

oblique slip. A more theoretical paper by Rodgers shows how double pull-apart basin systems develop where offstepping strike-slip faults overlap by more than the width of offstep. Howell *et al.* usefully summarize the sedimentological effects of the California transition from a subduction to a strike-slip regime during the late Tertiary.

The volume does not provide, as its title implies it will, a thorough view of sedimentation in oblique-slip zones. Of 13 papers only four address themselves specifically to clear examples of oblique-slip-related basins, and there is a preponderance of papers on compressional regimes in New Zealand, although the latter are geometrically related to the Alpine Fault System. Nevertheless, for those, like the reviewer, who are interested in regional tectonics, this is a most important reference volume.

JOHN F. DEWEY

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Waste Disposal

Ocean Dumping of Industrial Wastes. Papers from a symposium, West Greenwich, R.I., Oct. 1978. BOSTWICK H. KETCHUM, DANA R. KESTER, and P. KILHO PARK, Eds. Plenum, 1981. x, 526 pp., illus. \$59.50. *Marine Science*, vol. 12.

The Report on Ocean Dumping issued in 1970 by the U.S. Council on Environmental Quality concluded that there was a need for a national policy regarding ocean dumping. The conclusion was based on ocean dumping activity in the United States, which had increased rapidly since the end of World War II. Since 1970 a series of laws passed by the U. S. Congress has reversed that trend. At the same time, it has become apparent that there are many real, or perceived, problems with waste disposal on land. During the past three years, several marine scientists have argued that the oceans can be used in some cases for disposal of waste with few ill effects on other desired uses of the oceans. At the very least, they argue, we should reexamine the scientific basis for a ban on ocean dumping within the context of all waste-disposal options: land, sea, air, and recycling. The present situation has been summarized and a series of recommendations set forth in a Special Report to the President of the United States and the Congress ("The Role of the Ocean in a Waste Management Strategy," Janu-

ary 1981) by the National Advisory Committee on Oceans and Atmosphere (NACOA).

Thus *Ocean Dumping of Industrial Wastes* has been published at a propitious time. Even though the content mainly reflects the state of research and policy as of 1978, the volume provides a good reference for much of the background of present approaches to ocean dumping of wastes. The focus of the discussion and the source of most of the examples are experience in the United States, with some comments pertaining to the United Kingdom and international policy. Prospective readers should realize that the volume was not intended as, nor is it, a comprehensive review of the subject.

The book has five main sections. The introductory section, which contains four papers, begins with a concise, well-written account by P. K. Park and T. P. O'Connor of historical and international developments as they relate to the perspective of the United States. The essence of the main issues is presented in an 18-line introductory poem by Momiji.

The second section, Physical Aspects of Ocean Dumping, contains four very good papers describing applications of physical oceanography to ocean dumping of barged wastes and two papers about remote sensing. I found this section to have the best balance between theory and practice.

The third section, Chemical Aspects of Ocean Dumping, contains a mixture of good papers, for instance one on transition and heavy metals associated with acid-iron waste disposal by D. R. Kester *et al.*, and a few cursory papers containing data with little interpretation. A paper by K. S. Kamlet on disposal of organochlorine wastes by incineration at sea is an interesting, lucid description of its topic from a legal and policy viewpoint but does not contain any chemistry as such.

The fourth section, Biological Aspects of Ocean Dumping, is a conglomerate, with papers about aspects of microbiology, phytoplankton, zooplankton, fish, and histology and physiology. It would have been helpful to have an overview that related these studies and placed them in the broader context of response of marine organisms, populations, communities, and ecosystems to stress.

The final section, Future Prospects of Ocean Dumping, consists of a paper by Kester, Ketchum, and Park that relates the physical, chemical, and biological aspects dealt with in the preceding sections and provides an assessment of

present knowledge and future needs. The authors anticipate the issues set forth in the NACOA report.

I recommend selective reading of appropriate sections of this useful volume for all those enmeshed in the how, where, and for-how-long hassles of waste disposal—whether their current interest is land, sea, or air.

JOHN W. FARRINGTON

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Books Received

Advances in X-Ray Analysis. Vol. 24. Proceedings of a conference, Denver, Aug. 1980. Deanne K. Smith, Charles S. Barrett, Donald E. Leyden, and Paul K. Predecki, Eds. Plenum, New York, 1981. xx, 428 pp., illus. \$49.50.

Advice and Planning. Martin H. Krieger. Temple University Press, Philadelphia, 1981. xiv, 242 pp. \$18.95.

Aging Sensory Systems and Perception. John F. Corso. Praeger, New York, 1981. xviii, 284 pp., illus. \$29.95.

Air Pollution. Its Origin and Control. Kenneth Wark and Cecil F. Warner. Harper and Row, New York, ed. 2, 1981. xviii, 526 pp., illus. \$30.50.

Alfred Waterhouse and the Natural History Museum. Mark Girouard. Yale University Press, New Haven, Conn., and British Museum (Natural History), London, 1981. 64 pp., illus. \$12.95.

The Biochemistry of the Carotenoids. Vol. 1, Plants. T. W. Goodwin. Chapman and Hall, London, ed. 2, 1981 (U.S. distributor, Methuen, New York). xviii, 378 pp., illus. \$69.

Biofeedback Strategies for Interpersonal Relationships. Dorelle Markley Heisel. Gordon and Breach, New York, 1981. x, 192 pp., illus. Paper, \$19.50.

Biological Cycles. Papers from a symposium, Dallas, Mar. 1980. Ronald W. Estabrook and Paul Srere, Eds. Academic Press, New York, 1981. xxii, 574 pp., illus. \$59.50. *Current Topics in Cellular Regulation*, vol. 18.

A Book of Problems in Ordinary Differential Equations. M. L. Krasnov, A. I. Kiselyov, and G. I. Makarendo. Translated from the Russian edition (1978) by Vladimir Shokurov. Mir, Moscow, 1981 (U.S. distributor, Imported Publications, Chicago). 336 pp., illus. \$6.80.

A Brief Course of Higher Mathematics. V. A. Kudryavtsev and B. P. Demidovich. Translated from the Russian edition (1978) by Leonid Levant. Mir, Moscow, 1981 (U.S. distributor, Imported Publications, Chicago). 694 pp., illus. \$16.

Carbon-13 NMR Spectral Problems. Robert B. Bates and William A. Beavers. Humana, Clifton, N.J., 1981. xxii, 260 pp., illus. Cloth, \$29.50; paper, \$12.95. *Organic Chemistry*.

The Custom-Made Child? Women-Centered Perspectives. Helen B. Holmes, Betty B. Hoskins, and Michael Gross, Eds. Humana, Clifton, N.J., 1981. xiv, 368 pp. Cloth, \$14.95; paper, \$7.95. *Contemporary Issues in Biomedicine, Ethics, and Society*.

Dealing with Risk. The Planning, Management and Acceptability of Technological Risk. Richard F. Griffiths, Ed. Halsted (Wiley), New York, 1981. xxii, 144 pp. \$19.95.

Decay Heat Removal and Natural Convection in Fast Breeder Reactors. Papers from a meeting, 1980. Ashok K. Agrawal and James G. Guppy, Eds. Hemisphere, Washington, D.C., 1981. xvi, 424 pp., illus. \$55.

The Descent of Man, and Selection in Relation to Sex. Charles Darwin. With an introduction by John Tyler Bonner and Robert M. May. Princeton University Press, Princeton, N.J., 1981. xlviii, 476 pp. + appendix. Paper, \$10.95. Photoreproduction of the 1871 edition.

The Developmental Approach to Childhood Psychopathology. Humberto Nagera. Aronson, New York, 1981. x, 508 pp. \$30. *Classical Psychoanalysis and Its Applications*.

Energy Demand and Efficient Use. Proceedings of a school, Erice, Sicily, July 1980. Fernando Amman and Richard Wilson, Eds. Plenum, New York, 1981. viii, 462 pp., illus. \$52.50. *Ettore Majorana International Science Series, Physical Sciences*, vol. 9.

(Continued on page 585)

BOOKS RECEIVED

(Continued from page 551)

Environmental Lead. Papers from a symposium, Cincinnati, Ohio, Dec. 1978. Donald R. Lynam, Lillian G. Piantanida, and Jerome F. Cole, Eds. Academic Press, New York, 1981. xii, 358 pp., illus. \$31. Ecotoxicology and Environmental Quality Series.

Federal Legislation and the Clinical Laboratory. Morris Schaeffer, Ed. Hall, Boston, 1981. xxvi, 204 pp., illus. \$27.50.

The Fermenting Universe. Myths of Eternal Change. J. McKim Malville. Seabury, New York, 1981. x, 114 pp., illus. Paper, \$6.95.

Ferromagnetodynamics. The Dynamics of Magnetic Bubbles, Domains and Domain Walls. T. H. O'Dell. Halsted (Wiley), New York, 1981. x, 230 pp., illus. \$54.95.

Fixed Point Theory. An Introduction. Vasile I. Istrătescu. Reidel, Boston, 1981 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 468 pp. \$71. Mathematics and Its Applications, vol. 7.

Gravity, Deformation and the Earth's Crust. In Theory, Experiments and Geological Application. Hans Ramberg. Academic Press, New York, ed. 2, 1981. xii, 452 pp., illus. \$79.

Great Lakes Archeology. Ronald J. Mason. Academic Press, New York, 1981. xxiv, 426 pp., illus. \$34.05. New World Archaeological Record.

Handbook of Biological Psychiatry. Herman M. van Praag, Malcolm H. Lader, Ole J. Rafaelsen, and Edward J. Sachar, Eds. Dekker, New York, 1981. Vol. 4, Brain Mechanisms and Abnormal Behavior—Chemistry. xiv, 964 pp., illus. \$110. Vol. 5, Drug Treatment in Psychiatry—Psychotropic Drugs. x, 204 pp. \$28.75. Vol. 6, Practical Applications of Psychotropic Drugs and Other Biological Treatments. x, 560 pp. \$67. Experimental and Clinical Psychiatry, vol. 1.

The Handbook of Political Behavior. Samuel L. Long, Ed. Plenum, New York, 1981. Vol. 3. xxviii, 404 pp. \$45. Vol. 4. xxviii, 358 pp. \$45. Vol. 5. xxx, 362 pp. \$45.

An Introduction to the Study of Insects. Donald J. Borror, Dwight M. De Long, and Charles A. Triplehorn. Saunders, Philadelphia, ed. 4, 1981. xii, 828 pp., illus. \$26.95.

Japanese Scientific and Technical Literature. A Subject Guide. Robert W. Gibson, Jr., and Barbara K. Kunkel. Greenwood Press, Westport, Conn., 1981. xvi, 560 pp. \$75.

The Large Intestine. Its Role in Mammalian Nutrition and Homeostasis. O. M. Wrong, C. J. Edmonds, and V. S. Chadwick. Halsted (Wiley), New York, 1981. xiv, 218 pp., illus. \$24.95.

Large Scale Systems Theory and Applications. Proceedings of a symposium, Toulouse, France, June 1980. André Titli and Madan G. Singh, Eds. Published for the International Federation of Automatic Control by Pergamon, New York, 1981. xxxiv, 614 pp., illus. \$120.

Laser Interaction and Related Plasma Phenomena. Vol. 5. Proceedings of a workshop, Rochester, N.Y., Nov. 1979. Helmut J. Schwarz, Heinrich Hora, M. J. Lubin, and B. Yaakobi, Eds. Plenum, New York, 1981. xiv, 850 pp., illus. \$75.

Laser Spectroscopy of Solids. W. M. Yen and P. M. Selzer, Eds. Springer-Verlag, New York, 1981. xii, 312 pp., illus. \$58.80. Topics in Applied Physics, vol. 49.

Multiple Statistical Decision Theory. Recent Developments. Shanti S. Gupta and Deng-Yuan Huang. Springer-Verlag, New York, 1981. viii, 104 pp. Paper, \$9.80. Lecture Notes in Statistics, vol. 6.

National Oil Companies. Leslie E. Grayson. Wiley, New York, 1981. viii, 270 pp., illus. \$44.50.

National Work Conference on Microbial Collections of Major Importance to Agriculture. College Park, Md., Mar. 1980. American Phytopathological Society, St. Paul, Minn., 1981. iv, 52 pp. \$6.50.

Neuroendocrinology of Reproduction. Physiology and Behavior. Norman T. Adler, Ed. Plenum, New York, 1981. xxii, 556 pp., illus., + plates. Cloth, \$42; paper, \$18.95.

New Directions in Disarmament. Papers from a symposium, Racine, Wis., June 1980. William Epstein and Bernard T. Feld, Eds. Praeger, New York, 1981. xiv, 224 pp. \$7.75. Praeger Special Studies.

New Frontiers in Mammary Pathology. Proceedings of a symposium, Paris, Dec. 1979. K. H. Hollmann, J. de Brux, and J. M. Verley, Eds. Plenum, New York, 1981. viii, 320 pp., illus. \$39.50.

A New Prosperity. Building a Sustainable Energy Future. The SERI Solar/Conservation Study. Brick House, Andover, Mass., 1981. viii, 454 pp., illus. Paper, \$19.95.

Nonlinear Differential Equations in Abstract Spaces. V. Lakshmikantham and S. Leela. Pergamon, New York, 1981. x, 258 pp. \$45. International Series in Nonlinear Mathematics: Theory, Methods and Applications, vol. 2.

Les Procédés Mnémotechniques. Science ou Charlatanisme? Alain Lieury. Mardaga, Brussels, 1981. 200 pp., illus. Paper, 430 BF. Psychologie et Sciences Humaines.

Production and Utilisation of Synthetic Fuels. An Energy Economics Study. F. R. Benn, J. O. Edewor, and C. A. McAuliffe. Applied Science Publishers, London, and Halsted (Wiley), New York, 1981. xvi, 252 pp., illus. \$49.95.

The Programming Language Ada. Reference Manual. Springer-Verlag, New York, 1981. x, 244 pp. Paper, \$16.80. Lecture Notes in Computer Science, vol. 106.

Progress in Analytical Atomic Spectroscopy. Vol. 2. C. L. Chakrabarti, Ed. Pergamon, New York, 1981. vi, 386 pp., illus. \$76.

Prolonged Psychosocial Effects of Disaster. A Study of Buffalo Creek. Goline C. Gleser, Bonnie L. Green, and Carolyn Winget. Academic Press, New York, 1981. xii, 178 pp. \$19. Personality and Psychopathology.

Renewable Resource Management. Proceedings of a workshop, Christchurch, New Zealand, Jan. 1980. Thomas L. Vincent and Janislaw M. Skowronski, Eds. Springer-Verlag, New York, 1981. xii, 236 pp. Paper, \$15. Lecture Notes in Biomathematics, vol. 40.

Renewable Resources in Our Future. Alden D. Hinckley. Pergamon, New York, 1981. viii, 122 pp., illus. Paper, \$8. Environmental Sciences and Applications, vol. 8.

Spirit of Enterprise. The 1981 Rolex Awards. Gregory B. Stone, Ed. Freeman, San Francisco, 1981. xx, 460 pp., illus. \$15.95.

Statistical Tables. F. James Rohlf and Robert R. Sokal. Freeman, San Francisco, ed. 2, 1981. xvi, 200 pp. Cloth, \$22; paper, \$9.95.

Statistical Treatment of Environmental Isotope Data in Precipitation. International Atomic Energy Agency, Vienna, 1981 (U.S. distributor, Unipub, New York). xx, 256 pp. Paper, \$34.25. Technical Reports Series, No. 206.

Stochastic Nonlinear Systems in Physics, Chemistry, and Biology. Proceedings of a workshop, Bielefeld, Germany, Oct. 1980. L. Arnold and R. Lefever, Eds. Springer-Verlag, New York, 1981. viii, 240 pp., illus. \$29.50. Springer Series in Synergetics, vol. 8.

Structural Materials in Nuclear Power Systems. J. T. Adrian Roberts. Plenum, New York, 1981. xiv, 486 pp., illus. \$39.50. Modern Perspectives in Energy.

Structural Steel Design. Jack C. McCormac. Harper and Row, New York, ed. 3, 1981. x, 662 pp., illus. \$28.95.

Structure and Activity of Natural Peptides. Selected Topics. Proceedings of a meeting, Tübingen, Germany, Sept. 1979. Wolfgang Voelter and Günther Weitzel, Eds. Walter de Gruyter, New York, 1981. xii, 634 pp., illus. \$88.

Structured System Analysis. A New Technique. Barbara F. Medina. Gordon and Breach, New York, 1981. xiv, 82 pp. \$19.50.

Studies in the History of Biology. Vol. 5. William Coleman and Camille Limoges, Eds. Johns Hopkins University Press, Baltimore, 1981. viii, 206 pp. \$18.

Surface Mining. Soil, Coal, and Society. National Academy Press, Washington, D.C., 1981. xiv, 234 pp. Paper, \$11.50.

Toxicology of the Kidney. Jerry B. Hook, Ed. Raven, New York, 1981. xii, 276 pp., illus. \$32. Target Organ Toxicology Series.

Trial by Medicine. Insanity and Responsibility in Victorian Trials. Roger Smith. Edinburgh University Press, Edinburgh, 1981 (U.S. distributor, Columbia University Press, New York). x, 238 pp. \$33.

Trends and Progress in System Identification. Pieter Eykhoff, Ed. Pergamon, New York, 1981. xvi, 402 pp., illus. \$70. IFAC Series for Graduates, Research Workers and Practising Engineers, vol. 1.

Trends in the Biology of Fermentations for Fuels and Chemicals. Proceedings of a symposium, Upton, N.Y., Dec. 1980. Alexander Hollaender and five others, Eds. Plenum, New York, 1981. xii, 592 pp., illus. \$65. Basic Life Sciences, vol. 18.

Tundra Ecosystems. A Comparative Analysis. L. C. Bliss, O. W. Heal, and J. J. Moore, Eds. Cambridge University Press, New York, 1981. xxxviii, 814 pp., illus. \$120. International Biological Programme 25.

The Ultimate Resource. Julian L. Simon. Princeton University Press, Princeton, N.J., 1981. x, 416 pp., illus. \$14.50.

Ultrasonic Spectral Analysis for Nondestructive Evaluation. Dale W. Fitting and Laszlo Adler. Plenum, New York, 1981. x, 354 pp., illus. \$45.

Understanding Yourself and Others. A Student Activity Book of Psychological Experiments and Activities. William A. Gray and Brian A. Gerrard. Harper and Row, New York, 1981. xii, 180 pp. Paper, \$9.50.

World Energy. The Facts and the Future. Don Hedley. Facts On File, New York, 1981. 368 pp., illus. \$22.50.

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Cell Biologist/Immunologist. Ph.D. Research experience in cyclic nucleotides as related to cancer research. Experience in the development of hybridoma monoclonal antibodies, radioimmunoassay, and immunocytochemistry. Ability to maintain a vigorous research program. Capable of attracting external support. Excellent publications. Teaching. Seeks challenging research or industrial position. Box 423, 1001 Rockville Pike, Rockville, Maryland 20852. 10/30; 11/27

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Clinical/Analytical Chemist. Ph.D. 1976. England. Five years of international experience in medical research; diabetes, cancer research, glycoproteins, drugs and metabolites, toxicology. Extensive experience in the application of GC, GC-MS, HPLC, electrofocusing, TLC, UV, AA, and IR in the development of methods. Currently World Health Organization employee. Publications. Desires faculty/senior research position. No agencies please. Box 262, SCIENCE. 10/30; 11/6, 13, 20, 27; 12/4, 11, 18

Toxicologist. Ph.D. Certified with several years of experience in biochemical toxicology, carcinogenesis, mutagenesis, teratogenesis, management of hazard/risk/safety programs, subcontract monitoring. Interested in industrial position—pharmaceutical, agchem, cosmetic, or energy-related. Washington, D.C., area; willing to relocate. Box 275, SCIENCE. X

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Toxicologist/Pharmacologist. Ph.D. 1971. Two and one-half years of postdoctoral experience in environmental toxicology at NIH. Currently working as research assistant professor of pediatrics and pharmacology in a major university. Publications: developmental pharmacology and toxicology. Wide supervisory and research experience in analytical and biochemical techniques. Desires industrial, institutional, or academic position. Box 274, SCIENCE. X

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ANATOMIST. Tenure-track, 9-month appointment at assistant professor level to teach gross anatomy. Active research program essential; grant record desirable; area of research open. Send curriculum vitae, current research and grant status, and the names of three potential referees to: **Dr. Leon W. Bone, Search Committee Chairperson, Physiology, Southern Illinois University, Carbondale, Ill. 62901; telephone: 618-453-2745.** Application deadline (postmarked by): 7 December 1981. Appointment date: 15 August 1982. An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR. The Department of Biochemistry, State University of New York (SUNY), Stony Brook, is seeking candidates for two tenure-track positions at the assistant professor level for September 1982. (One of these positions was advertised in these columns recently.) The selected candidates will be expected to conduct an active, independent, and productive research program and to participate in the teaching activities of the department. Special efforts will be made to fill one of these positions with someone whose research interests are in the areas of enzymology or physical biochemistry. Candidates with research interests in the above areas or in other areas of biochemistry or molecular biology should send their curriculum vitae, bibliography, and names of three references by 1 January 1982 to: **Dr. R. Sarma, Chairman, Search Committee, Department of Biochemistry, SUNY, Stony Brook, Stony Brook, N.Y. 11794. SUNY, Stony Brook, is an Equal Opportunity/Affirmative Action Employer. AK Number 180.**

ASSISTANT PROFESSORS OF ANATOMY AND PHARMACOLOGY

Applications are invited for two tenure-track positions at the assistant professor level in the **MEDICAL SCIENCES PROGRAM** of Indiana University School of Medicine—Bloomington. Applicants must have an earned doctoral degree with postdoctoral research experience. The positions require establishing a strong, independent research program and participating in the program's teaching efforts. **Assistant professor of anatomy:** the preferred research interests include ultrastructure and histochemistry of the nervous system. **Assistant professor of pharmacology:** the preferred research interests include biochemical and molecular pharmacology and toxicology. Applicants must submit a curriculum vitae, a brief description of research interests, and three letters of recommendation to: **Chairman, Search and Screen Committee, Medical Sciences Program, Indiana University, Bloomington, Indiana 47405.**

Deadline for receipt of applications is 7 December 1981. An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

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ASSISTANT PROFESSOR RESEARCH POSITION IN FOREST BIOCHEMISTRY; application of hormone analytical techniques to forest trees and organ cultures derived from them. Starting date: 1 March 1982. Ph.D. in chemistry and substantial experience in plant hormone analysis applied to conifers. Twelve-month, fixed-term position. Salary: \$25,000 to \$27,000 per annum. Closing date: 1 January 1982. To apply, send letter, résumé, transcripts, and three letters of recommendation to: **Dr. John C. Gordon, Head, Department of Forest Science, Oregon State University, Corvallis, Oregon 97331. An Affirmative Action/Equal Opportunity Employer in compliance with Section 504 of the Rehabilitation Act of 1973.**

The Department of Pathology of the Dartmouth-Hitchcock Medical Center is searching for a person at the **ASSISTANT PROFESSOR** level who is AP/CP Board-certified or Board-eligible to work in the area of the application and processing of clinical laboratory information and the development of cancer screening surveys. This person should have expertise in the use of computers, applied statistics, and a special interest in immunohematology. Also required would be background in the application of medical decision-making techniques. Please direct inquiries to: **Howard M. Rawnsley, M.D., Department of Pathology, Dartmouth-Hitchcock Medical Center, Hanover, N.H. 03755. Equal Opportunity/Affirmative Action Employer.**

BACTERIOLOGIST. Tenure-track position for assistant professor in the Department of Biology. Broadly trained bacteriologist expected to develop and maintain a vigorous, externally funded program of research in microbial ecology or physiology. Start-up funds will be provided. Teaching responsibilities include a course in general microbiology. Send curriculum vitae and letters of recommendation before 15 December 1981 to: **Dr. D. L. Rohlffing, Department of Biology, University of South Carolina, Columbia, S.C. 29208. An Equal Opportunity/Affirmative Action Employer.**

BIOCHEMIST

Postdoctoral fellow or research associate to study the structure of intestinal mucins and participate in the preparation of monoclonal antibodies to synthetic antigens reflecting structural features of saccharide moieties of mucins from normal and neoplastic tissues of human colon. Appointee(s) will join a team involved in research in basic causes and prevention of colon cancer. Duration of appointment and salary are negotiable. Send curriculum vitae and names of three referees to: **Dr. J. J. Krepinsky, Ludwig Institute for Cancer Research, 9 Earl Street, Toronto, Ontario, Canada M4Y 1M4. Telephone: 416-978-3702.**

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ASSOCIATE DIRECTOR to administer, in concert with the director, the programs of the Agricultural Experiment Station; directs programs of the Branch Stations. Provides leadership in budgeting and research planning of the research functions of the Agricultural Experiment Station. Responsible for Branch Stations. Supervises orderly flow of project proposals and publications. Maintains knowledge of current federal, state, and university procedures, policies, and legislation. Provides liaison with regional and state commodity and advisory groups. Earned doctorate preferred. Scholarship and research accomplishments in a discipline of agriculture or home economics, and suitable professional experience to qualify as a professor in one of the departments of the College of Agriculture and Home Economics. Administrative experience in policy decision-making, fiscal planning and management, program development, and personnel management in relationship to research desired. Thorough understanding of the land-grant system and the relationship among research, teaching, and extension functions. Salary will be commensurate with qualifications. Send résumé and three letters of recommendation to: **Dr. Marvin L. Wilson, Department of Agronomy, Box 3Q, New Mexico State University, Las Cruces, New Mexico 88003.** Deadline for applications: 1 December 1981. *An Equal Opportunity/Affirmative Action Employer.*

CHAIR, Department of Biological Sciences SAN FRANCISCO STATE UNIVERSITY
Applications are invited from individuals with a doctorate in biological sciences and competence in teaching, research, and administration for chair of department of 40 faculty serving 800 majors. Curricula lead to B.A., B.S., and M.A. degrees. Candidates should be committed to research development and excellence in teaching. Salary up to \$42,120, commensurate with experience. Applications, including curriculum vitae, résumé of personal goals, and three references should be sent to: **Dr. B. J. Davis, Department of Biological Sciences, San Francisco State University, 1600 Holloway Avenue, San Francisco, Calif. 94132.** Deadline: 15 January 1982. *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF PHYSIOLOGY (Cardiovascular)

The Department of Physiology-Biochemistry and Radiology at The Medical College of Pennsylvania in Philadelphia are seeking an individual for a joint appointment in these two departments. This will be a regular, tenure track assistant professorship beginning July 1, 1982, with teaching and research responsibilities. We are seeking a cardiovascular physiologist interested in a collaborative research with basic scientists and clinicians interested in organ blood flow and related areas in radiology. Ample opportunity will be provided for career development as an independent investigator. Interested individuals are requested to send copies of their curriculum vitae and the names of suitable references to:

Dr. Julian B. March
Chairman, Department of
Physiology and Biochemistry

MEDICAL COLLEGE OF PENNSYLVANIA

3300 Henry Avenue
Philadelphia, PA 19129

Equal Opportunity Employer, M/F

POSITIONS OPEN

ASSOCIATE PROFESSOR, BIOCHEMICAL TOXICOLOGY

Associate professor. Tenured (12-month) position for a biochemical toxicologist. Position is expected to be filled by 1 July 1982. Candidate should possess an M.D. and/or Ph.D. degree in pharmacology or a related field and have at least 4 years of relevant postdoctoral experience prior to applying. Demonstrated success in developing an independent research program in toxicology, including analytical instrumentation, is required. The successful candidate will be expected to teach and advise graduate and health professional students. Qualified individuals are invited to send their curriculum vitae, a statement of research plans, significant reprints, and names of three references to: **S. B. Sparber, Ph.D., Chairman, Search Committee, Department of Pharmacology, 3-260 Millard Hall, 435 Delaware Street, SE, University of Minnesota, Minneapolis, Minnesota 55455.** Deadline for receipt of applications is 15 January 1982.

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

CHAIRMANSHIP

**Department of Radiation Therapy
University of Michigan Medical School**

The University of Michigan Medical School plans to create a Department of Radiation Therapy and will be seeking a chairman to direct the patient care, teaching, and research programs of this new department. Qualifications include: Board-certification in radiation therapy, demonstrated commitment to research and teaching, administrative experience, and training or previous work experience in an academic institution. A *nondiscriminatory, Affirmative Action Employer.* Respond to:

Robert E. Reed, M.D.

Associate Dean
M7320A Medical Science Building I
University of Michigan Medical School
1335 East Catherine Street
Ann Arbor, Michigan 48109

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A Ph.D. in Immunology, Biochemistry or related field having extensive experience and a demonstrable track record with hybridomas and immunoassays is required for this challenging opportunity. Experience in protein biochemistry, microbiology, or virology is highly desirable. Our Cambridge laboratories provide easy access to our Scientific Advisors and local academic institutions.

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POSITIONS OPEN

ASSOCIATE RESEARCH BIOCHEMIST, nontenure-track faculty position in the Department of Medicine, San Francisco General Hospital, to study the molecular genetics of hemoglobinopathies. Applicant must have doctoral degree and be an independent, established scientist with degree or in-depth experience in molecular biology or nucleic acid biochemistry. Responsibilities include supervising technicians and assisting in the operation of a laboratory program. Salary negotiable. Send curriculum vitae and references to: **Stephen H. Embury, M.D., Building 100, Room 263, San Francisco General Hospital, San Francisco, Calif. 94110.**

BIOCHEMIST. Postdoctoral position available. Background in proteins, enzymology, and amino acids needed for basic studies in enzymes of arginine biosynthesis. Recent Ph.D. applicants with pertinent experience considered. Send résumé and references to: **Dr. Sarah Ratner, Department of Biochemistry, Public Health Research Institute, 455 First Avenue, New York, N.Y. 10016.**

An Equal Opportunity Employer

STATE UNIVERSITY OF NEW YORK/COLLEGE AT OLD WESTBURY. Small, 4-year liberal arts college on Long Island with heterogeneous, nontraditional student body and strong tradition of social criticism and pedagogical innovation, seeks candidates for the following position. **BIOLOGY**—One full-time, tenure-track appointment at the assistant or associate professor rank. Must be qualified to teach undergraduate courses in cell biology/molecular biology and general biology. Ph.D. required. Demonstrated teaching excellence and research background required. Candidate should demonstrate the ability and willingness to teach students with a broad range of cultural, ethnic, and academic backgrounds. Rank and salary dependent on qualifications and experience. Starting date: 1 February 1982. Deadline for applications: 16 November 1981. Send résumé to: **Director of Affirmative Action (Search Committee BS/C), State University of New York/College at Old Westbury, Old Westbury, New York 11568.** *Affirmative Action/Equal Opportunity Employer.*

CORNELL UNIVERSITY DIVISION OF BIOLOGICAL SCIENCES

The new Section of Genetics and Development seeks three faculty members, to begin after 1 July 1982.

1) A **GENETICIST**, at either the assistant or associate professor level, to share the teaching of introductory genetics. Research on the molecular genetics of higher plants is of special interest, but any area of modern genetics will be considered.

2) Two **DEVELOPMENTAL BIOLOGISTS** at the assistant professor level.

a) A person with research interests in the molecular aspects of developmental biology, who will teach an undergraduate course in that area, and

b) A person with research interests in the developmental biology of invertebrates, who will develop an undergraduate course in invertebrate biology.

Successful candidates will be expected to maintain active research programs and participate in advanced instruction. Applicants with postdoctoral experience are preferred. Candidates should send curriculum vitae, a statement of research interests, and the names of three references. Please arrange to have letters of reference sent directly to the appropriate Search Committee, along with other materials, by 14 December 1981.

Dr. Stanley Zahler, Genetics Search Committee
or
Dr. Adrian Srb, Development Search Committee
Section of Genetics and Development
Bradfield Hall
Cornell University
Ithaca, New York 14853

Cornell University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

CELL BIOLOGIST. The Biology Department of Reed College has extended a search to fill an opening for a recent Ph.D. in **cellular biology (animal)** for September 1982. This is a possible long-term faculty appointment although the chances of tenure are limited. The successful candidate will teach cell biology to excellent undergraduates and guide their research. The appointee will be expected to develop and maintain an active research program. Résumés and three recent letters of reference should be sent to: **Dr. P. J. Russell, Chairman, Biology Department, Reed College, Portland, Oregon 97202.** Closing date for receipt of application and letters is 8 January 1982. *Affirmative Action/Equal Opportunity Employer.*

CELL AND DEVELOPMENTAL BIOLOGIST—Assistant professor beginning September 1982, to teach structural, developmental, and introductory biology. Send curriculum vitae, list of presentations, publications, research plan, and three letters of recommendation by 1 January 1982 to: **Dr. Laura L. Mays Hoopes, Department of Biology, Occidental College, Los Angeles, Calif. 90041.** *An Affirmative Action/Equal Opportunity Employer.*

HARVARD MEDICAL SCHOOL

CELL AND DEVELOPMENTAL BIOLOGY/ENDOCRINOLOGY. Applications are invited for post-doctoral and/or research associate positions to study mammalian spermatogenesis, fertilization, and embryogenesis. The research projects, directed by Drs. A. R. Bellvé, J. D. Biggers, and C. F. Millette, focus on events regulating the proliferation and differentiation of somatic, germinal, and embryonic cells. Candidates experienced in protein purification, plasma membrane biochemistry, cell culture, endocrinology and/or hybridoma techniques are particularly welcome. Appointments are for 2 or 3 years. Send curriculum vitae and list of references to: **Dr. A. R. Bellvé, Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School, 45 Shattuck Street, Boston, Mass. 02115.**

Equal Opportunity/Affirmative Action Employer

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

Applicants are solicited for **FACULTY POSITIONS** in the following departments:

MEDICINE—(Number 332) **Assistant professor/professor.** Participating member of the Pulmonary Disease and Critical Care Section. M.D. or Ph.D. If M.D., general ward and intensive care attending, serve on consultation service and bronchoscopy service. Assist in research and conduct own research in fundamental problems relating to pulmonary biology and disease. Must have experience in clinical and/or basic research in pulmonary physiology, pathophysiology, morphology, biochemistry, or pharmacology. (Number 333) **Assistant professor/associate professor.** Participating member of the Pulmonary Disease and Critical Care Section of the Department of Medicine. General ward and intensive care attending. Serve on consultation and bronchoscopy service in the Pulmonary Disease Section. Applicant must have experience in clinical and/or basic research. M.D. degree and Board-eligible. (Number 335) **Associate professor/professor.** Chief of Infectious Disease. Will be recruiting for vacancies within this section. Qualified teacher, clinician, and investigator. Must have M.D. degree and be Board-eligible.

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

WANTED—FIELD DIRECTOR for the University of Maryland Medical Research Unit located in Lahore, Pakistan. Will be responsible for the direction of an aggressive expanding medical research and training program, a component of the International Health Program administered by the Department of Microbiology of the University of Maryland School of Medicine. Program areas include ecology, virology, entomology, genetics, parasitology (with particular interest in malaria), bacteriology, epidemiology, and immunology. Experience in the management of research programs required. Salary is negotiable. Starting date: January 1982. Initial appointment will be for 2 years. Please send letter of interest, curriculum vitae, and names of references to: **John M. Dennis, M.D., Dean, University of Maryland School of Medicine, Howard Hall Addition, 655 West Baltimore Street, Baltimore, Md. 21201.** *An Equal Opportunity Employer.*

POSITIONS OPEN

CHAIRMAN Division of Medicinal Chemistry School of Pharmacy

The University of North Carolina at Chapel Hill

The Division of Medicinal Chemistry is seeking a senior experienced individual to chair the division beginning in the spring or fall term 1982. Candidates must have earned a Ph.D. degree, possess strong established credentials of teaching and research accomplishment and grantsmanship in the pharmaceutical sciences, and be committed as a leader to building the undergraduate and graduate teaching and research base of the division and the school. A familiarity with pharmaceutical education is expected and a record of activity in national chemical and/or pharmacy professional societies is desired. Interested persons should submit a letter of application and curriculum vitae no later than 15 November 1981 to: **Dr. Larry J. Loeffler, Chairman, Search Committee, Division of Medicinal Chemistry, School of Pharmacy, The University of North Carolina, Chapel Hill, N.C. 27514.**

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

COMPUTER CENTER DIRECTOR sought by the University of California (UC), San Francisco, for its Fresno—Central San Joaquin Valley Medical Education Program. The new computer center will support educational and research activities for approximately 100 faculty. The center will assist investigators in planning and conducting a diverse range of projects including biostatistical analyses, epidemiological surveys, health delivery comparisons, imaging, clinical algorithm development, and psychophysiological monitoring. Educational responsibilities will include not only familiarizing faculty, house staff, and other health professionals with computer applications in medicine, but also providing consultation to those with specific computer interests. Existing collaboration with local state university presents opportunities for participation of graduate students in computer sciences. Initial equipment includes VAX—11/750 and ample space in new educational building.

Applicants should possess advanced degree or considerable experience in computer sciences or closely related field and strong interest in biomedical science and clinical investigation. Experience with UNIX is highly desirable. Salary and academic appointment commensurate with experience.

Please direct inquiries to:

**Howard Corbus, M.D.
Acting Associate Dean
UC Medical Education Program
2615 East Clinton Avenue
Fresno, Calif. 93703**

The University of California is an Equal Opportunity Employer.

MICHIGAN TECHNOLOGICAL UNIVERSITY DEAN OF THE GRADUATE SCHOOL

In addition to developing and directing the current Ph.D. and master's degree programs, the dean will be responsible for moving selected graduate programs and the whole Graduate School and its faculty to positions of strength and national recognition commensurate with those of a distinguished research university.

Existing graduate programs are in the College of Engineering, College of Sciences and Arts, School of Forestry and Wood Products, and School of Business and Engineering Administration.

Nominations and applications should be sent by 15 December 1981 to: **The Search Committee, Office of the Vice President for Academic Affairs, Michigan Technological University, Houghton, Michigan 49931.**

Michigan Technological University is an Equal Opportunity Educational Institution/Equal Opportunity Employer.

FACULTY APPOINTMENT. The Department of Microbiology, College of Medicine, has an opening for an **assistant professor.** Responsibilities include teaching graduate and medical students. Preference will be given to candidates who will develop a strong research program in the control of gene expression or gene organization in prokaryotes, eukaryotes, or viruses. Use of recombinant DNA techniques is especially desirable. Postdoctoral experience is required. Send curriculum vitae and three letters of reference to: **Chairman, Microbiology Search Committee, Department of Microbiology, College of Medicine, University of California, Irvine, Irvine, Calif. 92717.** *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

DEVELOPMENTAL BIOLOGISTS. Department of Biology seeks two tenure-track assistant professors in developmental biology. Successful candidates are to establish and maintain vigorous, externally funded research programs and participate in an expanding program of cell and molecular biology. Teaching responsibilities are in graduate and undergraduate courses. Send curriculum vitae and letters of recommendation by 15 December 1981 to: **Dr. Wallace D. Dawson, Developmental Search, Department of Biology, University of South Carolina, Columbia, S.C. 29208.** *An Equal Opportunity/Affirmative Action Employer.*

DIRECTOR OF METHODS for the American Oil Chemists' Society (AOCS). New, permanent position to develop a program to revise and maintain the AOCS Official and Tentative Methods, to maintain technical liaison with related scientific groups, and to coordinate the activities of AOCS technical committees. Experience in analytical chemistry, including fat and oil derivatives. Résumé to: **Search Committee, c/o Dr. E. G. Perkins, 508 South 6 Street, Champaign, Ill. 61820.**

DIRECTOR FOR ANIMAL CARE FACILITY, D.V.M., D.V.M.—Ph.D., or Ph.D.

Applications are invited for the position of director for Animal Care Facility, University of Colorado School of Medicine. The position involves administration of a very active research animal facility. Experience in animal experimentation and understanding of the needs of research scientists are desirable. Appropriate eligibility or Board-certification in laboratory animal medicine is desirable. Academic affiliation to appropriate department and research opportunities could be made available to qualified applicants. Salary commensurate with qualifications.

Closing date: 15 November 1981.

Candidates should send complete curriculum vitae with a cover letter detailing their professional career plans, salary requirements, and names of three references to:

**L. E. Gerschenson, M.D.
Search Committee
Department of Pathology, B216
University of Colorado School of Medicine
4200 East 9 Avenue
Denver, Colorado 80262**

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

ECOLOGIST

Ecologist. One semester position, beginning 1 January 1982, to teach a junior-level systems ecology course and introductory environmental science. Supervision of undergraduate projects in ecology at the Miner Center satellite campus in Chazy, N.Y., required. Campus housing available for candidate and family. Send application letter and résumé by 13 November 1981. Three letters of reference required. Apply to: **Dr. James C. Dawson, Institute for Man and Environment, State University of New York, Plattsburgh, N.Y. 12901.** Telephone: 518-564-2178. *Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION

Seeking O.D., Ph.D. or Ph.D. with interest in vision. Primary responsibility will be conducting of clinically related research, with secondary responsibilities to include teaching in the professional and graduate programs. Salary and rank commensurate with qualifications. Send curriculum vitae by 15 January 1982 to:

**K. J. Ciuffreda, O.D., Ph.D.
Chairman, Search Committee
State University of New York
State College of Optometry
100 East 24 Street
New York, New York 10010**

Affirmative Action/Equal Opportunity Employer

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

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

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IMMUNOLOGY PHARMACOLOGY MOLECULAR BIOLOGY RESEARCH

SmithKline, a leader in pharmaceutical research, is undertaking a major expansion of its research division. Applications are invited from research scientists (Ph.D./ M.D./ D.V.M./ M.S./ B.S.) to join interdisciplinary research teams to participate in the development of new therapeutic agents in a stimulating environment that offers significant opportunities for innovative research.

Our scientists are encouraged to publish, to hold adjunct academic posts and to interact fully with the national and international scientific community. A new, superbly equipped \$27 million research facility is under construction at our Upper Merion research campus in suburban Philadelphia and will be completed in 1982. This represents the first stage of a \$200 million R&D facility under construction at this site for completion by 1985.

We are seeking outstanding individuals at all seniority levels who have expertise in one or more of the following subjects:

IMMUNOREGULATION

(ref: MB-1)

identification of lymphoid cell subsets / cell sorting / lymphokines/macrophage physiology/auto-immune diseases

HYBRIDOMA TECHNOLOGY

(ref: MB-2)

hybridoma production / characterization of monoclonal antibodies/ cell sorting

MOLECULAR GENETICS

(ref: MB-3)

DNA sequencing/nucleic acid enzymology/gene construction/gene cloning and expression in *Bacillus*, actinomycetes, yeast and mammalian systems/promotor regulation/gene amplification

FERMENTATION TECHNOLOGY

(ref: MB-4)

whole cell and enzyme immobilization / fermentation methods/biochemical and fermentation process engineering

CELL BIOLOGY

(ref: MB-5)

large scale mammalian cell culture / cell fusion / microinjection/bone marrow and tumor stem cell cloning/platelet physiology/mutagenesis/electron microscopy/subcellular fractionation

ENZYMOLGY AND PROTEIN CHEMISTRY

(ref: MB-6)

protein sequencing/peptide synthesis/ isolation and purification of lymphokines and cytokines / macromolecular separation / radioimmunoassays / microanalysis/instrumentation development

RECEPTOR BIOLOGY

(ref: MB-7)

receptor isolation, characterization and reconstitution/pharmacokinetics/radioimmune assays/biology of dopaminergic, adrenergic, serotonergic, histaminergic and peptidergic receptor systems

MOLECULAR PHARMACOLOGY

(ref: MB-8)

drug-chromatin interactions/nucleo-cytoplasmic interactions/regulation of macromolecular synthesis/advanced biophysical instrumentation/ cell fractionation

We offer excellent compensation and benefits, an attractive relocation policy and a work environment that offers substantial opportunity for personal and professional advancement. For confidential consideration, send C.V., salary expectations and names of three references, citing the appropriate reference number listed above to: Mr. Walter B. Flagg.

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CORPORATION

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POSITIONS OPEN

PSYCHOLOGY DEPARTMENT CHAIR. Contingent upon funding, the College of Social and Behavioral Sciences and the Department of Psychology at the University of South Florida announce the availability of a position as chair of the Department of Psychology for a senior academician with administrative experience. Salary is competitive and negotiable. The department currently has 30 regular faculty, 3 branch campus faculty, and approximately 15 adjunct faculty. Its orientation is a strong and productive combination of research and application, as represented in its three Ph.D. programs in clinical/community psychology (APA-approved), experimental psychology, and industrial/organizational psychology. Approximately 125 full-time students are enrolled in the Ph.D. programs. There are approximately 900 undergraduate majors. The university currently registers in excess of 24,000 students per term. The department and the university continue to show active growth and development. Interested applicants should contact: **Dr. Louis A. Penner, Chairperson, Chair Search Committee, Department of Psychology, University of South Florida, Tampa, Florida 33620.** Please forward application materials by 20 December 1981. According to Florida law, applications and meetings regarding the same are open to the public. *The University of South Florida is an Affirmative Action/Equal Opportunity Employer.*

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

GENETICS FACULTY POSITION

Applications are invited from individuals interested in a 12-month tenure-track appointment who have an outstanding record of achievement. Rank and salary (\$25,000 per year, minimum) are commensurate with qualifications. Duties include teaching graduate/undergraduate genetics students and conducting a vigorous research program. Send curriculum vitae, summary of research interests, and three letters of recommendation by 1 December to: **Department of Genetics, Iowa State University, Ames, Iowa 50011.**

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

IMMUNOLOGIST/ BIOLOGIST, Ph.D.

Experience in hybridoma technology, immunochemistry. Tenure-track position with full benefits at Baylor College of Medicine, Houston, Texas. Please send curriculum vitae and bibliography to:

Box 242, SCIENCE

Baylor is an Equal Opportunity/Affirmative Action Employer.

LABORATORY ANIMAL MEDICINE

Montana State University invites applications for the position of **DIRECTOR** of Laboratory Animal Program and Facilities. Position emphasis is development of laboratory animal program and management of a new (to be constructed 1982-1983) central laboratory animal facility and several satellite facilities. Participation in research is encouraged. Opportunity exists to teach in undergraduate, graduate, or professional programs. Professional veterinary degree from an American Veterinary Medical Association-accredited institution required. Applicants should be certified by the American College of Laboratory Animal Medicine as Diplomates in Laboratory Animal Medicine or should be eligible for such certification. Academic rank and salary commensurate with experience. Send résumé and names of three references by 31 December 1981, to: **Norman D. Reed, Head, Microbiology Department, Montana State University, Bozeman, Montana 59717.** Montana State University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

IMMUNOLOGY

The Department of Biology and the Rosenstiel Center of Brandeis University invite applications for a tenure-track position at the assistant or associate professor level for a molecular biologist with a strong research interest in immunology. The level of appointment will depend on the background and experience of the candidate and excellence of research, both accomplished and planned. Excellence in teaching is also expected. Send curriculum vitae and a short description of accomplished and planned research and arrange for three letters of reference to be sent to: **Dr. Alfred Nisonoff, Rosenstiel Center, Brandeis University, Waltham, Mass. 02254.** Deadline for applications is 15 November 1981. *We are an Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGIST—Assistant Professor

Tenure-track position available 1 July 1982. Establish active, funded research program in area of specialization. Teach undergraduate and/or graduate courses in immunology and possibly in either microbiology or cell biology. Ph.D. and minimum of 2 years of postdoctoral research experience required. The Department of Biology currently has 22 faculty in several biological areas. This position is the first in an expansion plan under our new chairperson.

Salary, for a three-quarter (39-week) academic year, depends on qualifications. Can be supplemented with 11-week summer salary from outside funding.

To apply, send curriculum vitae, statement of research plans, and names of three references by 31 December 1981 to:

**Chairperson
Immunologist Search Committee
Biology Department
403 Richards Hall
Northeastern University
360 Huntington Avenue
Boston, Mass. 02115**

Northeastern University is an Equal Opportunity/Affirmative Action Employer.

MEDICAL DIRECTOR. The Department of Psychiatry, College of Medicine, University of Kentucky, and The Charter Medical Corporation are seeking a senior, Board-certified psychiatrist for the position of medical director for an 80-bed private psychiatric hospital in the Lexington, Kentucky, area. Submit curriculum vitae and inquiries to: **Chairman, Department of Psychiatry, University of Kentucky, College of Medicine, Lexington, Kentucky 40536.** *The University of Kentucky is an Equal Opportunity Employer.*

MOLECULAR BIOLOGIST

The Department of Biological Sciences at the State University of New York (SUNY) at Albany welcomes applications for one, and possibly two, tenure-track faculty positions at the assistant professor level. Candidates should be capable of establishing strong research programs in the areas of gene expression and regulation or DNA structure and organization. Send curriculum vitae and arrange for three letters of recommendation to be sent to: **Dr. Richard S. Zitomer, Chairman of the Molecular Biology Search Committee, Department of Biological Sciences, SUNY at Albany, 1400 Washington Avenue, Albany, New York 12222.**

The State University of New York at Albany is an Equal Opportunity/Affirmative Action Employer. Applications from women, minorities, and the handicapped are especially welcome.

MOLECULAR GENETICIST

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

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

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

POSITIONS OPEN

MICROBIOLOGY tenure-track position in Basic Sciences Division of medical school. Candidates should have a Ph.D. in microbiology and postdoctoral training and be able to teach a microbiology/infectious disease course. Preference will be given to candidates with research interests in the area of cell surface receptors for bacterial and eukaryotic viruses and/or gene regulation in viruses and prokaryotic and eukaryotic cells. Candidates should forward curriculum vitae, a brief statement of research plans, and the names of three individuals who can provide references to: **Dr. Stephen M. Boyle, Chairman, Search Committee, Basic Sciences Division, Faculty of Medicine, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3V6.** Only Canadians or permanent residents need apply for this position.

MICROBIOLOGY. Applications are invited from individuals with demonstrated excellence in microbial biochemistry or molecular biology for a tenure-track assistant professorship in the Department of Microbiology at the Medical College of Wisconsin. Applicants must have postdoctoral research training and be able to develop an independent research program, teach medical students, and instruct graduate students. Send résumé, summary of proposed research, and names of references to: **Search Committee, Department of Microbiology, Medical College of Wisconsin, P.O. Box 26509, Milwaukee, Wisconsin 53226.** *Affirmative Action/Equal Opportunity Employer.*

MOLECULAR/CELLULAR/DEVELOPMENTAL BIOLOGIST

Applications and nominations are invited for a tenure-track assistant professorship. Responsibilities will include participation in teaching programs at the undergraduate and graduate levels and the development of a vigorous independent program of research in molecular, cellular, or developmental biology. Preference will be given to those of demonstrated research potential. Applications, including curriculum vitae, list of publications, and summary of research plans, as well as letters of reference, should be sent to: **Dr. Daniel L. Friedman, Chairman, Search Committee, Department of Molecular Biology, Vanderbilt University, Nashville, Tennessee 37235.**

An Affirmative Action/Equal Opportunity Employer

NEUROANATOMIST, research assistant professor, Department of Neurology. Nontenure-track research position available 1 January 1982. Candidates should have Ph.D. in neuroanatomy and a minimum of 2 years of postdoctoral experience. Expertise in transmission and scanning electron microscopy of the nervous system and in immunohistochemistry and immunocytochemistry are requisite. Experience in research on the hypothalamus is desirable. Send curriculum vitae and names of three references to: **Dr. Robert Y. Moore, Department of Neurology, Health Sciences Center, State University of New York at Stony Brook, Stony Brook, N.Y. 11794.** *State University of New York at Stony Brook is an Equal Opportunity/Affirmative Action Employer.* AK Number 184.

NEUROPHYSIOLOGIST

RESEARCH ASSOCIATE position available April 1982 for a recent Ph.D. or M.D. to join an ongoing study of the functional development of synapses on autonomic neurons in vivo. Opportunity for fluctuation and quantal analysis of developing synapses. Send curriculum vitae and names of three references to: **Dr. Lawrence M. Marshall, Department of Physiology 206H, University of North Carolina, Chapel Hill, N.C. 27514.** *An Affirmative Action/Equal Opportunity Employer.*

PHARMACOLOGIST at Burroughs Wellcome Co. to assist in studies relating to the development of potential therapeutic agents. Applicants must have a bachelor's degree or equivalent training and experience in biology, biochemistry, or pharmacology with at least 2 years of experience in pharmacology. A master's degree in pharmacology is highly desirable. A good knowledge and practical experience in **autonomic pharmacology** is essential. **BURROUGHS WELLCOME CO.,** a progressive pharmaceutical company, is located near three major universities. Interested candidates should forward curriculum vitae to: **Employment Supervisor, BURROUGHS WELLCOME CO., 3030 Cornwallis Road, Research Triangle Park, N.C. 27709; or telephone, COLLECT, between 10 a.m. and 2 p.m.: 919-541-9090, extension 4649.** *An Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGIST

Wyeth Laboratories, located in an attractive Philadelphia suburb, is seeking a Ph.D. Immunologist with 1-5 years postdoctoral experience in cellular immunology. The successful candidate should possess experience with techniques for isolation of lymphoid cell populations, measurements of in vitro parameters of cell mediated immunity and surface markers. The individual selected for this opening will be involved with the development of antitumor and immunomodulators with a particular emphasis on their mechanism of action. The candidate should possess a Ph.D. in Immunology/Biochemistry/Microbiology.

This position offers an excellent starting salary and an attractive package of fringe benefits. Qualified individuals are invited to apply by forwarding a resume in confidence to:

JOHN PINKERTON
Personnel Department

Wyeth Laboratories, Inc.
P.O. BOX 8299
Philadelphia, PA 19101

Equal Opportunity Employer, M/F/H

POSTDOCTORAL POSITION

The Respiratory Physiology Group of the Department of Physiology, University of Pennsylvania, invites applications for postdoctoral research positions in the field of respiratory physiology. Representative research areas include airway smooth muscle, gas exchange, carbonic anhydrase, fetal/maternal circulation, tissue oxygenation, lung and lung cell metabolism, chemoreceptor mechanisms, and mitochondrial reactions. These positions are intended to provide one to three years of postdoctoral experience for persons planning to pursue a career in respiratory physiology research. Address inquiries to Dr. Baynard T. Storey, Education Officer, Respiratory Physiology, Department of Physiology, Richards Building A201, University of Pennsylvania Philadelphia, Pa. 19104. Applications from women and minority persons are especially welcome.

An Equal Opportunity/
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Postdoctoral Research Position MUTAGENESIS

The Lawrence Livermore National Laboratory has a postdoctoral position available immediately in the area of mutagenesis. The selected candidate will develop improved tests for mutagens in cultured mammalian cells; the project involves devising in vitro conditions for the efficient detection of a broad spectrum of mutagens requiring metabolic activation, as well as performing biochemical characterization of DNA repair-deficient mutants of Chinese hamster cells to be used in the testing. Candidates should have a background in cell or molecular biology or biochemistry; preference will be given to individuals familiar with cell culture, DNA repair, or metabolic activation of promutagens. Salary depends on qualifications. Please send curriculum vitae and names of three references to: **Ted Wilson, Lawrence Livermore National Laboratory, P.O. Box 5510, L-425, KSC-101, Livermore, CA 94550. U.S. CITIZENSHIP REQUIRED.** An equal opportunity employer, m/f/h.

University of California

Lawrence Livermore National Laboratory

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WOODS HOLE OCEANOGRAPHIC INSTITUTION

Assistant Scientist Physical Oceanographer

The Physical Oceanography Department plans to make a tenure-track appointment as Assistant Scientist. Applicants should have a degree in Physical Oceanography or a closely related field and preferably, some post-doctoral experience. A candidate's area of expertise in oceanography is not specified, but a working knowledge of fluid dynamics is an important qualification.

Please send vita to the Chairman, Physical Oceanography Department, Box 54P.



**WOODS HOLE
OCEANOGRAPHIC
INSTITUTION**

Woods Hole, MA 02543

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RESEARCH MINERALOGIST

The Department of Mineral Sciences at the American Museum of Natural History is re-opening its search for a tenure-track position for ASSISTANT CURATOR OF MINERALOGY beginning July 1982. This is a research position with an average of 1/4 time responsibility towards departmental activities, collection management, exhibition, and interaction with the mineral community at large. High quality problem-oriented research is the prime responsibility. The field of specialization within the mineral sciences is open, and may include and combine aspects of X-ray crystallography, ultrastructure analysis, crystal growth, spectroscopy, gemology, petrologic mineralogy, mineral geochemistry, crystal and thermochemistry, medical mineralogy, and mineral physics. Major research facilities include a fully automated ARL-SEMQ electron microprobe, X-ray laboratory, minicomputers, and a 100,000 specimen mineral collection. Opportunities exist for research and/or teaching collaboration with nearby institutions such as Columbia (Lamont-Doherty Geological Observatory), Princeton, SUNY at Stony Brook, Yale and Mt. Sinai School of Medicine (TEM facilities).

Requirements are a Ph.D. in hand by time of appointment, an ability to do creative research, and a desire to learn about collections and relate to the public in terms of exhibition and speaking. Applications should include: (1) curriculum vitae, (2) names of three persons familiar with your work who will write letters of recommendation, and (3) a brief statement of research interests.

These must be submitted by February 1, 1982 to:
Dr. Martin Prinz
Chairman, Department of Mineral Sciences

American Museum of Natural History
Central Park West at 79th Street
New York, New York 10024

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

POSITIONS OPEN

PHYCOLOGIST or MYCOLOGIST, assistant professor level, initial 3-year appointment starting fall 1982. Responsibilities to include courses in plant physiology and specialty and to establish a vigorous research program in the area of physiology and/or development. Ph.D. required with postdoctoral experience preferred. Submit complete curriculum vitae and three letters of reference to: **Chairman, Phycology/Mycology Search Committee, Department of General Biology, Vanderbilt University, Box 1812, Station B, Nashville, Tenn. 37235.**

Deadline for receipt of applications: 2 January 1982.
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BERKELEY PHYSICS

Pending budgetary approval, the Department of Physics of the University of California, Berkeley, expects during the next 2 years to make one or two tenure appointments. Preferred areas of research are theoretical particle physics, experimental condensed matter physics, statistical physics, and astrophysics.

Applicants should write, as soon as possible, and definitely before 15 December 1981 to: **Chairman, Department of Physics, University of California, Berkeley, California 94720**, giving curriculum vitae, publication list, and references. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

PHYSIOLOGY—Assistant professor position in the Department of Biology available 1 September 1982. Teaching responsibilities include a one-semester nonlaboratory course in general physiology, a one-semester laboratory course in organismic and cellular physiology, and a one-semester advanced laboratory course. The incumbent also will supervise advanced undergraduate research projects in physiology. Ph.D. required with area of specialty in the physiology of invertebrates or plants. *Women and minorities are encouraged to apply.* Send curriculum vitae and names, addresses, and telephone numbers of three referees to: **Dr. Bernard Fried, Chairman, Search Committee, Department of Biology, Lafayette College, Easton, Pa. 18042, Lafayette College is an Equal Opportunity Employer, M/F.**

PLANT MOLECULAR BIOLOGIST. Tenure-track position in plant cell culture and biochemistry/physiology for 1 September 1982. Teach undergraduate and graduate courses in plant physiology and bioenergetics, and participate in our in vitro cell biology and in the biochemistry/biophysics programs. Ph.D. with established, productive research program related to cell regulation and demonstrated teaching abilities. Level of appointment and salary negotiable. Submit curriculum vitae, reprints, in-press manuscripts, a statement of professional and research goals, and written recommendations from three references by 11 December 1981 to: **Dr. W. D. Graziadei, Department of Biological Sciences, Box 1000, State University of New York, Plattsburgh, N.Y. 12901.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL. Recent Ph.D. trained in biochemistry and/or toxicology needed on NIH-supported project studying formation of the myoneural junction and the action of organophosphate pesticides. Emphasis is on the regulation of acetylcholinesterase in developing muscle and nerve and the mechanism of organophosphate-induced neurotoxicities; 3 years of support available. Contact: **Barry W. Wilson, Avian Sciences, University of California, Davis, Calif. 95616.** *Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATE available 1 January 1982 to work on a statistical model of air pollution effects as reflected by tree-ring variation: involving computing, statistics, dendrochronology, and limited fieldwork. One-year contract initially. Salary: \$20,000. Send applications, including résumé and three letters of reference, by 4 December 1981 to: **Dr. T. H. Nash III, Department of Botany, Arizona State University, Tempe, Ariz. 85287.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study inborn errors of metabolism in cell culture. Recent Ph.D. with background in enzymology and protein purification preferred. Starting salary: \$15,000 to \$16,000, plus benefits. Send curriculum vitae and names and addresses of three references to: **Dr. Rody P. Cox, Department of Medicine, Veteran Administration Medical Center, 10701 East Boulevard, Cleveland, Ohio 44106.** *Cleveland VA Medical Center/Case Western Reserve University is an Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL FELLOW

Position available to join an ongoing research program in amorphous silicon-based semiconductors. Work involves the preparation, characterization, and property measurement of amorphous Si, Ge, Si-Ge alloys, and similar materials. Applicants must have a Ph.D. in experimental solid-state physics or materials science, a strong publication record, and the ability and willingness to work with graduate students. Experience in the deposition by sputtering and glow discharge techniques of the materials listed above is required, as is experience in x-ray diffraction, vacuum and mass spectroscopy techniques, computer interfacing and programming, and optical absorption measurements in the visible and infrared. Salary is \$18,600. Send curriculum vitae and list of publications to: **W. Healy, Cambridge Job Center, 806 Massachusetts Avenue, Cambridge, Mass. 02139.** Please refer to Job Number 1765.

Postdoctoral Positions in DNA repair. Positions available for recent Ph.D.'s in cell biology, biochemistry, or molecular biology to study the regulation of DNA repair in normal and repair-deficient human cells. Salary negotiable. Send applications with curriculum vitae and names of two references to:

**Dr. Michael A. Sirover
Fels Research Institute
Temple University School of Medicine
Philadelphia, Pa. 19140**

POSTDOCTORAL POSITIONS IN GENETICS

Postdoctoral positions in genetics for Ph.D. or M.D. with interest in genetic epidemiology of common diseases, especially psychiatric disorders, and behavioral traits. Participating faculty from biostatistics, genetics, psychiatry: **C. R. Cloninger, I. I. Gottesman, D. C. Rao, T. Reich, J. Rice, B. Suarez, and S. Yokoyama.** NIMH positions available immediately; renewal up to 3 years. Send curriculum vitae and references to: **Dr. C. Robert Cloninger, Department of Psychiatry and Genetics, Washington University School of Medicine and the Jewish Hospital of St. Louis, P.O. Box 14109, St. Louis, Mo. 63178.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available in February for 2 to 3 years for a Ph.D. to study cell-wall assembly mutants (especially chitin synthetase) of *Neurospora crassa*. Expertise in genetics/biochemistry preferred. Salary range: \$13,000 to \$14,000, plus fringe benefits. Send curriculum vitae, publications, and three letters of reference to: **Dr. Claude P. Selitrennikoff, B-111, University of Colorado Health Sciences Center, 4200 East 9 Avenue, Denver, Colo. 80262.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION

A position will be available about 1 March 1982 for an individual interested in enzymology and regulation of RNA processing in prokaryotes or eukaryotes [see *J. Biol. Chem.* **255**, 11233 and 11240 (1980); *J. Biol. Chem.* **256**, 5627 and 5633 (1981)] or in supramolecular organization of the eukaryotic protein-synthesizing system [*Biochemistry* **19**, 4978 (1980)]. Applicant with experience in nucleic acid enzymology and/or molecular genetics preferred. Send curriculum vitae and three letters of reference to: **Dr. Murray P. Deutscher, Department of Biochemistry, University of Connecticut Health Center, Farmington, Conn. 06032.**

POSTDOCTORAL POSITION available January 1982 for 1 or 2 years. Research on intestinal absorption and metabolism of toxic metal ions. Biochemical and/or physiological training required and experience with absorption techniques desirable. Starting salary: about \$14,000. Send curriculum vitae and three letters of recommendation to: **Dr. Robert H. Wasserman, Department of Physiology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.** *An Equal Opportunity/Affirmative Action Employer.*

TWO POSTDOCTORAL POSITIONS available 1 January 1982 in cognitive processes and cognitive development. Each position is for one year with possibility of extension for second year. By 1 December, send curriculum vitae, statement of research background, copies of relevant publications, and three or more letters of reference to: **Lauren J. Harris, Department of Psychology, Psychology Research Building, Michigan State University, East Lansing, Mich. 48824.** Telephone inquiries to: 517-353-0792.

An Affirmative Action/Equal Opportunity Institution

POSITIONS OPEN

POSTDOCTORAL POSITION IN CHEMICAL CARCINOGENESIS available immediately for a cell biologist, toxicologist, biochemist, or related field. Research involves the development of in vitro systems for investigating the mechanisms of carcinogen-induced transformation of human lung and esophageal epithelial cells. Appropriate animal model cell culture systems are available for each tissue. Project will involve studies of carcinogen metabolism, DNA repair, and cell transformation. Salary competitive. Send curriculum vitae and names of three references to: **Dr. Gary Stoner, Department of Pathology, Medical College of Ohio, 3000 Arlington Avenue, Toledo, Ohio 43614.** *An Equal Opportunity Employer, M/F.*

A POSTDOCTORAL POSITION

Is available immediately, for 2 years, for research on purification of peptides or phospholipid metabolism.

Experience with the appropriate techniques during recent Ph.D. studies is required.

Salary according to qualifications.

Please send applications, including curriculum vitae, to:

**Dr. Fernand Labrie
Molecular Endocrinology Research Center
Le Centre Hospitalier de l'Université Laval
2705 Laurier Boulevard
Sainte-Foy, Quebec, Canada G1V 4G2
Telephone: 418-656-8253**

POSTDOCTORAL POSITION available immediately in laboratory investigating function of metallothionein in metal detoxification, using isolated liver perfusion, and in normal zinc and copper metabolism, using in vitro enzyme reactivation. Applicant with experience in biochemistry preferred. Salary: \$14,000 per year. Please send curriculum vitae and three letters of reference to: **Dr. Frank O. Brady, Division of Biochemistry, Physiology, and Pharmacology, University of South Dakota School of Medicine, Vermillion, South Dakota 57069.** Closing date: one month after this advertisement appears. *The University of South Dakota is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL/RESEARCH SPECIALIST—A postdoctoral fellow with Ph.D. to work on immunocalculation of secretory protein in Gram-positive bacteria. The candidate will work in a team and will be involved mainly in immunoelectron microscopic localization with some correlative immunohistochemical and biochemical work. The salary: \$14,923 with fringe benefits; the appointment will be for 1 year with possibility for extension for another year. Please submit résumé to: **Personnel Department, COLLEGE OF MEDICINE AND DENTISTRY OF NEW JERSEY—Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854.** *An Equal Opportunity/Affirmative Action Employer, M/F.*

PROFESSOR AND CHAIRPERSON DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY THE ALBANY MEDICAL COLLEGE

The Albany Medical College of Union University, located in Albany, New York, is seeking highly qualified applicants for the position of professor and chairperson, Department of Microbiology and Immunology. This position represents an outstanding opportunity for an individual committed to excellence in medical and graduate teaching, research, and programs development. Applicants should have a strong record of academic achievement as reflected by scholarly publications, success in obtaining extramural funding, and peer recognition. Candidates must have demonstrated achievement in research and administration or provide evidence for leadership potential in these areas. The Albany Medical College is a private 4-year medical school founded in 1839. It has strong and developing basic science and clinical research programs and a long tradition of excellence in medical education. Qualified individuals are invited to forward curriculum vitae and letter of interest to:

**Dr. Leo E. Reichert, Jr.
Chairman, Microbiology and Immunology
Search Committee
Department of Biochemistry
Albany Medical College
Albany, New York 12208**

Closing date for applications is 31 December 1981. *The Albany Medical College is an Equal Opportunity/Affirmative Action Employer.*

BIOCHEMISTS/CHEMISTS

Synthesis of radioactive compounds

We are seeking individuals for excellent career opportunities with a leading manufacturer of biochemicals. Attractive East Coast Suburban location.

STAFF SCIENTIST / SENIOR SCIENTIST—with a PhD and experience in Synthesis of radioactive biochemicals.

STAFF BIOCHEMIST / CHEMIST—A minimum BS with 2-3 years experience in organic or biochemistry and background in radioactive compound synthesis.

Salary will be commensurate with experience.

Write to: Box Sci. 272

UNIVERSIDAD AUTONOMA DE CD. JUAREZ

ESCUELA DE MEDICINA ADVANCED STANDING ADMISSION PROGRAM

The University of Ciudad Juárez, School of Medicine has established a procedure for individuals possessing certain doctoral degree, whereby these individuals may be considered for admission into the medical curriculum at an advanced level as students in the regular five-year program.

It is possible for successful students to complete the core clinical courses and clinical training for the M.D. degree within 32 months.

To be considered for admission an individual must possess credentials in one of the following categories:

- 1.-A Ph. D. in a basic medical science.
- 2.-A doctoral degree from certain professional school of Dentistry or Veterinary Medicine where the basic sciences is equivalent in content to that of the medical school.
- 3.-A Ph. D. in a (Non-Basic) science are where the transcript can demonstrate appropriate scientific training.

Individuals with a professional degree in Chiropractic Medicine, Optometry, Osteopathy, Podiatry or Stomatology are not eligible for advanced standing.

Applications must be completed by Nov. 15 of the year prior to beginning study in Cd. Juárez.

DIRECT INQUIRES TO:

LUIS RAUL ABBUD ABBUD, M.H.A.
ADMINISTRATOR
UNIVERSIDAD AUTONOMA DE CD. JUAREZ
APDO. POSTAL 231
CD. JUAREZ, CHIH., MEXICO

VETERINARY PATHOLOGIST

...for staff position. Prefer broad based experience and/or training in laboratory animal pathology, especially Toxicologic Pathology. Duties include designing, conducting and reporting of preclinical drug safety evaluation studies, with emphasis on the gross, histopathologic and clinicopathologic evaluation of animals used in such studies. Requirements include D.V.M. and advanced training in pathology.

Interested applicants should send resume and salary requirements to:

**Wyeth Wyeth
Laboratories Inc.**
P.O. Box 861
Paoli, Pa. 19301

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POSITIONS OPEN

POSTDOCTORAL POSITION. Three-year period appointment for recent Ph.D. in one of the following areas: (i) chemical carcinogenesis/cell transformation in vitro and (ii) hybridoma production of animal/human cells secreting hormones/antibodies and production of new parent tumour lines. Salary in range of £6530 to £8589 per annum. Starting pay according to experience. Noncontributory pension scheme. Applications, with curriculum vitae and three references, to: **Dr. W. Mason, Agricultural Research Council, Institute of Animal Physiology, Babraham, Cambridge, United Kingdom.**

POSTDOCTORAL RESEARCH ASSOCIATE positions are available immediately for a period of 2 to 3 years to study the molecular mechanisms of the carrier-mediated glucose transport and of its activation by insulin. A strong background in protein chemistry is desirable. Please send curriculum vitae and names of three references to: **Dr. Chan Y. Jung, Department of Biophysical Sciences, 118 Cary Hall, School of Medicine, State University of New York at Buffalo, Buffalo, N.Y. 14214.**

POSTDOCTORAL RESEARCH ASSOCIATE. Ph.D. with experience in protein purification. Competitive salary. Send curriculum vitae to: **Adel A. Yunis, M.D., Department of Medicine (R-38), University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101. Telephone: 305-547-6963.**

An Equal Opportunity Employer

The University of California, Irvine, Department of Surgery, is recruiting for an **IN-LINE PROFESSOR** with a doctorate in biology or biophysics and a background in laser technology. This person must have demonstrated experience with its biological effects, especially at the cellular and tissue levels. Must have an interest in experience with laser application to human malignancies and in coordinating a general program in several surgical specialties. The research position also involves teaching undergraduate medical students, residents, and postgraduate students. Send curriculum vitae and references to: **G. Robert Mason, M.D., Professor and Chairman, Department of Surgery, University of California, Irvine, Irvine, California 92717, by 7 December 1981.**

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

RESEARCH ASSOCIATE (postdoctoral positions) available in the Cell Biology Laboratory, Mt. Zion Hospital, and the Department of Physiology, University of California, San Francisco, to work with active multidisciplinary group studying cellular mechanisms of hormone secretion and action (faculty: J. A. Williams, I. D. Goldfine, and R. Roth). Focus on pancreatic acinar function, GI hormones, insulin, and thyroid hormone. Advanced candidate could qualify for faculty appointment. Send curriculum vitae, letter of interests, and names of three references to: **J. A. Williams, Cell Biology Laboratory, Mount Zion Hospital and Medical Center, P.O. Box 7921, San Francisco, Calif. 94120.**

RESEARCH ASSOCIATE position available immediately to work in multidisciplinary laboratory operating Finnigan Mass Spectrometer for biomedical research projects in College of Medicine. Requires M.S. or Ph.D. Send curriculum vitae and names of three references to: **Dr. Davis, Director, Laboratory of Analytical Chemistry and Mass Spectrometry, Department of Pharmacology, University of Arizona, Health Science Center, Tucson, Ariz. 85124. Telephone: 602-626-6400 An Equal Opportunity/Affirmative Action Employer.**

RESEARCH SCIENTIST. The Charles F. Kettering Research Laboratory has a staff opening for a scientist with 1 to 4 years of postdoctoral experience in areas pertinent to the enhancement of plant productivity. Scientists with research programs related to symbiotic nitrogen fixation, photosynthesis, or the interrelations between photosynthesis and N_2 fixation are encouraged to apply. Expertise in microbial genetics and physiology, cyanobacteria, and plant-microbe interactions, including endomycorrhizal associations, would be especially valuable. This laboratory offers the opportunity for full-time independent research with interaction and collaboration with other scientists working in nitrogen fixation and photosynthesis. Send résumé and references to: **The Search Committee, c/o D. L. Keister, The Charles F. Kettering Research Laboratory, Yellow Springs, Ohio 45387.**

POSITIONS OPEN

RESEARCH ASSOCIATE POSITION

Long-term full-time research position immediately available in the Laboratory of Developmental Neurobiology. Candidate should be experienced with modern axoplasmic tracer techniques, have an interest in neuroembryological research, and should possess leadership qualities. Salary open and dependent on qualifications. Send curriculum vitae and letters of reference to: **Dr. Joseph Altman, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907.**

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TOXICOLOGY

Full-time position currently available for a toxicologist with special interests in reproductive toxicology and/or biochemical toxicology. Salary negotiable.

Dr. Raymond D. Harbison
Division of Interdisciplinary Toxicology
University of Arkansas for Medical Sciences
4301 West Markham
Little Rock, Arkansas 72205

An Equal Opportunity Employer

TOXICOLOGIST

Background in genetics, biochemistry, or cell biology. Must have experience in mammalian cell mutagenesis. Work involves screening of chemicals using Ames and other short-term tests, validation of assays, and evaluation of published data. Qualified applicants should send their résumé to: **IBM Corporation, Robert Williams, General Products Division, Department 433/122, College and Professional Recruiting, 5600 Cottle Road, San Jose, Calif. 95193. An Equal Opportunity Employer.**

TOXICOLOGY (Search Continued)

We seek to appoint (at Ph.D. level) an accredited individual to initiate, develop, and direct a regional toxicology laboratory within an academic framework. The programmatic components will include therapeutic drug evaluation, substance abuse, and a major thrust in industrial/agricultural toxicology. The appointee would have opportunity for individual and/or collaborative research in a multidisciplinary department, and professional growth is encouraged. Salary would be highly competitive. Complete curriculum vitae and the names of three references should accompany the application and be addressed to:

B. Salafsky, Ph.D.
Chairman, Search Committee
Department of Biomedical Sciences
University of Illinois College
of Medicine—Rockford
1601 Parkview Avenue
Rockford, Ill. 61101

An Affirmative Action/Equal Opportunity Employer

WILDLIFE ECOLOGIST

Assistant professor, Ph.D. tenure-track position beginning 15 August 1982. Responsibilities include participation in wildlife curriculum within the Department of Zoology, developing a research program, and teaching wildlife management and specialty courses. Send letter stating future teaching interests and research plans, curriculum vitae, reprints, and three letters of recommendation to: **Dr. Andrew T. Smith, Wildlife Search Committee, Department of Zoology, Arizona State University, Tempe, Ariz. 85287. Deadline: 7 January 1982.**

Affirmative Action/Equal Opportunity Employer

FELLOWSHIPS

PRE- AND POSTDOCTORAL FELLOWSHIPS AND PROFESSIONAL ASSISTANT IN MOLECULAR BIOLOGY

Positions available to study regulation of gene expression for (i) ribosomal proteins and (ii) muscle proteins during growth and differentiation. Successful applicants will be involved in mRNA isolation, recombinant DNA technology, and in vitro transcription and translation systems. Salaries up to \$18,000 per annum, depending on experience. Interested candidates should submit curriculum vitae and three letters of reference to: **B. H. Sells and/or J. Bag, Laboratories of Molecular Biology, Faculty of Medicine, Memorial University, St. John's, Newfoundland, Canada A1B 3V6.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP. Position participating in studies of regulation of urea cycle enzymes, mechanism of overproduction of argininosuccinate synthetase, and DNA-mediated gene transfer of urea cycle enzymes. Offers experience in recombinant DNA techniques as applied in human biochemical genetics. Send curriculum vitae and letters of recommendation or write for further information to: **Arthur L. Beaudet or William E. O'Brien, Department of Pediatrics, Baylor College of Medicine, Houston, Texas 77030.**

PRE- AND POSTDOCTORAL FELLOWSHIPS IN BASIC MEDICAL SCIENCES. Graduate fellowships (up to \$10,000 per year) are available to qualified applicants who wish to pursue an M.Sc. or a Ph.D. program in the Basic Sciences Division of the Faculty of Medicine at Memorial University. Postdoctoral fellowships (up to \$18,000) are also available.

Research opportunities encompassing all basic science disciplines are present in the **CARDIOVASCULAR, ENDOCRINOLOGY AND METABOLISM, GASTROENTEROLOGY, HUMAN GENETICS, IMMUNOLOGY, MOLECULAR BIOLOGY, AND NEUROSCIENCES** research groups.

Application forms and further information may be obtained from:

Dr. B. H. Sells
Associate Dean, Basic Medical Sciences
Faculty of Medicine
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3V6

POSTDOCTORAL FELLOWSHIP in Clinical Pharmacology Laboratory. The Division of Clinical Pharmacology, Jefferson Medical College, Thomas Jefferson University, welcomes applications from individuals with a Ph.D. in pharmacology, pharmacuetics, toxicology, or analytical chemistry for a postdoctoral position in the division's laboratory. Applicants should have a keen interest in the use of precise analytical techniques, such as HPLC, GLC, and RIA, to problems in clinical pharmacology. Individual will be encouraged to pursue clinical research on drug-drug interactions, pharmacokinetics, drug biotransformation, and drug binding to tissues. Ample opportunity will be provided to study pharmacodynamics and drug disposition in experimental animals. Stipend will be approximately \$18,000 per year, plus full university benefits. Interested person should be available to start between January and June 1982. Duration of fellowship will be at least 1 year. Contact: **Dr. Brian N. Swanson, Assistant Director, Division of Clinical Pharmacology, THOMAS JEFFERSON UNIVERSITY, Room 502, Main Building, 11th and Walnut Streets, Philadelphia, Pa. 19107. Telephone: 215-928-6086. Equal Opportunity Employer.**

GRANTS

PRE- AND POSTDOCTORAL GRANTS are available for research in which the natural resources of the Huyck Preserve are utilized. Laboratory space and housing provided for family or assistants. Stipends to a maximum of \$2000. Applications are due 15 January 1982. Applications and inquiries to: **Dr. R. C. Dalgleish, Biological Station, E. N. Huyck Preserve, Inc., Rensselaerville, N.Y. 12147.**

TRAINING PROGRAM

UNIVERSITY OF COLORADO RESEARCH TRAINING IN DEVELOPMENTAL PSYCHOBIOLOGY

M.D. and Ph.D. trainees will receive broad and comprehensive training in research methods and strategies in developmental psychobiology with an emphasis on development of clinically relevant maladaptive behavior. A 1-year training program is offered with the possibility of an additional 1-year renewal. Internationally recognized faculty will provide training and varied research opportunities including tissue culture, electrophysiology, neuromagnetism, neuroimmunology, animal models including nonhuman primates, infant development, and clinical psychiatric and pediatric problems. Available beginning summer 1982.

For further information, contact:

Martin Reite, M.D., Program Director
Department of Psychiatry
Box C268, 4200 East 9 Avenue
University of Colorado School of Medicine
Denver, Colorado 80262

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BIOCHEMICAL RESEARCH PRODUCTS

Representatives for fast growing company in the field of biotechnology. Establish rapport with research, biochemist on a technical basis and provide information and performance specifications on products needed by the researcher.

Experience in sales of biological research products preferred but not required. Minimum B.S. in Biochemistry with current knowledge of biochemical techniques. Good base pay salary and commission. Please send resume' to:

J. Wamstad
**BETHESDA RESEARCH
LABORATORIES**
Box 6009, 8717 Grovemont Circle
Gaithersburg, Maryland 20878
(a suburb of Washington, D.C.)



An Equal Opportunity Employer, M-F-H.

VETERINARY PATHOLOGIST

The Department of Safety Assessment, Merck Institute for Therapeutic Research, is seeking a Veterinary Pathologist with 5-7 years of experience.

The position involves responsibility for the design and evaluation of subacute and chronic toxicity studies of potential therapeutic agents.

We are seeking an applicant with a D.V.M. and a Ph.D. or equivalent training in pathology who has strong leadership qualities. The successful candidate should have a broad background in pathology and an interest in mechanisms of toxicity and a demonstrated ability to contribute to problem solving in this broad area.

The Merck Institute has always provided outstanding opportunities for professional growth in a multi-disciplinary research environment. Starting salary is commensurate with qualifications and is accompanied by a comprehensive benefit program. Our research facilities are located in the attractive suburbs, 25 miles northwest of Philadelphia.

Please send curriculum vitae with publication record to DONAL E. JACKSON

Merck Sharp & Dohme Research Laboratories

West Point, PA 19486

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BIOGEN S.A. Geneva, Switzerland

Positions are available for scientists at all levels who are skilled in the areas of:

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MICROBIAL PHYSIOLOGY
CELL BIOLOGY
BIOCHEMISTRY
IMMUNOLOGY

FERMENTATION TECHNOLOGY
ENZYMOLGY
PROTEIN CHEMISTRY
NUCLEIC ACID BIOCHEMISTRY
RECOMBINANT DNA TECHNOLOGY

Biogen is a biotechnology company with laboratories in Switzerland and in the United States, developing commercial applications of molecular biology in a variety of areas. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment. Because of successful developments we will be expanding our staff and facilities during 1982 and are seeking highly qualified researchers as we initiate new projects.

Biogen offers a competitive salary and benefits package.

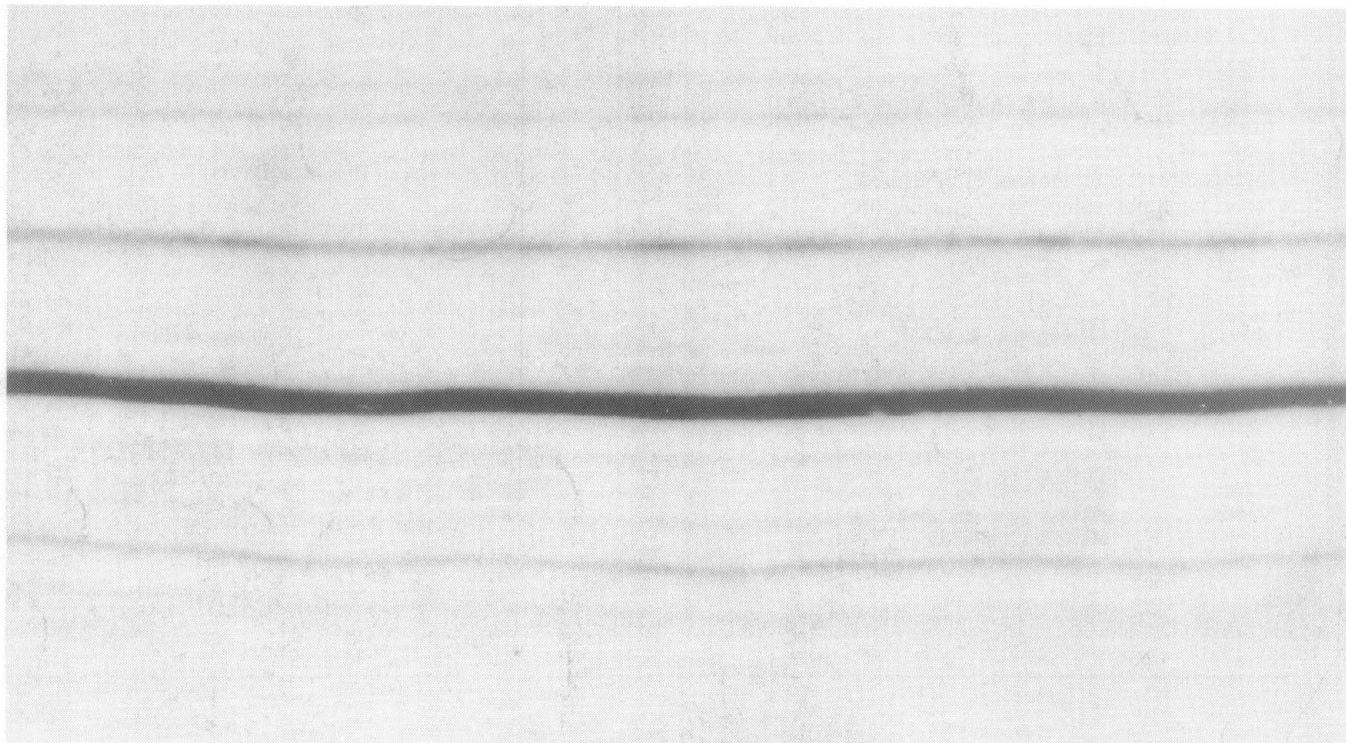
**REPLY TO: Personnel Manager, Biogen S.A., Route de Troinex 3,
1227 Carouge, Geneva, Switzerland.**

Please send your resume and a list of three individuals who may be contacted for references on your behalf. All replies will be evaluated in confidence.

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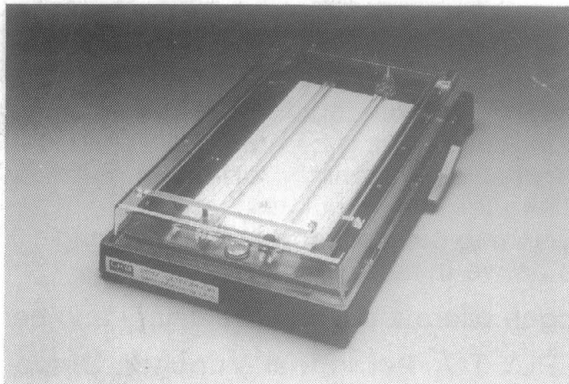
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