** *Equal Opportunity Employer.*

TOXICOLOGY. The Department of Pharmacology and Therapeutics, Schools of Medicine and Dentistry, State University of New York at Buffalo (SUNY), invites applications for a full-time faculty position as **ASSISTANT PROFESSOR**. Candidates must have a Ph.D. degree in pharmacology, toxicology, or in a closely related area; they must have clear evidence of training and expertise in toxicology. No applicant without such evidence will be considered. Preference will be given to those with at least 2 years of research experience and publications in some area of toxicology. Duties include teaching (graduate and professional programs), research, and participation in development of the department program in toxicology. Send curriculum vitae and also request that three letters of recommendation be sent to: **Dr. Edward A. Carr, Jr., Department of Pharmacology and Therapeutics, Medical School, SUNY at Buffalo, 127 Farber Hall, Buffalo, New York 14214.** *An Equal Opportunity/Affirmative Action Employer.*

ASSOCIATE PROFESSOR OF DEVELOPMENTAL PSYCHOLOGY, specializing in cognitive development. An individual is sought who is interested in theoretical models and whose work complements current research in the Institute dealing with memory development and individual differences in cognitive functioning. Candidates must present evidence of high research competence, scholarly productivity, and effectiveness in teaching and research supervision. Teaching responsibilities will involve both graduate and undergraduate students. Starting date is 16 September 1980. Salary is competitive depending upon credentials and experience. Send curriculum vitae and supporting letters by 1 March 1980 to:

**Herbert L. Pick, Jr., Chair
Search Committee
Institute of Child Development
51 East River Road
University of Minnesota
Minneapolis, Minn. 55455**

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

Teaching position available April 1980. **BIOLOGIST** with a histology and/or cell biology orientation. Applicants must show strong teaching credentials in histology/cell biology and general biology at the introductory level. Appointment will be at the instructor or assistant professor level. Master's degree minimum. Closing date: 15 February 1980. Applicant must send curriculum vitae, transcripts, and three letters of recommendation to: **Dr. Donald M. Meisner, Chairman, Biology Department, Raymond Walters General and Technical College, University of Cincinnati, 9555 Plainfield Road, Cincinnati, Ohio 45236.** *Equal Opportunity/Affirmative Action Employer.*

BIOMETEOROLOGY SPECIALIST Davis Campus Location

Develop technically based extension education program in agricultural meteorology. Collect and interpret climatic data, plan research projects, and interpret results in education program. Develop and broadcast information to agricultural users and others on climatic effects on physical and biological systems. Cooperate closely with other state and local staff, other agencies. Working knowledge of use of meteorological information in agricultural systems and conduct of applied research is essential. Ph.D. in agricultural meteorology or related field preferred. Extension experience desirable. Contact: **Personnel Administrator, Cooperative Extension, 331 University Hall, University of California, Berkeley, Calif. 94720.** Refer to Number 7930. Closing date: 22 February 1980. *An Equal Opportunity Employer.*

POSITIONS OPEN

ATMOSPHERIC SCIENCE FACULTY—Applications are invited for a tenure-track or tenured faculty position available 1 September 1980 in the Division of Meteorology and Physical Oceanography in the Rosenstiel School of Marine and Atmospheric Sciences of the University of Miami. The rank and salary will be negotiated depending on qualifications. The applicant must hold a Ph.D. in atmospheric science or a related discipline. The applicant should have atmospheric science research and teaching interests that complement the activities of the division. Applicants should submit curriculum vitae and the names of three professional references to the Search Committee chairman: J. E. Geisler, Division of Meteorology and Physical Oceanography, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, Florida 33149.

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

BIOCHEMISTRY

Postdoctoral research position available 1 March 1980 for 1 to 2 years to study the relationship of cerebral lipids to development of epilepsy. Research will specifically focus on regulation of brain sterol metabolism in various experimental states. The position offers training in both biochemical and physiological aspects of neurochemistry and the opportunity for very productive work. Applicants should have a strong interest and some experience in lipid biochemistry. Starting salary is \$15,000 and a full-time technical assistant will be furnished. Please send curriculum vitae, a brief description of your Ph.D. work, and the names of three references to:

Richard J. Cenedella, Ph.D.
Chairman, Department of Biochemistry
**KIRKSVILLE COLLEGE OF
OSTEOPATHIC MEDICINE**
Kirksville, Missouri 63501

Equal Opportunity/Affirmative Action Employer

BIOGEOCHEMIST

Martin Marietta Corporation's Environmental Center is seeking an individual with a Ph.D. degree for the position of biologist-environmental chemist. Applicants should have a working knowledge of the flow of toxic compounds through ecological systems and the ability to work with applied problems. Experience with geochemical aspects of material flows is desirable. Send résumé, references, and salary requirements to: C. Joyce McAleer, Personnel Manager, Martin Marietta Corporation, 1450 South Rolling Road, Baltimore, Maryland 21227. *An Equal Opportunity Employer.*

BIOLOGICAL EDITOR/WRITER

A position for a biologist, preferably an aquatic ecologist, with advanced training and experience in technical editing and writing is now open with Texas Instruments Hudson River Ecological Study in Buchanan, New York. The successful applicant will be a member of a team assessing the impacts of power plants. Duties include: technical editing, writing, and coordinating the activities of a Reports Production group.

Send résumés to:

Personnel Administrator
Texas Instruments Incorporated
Hudson River Ecological Study
P.O. Box 237
Buchanan, New York 10511
An Equal Opportunity Employer, M/F

BIOLOGY FACULTY POSITIONS UNIVERSITY OF PUERTO RICO

Applications are invited for tenure-track faculty positions at all levels of appointment. Ph.D. is required. Preference will be shown to candidates in the areas of general biology, ecology, physiological ecology (animal), and plant taxonomy (lower groups preferred). Spanish highly desirable. The new faculty members will be required to teach undergraduate and graduate courses and to establish a vigorous independent research program of outstanding quality. Application deadline: 15 February 1980. Interested persons should send curriculum vitae, a statement of their research plans and goals, copies of major publications, and the names of at least three references to: **Recruitment Committee, Department of Biology, University of Puerto Rico, Río Piedras, Puerto Rico 00931.**

POSITIONS OPEN

A **BIOLOGIST** with expertise in molecular genetics and microbiology is sought to teach undergraduate courses in these areas at Canisius College beginning in the fall semester of the 1980-1981 academic year. Sufficient breadth of training to offer introductory courses in biology for both majors and nonmajors is helpful. Candidates should also possess a strong commitment to undergraduate teaching, professional research, and college service. The position is at the rank of assistant or associate professor in a tenure-track with a competitive salary range dependent upon qualifications and experience. Canisius College is a liberal arts college in the Jesuit tradition.

Send applications with full curriculum vitae, transcripts of postsecondary educational experiences, and three letters of recommendation to:

Robert F. Blasdel, Ph.D., Chairman
Department of Biology
Canisius College
Buffalo, New York 14208

Applications must be received by 15 February 1980. *Canisius College is an Affirmative Action/Equal Opportunity Employer.*

BOTANY. The Department of Botany, Miami University, invites applications for a visiting faculty position with salary and rank to be determined by the qualification of the individual, with the possibility of teaching or research support during the summer. Postdoctoral students and scientists on sabbatical leave are encouraged to apply. All areas of botany will be considered. Responsibilities include some teaching and interacting with undergraduate and graduate students. This position is a non-tenure-track appointment for 1 year, but may be renewed for one or two additional years. Applications, curriculum vitae, transcripts, and three letters of recommendation should be sent to: **Thomas K. Wilson, Department of Botany, Miami University, Oxford, Ohio 45056** by 15 February 1980. *An Equal Opportunity/Affirmative Action Employer.*

CARDIOLOGIST—Faculty position, full-time academic cardiologist (assistant professor) to assume teaching and patient care responsibilities at Palo Alto Veterans Administration Medical Center directly associated with Stanford University School of Medicine. Position involves responsibilities in cardiac catheterization laboratory (applicants capable of directing same are particularly sought) and non-invasive laboratory, developing an active research program, and activity in the Cardiology Division at Stanford University Hospital. Send curriculum vitae and three references to: **E. William Hancock, M.D., Chairman, Search Committee, Cardiology Division, Stanford University School of Medicine, Stanford, Calif. 94305.** *Stanford is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

CARDIOPULMONARY PHYSIOLOGY

The Department of Anatomy and Physiology, College of Veterinary Medicine, has reopened a position for a tenure-track faculty member to participate in teaching systemic physiology to veterinary and graduate students and to establish a productive research program.

Candidates must have a Ph.D. degree or equivalent (D.V.M. desirable) and an interest and demonstrated research competency in cardiopulmonary physiology, especially of large domestic animals. Rank and salary are open and depend on qualifications. Applicants are invited to submit résumés and list of three references by 15 February 1980 to: **Dr. Roger Fedde, Department of Anatomy and Physiology, College of Veterinary Medicine, Kansas State University, Manhattan, Kansas 66506.** *An Affirmative Action/Equal Opportunity Employer.*

CHEMIST

B.S./M.S. chemists required to develop methods and perform routine analyses and synthesis related to cancer research. Positions available in GLC, HPLC, TLC, and organic synthesis. Collaborative research opportunities available for creative individuals.

Please send résumé and names of three references to:

Personnel
Position Number 1448
FREDERICK CANCER RESEARCH CENTER
Litton Bionetics, Inc.
P.O. Box B
Frederick, Md. 21701

Equal Opportunity Employer, M/F

POSITIONS OPEN

CELL BIOLOGY FACULTY POSITION Cornell University

Applicants are being sought with demonstrated research excellence in animal cell biology; the areas of immunology, cytoskeleton, and cell-cell interactions are of special interest, but candidates in other areas will be considered as well. Ability to teach cell biology is also important. Rank and salary to be determined by experience. Applicants should send curriculum vitae and a statement of future research plans, and arrange for three letters of recommendation to be sent to:

S. J. Edelstein, Chairman
Section of Biochemistry, Molecular and Cell Biology
110 Wing Hall
Cornell University
Ithaca, N.Y. 14853

The deadline for receipt of materials is 1 March 1980.

Cornell University is an Equal Opportunity/Affirmative Action Employer.

CHAIRMAN DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION GEORGETOWN UNIVERSITY SCHOOL OF MEDICINE

The school is searching for a new chairperson for this important clinical department who will also be chief of the Physical Medicine and Rehabilitation Service at Georgetown University Hospital and director of the educational programs. Applicants should be experienced in the clinical specialty, teaching at the undergraduate and graduate levels, and in research. *Georgetown University is an Affirmative Action/Equal Opportunity Institution in employment and admissions.* Letters from interested persons or proposals for the position should be addressed to:

Peter A. Kot, M.D.
Professor of Physiology and Biophysics
Georgetown University
School of Medicine
3900 Reservoir Road, NW
Washington, D.C. 20007

CHEMIST

The Food Safety and Quality Service (FSQS) of the U.S. Department of Agriculture (USDA) is announcing two chemist (mass spectrometry specialist) positions.

One GS-12; salary range: \$24,703 to \$32,110; in St. Louis, Missouri; announcement number FSQS-79-331S, and

One GS-11; salary range: \$20,611 to \$26,794; in San Francisco, California; announcement number FSQS-79-332S.

Minimum requirements: B.S. in chemistry, physics, or other physical sciences, plus 3 years of professional experience in mass spectrometry. One year at the next lower grade or equivalent is required. Required: experience in assay development, quantitation, and trace analysis using GC/MS techniques. Desirable: computer programming and micro-derivatization techniques.

Submit SF-171, Personal Qualification Statement by 4 February 1980 to: **Winnie Joy, USDA, FSQS, Personnel Division, WSPO, Room 3438-S, 14th and Independence Avenue, SW, Washington, D.C. 20250; Telephone: 202-447-4815.** Please indicate the specific position for which you are applying and the announcement number. *USDA is an Equal Opportunity Employer.*

COMPUTER EQUIPMENT ANALYST, Science and Education Administration, Beltsville, Maryland, \$24,703 to \$38,186 per annum (commensurate with qualifications and experience). Responsible for the performance of systems analyses, feasibility studies, and writing of technical specifications. Duties involve specification of minicomputers and a variety of peripherals with emphasis on data acquisition control accessories, consultation with users of such equipment in the agriculture research environment, and providing technical support to procurement activities involving minicomputers and related equipment. Position requires a knowledge of commercially available minicomputer hardware, software, and services. Career Civil Service position. Contact or mail application SF-171 to: **Dolores Kauffman, USDA-SEA-AOD, Personnel Branch, S1, Building 003, Room 318, BARC-West, Beltsville, Md. 20705.** Telephone: 301-344-2768. *An Equal Opportunity Employer.*

POSITIONS OPEN

DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY UNIVERSITY OF CALIFORNIA, SAN FRANCISCO (UCSF) DEPARTMENT CHAIRPERSON

Candidates with outstanding academic qualifications in microbiology, immunology, virology, or allied fields are invited to apply for the position of professor and chairperson of the Department of Microbiology and Immunology at UCSF. Candidates should have demonstrated accomplishments in research of high quality, and have a commitment to teaching programs at the professional school and graduate level. Applicants should submit curriculum vitae, bibliography, and the names of four referees to:

H. J. Ralston, M.D.
Chairman, Microbiology Search Committee
Department of Anatomy
University of California
San Francisco, Calif. 94143

no later than 15 March 1980.

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

CHEMIST Salary Flexible

We are studying the formation and toxicity of new drug-generated nitrosamines by HPLC, GC, and TLC. Project entails synthesis of new nitrosamines, development of microanalytic procedures for these compounds, and detection of trace quantities of nitrosamines in body fluid of animals and humans. Meticulous technique in the handling of suspect and known carcinogens required. Position open immediately. Contact:

Irene H. Raisfeld, M.D.
Department of Pharmacological Sciences
Health Sciences Center
State University of New York at Stony Brook
Stony Brook, N.Y. 11794
Telephone: 516-246-2568

CLINICAL TOXICOLOGIST—Food and Drug Administration (an Equal Opportunity Employer) has a permanent Civil Service or Commissioned Corps (U.S. Public Health Service) opening for Director, Division of Poison Control (National Clearinghouse for Poison Control Centers), located in Rockville, Md. The position has no direct patient-care duties, but does involve advising treating physicians on an international basis. The incumbent will be responsible for planning, conducting, and evaluating epidemiologic, animal, and clinical research; medical review, evaluation, and dissemination of toxicity and treatment information; coordinating the poison control program with other federal agencies, state and local governments, professional societies, and others; planning, implementing, and evaluating consumer and professional education programs; and influencing regulations via labeling reviews, recommending bans on products, recalls, and so forth.

Initial grade of the position; GS-14 (salary range: \$42,812 to \$50,112 per year, depending upon experience and qualifications). Comprehensive fringe benefits available.

Requirements: medical degree (M.D. or D.O.) and Board-eligibility in a medical specialty or equivalent experience, plus extensive experience in clinical toxicology or poison control. Acceptability of applicants and of degree source governed by Civil Service regulations.

Send résumé or curriculum vitae to:

Marsha Pincus
Food and Drug Administration
Division of Personnel Management (Room 4B42)
5600 Fishers Lane
Rockville, Md. 20857

DIRECTOR OF CANCER RESEARCH

Full-time position as Director of Cancer Research in the Division of Gynecologic Oncology. Requires a Ph.D. in biochemistry and preferably postdoctoral training experience in radioimmunoassay. Immunologic and other analytical techniques are desired. The applicant should be able to perform independent research as well as being able to develop methods for the measurement of tumor-associated oncofetal antigens in tumor tissue and plasma. Salary and position according to qualifications. Submit curriculum vitae to:

J. R. van Nagell, Jr., M.D.
Division of Gynecologic Oncology
University of Kentucky Medical Center
Lexington, Kentucky 40536

POSITIONS OPEN

DEAN, COLLEGE OF NATURAL SCIENCES. The University of Texas at Austin invites applications for the position of dean of the College of Natural Sciences. Applicants should qualify for a tenured appointment in a natural sciences department and should provide evidence of accomplishment in scholarship and teaching. Administrative experience is essential. Interested persons should address inquiries to: **Professor John E. Gilbert, Chairman, Consultative Committee, Department of Mathematics, The University of Texas at Austin, Austin, Texas 78712.** The closing date for applications is 7 February 1980. *The University of Texas at Austin is an Equal Opportunity/Affirmative Action Employer.*

DEAN, SCHOOL OF URBAN AND PUBLIC AFFAIRS

Carnegie-Mellon University. Nominations and applications are invited until 1 March 1980 for the position of dean, School of Urban and Public Affairs, Carnegie-Mellon University. The school has professional M.S. and academic Ph.D. programs enrolling 100 students overall and has 23 faculty from diverse disciplines. The successful candidate will have a strong academic record, experience with the public or private sector, administrative experience, and a commitment to leading a school with strong research and teaching programs. Applications with résumés should be sent to: **Professor Robert Strauss, Chairman, Search Committee, Carnegie-Mellon University, School of Urban and Public Affairs, Pittsburgh, Pa. 15213.** An Equal Opportunity Employer.

DEAN SCHOOL OF AGRICULTURE Purdue University

Purdue University seeks nominations and applications for the position of dean of agriculture. The dean of agriculture is responsible for the School of Agriculture, the Agricultural Experiment Station, and the Cooperative Extension Service. Candidates should be successful agricultural scientists or economists. A record of administrative achievement is essential.

Direct inquiries by 31 January 1980 to

Dr. Felix Haas
Executive Vice President and Provost
Purdue University
West Lafayette, Indiana 47907

Purdue University is an Equal Opportunity/Affirmative Action Employer.

DEVELOPMENTAL GENETICIST

The Department of Zoology, University of Wisconsin-Milwaukee, is recruiting for an assistant professor tenure-track position starting 27 August 1980. Candidate must have demonstrated potential to develop and maintain an active research program in genetic aspects of eukaryotic differentiation and regulation at the cellular and subcellular level. Preference will be given to applicants with postdoctoral research experience. Responsibilities include supervision of M.S. and Ph.D. students, participation in courses in general genetics and population genetics, and the development of an advanced course in the area of special interest. Curriculum vitae, a summary of research goals, transcripts, and three letters of professional recommendation may be sent to: **Professor Ethel Sloane, Chairperson, Personnel Committee, Department of Zoology, P.O. Box 413, University of Wisconsin-Milwaukee, Milwaukee, Wis. 53201.** Closing date is 15 February 1980.

The University of Wisconsin-Milwaukee is an Equal Opportunity/Affirmative Action Employer and welcomes applications from all qualified candidates.

Sigma Data Computing Corporation's Division of Information and Scientific Applications invites applications from individuals qualified to participate in an **environmental modeling/chemical fate assessment team effort.** Applicants qualifications must match either of the following criteria:

Scientific applications analyst/programmer experienced in the development of single or multi-media environmental models, or

Scientist (hydrologist, meteorologist, chemist, civil engineer, and so forth) experienced in the use of air and/or water quality models.

Salary: \$18,000 to \$25,000 per year, commensurate with qualifications. Submit résumé and references to:

Sigma Data Computing Corporation
2021 K Street, NW, Suite 207
Washington, D.C. 20006
Attention: Roger Long

POSITIONS OPEN

Ph.D., DIRECTOR OF ORTHOPAEDIC RESEARCH, UNIVERSITY OF NEBRASKA MEDICAL CENTER

The University of Nebraska Department of Orthopaedic Surgery and Rehabilitation is seeking a basic scientist with a background and interest in musculoskeletal research to direct a growing research program.

The director of research will have the opportunity to teach basic science to orthopaedic residents and students and to apply basic science expertise to clinical problems. Send résumé to: **John F. Connolly, M.D., Chairman, Department of Orthopaedic Surgery and Rehabilitation, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, Neb. 68105; telephone: 402-541-4287.** The University is an Affirmative Action/Equal Opportunity Employer.

DIRECTOR, INTERNATIONAL CENTRE FOR DIARRHOEAL DISEASES RESEARCH, BANGLADESH (ICDDR,B)

The ICDDR,B is an international health research and training centre located in Bangladesh, and is directed toward the study of all aspects of diarrhoeal diseases and related aspects of fertility and nutrition. It was established by an ordinance of the government of Bangladesh in December 1978. Twenty-six nations and agencies now participate in the work of the centre. It is guided by a Board of Trustees with majority representation from developing countries. The director is responsible for the programs and management of the centre.

A candidate should have a strong international reputation as a biomedical scientist and experience in managing a scientific organization. Experience in developing countries is desirable.

The terms and conditions of employment are negotiable and may be guided by policies of other international institutions.

Letters of application should contain complete curriculum vitae and should be addressed to:

Charles C. J. Carpenter, M.D.
Chairman, Department of Medicine
Case Western Reserve University
Cleveland, Ohio 44106

SCIENTIFIC DIRECTOR FOR BLOOD CENTER

Ph.D. with 5 years of postdoctoral experience in research and laboratory management. Must have background knowledge of blood banking. Will be responsible for establishing new procedures and coordinating research projects with clinical departments. Opportunity for participating in ongoing research and pursuing own initiatives. Academic appointment commensurate with qualifications. Send curriculum vitae to: **Tibor J. Greenwalt, M.D., Director, The Paul I. Hoxworth Blood Center of the University of Cincinnati, 3231 Burnet Avenue, Cincinnati, Ohio 45267.**

UNIVERSITY OF CHICAGO FACULTY POSITION IN PLANT CELL BIOLOGY

The Department of Biology invites applicants for a faculty appointment from individuals with research interests in cell or molecular biology of plants. Applicants should have demonstrated aptitude to develop an independent research program and willingness to participate with others in courses in cell biology and modern plant biology. Send curriculum vitae, bibliography, and reference names and addresses to: **Dr. Hewson Swift, Department of Biology, University of Chicago, 1103 East 57 Street, Chicago, Illinois 60637.**

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

FACULTY POSITION IN ENVIRONMENTAL HEALTH. A tenure-track academic year position will be available September 1980, to teach courses in environmental health and microbiology, coordinate undergraduate and graduate programs in environmental health, and carry out research. Applicant must have a doctoral degree in a health-related field, practical environmental health experience, and the ability to teach effectively and develop an independent research program. The Microbiology Department has an undergraduate curriculum in microbiology, with options in environmental health and medical technology, and M.S. and Ph.D. programs in microbiology. Send résumé and names of three references by 15 March 1980 to: **Dr. Gordon A. McFeters, Microbiology Department, Montana State University, Bozeman, Montana 59717.** Montana State University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

EPIDEMIOLOGIST. Medical and Health Sciences Division. To assist in formulation and development of epidemiologic studies; be responsible for valid statistical design and analyses; and implement plans for and supervise data collection.

Qualifications: Ph.D. in epidemiology and experience in epidemiologic studies.

ENERGY RESEARCH SCIENTISTS. Institute for Energy Analysis. Needed for three projects: a comprehensive study of fuel-use alternatives and climatic and societal impacts of the CO₂ problem; a regional geothermal and energy resource assessment study; and an assessment and evaluation of energy data requirements and economic analysis of energy-related industries.

Candidates should possess a Ph.D. in fields such as geology, geophysics, engineering, chemistry, meteorology, sociology/demography, political science, and economics; applicable relevant experience; and a demonstrated publication record.

Send résumé, salary requirements, and names and addresses of references to: **Dr. John Hicks, Oak Ridge Associated Universities, P.O. Box 117, Oak Ridge, Tennessee 37830. Equal Opportunity Employer.**

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

Applicants are solicited for **faculty positions** in the following departments: **PEDIATRICS**—(Number 204) **Adjunct Assistant Professor:** perform purification and labeling of proteins, enzymatic assays, binding assays, data processing and calculations. Ph.D. in biochemistry or pharmacology. **RADIOLOGICAL SCIENCES**—(Number 207) **Assistant Professor:** diagnostic radiology and diagnostic ultrasound. In addition to teaching, position includes duties in service and research. Certified by American Board of Radiology or eligible; 4 years of post-doctoral training in diagnostic radiology, sub-specialty training in diagnostic ultrasound, computerized tomography, and special procedures.

Applicants should send curriculum vitae, identifying vacancy number for which they are applying, to: **Dr. Thomas N. Lynn, Dean, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Oklahoma 73190. We are an Equal Opportunity Employer.**

FACULTY POSITION IN BIOLOGY

Southwestern University seeks qualified applicants for a full-time opening in the biology faculty beginning fall 1980. The person appointed will assume the department chairmanship beginning with the second year of his/her appointment. Applicants must have Ph.D. and sufficient teaching and other experience to assume leadership of the department; strong training in physiology and comparative anatomy; and other interests compatible with participation in an undergraduate liberal arts program. Appointment at the assistant or associate professor level. Closing date for applications is 15 February 1980. Send inquiries and résumés to: **G. Benjamin Oliver, Dean, Southwestern University, Georgetown, Texas 78626. An Equal Opportunity/Affirmative Action Employer.**

At Christopher Newport College, a 4-year state college serving an urban population of 225,000, a tenure-track **FACULTY TEACHING POSITION** will be available beginning August 1980. Major teaching responsibility will be in ecology and plant taxonomy with expertise in biogeography, soils, and plant pathology being desirable. Rank and salary will be commensurate with experience and credentials. Minimum of a master's degree is required, but a Ph.D. is desirable. Teaching experience will be considered. Applications, including résumés, college transcripts, and three letters of recommendation must be received by 15 February. They should be sent to: **Dr. David Banks, Department of Biology and Environmental Science, Christopher Newport College, Newport News, Virginia 23606. Christopher Newport College is an Affirmative Action/Equal Opportunity Employer.**

University of Maryland University College seeks excellent classroom teachers for nonlaboratory science courses offered to students on U.S. bases overseas. **GEOLOGISTS, ZOOLOGISTS, and BOTANISTS** with clear competence to teach two of these areas sought. (i) Ph.D. or two M.A.'s; (ii) recent undergraduate teaching experience; and (iii) U.S. citizenship all essential. Families: positions require frequent travel; family housing and schools not provided. Apply (send résumé) to: **Dr. Julian S. Jones, University of Maryland University College, College Park, Maryland 20742. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

FACULTY POSITIONS COLLEGE OF OSTEOPATHIC MEDICINE OF THE PACIFIC

309 Pomona Mall East, Pomona, Calif. 91766

Applications are invited from qualified men and women with the Ph.D., D.O., or M.D. degree for teaching positions in an expanding program available July 1980 in the following areas:

- 1) Gross anatomy/neuroanatomy,
- 2) Histology/embryology,
- 3) Biochemistry,
- 4) Microbiology,
- 5) Pathology,
- 6) Pharmacology, and
- 7) Human physiology.

Rank and salary are commensurate with training and experience.

Applicants should submit curriculum vitae, list of publications, and the names of three references to:

**Dean of Educational Resources
College of Osteopathic Medicine of the Pacific
309 Pomona Mall East
Pomona, California 91766**

An Equal Opportunity/Affirmative Action Employer

TWO FACULTY POSITIONS. The Department of Chemistry, Illinois Wesleyan University, is seeking applicants for two tenure-track positions. The area of specialty is open for both positions, excluding physical chemistry. The first position is for **DEPARTMENT HEAD**, and is expected to be made at the associate professor rank. Duties include administering a liberal arts college department, teaching, and promoting undergraduate research activities. The second appointment will be made at the **INSTRUCTOR/ASSISTANT PROFESSOR** level. Excellence in teaching and a commitment to research are requirements for both positions. *Applications from women and minority candidates are particularly welcome.* Send curriculum vitae and three letters of reference to: **Roger Schnatter, Director of Natural Science, Illinois Wesleyan University, Bloomington, Illinois 61701.** The closing date for applications is 21 February 1980. *Illinois Wesleyan University is an Equal Opportunity Employer.*

FACULTY POSITION—Department of Biological Chemistry, University of California, Davis, School of Medicine. Applications are invited for a faculty position at the rank of assistant or associate professor, to begin spring or summer 1980. Candidate should be active in research and capable of contributing significantly to medical school and graduate teaching in the areas of biochemistry, physiological chemistry, cellular, and molecular biology. Quality and originality of research will receive greater emphasis than field of specialization, although potential to enter into interdisciplinary research within the department, encompassing the areas mentioned above, will be given favorable consideration. Applicants should send curriculum vitae, list of publications, future research plans, and the names of at least three individuals from whom letters of recommendation may be solicited by the Search Committee to: **Dr. Robert S. Traut, Chairperson, Search Committee, Department of Biological Chemistry, School of Medicine, University of California, Davis, Calif. 95616.** Completed applications should be received not later than 15 February 1980. *The University of California is an Affirmative Action/Equal Opportunity Employer. Women and minority candidates are encouraged to apply.*

HYDROGEOLOGIST

**Department of Geological Sciences
The University of Texas at Austin**

A tenured or tenure-track faculty position is open in hydrogeology, effective September 1980. Responsibilities will include graduate and undergraduate courses in hydrogeology and related subjects and development of graduate research programs.

Applicants for this position must have completed all requirements for the Ph.D. degree at the time of employment. Salary and appointment level will be commensurate with experience. Please send complete résumé and statement of research interests and planned research projects to:

**Dr. Robert E. Boyer, Chairman
Department of Geological Sciences
The University of Texas at Austin
P.O. Box 7909
Austin, Texas 78712**

Equal Opportunity/Affirmative Action Employer, M/F

HARVARD UNIVERSITY GRADUATE SCHOOL OF EDUCATION

Laboratory of Human Development has two full-time positions at the assistant/associate professor level (other nontenured ranks possible) for September 1980.

The **first position** is for an interdisciplinary specialist in the comparative study of human development. Applications are invited from anthropologists or psychologists with experience in cross-cultural research on the child, family, life span, or process of socialization.

The **second position** seeks an experienced developmental psychologist with broad interest in cognitive development and its applications to education.

Both positions require a doctorate, with demonstrated competence in ongoing research and experience teaching/advising at the graduate level. Initial appointment of term is 3 to 5 years.

Send curriculum vita, two writing samples, and cover letter indicating position of preference by 15 February 1980 to: **Dr. Robert A. LeVine, Search Committee, Graduate School of Education, Harvard University, Cambridge, Mass. 02138.**

An Affirmative Action/Equal Opportunity Employer.

KING FAISAL UNIVERSITY COLLEGE OF MEDICINE DAMMAN, SAUDI ARABIA FACULTY POSITIONS OPEN 1980-1981

The expanding College of Medicine, now in its sixth year, is accepting applications from qualified men and women for the 1980-1981 academic year in:

CHEMISTRY	PATHOLOGY
BIOLOGY	EPIDEMIOLOGY
PHYSICS	MICROBIOLOGY
BIOCHEMISTRY	PARASITOLOGY
ANATOMY	PHARMACOLOGY
PHYSIOLOGY	COMMUNITY MEDICINE

Doctorate or equivalent degree required. Language of instruction is English. Interviews to be held in London, Houston, and Ottawa during February 1980.

Salaries are highly competitive and negotiable; comparable to other Saudi universities.

Benefits include free furnished housing, educational allowances, air tickets to and from Saudi Arabia once each year for a family of four, 60-day paid vacation, and liberal overweight allowance. No Saudi income tax.

Send curriculum vitae with current telephone number and the names and addresses of three references to:

**Dr. Tawfiq Tamimi
Dean, College of Medicine
King Faisal University
c/o Saudi Arabian
Educational Mission
2221 West Loop South
Houston, Texas 77027**

OR

**c/o P.O. Box 2
Sunbury-on-Thames
Middlesex TW16 5JP England**

POSITIONS OPEN

GENERAL BIOLOGY COORDINATOR, College of Sciences. Primary responsibility is to provide leadership and vision into the coordination of a multi-section, general education, nonmajor introductory general biology course (lecture and laboratory). Annual enrollment: approximately 2800 students with 19 participating faculty. Other duties to include: teaching, course development, organization, and implementation. Requirements: Ph.D., Ed.D., or equivalent in biology or science education. Demonstrated leadership and experience in the coordination and teaching of a multisection general biology course. Expertise in multimedia, innovative approaches to instruction, CAI, A-T, PSI, and so forth, required. Position to begin 25 August 1980. Application deadline: 10 March 1980. Send complete résumé, three letters of recommendation, and complete transcripts to: **Dr. Robert Johnson, Chairperson, Department of Biology, Southeast Missouri State University, Cape Girardeau, Mo. 63701. An Equal Opportunity/Affirmative Action Employer, M/F.**

IN DETROIT! GENETICS ASSOCIATE

Master's in genetic counseling, plus one year of experience in activities relating to genetic disease.

Start at
\$18,300

Send your résumé to:

W. I. YOUNG, Ph.D.
Genetics Program Coordinator
Bureau of Personal Health Services
Michigan Department of Public Health
P.O. Box 30035
Lansing, Mich. 48909
An Equal Opportunity Employer, F/M/H/V

GENETIC ENGINEERING

We are seeking applications for a position in our biological research group located in our recently constructed laboratories in Richmond, Calif. The principal responsibility will be to apply the techniques of recombinant DNA technology to develop new biological systems/processes and to broaden our existing programs. Applicants should have a Ph.D. or equivalent experience in molecular biology, genetics, or related fields and must have research experience with cloning techniques.

We offer a competitive salary and fringe benefits package in addition to an attractive San Francisco Bay area location. Applicants should send a résumé, statement of research interests and experience, and the names of three references to:

James P. Baker
Personnel Manager
Stauffer Chemical Company
de Guigne Technical Center
1200 South 47 Street
Richmond, Calif. 94804

Stauffer is an Affirmative Action/Equal Opportunity Employer.

IMMUNOLOGY FACULTY POSITION—Applications invited for tenure-track position at the University of Pennsylvania, School of Veterinary Medicine, to conduct research on the virus-host, tumor-host immunological interactions in the bovine leukemia system. Strong background in cellular immunology desired. Rank and salary open. Applicants should submit curriculum vitae, representative publications, and names of three referees to: **J. F. Ferrer, M.D., University of Pennsylvania, New Bolton Center, Kennett Square, Pa. 19348. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

VIROLOGY FACULTY POSITION—Applications invited for tenure-track position at University of Pennsylvania, School of Veterinary Medicine, to conduct research primarily on the bovine leukemia virus system. Opportunity to develop independent research program in coordination with ongoing studies on bovine leukemia. Strong background in the molecular and biological aspects of mammalian viruses, preferably publications, and names of three referees to: **J. F. Ferrer, M.D., University of Pennsylvania, New Bolton Center, Kennett Square, Pa. 19348. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

GENETICS FACULTY POSITION

chairperson or established staff person; professor or associate professor

Applications are invited for a 12-month tenured appointment. The successful candidate must be: actively engaged in a vigorous and creative research program, able to direct graduate students, a stimulating teacher, and, if appropriate, an able administrator. Any area of genetics will be considered that will lead to advancements in our basic understanding of agronomically important plants or their symbionts, with preference given to plant cell culture or nitrogen fixation. Duties will include teaching undergraduate general genetics and/or a graduate course of choice. Appropriate reductions in teaching duties will be made for chairperson responsibilities. The Department of Genetics has ten faculty with active research programs in: *Rhizobium*, soybean, maize, *Drosophila*, immuno and somatic cell genetics. Please send curriculum vitae, a statement of research plans, and three letters of recommendation by 15 February 1980 to: **Dr. Alan Atherly, Department of Genetics, Iowa State University, Ames, Iowa 50011.**

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

UNIVERSITY OF WASHINGTON (SEATTLE) GEOLOGICAL SCIENCES

Openings for two assistant professors for tenure-track positions beginning in autumn 1980.

GEOCHEMISTRY. Candidates expected to have Ph.D. in geochemistry or chemistry with primary research activity in application of chemical principles and techniques to problems of ore deposits and water-rock systems. Experience with computer modeling and laboratory experimental methods desired.

PHYSICAL STRATIGRAPHY. Candidates must have completed Ph.D. and have primary research activity in areas of depositional systems, and sedimentary and tectonic environments, including analysis of relevant geophysical data.

Both positions involve undergraduate/graduate teaching and development of strong research programs. Persons interested should send résumé, list of publications, and names of four references to: **John B. Adams, Chairman, Geological Sciences, AJ-20, University of Washington, Seattle, Washington 98195.** Closing date for applications is 1 February 1980.

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

GEOLOGIST. Applications are invited for a tenure-track position beginning September 1980. Teaching responsibilities will be in mineralogy/petrology; assistant professor level. Ph.D. required and interest in computer applications desirable. Send application before 31 January 1980 to: **Dr. M. Kontrovitz, Chairman, Geosciences, Rider College, Lawrenceville, N.J. 08648. Rider College is an Equal Opportunity/Affirmative Action Employer.**

LABORATORY DIRECTOR. Ph.D. wanted immediately to co-direct the Transfusion and Hematology Laboratories of a Children's Hospital. Background in immunology, blood banking, or immunohematology desirable. Research and teaching opportunity (affiliation with State University of New York). Salary commensurate with qualifications. Submit curriculum vitae and three references to: **Dr. J. Humbert, Head, Hematology Division, Children's Hospital of Buffalo, Buffalo, N.Y. 14222. An Equal Opportunity/Affirmative Action Employer.**

LIPOPROTEIN- GASTROINTESTINAL PHYSIOLOGIST

A tenure-track position at the rank of assistant professor is available in the Department of Physiology and Biophysics of the University of Tennessee Center for the Health Sciences. Candidates should have a Ph.D. or M.D. degree, a minimum of 2 years of postdoctoral training, and a strong research background in gastrointestinal physiology. We are primarily interested in individuals whose research is in the area of lipoprotein metabolism. Demonstrated ability to initiate a strong, independent research program and to engage in the teaching activities of the department is expected. Opportunity is available for interaction with an established lipoprotein research group. Send curriculum vitae, a brief statement of research interests, and the names of three references to: **Dr. Leonard Share, Chairman, Department of Physiology and Biophysics, University of Tennessee Center for the Health Sciences, Memphis, Tennessee 38163. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

HORTICULTURALIST/PLANT PHYSIOLOGIST

The Department of Botany and Plant Sciences, University of California, Riverside, announces a position at the assistant professor level, with both an experiment station and academic title, available 1 July 1980. The position is a tenure-track, 11-month appointment in the College of Natural and Agricultural Sciences and the Agricultural Experiment Station. A Ph.D. is required; postdoctoral experience is preferred, but all qualified candidates will be considered. Background in tree crops physiology and horticulture is desirable, but candidates with other backgrounds are also encouraged to apply. The appointee is expected to teach upper-division courses in tree crops. Opportunity to develop a graduate-level course in area of specialization. Must be willing to serve as major professor to M.S. and Ph.D. students. Must develop a horticultural and physiological research program on citrus. The area(s) of research will be determined by the interests of the successful candidate and the scientific and agricultural merits of the research. Opportunity exists for interaction with research workers from many disciplines, including research on integrated pest management.

Send curriculum vitae and official transcripts and arrange to have at least three confidential letters of recommendation sent to: **Dr. R. K. Soost, Search Committee Chairman, Department of Botany and Plant Sciences, University of California, Riverside, Calif. 92521.** Application deadline is 15 February 1980.

An Affirmative Action/Equal Opportunity Employer

HYPERBARIC PHYSICIAN

Research associate position to participate in a 2-year research program into the basic mechanisms of decompression and to act as a diving medical officer during tests of experimental decompression schedules. Must be experienced in diving medicine and physiology including decompression theory and the use of computers for real time data acquisition, information storage and retrieval, and modeling. Must be familiar with inert gas exchange measurement techniques and use of Doppler equipment. Salary: \$25,000 per annum. Send curriculum vitae and letters of reference to: **R. D. Vann, Ph.D., Box 3823, Duke University Medical Center, Durham, N.C. 27710.**

INHALATION TOXICOLOGIST

B.S./M.S.-level scientist with training or experience that would provide the necessary background to participate in an inhalation toxicology program.

Please send résumé to: **David R. O'Donnell, Senior Personnel Representative, Eli Lilly and Company, P.O. Box 708, Greenfield, Indiana 46140.**

LABORATORY TECHNOLOGIST II

Challenging position associated with a 3-year NIH project available at the University of Florida's J. Hillis Miller Health Center. Requires B.S. plus 1 year of experience in neurohistology or histology or 5 years of experience. Salary: \$10,753 per annum, plus excellent fringe benefits including tuition waiver. Send résumé to: **University of Florida, Scientific Employment Section, 217 HUB, Gainesville, Fla. 32610.**

Equal Opportunity/Affirmative Action Employer

NATURAL RESOURCE PLANNER—18-month assignment in West Africa to work with technical team on Land Use Inventory project. Prefer U.S. citizen with Ph.D. or master's in resource planning. At least 5 years of professional experience and overseas background necessary and knowledge of French preferred. Candidate must be experienced in land and water resource evaluation, soil suitability, and remote sensing analysis. Send résumé to: **Walter T. Oerlemans, Personnel Manager, Reference Number 7941, TAMS, 655 Third Avenue, New York, N.Y. 10017. Telephone: 212-867-1777. An Equal Opportunity Employer, M/F/H.**

Position open for a **PATHOLOGIST—DIRECTOR OF HEMATOLOGY LABORATORY** in the Department of Pathology, Northwestern University Medical School, and Northwestern Memorial Hospital, Chicago, Illinois. Full-time academic appointment; rank dependent on level of experience and scholarly development. An active research program obligatory. Send résumé to: **Dante G. Scarpelli, M.D., Ph.D., Professor and Chairman, Department of Pathology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611. Equal Opportunity/Affirmative Action Employer**

POSITIONS OPEN

MAMMALIAN PHYSIOLOGISTS AND BIOPHYSICISTS. Positions open for the 1980-1981 academic year in the areas of cardiovascular physiology, renal physiology, gastrointestinal physiology, endocrinology, reproductive physiology, and respiratory physiology at King Faisal University College of Medicine in Dammam, Saudi Arabia. Ph.D. and/or M.D. and at least 2 years of teaching experience. Salaries are highly competitive and benefits are excellent. Language of instruction is English. Send complete curriculum vitae with telephone numbers and three references to: **Dr. Tawfig Tamimi, Dean, College of Medicine, King Faisal University, c/o Saudi Arabian Educational Mission, 2221 West Loop South, Houston, Texas 77027.**

MARINE BENTHIC ECOLOGIST

Assistant professor, tenure-track line, available 1 July 1980. Candidate must have interest in sediment-animal relationships with expertise in one or more of the following: physiological response and adaptation to stress, uptake of contaminants, bioturbation, recolonization and succession on disturbed bottoms. Initial employment will be for 3 years at an academic year salary of \$15,000 to \$16,000. Applicants should have strong field orientation with experience in experimental design and the application of modern statistical methods to data. By 1 February 1980, send complete résumé and three letters of reference to: **Dr. Robert Malouf, Chairman, Search Committee, Marine Sciences Research Center, State University of New York at Stony Brook, Stony Brook, L.I., N.Y. 11794. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN EXPERIMENTAL PATHOLOGY. M.D. or Ph.D. to study cell cycle and plasma membrane control of differentiation and carcinogenesis beginning summer 1980. Experience in tissue culture, cell biology, and membrane biochemistry desirable. Competitive stipend. Send résumé and the names of three references to: **Dr. Robert E. Scott, Head, Section of Experimental Pathology, Mayo Clinic, Rochester, Minnesota 55901. Equal Opportunity/Affirmative Action Institution.**

DEAN, SCHOOL OF NATURAL SCIENCES AND MATHEMATICS THE UNIVERSITY OF TEXAS AT DALLAS

The University of Texas at Dallas invites nominations and applications for the position of dean of the School of Natural Sciences and Mathematics. The University of Texas at Dallas, a component of the University of Texas System, offers upper division and graduate education in six schools. The School of Natural Sciences and Mathematics is composed of 10 full-time faculty members, and it offers seven master's programs and five Ph.D. programs.

The dean is expected to exercise leadership in the area of faculty recruitment, curriculum planning, community relations, budget planning and administration, and long-term planning for the school. The dean reports directly to the vice president for academic affairs.

Qualifications

A doctoral degree in one of the school's disciplines and university teaching experience are highly desired, but the fundamental qualification is excellence, whether it be in academic scholarship, public service, or scientific leadership. The candidate must have an outstanding record of performance in administration, must be able to communicate effectively with colleagues, and, above all, have a demonstrated ability to think creatively about the problems of education in the sciences. The candidate's record should justify appointment at a tenured level in one of the disciplines in the school.

The term of office as dean will presumably begin on or before 1 September 1980. In order to ensure full consideration, applicants should submit by 15 February 1980, a letter of interest, a résumé (indication of sex and ethnicity for Affirmative Action statistical purposes is requested, but not required), and the names of referees to:

**Chairman, Search Committee Number 220
School of Natural Sciences and Mathematics
The University of Texas at Dallas
P.O. Box 688
Richardson, Texas 75080**

The University of Texas at Dallas is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

MAMMALOGIST. Applications are invited for assistant curator in the Division of Mammals, Field Museum of Natural History; 12-month, career-track, full-time appointment, with both research and curatorial responsibilities to begin September 1980. Applicants must have Ph.D. with primary interest in and commitment to an active research program in systematic mammalogy in the broadest sense and the curation of a major mammal collection. Other duties may include participation in exhibition and educational functions of Field Museum. Opportunities exist for work with graduate students. Salary dependent on qualifications and experience. Send curriculum vitae, description of research experience, future plans, reprints of publications, and letters from three referees by 1 March 1980 to: **Dr. Harold Voris, Chairman, Search Committee, Department of Zoology, Field Museum of Natural History, Roosevelt Road at Lake Shore Drive, Chicago, Illinois 60605. Telephone: 312-922-9410.**
An Equal Opportunity Employer

PHYSICAL CHEMISTRY FACULTY POSITION—Tenure-track position for teaching at the undergraduate level starting September 1980. Rank and salary commensurate with experience. Ph.D. required. Send résumé, three letters of recommendation, transcripts, and description of research interests by 15 February to: **Richard F. Atkinson, Chairman, Department of Chemistry, Grand Valley State College, Allendale, Mich. 49401. An Equal Opportunity Employer.**

POSTDOCTORAL—NEUROPEPTIDES: CHEMISTRY

Position available 1 May 1980 for an individual with peptide chemistry skills. Emphasis on extraction, purification, and identification preferred. Opportunity for studies of new substances and species. The laboratory focus is on neuropeptides: anatomy, physiology, biochemistry, role in behavior and human clinical problems. Salary: \$10,000 and up, with fringes. Send curriculum vitae and two references to: **Dr. Huda Akil, Mental Health Research Institute, University of Michigan, Ann Arbor, Michigan 48109. An Equal Opportunity Employer.**

FACULTY POSITIONS OPEN COLLEGE OF AGRICULTURAL SCIENCES AND FOODS KING FAISAL UNIVERSITY HOFUF, SAUDI ARABIA Academic Year 1980-1981

The expanding College of Agricultural Sciences and Foods of King Faisal University invites inquiries from qualified applicants for the 1980-1981 academic year in the following fields: **Agronomy, Horticulture, Beekeeping, Poultry Science, Biology, Chemistry, Physics, Botany, Biochemistry, Agricultural Extension, Plant Pathology, Agricultural Economics, Animal Science, Animal Ecology, Dairy Science, Agricultural Engineering, and Water Resources and Climatology.**

PREREQUISITES: Master's or equivalent degree; practical and/or teaching experience. Knowledge of Arabic is helpful but not required. Language of instruction is English. Positions available September 1980; interviews scheduled with the dean in Houston, London, and Ottawa in April/May 1980.

SALARY RANGES: Approximate annual U.S. equivalent: professor, \$25,469 to \$33,965; associate professor, \$22,779 to \$28,973; assistant professor, \$18,570 to \$27,487; and lecturer, \$11,611 to \$16,035. Salaries are paid monthly in Saudi riyals. Substantial increase in these salaries is being considered for 1980-1981.

BENEFITS: Free, furnished accommodations; substantial educational allowance for up to four children. Air tickets to and from Saudi Arabia once per year for family of four. Sixty-day paid summer holiday; yearly bonus; overweight allowance. No Saudi income tax. Contracts are for 1 year and are renewable.

Send curriculum vitae with current telephone number and the names, addresses, and telephone numbers of three references to:

**Dr. Hussein M. Elarosi
Dean, College of Agricultural Sciences and Foods
King Faisal University
c/o Saudi Arabian Educational Mission, 2221 West Loop South, Houston, Texas 77027;**

OR

c/o P.O. Box 2, Sudbury-on-Thames, Middlesex TW16 5JP England.

POSITIONS OPEN

MARINE BIOMEDICAL SCIENTIST

The Medical University of South Carolina has an immediate opening for a biomedical scientist at the doctoral level and with interest and experience in marine science. The individual is to develop biomedical research and graduate programs at the Cooperative Research Facility at the Fort Johnson laboratories on Charleston harbor. Faculty appointment will be in one of the basic science departments of the Medical University. Send curriculum vitae, statement of current interests and goals, and three letters of recommendation to: **Dr. John W. Zemp, Dean, College of Graduate Studies and University Research, Medical University of South Carolina, 171 Ashley Avenue, Charleston, S.C. 29403. An Equal Opportunity/Affirmative Action Employer.**

PHYSIOLOGIST. Tenure-track appointment in biology beginning August 1980 at the assistant professor level for a broadly trained physiologist with a strong emphasis in vertebrate physiology. Primary teaching responsibility is physiology at the junior level for biology, medical technology, and nursing students, and advanced cell physiology for biology students. Ph.D. required and teaching experience expected. Submit a résumé, transcripts, and have three letters of reference forwarded to: **Dr. Robert C. Haynes, Chairperson, Search Committee, Sangamon State University, Springfield, Illinois 62708.** Closing date for applications is 1 March 1980.

Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL—NEUROPEPTIDES: ANATOMY

Position available 1 May 1980 for an individual with light and EM skills, familiarity with CNS anatomy, and interest in neurotransmission. The laboratory focuses on opiate peptides and related substances, both presynaptic anatomy and receptor autoradiography. Opportunity for interactions with peptide behavior, physiology, chemistry, and clinical studies. Salary: \$10,000 and up, with fringes. Send curriculum vitae and two references to: **Dr. Stanley Watson, Mental Health Research Institute, University of Michigan, Ann Arbor, Michigan 48109. An Equal Opportunity Employer.**

Baylor College of Medicine

1100 MEDICAL CENTER • HOUSTON, TEXAS 77030

NUTRITION AND PREGNANCY LABORATORY DIRECTOR, CHILDREN'S NUTRITION RESEARCH CENTER

The United States Department of Agriculture Children's Nutrition Research Center of the Human Nutrition Program of the Science and Education Administration is located within and administered under a cooperative agreement with Baylor College of Medicine and Texas Children's Hospital in Houston, Texas. The mission of the Center is the determination of nutrient requirements in infants and children during the age ranging from conception to the adolescent. The emphasis is on normal requirements as a standard for the many applied programs in human nutrition of the Federal Government.

Because of the mandate to investigate nutrient requirements in normal children it is determined to be essential that a Nutrition and Pregnancy Laboratory be established as a part of this national center for childhood nutrition research. The Nutrition and Pregnancy Laboratory will participate in intramural and extramural research projects which are designed to study the nutrient needs of normal pregnancy and fetal development.

A Director of the Nutrition and Pregnancy Laboratory is being sought to provide leadership in research development and operation of this national laboratory. This scientist should be an experienced biologist, physiologist, biochemist or nutritionist who has demonstrated academic capacity and administrative experience in perinatal research. The Director of this laboratory ideally should be a physician, however, this is an optional requirement.

Those interested in evaluating this opportunity for scientific leadership should correspond with Judith M. Nagle, Personnel Services, Baylor College of Medicine.

An Equal Opportunity Employer

POSITIONS OPEN

MICROBIOLOGISTS. Two tenure-track faculty positions beginning August 1980. **Rank:** assistant or associate professor, either position. **Requirements:** completed Ph.D. and publications; postdoctoral experience preferred. The successful candidates should expect to carry on an active research program, to secure research funding from outside agencies, to direct the work of graduate students specializing in microbiology, and to teach introductory and advanced microbiology courses. **Applicants:** send complete curriculum vitae, including copies of publications and names and addresses of three references, to: **Dr. H. Bailey Ward, Chairman, Microbiology Search Committee, Department of Biology, University of Mississippi, University, Miss. 38677.** To ensure consideration, applications should be received before 1 March 1980.

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

MICROPALAEONTOLOGIST

The Geosciences Program, The University of Texas at Dallas, is seeking applications for a tenure-track faculty position at the assistant professor level, beginning fall 1980 in micropaleontology.

Departmental research facilities of special interest to the new faculty include SEM, luminoscope, automated microprobe, and computer.

The position requires a Ph.D. and a commitment to excellence in teaching and research. Duties will include teaching at the upper level undergraduate and graduate levels, supervision of M.S. and Ph.D. student research, and research in area of specialty (nanofossils and/or planktonic foraminifera preferred). Preference will be given to scientists with broad interests who will interact with faculty in classics, carbonates, micropaleontology, and sedimentary geochemistry.

Indication of sex and ethnicity for Affirmative Action statistical purposes is requested, but not required. Applicants should submit a résumé, names of three references, and a statement of research interest by 31 March 1980 to:

**Academic Search Number 221
The University of Texas at Dallas
P.O. Box 688
Richardson, Texas 75080**

The University of Texas at Dallas is an Affirmative Action/Equal Opportunity Employer.

MOLECULAR BIOLOGIST. The Department of Biology, University of California, San Diego, invites applications for a faculty position in molecular biology at the level of assistant professor. The appointee must have had postdoctoral training and is expected to conduct a rigorous research program (area of eukaryotic biology preferred) and to participate in undergraduate and graduate teaching. Applicants should send curriculum vitae, including a list of publications and the names and addresses of five references. The position will be available beginning September 1980. Send applications by 29 February 1980 to:

**Dr. M. I. Simon
Search Committee
Department of Biology, B-022
University of California, San Diego
La Jolla, Calif. 92093**

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

POSTDOCTORAL POSITION in neuroscience available immediately for person with background in electron microscopy. Project involves transmission and scanning electron microscopy of cultured brain capillary endothelial cells. Electron probe microanalysis and cytochemical localization of enzymes will also be used. Prior experience in electron microscopy required; familiarity with neuroanatomy desirable. Send curriculum vitae and two letters of recommendation to: **Gary W. Goldstein, M.D., Department of Pediatrics, University of Michigan, Ann Arbor, Michigan 48109.**

POSTDOCTORAL POSITIONS: for 1 to 3 years, available immediately for study of enzyme mechanisms including active-site directed irreversible inhibition (THIAMIN DIPHOSPHATE REQUIRING ENZYMES, PURINE NUCLEOSIDE PHOSPHORYLASE, GLYOXALASE I—see biochemical and chemical literature for references). Experience in enzymology/protein chemistry important. Salary: \$12,000 and up, depending on experience, plus fringe benefits. Send résumé and letters of reference to: **Professor F. Jordan, Chemistry, Rutgers University, Newark, N.J. 07102.** *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

MOLECULAR BIOLOGISTS

If you are interested in a challenging career at the Ph.D., M.S., or B.S. level with a leader in molecular biology, Bethesda Research Laboratories is offering senior and junior positions in the areas of:

ENZYMOLGY—Purification of nucleic acid enzymes using state-of-the-art techniques; improving these techniques and exploring alternative methods.

DNA SEQUENCING—Contract and R & D sequencing of nucleic acids;

DNA SEPARATION/PURIFICATION—Contract DNA separation and exploring alternative methods for separating nucleic acids; large-scale purification of DNA from cells and viruses;

CLONING/MICROBIOLOGY—Experience in cloning technology or basic microbiology to work in challenging contract R & D program; and

BIO-ORGANIC SYNTHESIS—Organic chemists to work on protein chemistry nucleic acid synthesis and affinity matrices.

For information, telephone or write:

**BETHESDA RESEARCH LABORATORIES, INC.
411 North Stonestreet Avenue
Rockville, Maryland 20850
Telephone: 301-840-8000 or 8043**

MOLECULAR GENETICIST

We are a new company in the Boston area dedicated to the discovery and development of products useful in medicine, agriculture, and energy, utilizing techniques of recombinant DNA. We seek a **director of research**, whose chief responsibilities will be recruitment and supervision of a highly qualified scientific staff, and consultation with scientists and colleagues in this and related fields. Minimum requirements for this position are a Ph.D. in molecular biology (with emphasis on eucaryote molecular genetics) and 4 to 5 years of experience in the techniques of recombinant DNA at the postdoctoral level. Qualified applicants are invited to submit, in confidence, their résumés, together with publications and salary history, to: **GENESY, Box 1200, 104 Charles Street, Boston, Mass. 02114.** *We are an Equal Opportunity Employer.*

AN UNTAMED PHYSICIST?

Are you a capable, successful Ph.D. experimental physicist or EE with some latent pioneer spirit? Do you have at least some electronic design ability? Would you be interested in broad problems related to instruments and systems involved in fisheries research and management? Are you attracted, or at least not repelled, by the idea of life in the remote, but accessible, San Juan Islands, northwest of Seattle, in Puget Sound?

This small, successful corporation has an opening for a staff member who must be able to answer yes to the questions above. Some experience with mini/micro computers, and a comfortable attitude toward small boats and small airplanes will count in the applicant's favor.

We offer to the successful applicant broad responsibility and compensation to match, a first-quality profit-sharing, retirement, and benefit plan, and an opportunity to live and prosper in a unique, beautiful environment of mountains, land, and water.

If you think you are qualified and if you would like to know more, respond with résumé, list of publications, and names of three references to: **Dr. K. B. Jefferts, Northwest Marine Technology, Inc., Shaw Island, Washington 98286.**

PLANT MOLECULAR BIOLOGY-POSTDOCTORAL POSITION available immediately on 3-year NIH grant to study the rearrangements of corn mitochondrial DNA resulting in male sterility and fungal toxin susceptibility of the plant. Experience with cloning and/or restriction mapping desirable. Send curriculum vitae plus three letters of recommendation to: **Dr. Virginia Walbot, Department of Biology, Washington University, St. Louis, Mo. 63130.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION—Research on the effects of ethanol or mammalian hepatic inflammation and fibrosis including studies of protein and collagen metabolism. Position is available immediately for 2 to 3 years. Please send curriculum vitae, statement of research interest, and three letters of recommendation to: **Charles S. Lieber, M.D., Alcoholism Research and Treatment Center, BRONX VA HOSPITAL, 130 West Kingsbridge Road, New York, N.Y. 10468.** *An Equal Opportunity Employer.*

POSITIONS OPEN

PHYSICIST, Ph.D./SENIOR ONCOLOGY CENTER

Excellent position available immediately. Expanding urban cancer center offers stimulating atmosphere, full benefit package, opportunity for professional growth.

Desire senior staff physicist for major radiation therapy facility. Primary responsibility for calibration and dosimetry of high energy x-rays and electrons produced by clinical linear accelerators.

Applicants must be knowledgeable in theoretical and experimental techniques regarding the interaction of radiation with matter. Familiarity with computerized data processing techniques essential. Position provides opportunity to develop research interests.

All inquiries will be processed in confidence and should contain compensation requirements.

Please reply in writing only, with curriculum vitae, to:

**The Johns Hopkins Medical Institutions
c/o David G. Grant, Director
Radiation Oncology Physics
600 North Wolfe Street
Baltimore, Maryland 21205
Equal Opportunity Employer**

POSTDOCTORAL FELLOW position available for research on the molecular genetics of murine leukemia virus-encoded plasma membrane glycoproteins and their roles in causing malignancy. Contact: **David Kabat, Department of Biochemistry, University of Oregon Health Sciences Center, Portland, Oregon 97201.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOW TOXICOLOGY Background in Chemistry

We are interested in drug-drug interactions that generate new nitrosamines. Experience in HPLC and GC, and interest in developing new methods for the study of potential carcinogens desirable. Position open immediately. Contact:

**Ilene H. Raisfeld, M.D.
Department of Pharmacological Sciences
Health Sciences Center
State University of New York at Stony Brook
Stony Brook, N.Y. 11794
Telephone: 516-246-2568**

POSTDOCTORAL POSITION available immediately for study of regulation of DNA replication initiation in bacterial plasmids. Background in molecular biology of nucleic acids and recombinant DNA technology preferred. Please send curriculum vitae, a statement of research interests, and names of three references to: **Dr. Charles F. Morris, Department of Biological Chemistry, Washington University School of Medicine, 660 South Euclid Avenue, St. Louis, Missouri 63110.**

POSTDOCTORAL POSITIONS available immediately and in fall 1980 involving research in DNA replication and repair in mammalian cell-virus systems, and the effects of chemical carcinogens. Salary: \$16,000. Please send curriculum vitae to:

**Liebe F. Cavalleri, Ph.D.
Sloan-Kettering Institute
Walker Laboratory
145 Boston Post Road
Rye, New York 10580**

POSTDOCTORAL POSITION. Ph.D. or D.V.M. To work in active group studying immunity mechanisms to herpesvirus infections. The research investigates the use of liposomes as tools to define herpesvirus antigens involved in the induction of several aspects of cell mediated immunity in vivo and in vitro. Other interests include a definition of cell and lymphokine interactions required for antiherpesvirus immunity and the use of liposome vaccines for immunization. Contact: **Dr. Barry Rouse, Department of Microbiology, University of Tennessee, Knoxville 37916.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION for Ph.D. in biochemistry. Available 1 February. Primary structure determination and active site studies of tryptophanyl-tRNA synthetase. Background in protein chemistry and/or enzymology desirable. Salary: \$13,000 to \$15,000. Please send curriculum vitae and names of three references to:

**Dr. Karl H. Muench
Division of Genetic Medicine R-99
University of Miami School of Medicine
P.O. Box 016960
Miami, Florida 33101**

PHARMACOLOGIST POST DOCTORAL

SMITHKLINE, a diversified multinational pharmaceutical firm located in Philadelphia, Pennsylvania is seeking a Ph.D. Biochemical Pharmacologist for a post doctoral position.

Candidates are required to have:

- Experience in Antonomic Nervous System Pharmacology and familiarity with in *vivo* an in *vivo* techniques.
- Some background in biochemistry and experience with isolation and purification techniques.
- Ability and desire to carry out independent research under guidance of a Senior Investigator.

An interest in Peptides is desirable. Publications are encouraged.

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William G. Groves, Senior Employment Administrator, SMITHKLINE & FRENCH LABORATORIES, A Division of SMITHKLINE CORPORATION, 1558 Spring Garden Street, P.O. Box 7929, Philadelphia, Pennsylvania 19101. We are an Equal Opportunity Employer, M/F/H/V.

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DEAN GRADUATE SCHOOL OF MEDICAL SCIENCES UNIVERSITY OF TENNESSEE CENTER FOR THE HEALTH SCIENCES

Applications and nominations are invited for the position of dean of the Graduate School of Medical Sciences. The Graduate School is concerned with all aspects of graduate education at the University of Tennessee Center for the Health Sciences. The Graduate School has primary responsibility for academic degree programs leading to the M.S. and Ph.D. degrees and for the coordination of policies and programs for postprofessional-degree training that leads to the award of a university degree or certificate. The Graduate School exerts its influence throughout the Health Sciences Center by fostering excellence in scholarship, research, and service in the academic tradition.

Candidates for the position should have demonstrated abilities as an outstanding biomedical scientist in research and teaching, should possess the Ph.D. or other doctoral degree and qualify for an appointment as full professor in the Health Sciences Center, should be dedicated to the concept of graduate health sciences education, and should have demonstrated administrative experience.

The University of Tennessee is an Equal Opportunity/Affirmative Action/Title IX/504/Disabled Veteran Employer. Applications should include complete curriculum vitae, list of publications, and names of three references. Applications and nominations should be submitted no later than 15 February 1980 to:

Dr. Audrey N. Roberts
Department of Microbiology
Co-Chairman, Graduate Dean Search Committee
University of Tennessee
Center for the Health Sciences
858 Madison Avenue
Memphis, Tennessee 38163

PHYSICAL SCIENCE ADMINISTRATORS

Office of Naval Research, Pasadena, has two positions available:

- ELECTRONICS/COMMUNICATIONS
Ann. No. ONR 7S-79
- MATERIALS
Ann. No. ONR 6S-69

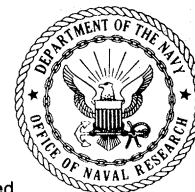
Job responsibilities include scientific coordination in the fields of materials or electronics/communications and related technologies throughout the Western United States. Participate in planning and management of Naval materials research program. CSC Handbook X-118 requirements and PhD, or experience equivalent. Plus broad background in the material sciences and structures or electronics/communications.

Salary: GS-1301-12 \$24,703-\$32,110

Applications must be postmarked no later than: 11 February 1980

Please send SF-171 and resume to:

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(213) 795-5971



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FACULTY POSITION

The University of Massachusetts Medical School Department of Microbiology announces an opening of a tenure-track position. The candidate should have carried out significant predoctoral and postdoctoral research on the genetics and molecular biology of prokaryotes or simple eukaryotes and should plan to continue independent research in this general field. Shared teaching responsibilities involve instructing medical and graduate students in genetics, microbiology and molecular biology.

Research interests in the department include cellular immunology, eukaryotic gene organization and regulation, molecular biology of animal viruses, control of bacterial sporulation and bacteriophage gene regulation.

Applicants should provide curriculum vitae, a short statement of the proposed research program and the names of three scientists willing to write letters of recommendation.

Send applications to Dr. Miriam M. Susskind, Department of Microbiology.

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We seek a recently graduated Ph.D. to undertake a research project on the effects of ischemia and anoxia in animal preparations. Responsibilities will include laboratory work and preparation of written and verbal reports. Your background should include a Ph.D. in Pharmacology or related field with familiarity in central nervous system and cardiovascular areas.

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POSTDOCTORAL POSITION(S). Macromolecular studies of the subunit structure and interaction of proteins by laser light-scattering and other physical techniques. Bio-organic synthesis and study of inhibiting reagents of sickle hemoglobin polymerization. Send résumé and three professional references to: **Dr. T. T. Herskovits or Dr. R. W. Franck, Department of Chemistry, Fordham University, Bronx, New York 10458.**

POSTDOCTORAL POSITION available immediately in protein-lipid membrane field for recent Ph.D. in biochemistry, physical biochemistry, or chemistry. Contact: **Dr. E. S. Rowe, Medical Research Service (151), Veterans Administration Medical Center, 4801 Linwood Boulevard, Kansas City, Mo. 64128; or telephone: 816-861-4700, extension 560. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS available for study of mechanisms of intracellular protein turnover. One project involves a physiological and biochemical approach towards understanding roles of Ca^{2+} , ATP, cyclic nucleotides and tension on protein degradation, and synthesis in cardiac and skeletal muscle. A second project involves the role of ATP-dependent proteases in the degradation of abnormal proteins and in erythroid maturation. Starting salary to \$16,000 plus 22.5 percent fringe benefits, depending on qualifications. Send curriculum vitae and names of three references to: **Dr. Joseph D. Edlinger, Box 5, Department of Anatomy and Cell Biology, State University of New York-Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. An Affirmative Action/Equal Opportunity Employer.**

Two POSTDOCTORAL POSITIONS at Michigan State University, Department of Microbiology and Public Health, East Lansing, Mich. 48824. Molecular virologist to work on the molecular biology and genetics of viral transformation. Salary negotiable. Send curriculum vitae and names of references to: **Dr. Michele Fluck, Department of Microbiology and Public Health, Biochemist/geneticist to work on the biochemical genetics of yeast. Will involve modern techniques of genetics and biochemistry. Salary negotiable. Send curriculum vitae and names of references to: Dr. P. T. Magee, Department of Microbiology and Public Health. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available in fall 1980 for research on mechanism of hormone action and membrane biochemistry. Salary: \$16,000 to \$19,000. Send curriculum vitae and names of references to: **C. S. Lo, Ph.D., Department of Physiology, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20014. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN RESPIRATORY PHYSIOLOGY available immediately for qualified candidate with Ph.D. degree who is interested in oxygen transport to tissue, particularly during hypoxia. Opportunities are also present to gain experience in clinical pulmonary physiology and to teach at all levels of medical education. Starting salary: \$13,380. Send curriculum vitae, names and address of three references, and reprints of your latest publications to: **Dr. Stephen M. Cain, Department of Physiology and Biophysics, 350 Lyons Harrison Research Building, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294.**

The University of Alabama in Birmingham is an Equal Opportunity/Affirmative Action Employer.

THE TRUDEAU INSTITUTE

Several **POSTDOCTORAL POSITIONS** will be available soon for suitably qualified applicants interested in studying immunity to infectious diseases and cancer. The research program of the Trudeau Institute involves the use of a spectrum of animal models of infectious diseases and cancer to analyze mechanisms of protective immunity at the physiological, cellular, and molecular levels. Applicants should have some training in immunobiology. The starting salary is \$13,500 and campus housing is available. Send résumé to: **Dr. Robert J. North, Director, Trudeau Institute, P.O. Box 59, Saranac Lake, N.Y. 12983. An Equal Opportunity Employer.**

POSITIONS OPEN

POSTDOCTORAL POSITION IN MOLECULAR BIOLOGY

Available immediately to study regulation of eukaryotic gene transcription using in vitro system. Starting salary negotiable (\$12,000 up). Send curriculum vitae and three letters of recommendation to: **Dr. Guang-er Wu, Department of Microbiology, Emory University, Atlanta, Ga. 30322. Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS—Available for studies on various aspects of the interferon system, including isolation of interferon messenger RNA and characterization of its products; fragmentation and modification of interferon proteins; and pharmacological studies. Send curriculum vitae and names of references to: **Dr. William E. Stewart II, Interferon Laboratories, Sloan-Kettering Institute for Cancer Research, 1275 York Avenue, New York, N.Y. 10021. An Equal Opportunity Employer, M/F.**

POSTDOCTORAL POSITION available immediately for study of microbial iron metabolism. Strong chemical background and microbiological experience required. Send curriculum vitae and two letters of reference to: **Dr. Thomas Emery, Department of Chemistry and Biochemistry, Utah State University, Logan, Utah 84322. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE. Research with cell cultures on molecular mechanisms of cancer, cell growth, and inhibition of growth. Bibliography: *Proc. Natl. Acad. Sci. U.S.A.* 74, 3791 (1977) and *Biochem. Pharmacol.* 28, 1971 (1979). Send curriculum vitae and names of three references to: **Dr. E. S. Canellakis, Department of Pharmacology, Yale University, New Haven, Conn. 06510. Yale University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately with group investigating role of ion transport in insulin action. Studies include Na-K-ATPase, ion fluxes, physiological studies on whole animals, effect of ions on metabolic pathways, intracellular microelectrodes, and Fourier-transform NMR. Send résumé and three references to: **Dr. R. D. Moore, Professor of Biophysics, State University of New York, Plattsburgh, N.Y. 12901. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE in mammalian neurophysiology and control of ventilation. Research will involve electrophysiological investigations related to the central nervous system integration of pulmonary afferent information. Prior experience with single neuron recording and programming of laboratory computer preferred. Salary range: \$13,000 to \$15,000. The initial appointment is for 1 year but may be extended. Send detailed résumé of neurophysiological research and training and two letters of recommendation to: **James Cavallaro, Cardiovascular-Pulmonary Division, 874 Maloney Building, Hospital of the University of Pennsylvania, 3600 Spruce Street, Philadelphia, Pa. 19104. Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE IN BIOCHEMISTRY

Three- to 5-year appointment to begin immediately. Project requires knowledge of and training in molecular biology, including recombinant DNA and cloning techniques. Send curriculum vitae, bibliography, and names of three references to: **Dr. Isidore S. Edelman, Department of Biochemistry, College of Physicians and Surgeons, 630 West 168 Street, New York, N.Y. 10032.**

Columbia University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATES IN MEMBRANE BIOCHEMISTRY

Positions (two) available starting spring 1980 to work on isolation, structure, and intramembrane organization of components of hormone-responsive adenylyl cyclases. Persons applying should be recent graduates in biochemistry and have experience with protein isolation techniques, fundamental physicochemistry of proteins, and mono- and bidimensional polyacrylamide gel electrophoresis. Applicants should write to: **Dr. Lutz Birnbaumer, Department of Cell Biology, Baylor College of Medicine, Houston, Texas 77030.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE needed to participate in studies on the cloning and expression of T₄ phage genes and on the isolation and functions of mRNA-binding proteins. Experience in nucleic acid biochemistry desirable. Can start in July 1980 or sooner. Salary similar to new NRSA levels. Send résumé to: **Jim D. Karam, Department of Biochemistry, Medical University of South Carolina, Charleston, South Carolina 29403. Telephone: 803-792-4321.**

POSTDOCTORAL RESEARCH FELLOW—Clinical Chemistry Laboratory. For an immunologist-biochemist to work on an enzyme-related cell-membrane mechanism in diseases mediated by viruses or virus-like substances. Just completed laboratory overlooking the city of Chicago; university medical center affiliation; teaching hospital. Annual stipend: \$12,000. Please contact: **Otto E. Lobstein, Director of Clinical Chemistry, Department of Pathology, Mount Sinai Hospital Medical Center, Chicago, Illinois 60608; telephone 312-542-2340.**

RADIATION SAFETY OFFICER. RADIOBIOLOGIST. BIOPHYSICIST. Academic position to establish, supervise, and coordinate a radiation safety program, encompassing hospital medical, dental, and graduate school research activities. Responsibilities will include teaching radioisotope techniques and radiation safety. Salary negotiable. Submit curriculum vitae and names of three references to: **Dr. James Pulliam, Search Committee for Health Physicist, Department of Anatomical Sciences, Meharry Medical College, Nashville, Tennessee 37208.**

RESEARCH ASSOCIATE. Available immediately for studies on genetic regulation of β -galactosidase in yeast, including mutant isolation and characterization, gene cloning, DNA and RNA sequencing, and in vitro transcription. Experience in genetics or biochemistry essential. Faculty position possible. Salary: \$14,000 to \$20,000, depending upon experience. Please send résumé and three letters of reference to: **Dr. Robert Dickson, Department of Biochemistry, University of Kentucky College of Medicine, Lexington, Ky. 40536. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE

Conduct in-depth research on soybean tissue culture, callus induction, and differentiation from somatic and reproductive organs, purification of tRNA-cytokinins, enzyme assays, and protoplast fusion. Ph.D. in biology/genetics. Research experience in plant tissue culture, biochemistry, and somatic cell genetics as evidenced by publications; \$18,900 per year; 40 hours per week.

Qualified persons contact:

**Handy Williamson, Jr., Ph.D.
Director of SEA/CR Program
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RESEARCH ASSOCIATE available 1 March 1980. To study phosphofructokinase and its interactions with other proteins. Starting salary: negotiable. Send résumé and three letters of recommendation to: **Dr. Sonia R. Anderson, Department of Biochemistry and Biophysics, Oregon State University, Corvallis, Oregon 97331. Closing date: 15 February 1980. Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.**

RESEARCH ASSOCIATE. To study the biochemistry and immunology of proteolytic enzymes from *Schistosoma mansoni*. Available now. Biochemistry/microbial physiology background required. Salary at \$13,500 or above. Contact: **Dr. Marc H. Dresden, Department of Biochemistry, Baylor College of Medicine, Houston, Texas 77030.**

RESEARCH ASSOCIATES. Two postdoctoral positions in molecular endocrinology available for studying the hormonal regulation of growth and differentiation of fetal lung cells. Experience in membrane and chromatin isolation, chromosomal protein studies, protein purification, lipid biochemistry, hormone binding, tissue culture, electron microscopy, and small animal surgery desired. Send curriculum vitae and three letters of reference to: **Dr. George Giannopoulos, Department of Obstetrics and Gynecology, Harvard Medical School, 250 Longwood Avenue, Boston, Massachusetts 02115. An Equal Opportunity/Affirmative Action Employer.**

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If interested, submit Personal Qualifications Statement, SF-171, or detailed resume, including personal references to:

OFFICE OF NAVAL RESEARCH

PERSONNEL SERVICES DIVISION

Announcement No. 79-18

800 N. Quincy St. #823

Arlington, Virginia 22217

Attn: Ms. M. Talbot

All applications must be postmarked no later than February 1, 1980 to receive consideration.

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POSTDOCTORAL RESEARCH

Ultrasonic Tissue Characterization

The Department of Radiological Sciences, University of California, Irvine invites applications for the position of Senior Development Engineer. Applicants should possess a Ph.D. and have extensive experience in signal analysis, especially relating to ultrasonic waveforms, and in the development of medical imaging hardware and software. Applicants with only a B.S. or M.S. and/or applicants with alternative academic preparations will also be considered provided they have appropriate experience and strong letters of recommendation. However, the successful applicant will be expected to have background, experience, and specialized knowledge involving the physics of ultrasound, the propagation of ultrasound in tissue, general signal processing procedures (with some specific applications involving ultrasound), the development of medical imaging hardware, the development of signal processing hardware, the implementation of software on an appropriate computer system, and systems analysis of imaging systems. The successful applicant will play a major role in an ongoing research program involving ultrasonic tissue characterization. Salary: \$26,000 to \$32,000 depending on experience. Application deadline: 1 March 1980. Starting date: winter 1980. Applications from all qualified candidates are welcome; minorities and women are encouraged to apply. Send curriculum vitae and letters of application to:

Dr. Joie Pierce Jones
Department of Radiological Sciences
University of California, Irvine
Irvine, California 92717



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MICROBIOLOGIST/ BIOCHEMIST POST-DOCTORAL

SmithKline Corporation,
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Candidates specifications include:

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- Experience in isolation of high molecular weight proteins e.g. cell membrane fractions.
- Familiarity with gel electrophoresis and radiochemical techniques.

The successful candidate will be involved in studies of the effects of antibiotics on penicillin binding proteins.

SmithKline offers an excellent compensation program. Please send resume to: William G. Groves, Senior Employment Administrator, SMITH KLINE & FRENCH LABORATORIES, A Division of, SMITHKLINE CORPORATION, 1562 Spring Garden Street, P.O. Box 7929, Philadelphia, Pennsylvania 19101. We are an equal opportunity employer, Male/Female/Handicapped/Veteran.

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POSITIONS OPEN

RESEARCH ASSOCIATE position available immediately for Ph.D. in biochemistry or molecular biology. Training or some background in recombinant DNA techniques and/or DNA sequencing preferred. Research involves the study of the regulation and synthesis of an enzyme of mammalian mitochondria. Salary commensurate with experience and competitive with postdoctoral fellowships. Send curriculum vitae and names of references to: **Dr. Carol J. Lusty, Department of Biochemistry, Public Health Research Institute of the City of New York, Inc., 455 First Avenue, New York, N.Y. 10016.**

An Equal Opportunity Employer

RESEARCH ASSOCIATE

A research staff position is available in the Massachusetts Institute of Technology (MIT) Department of Earth and Planetary Sciences in the field of very-long-baseline interferometry (VLBI), primarily for applications in geodesy, geophysics, astrometry, and astrophysics. The position will involve primarily participation in VLBI experiments, analysis of data, interpretation of results, and supervision of students. A Ph.D. in physics or astronomy is required.

Please submit résumé and three letters of recommendation to: **MIT Personnel Office, 400 Main Street, Cambridge, Mass. 02139, Attention: Job Number R79-341.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE position in parasitology available in April to study the immunology, immunochimistry, and cell biology of experimental visceral leishmaniasis. The appointment will be made by Columbia University and the research will be conducted at the Institute of Microbiology, Federal University of Rio de Janeiro, Rio de Janeiro, Brazil, as part of a collaborative program between the two institutions. Initial appointment for 1 year with a starting salary of \$20,000 per annum is renewable. Experience in immunology, cell biology, or biochemistry desirable. Send curriculum vitae and names of references to: **Dr. P. A. D'Alessandro, Division of Tropical Medicine, College of Physicians and Surgeons, Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Equal Opportunity/Affirmative Action Employer, M/F.*

RESEARCH PROFESSOR—Position requires a major effort on bronchial-associated lymphoid tissue and the hilar lymph node complex. Candidate must have a minimum of 8 years of experience in histochemistry, electron microscopy, and immunopathology. Prefer M.D. with Ph.D. training or equivalent in experimental pathology. Salary: \$30,000. Deadline for applications is 15 February 1980. **Department of Microbiology and Immunology, 300 South Hawthorne Road, Bowman Gray School of Medicine of Wake Forest University, Winston-Salem, N.C. 27103.** *An Affirmative Action/Equal Opportunity Employer.*

SENIOR SCIENTIST—Ph.D. in chemical engineering or equivalent preferred. Industrial process design experience necessary. Must have hands-on background and antibiotic product-fermentation process design and know separation techniques. Will be responsible for overall development of a reliable production process through advanced technological methodologies. NOTE: additional opportunities for chemical engineers with background in biologicals are expected to open up soon. Résumés to: **C. Barksdale, Department M-51, Ortho Diagnostics Inc., Route 202, Raritan, N.J. 08869.**

STAFF POSITION. Position available immediately for biologist with Ph.D. in mammalian or cellular physiology to join research group evaluating the toxicity and mutagenicity of environmental pollutants. Experience in cytogenetics and cell culture very desirable. Send curriculum vitae and names of two references to: **Dr. D. C. Borg, Chairman, Medical Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, L.I., N.Y. 11973.** *An Equal Opportunity Employer, M/F.*

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26 to 28 August 1980
Second International Congress on Bioluminescence and Chemiluminescence
Scientific Coordinators: Dr. Marlene DeLuca and Dr. William D. McElroy
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Chemistry Department, M-001
University of California at San Diego
La Jolla, Calif. 92093

GRADUATE STUDY

GRADUATE TRAINING IN BASIC MEDICAL SCIENCES

The College of Medicine, University of South Alabama, invites applications from qualified individuals interested in pursuing the Ph.D. degree in basic medical sciences. Applications are now being accepted for June 1980 entrance into the graduate program leading to the doctorate with specialization in either anatomy, biochemistry, microbiology/immunology, pharmacology, or physiology. This is a unique program designed to accept both qualified nondegree-holding students after only 3 years of appropriate undergraduate study as well as applicants holding degrees. Fellowships are available which provide tuition and stipends. Applications are accepted at any time but must be completed by 1 March for admission. For further information write:

Edwin R. Hughes, M.D., Director
Graduate Program in Basic Medical Sciences
Medical Sciences Building, Room 2152
University of South Alabama
Mobile, Alabama 36688

DOCTORAL PROGRAM

PH.D. IN ENGINEERING AND PUBLIC POLICY

The Department of Engineering and Public Policy at Carnegie-Mellon University offers an interdisciplinary, research-oriented Ph.D. for persons with an undergraduate degree in engineering or the mathematical or physical sciences. Persons with more advanced training or experience are especially welcome. Some financial support is available. Contact:

Engineering and Public Policy
Carnegie-Mellon University, 30912
Pittsburgh, Pa. 15213

TRAINING PROGRAM

HYPERTENSION RESEARCH TRAINING PROGRAM. Funded by NHLBI. Postdoctoral (Ph.D., M.D., D.V.M., or D.O.) research traineeships available July 1980, for 1 or 2 years in the following areas: salt-dependent hypertension (H. P. Dustan, M.D.); membrane sodium transport (H. W. Overbeck, M.D., Ph.D.; D. D. Ku, Ph.D.); neural mechanisms (S. Oparil, M.D.); nephron function (L. G. Navar, Ph.D.; D. W. Plath, M.D.); cardiac hypertrophy (S. P. Bishop, D.V.M., Ph.D.); membrane ion channels (D. W. Urry, Ph.D.; M. M. Long, Ph.D.; M. A. Khaled, Ph.D.); vascular wall molecular pathology (D. W. Urry, Ph.D.; M. M. Long, Ph.D.); vascular connective tissue (L. Roden, M.D., Ph.D.); exercise training in borderline hypertensives (A. Oberman, M.D.); renin-angiotensin-aldosterone (S. Oparil, M.D.); and hemodynamics (H. P. Dustan, M.D.; H. W. Overbeck, M.D., Ph.D.; S. Oparil, M.D.). Positions for predoctoral (Ph.D.) trainees (physiology, biochemistry, pathology, or pharmacology) are also available. Applicant must be U.S. citizen or hold immigrant's visa. Send curriculum vitae and three letters of recommendation to: **Harriet P. Dustan, M.D., Director, Cardiovascular Research and Training Center, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294.** *An Affirmative Action/Equal Opportunity Employer.*

FELLOWSHIPS

POSTDOCTORAL TRAINING FELLOWSHIP—CLINICAL CHEMISTRY, for individual with outstanding qualifications. Newly approved program offers opportunity to pursue advanced training in a modern, progressive laboratory in an active university medical center setting. Annual stipend: \$12,000. Contact: **Norbert Tietz, Director, Clinical Chemistry, Department of Pathology, University of Kentucky Medical Center, Lexington, Ky. 40536.**

ANNOUNCEMENT: INSECT VIROLOGY RESEARCH FELLOWSHIPS

Postdoctoral research fellowship (\$14,000 per year for 2 years) and two predoctoral fellowships (\$5,200 per year plus tuition waiver) available for research in the biochemistry and molecular biology of insect viruses. Positions available June to September 1980. Application deadline: August 1980. Send curriculum vitae to: **Dr. William McCarthy, Pesticide Research Laboratory, The Pennsylvania State University, University Park, Pa. 16802.** *An Affirmative Action/Equal Opportunity Employer.*

FELLOWSHIPS

PREDOCTORAL FELLOWSHIPS. The Graduate Program in Molecular Cell Biology invites applications from highly qualified students interested in an interdisciplinary Ph.D. program. Major areas of emphasis include animal virology, bacterial and somatic cell genetics, cancer biology, cellular immunology and immunochemistry, connective tissue and protein biochemistry, infectious diseases and host defense, membrane biochemistry, nucleic acid synthesis, and research involving the cause and prevention of dental caries. All students admitted to the program receive stipends of \$5,100 plus tuition and fees per year. Contact: **Dr. Roy Curtiss, Co-Director of Graduate Studies, Department of Microbiology, University of Alabama in Birmingham, Medical Center, Birmingham, Alabama 35294.**

Université du Québec à Montréal Département des Sciences Biologiques POSTDOCTORAL FELLOWSHIP

Applications are invited for postdoctoral fellowship for the study of the ecological control of nuisance aquatic plants.

Candidates are invited from good experimentalists with knowledge of plant ecology and physiology, preferably with experience in aquatic plants. Tenure is 2 years, with appointment as soon as possible. Salary: \$15,000 per annum. Send curriculum vitae to: **Dr. F. Sarhan, Département des Sciences biologiques, Université du Québec à Montréal, Montréal, Québec, Canada H3C 3P8.**

MARINE POLICY AND OCEAN MANAGEMENT RESEARCH FELLOWSHIPS

Woods Hole Oceanographic Institution offers 1-year fellowships to professionals in social sciences, law, or natural sciences to conduct research in marine policy and ocean management. Recipients of awards are selected on a competitive basis, with primary emphasis placed on research promise.

Fellowship stipend is \$16,500. 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 March 1980 for 1980-1981 awards. Awards will be announced 1 April 1980. Write for application forms to: **Fellowship Committee, Woods Hole Oceanographic Institution, Woods Hole, Massachusetts 02543.**

Equal Opportunity/Affirmative Action Institution

POSTDOCTORAL FELLOWSHIP IN ENDOCRINOLOGY AND METABOLISM. One NIH-supported position available July 1980 and four for 1981. One to 3 years of training in basic or clinical research in areas of secretion and action of pancreatic and gut hormones, diabetes mellitus, hypothalamic-pituitary-gonadal system, growth hormone structure-function relationship, adrenal cortex, renin-angiotensin-aldosterone system; collaboration with Departments of Biochemistry and Physiology available. Applicant should have M.D. or Ph.D. May include training in clinical endocrinology and metabolism. Contact (with curriculum vitae): **S. S. Fajans, M.D., Division of Endocrinology and Metabolism, University Hospital, Ann Arbor, Michigan 48109; telephone: 313-764-4165.** *An Equal Opportunity/Affirmative Action Institution.*

MEMORIAL UNIVERSITY OF NEWFOUNDLAND DEPARTMENT OF GEOLOGY

A postdoctoral fellowship is available for research on ophiolite emplacement mechanisms and mélange development. The successful applicant will have had previous field experience in such geological terrains and will be required to participate in a study of Appalachian-Caledonian ophiolites with Dr. J. G. Malpas and Dr. R. K. Stevens. Limited teaching duties may also be required.

The appointment will be effective 1 June 1980 at a salary of \$12,900 and will be for 1 year in the first instance, but with opportunity for extension.

Applications, including curriculum vitae and the names and addresses of two referees, should be sent by 1 March 1980 to:

Head, Department of Geology
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3X5

MARINE BIOLOGICAL LABORATORY

WOODS HOLE, MASSACHUSETTS 02543

announces

FIVE SHORT COURSES FOR SPRING, 1980

including new offerings on analytical light microscopy and the use of small computers in biological research. These residential programs emphasize laboratory practice and are intended primarily for scientists who require the techniques and information for their own work.

ANALYTICAL AND QUANTITATIVE LIGHT MICROSCOPY IN BIOLOGY, MEDICINE, AND MATERIALS SCIENCES

April 27 - May 3, 1980

Offered for the first time, this course is limited to 16 participants. The instruction emphasizes lectures and laboratory practice on microscope systems that *maxima*ly exploit the information retrievable from the interaction of light and the specimen. The Instructor in Chief is Shinya Inoué of MBL, assisted principally by Edward Salmon of the University of North Carolina. Other faculty include Gordon Ellis of the University of Pennsylvania, Robert Zeh of SUNY, Albany, Ferenc Harosi of MBL, and D. Lansing Taylor of Harvard.

FREEZE-ETCHING IN ELECTRON MICROSCOPY **May 4 - 9, 1980**

Both Denton and Balzers equipment will be the laboratory basis for the third presentation of this course at MBL. Intended for scientists with some experience in conventional TEM, the program is limited to 16 students and is led by Russell Steere of the U.S. Department of Agriculture in Beltsville; his principal assistant will be John Rash of Colorado State University. Other faculty include Joaquim Sommer of Duke University and Eric Erbe and Michael Mosely of USDA, Beltsville.

ELECTRON MICROSCOPY IN THE BIOLOGICAL SCIENCES

May 11 - 23, 1980

Blair Bowers of NIH and Morton Maser of MBL are Instructors in Chief of this two-week program designed for persons who need conventional TEM in their research but who have little or no experience. Attendance is limited to 12 participants. Other faculty include Lee Peachey of the University of Pennsylvania, Keith Porter of the University of Colorado, and Marc Willingham of NIH. This will be the fourth presentation of the course at MBL.

ADDITIONAL INFORMATION on course content and application materials may be obtained from the Admissions Office, Marine Biological Laboratory, Woods Hole, Massachusetts 02543; telephone 617-548-3705.

MBL is an Equal Opportunity Institution.

SMALL COMPUTERS IN BIOMEDICAL RESEARCH **May 18 - 23, 1980**

Also offered for the first time and limited to 16 participants, this program consists of a mixture of lectures and hands-on problem solving sessions using complete microprocessor based computer systems. There are no specific prerequisites; students will learn to adapt computer techniques to their own application requirements. Larry Palmer of the University of Pennsylvania is Instructor in Chief, assisted principally by Lee Peachey, also of Pennsylvania.

BIOLOGICAL ELECTRON MICROSCOPY FOR TECHNICIANS

April 20 - 25, 1980

The fourth offering of this program at MBL is limited to 12 students whose interest is more in the technical aspects of conventional TEM than in its research and clinical interpretation. There are no prerequisites, although most participants have some experience or training. Instructors in Chief are Morton Maser of MBL and Ann Scarborough of Louisiana State University, assisted principally by D. Eugene Copeland of MBL.



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