

John Dewey. The Russian orientation was dominated by the behavioral and neurophysiological approach of Bekhterev, whose Psychoneurological Institute (established in 1907) became the national center for empirical research in psychology. With the Revolution, ideological and political forces were generated that both inspired and restricted scientific research. Psychology found itself at the center of these conflicting forces as both psychologists and party officials sought a new methodology based on a Marxist-Leninist psychology of man. Before Stalinism closed the door on this inquiry, a fascinating array of psychological research was conducted in diverse areas from the neurology of brain functions to psychoanalytical dream analysis.

During the 1920's, Bekhterev's prominence was overshadowed by the experimental research of Pavlov and his followers. After receiving the Nobel Prize in 1904 for his study of the nervous mechanisms in the digestive glands, Pavlov formulated his theory of reflexes, which was later developed into an empirical methodology for the study of human motivation and behavior. From his animal experiments, he postulated two distinct types of reflexes—unconditional (those which always recur in a similar physiological manner) and conditional (reproducible responses dependent upon specific stimuli). Pavlov went on to introduce the term "signalization" to designate the connection between sensory input and motor output in the physiology of the nervous system. This research was then further expanded into other realms of human behavior, particularly psychological dysfunctionality. Thus, Pavlov's experimental work served as a model for the psychological examination of cognitive problems (such as verbal communication and writing) as well as for a whole range of diagnosed psychiatric disturbances.

At the same time, other work was being carried out in directions not anticipated by Pavlov. Nikolai Bernstein conducted a series of interesting experiments at the Central Institute of Labor in Moscow during the 1920's and 1930's on the mechanics of body movements. By attaching small sources of light to his subjects' bodies at the joints and then recording their movements on film, he was able to produce a theory of "kinematic activity" that anticipated by decades recent developments in the West on feedback, programming, and cybernetics.

Also at this time, Alexander Luria conducted experiments combining as-

pects of psychoanalysis, which was a subject of widespread interest during the 1920's in the Soviet Union, with his efforts to better understand certain problems in the motor responses of his subjects. One of the most brilliant figures from this era was Lev Vygotsky, who created an "instrumental method" for research on the origins of our acquisition of psychological tools, of which he considered language the most significant because of its role in the construction of thought structures. Vygotsky's experiments and theoretical papers on the relationship between internal functions (symbolic tools) and external actions (social relations) are examples of some of the most innovative and original work ever done in Soviet psychology.

The book is weakened somewhat by the fact that the chapters appear to be separate thematic essays that have been linked together *ex post facto*. Also, there are unfortunate instances of cumbersome language ("physiologization," "Pavlovianization," and the like). In addition, the book lacks a conclusion in which the author synthesizes and evaluates the separate orientations he has discussed. The subtitle of the book is misleading since it is decidedly not a social history as that term is understood by contemporary social historians. This aside, Kozulin's discussions of the utopian expectations, the achievements, and the continuing unresolved problems of Soviet psychology over the last seven decades are intelligent, lucid, and engaging. This is an important book that should encourage further research into other aspects of Soviet psychology. It deserves a wide readership.

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## Books Received

**Ada: Language, Compilers and Bibliography.** M. W. Rogers, Ed. Published on behalf of the Commission of the European Communities by Cambridge University Press, New York, 1984. Various pages. \$17.95. The Ada Companion Series.

**Advances in Carbohydrate Chemistry and Biochemistry.** Vol. 42. R. Stuart Tipson and Derek Horton, Eds. Academic Press, Orlando, Fla., 1984. xiv, 444 pp., illus. \$65.

**Advances in Heat Transfer.** Vol. 16. James P. Hartnett and Thomas F. Irvine, Jr., Eds. Academic Press, Orlando, Fla., 1984. xii, 388 pp., illus. \$70.

**Atmospheric Electrodynamics.** Hans Volland. Springer-Verlag, New York, 1984. x, 205 pp., illus. \$35.50. Physics and Chemistry in Space, vol. 11.

**Atmospheric Science and Power Production.** Darryl Randerson, Ed. U.S. Department of Energy Office of Scientific and Technical Information, Oak Ridge, Tenn., 1984 (available as DE84005177 from National Technical Information Service, Springfield, Va.). x, 850 pp., illus. \$29.50. DOE/TIC-27601.

**The Atomic Nucleus.** J. M. Reid. 2nd ed. Manchester University Press, Dover, N.H., 1984. 279 pp., illus. Paper, \$8.50.

**Autologous Bone Marrow Transplantation and Solid Tumors.** J. Gordon McVie, Otilia Dalesio, and Ian E. Smith, Eds. Raven, New York, 1984. xvi, 192 pp., illus. \$52. Monograph Series of the European Organization for Research on Treatment of Cancer, vol. 14.

**Axonal Transport in Neuronal Growth and Regeneration.** John S. Elam and Paul Cancalon, Eds. Plenum, New York, 1984. xvi, 284 pp., illus. \$45. Advances in Neurochemistry, vol. 6. Based on a conference, Tallahassee, Fla., March 1983.

**Azides and Nitrenes. Reactivity and Utility.** Eric F. V. Scriven, Ed. Academic Press, Orlando, Fla., 1984. xiv, 542 pp., illus. \$99.50.

**Bacteria, Plasmids, and Phages. An Introduction to Molecular Biology.** E. C. C. Lin, Richard Goldstein, and Michael Syvanen. Harvard University Press, Cambridge, Mass., 1984. xii, 316 pp., illus. \$35.

**Beginning Micro-PROLOG.** J. R. Ennals. 2nd ed. Harper and Row, New York, 1984. 196 pp. Paper, \$15.95.

**The Biographical Dictionary of Scientists.** David Abbott, Ed. Bedrick, New York, 1984 (distributor, Harper and Row, New York). Four volumes. Astronomers. iv, 204 pp., illus. Biologists. iv, 182 pp., illus. Chemists. iv, 203 pp., illus. Physicists. iv, 212 pp., illus. Each volume, \$18.95.

**Biological Magnetic Resonance.** Vol. 6. Lawrence J. Berliner and Jacques Reuben, Eds. Plenum, New York, 1984. xviii, 300 pp., illus. \$47.50.

**The Biology of Idiotypes.** Mark I. Greene and Alfred Nisonoff, Eds. Plenum, New York, 1984. xvi, 507 pp., illus. \$59.50.

**Biomaterials Science and Engineering.** Joon Bu Park. Plenum, New York, 1984. xvi, 459 pp., illus. \$35.

**Cliniques de Thérapie Comportementale.** O. Fontaine, J. Cottiaux, and R. Ladouceur. Mardaga, Brussels, 1984. 456 pp., illus. Paper, 2410 BF.

**Comets.** A Descriptive Catalog. Gary W. Kronk. Enslow, Hillside, N.J., 1984. viii, 331 pp. Paper, \$22.50.

**The Communication of Emotion.** Ross Buck. Guilford, New York, 1984. xviii, 391 pp., illus. \$27.50. The Guilford Social Psychology Series.

**Community Structure and the Niche.** Paul S. Giller. Chapman and Hall, London, 1984 (U.S. distributor, Methuen, New York). x, 176 pp., illus. Paper, \$11.95. Outline Studies in Biology.

**Comparative Biochemistry and Physiology of Enzymatic Digestion.** H. J. Vonk and J. R. H. Western. Academic Press, Orlando, Fla., 1984. x, 501 pp., illus. \$80.

**The Complete Book of Lisa.** Kurt J. Schmucker. Harper and Row, New York, 1984. xii, 335 pp., illus. Paper, \$17.95. A Tilden Press Book.

**Comprehensive Treatise of Electrochemistry.** Vol. 8, Experimental Methods in Electrochemistry. Ralph E. White *et al.*, Eds. Plenum, New York, 1984. xviii, 620 pp., illus. \$89.50.

**Comprehensive Treatise of Electrochemistry.** Vol. 9, Electrodes: Experimental Techniques. Ernest Yeager *et al.*, Eds. Plenum, New York, 1984. xviii, 451 pp., illus. \$65.

**Computational Fluid Mechanics and Heat Transfer.** Dale A. Anderson, John C. Tannehill, and Richard H. Fletcher. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1984. xii, 599 pp., illus. \$39.95. Series in Computational Methods in Mechanics and Thermal Sciences.

**Computational Group Theory.** Michael D. Atkinson, Ed. Academic Press, Orlando, Fla., 1984. xii, 373 pp. \$60. From a symposium, Durham, Aug. 1982.

**Computational Methods for Optimizing Distributed Systems.** K. L. Teo and Z. S. Wu. Academic Press, Orlando, Fla., 1984. xiv, 317 pp. \$62. Mathematics in Science and Engineering, vol. 173.

**Computer-Assisted Image Analysis Cytology.** S. Donald Greenberg, Ed. Karger, Basel, 1984. x, 201 pp., illus. \$58.75. Monographs in Clinical Cytology, vol. 9.

**Computer Graphics and Applications.** Dennis Harris. Chapman and Hall, London, 1984 (U.S. distributor, Methuen, New York). x, 174 pp., illus., + plates. \$39.95; paper, \$19.95.

**Computer Mapping.** Progress in the '80s. James R. Carter. Association of American Geographers, Washington, D.C., 1984. x, 86 pp., illus. Paper, \$5. Resource Publications in Geography.

**A Concept of Mathematical Physics. Models for Space-Time.** Tamás Matolcsi. Akadémiai Kiadó, Budapest, 1984. 236 pp. \$26.

**Conceptia Biostructurala si Teoriile Moleculare ale Materiei VII.** Eugen Macovschi. Editura Stiintifica si Enciclopedica, Bucharest, Romania, 1984. 157 pp., illus. Paper, Lei 8.25.

**The Constitutive Law in Thermoplasticity.** Th. Lehmann, Ed. Springer-Verlag, New York, 1984. iv, 601 pp., illus. Paper, \$31.30. CISM Courses and Lectures No. 281.

(Continued on page 1603)

## BOOKS RECEIVED

(Continued from page 1575)

**Contributions in Quaternary Vertebrate Paleontology.** A Volume in Memorial to John E. Guilday. Hugh H. Genoways and Mary R. Dawson, Eds. Carnegie Museum of Natural History, Pittsburgh, 1984. vi, 538 pp., illus. \$56. Special Publication No. 8.

**Correlative Neuroanatomy of Computed Tomography and Magnetic Resonance Imaging.** J. de Groot, with Catherine M. Mills. Line drawings by L. Lyons. Lea and Febiger, Philadelphia, 1984. xii, 248 pp., illus. \$45.

**A Critique of the Study of Kinship.** David M. Schneider. University of Michigan Press, Ann Arbor, 1984. xii, 208 pp. \$24; paper, \$12.50.

**Genes Involved in Microbe-Plant Interactions.** D. P. S. Verma and Th. Hohn, Eds. Springer-Verlag, New York, 1984. xiv, 393 pp., illus. \$55. Plant Gene Research.

**Geology in Engineering.** Robert Bowen. Elsevier, New York, 1984. xii, 411 pp., illus. \$59.25.

**The Grizzly Bear.** Thomas McNamee. Drawings by Gordon Allen. Knopf, New York, 1984. vi, 308 pp. \$18.95.

**Ground Movements and Their Effects on Structures.** P. B. Attewell and R. K. Taylor, Eds. Surrey University Press (Blackie), London, 1984 (U.S. distributor, Methuen, New York). xviii, 441 pp., illus. \$59.95.

**InfoWorld's Essential Guide to the Commodore 64.** Richard A. Milewski. Harper and Row, New York, 1984. xii, 239 pp., illus. Paper, \$16.95.

**InfoWorld's Essential Guide to the TRS-80 Models III and 4.** Timothy A. Daneliuk. Harper and Row, New York, 1984. x, 214 pp., illus. Paper, \$16.95.

**Insect Ecology.** Peter W. Price. 2nd ed. Wiley-Interscience, New York, 1984. xvi, 607 pp., illus. \$37.50.

**Introduction to Applied Geophysics.** Stanislav Mareš et al. Reidel, Boston, 1984 (distributor, Kluwer Boston, Hingham, Mass.). xviii, 581 pp., illus. \$89. Translated from the Czech edition.

**Introduction to Electric Power Engineering.** Richard D. Shultz and Richard A. Smith. Harper and Row, New York, 1984. viii, 264 pp., illus. \$37.95.

**Inverse Semigroups.** Mario Petrich. Wiley-Interscience, New York, 1984. x, 674 pp., illus. \$62.50. Pure and Applied Mathematics.

**Invertebrate-Microbial Interactions.** J. M. Anderson, A. D. M. Rayner, and D. W. H. Walton, Eds. Cambridge University Press, New York, 1984. xii, 349 pp., illus. \$79.50. British Mycological Society Symposium Series, 6. From a symposium, Exeter, England, Sept. 1982.

**Involvement in Learning.** Realizing the Potential of American Higher Education. Final Report of the Study Group on the Conditions of Excellence in American Higher Education. National Institute of Education, Washington, D.C., 1984 (available from the Superintendent of Documents, Washington, D.C.). xii, 101 pp. Paper, \$4.50. Stock No. 065-000-00213-2.

**Ion Channels.** Molecular and Physiological Aspects. Wilfred D. Stein, Ed. Academic Press, Orlando, Fla., 1984. xx, 394 pp., illus. \$75. Current Topics in Membranes and Transport, vol. 21.

**Phosphate and Mineral Metabolism.** Shaul G. Massry, Giuseppe Maschio, and Eberhard Ritz, Eds. Plenum, New York, 1984. xiv, 485 pp., illus. \$69.50. Advances in Experimental Medicine and Biology, vol. 178. From a workshop, Verona, Italy, June 1983.

**Pieces of White Shell.** A Journey to Navajoland. Terry Tempest Williams. Illustrations by Clifford Brycelea. Scribner, New York, 1984. xiv, 162 pp. \$14.95.

**A Place to Grow Old.** The Meaning of Environment in Old Age. Stephen M. Golant. Columbia University Press, New York, 1984. xiv, 421 pp. \$40. Columbia Studies of Social Gerontology and Aging.

**Plant Chemosystematics.** J. B. Harborne and B. L. Turner. Academic Press, Orlando, Fla., 1984. x, 562 pp., illus. \$95.

**Plant Drug Analysis.** A Thin Layer Chromatography Atlas. H. Wagner, S. Bladt, and E. M. Zgainski. Springer-Verlag, New York, 1984. xiv, 320 pp. \$58. Translated from the German edition (Berlin, 1983) by Th. A. Scott.

**Plasma Protein Secretion by the Liver.** H. Glaumann, T. Peter, Jr., and C. Redman, Eds. Academic Press, Orlando, Fla., 1983. xviii, 497 pp., illus. \$75.

**Poison in the Pot.** The Legacy of Lead. Richard P. Wedeen. Southern Illinois University Press, Carbondale, 1984. xii, 275 pp., illus. \$24.95.

**Polychlorinated Dibenzofurans.** Criteria for Their Effects on Humans and the Environment. M. F. Mitchell, H. A. McLeod, and J. R. Roberts. National Research Council of Canada, Ottawa, 1984. 244

pp., illus., + appendix. Paper, \$8. Publication No. NRCC 22846 of the Environmental Secretariat.

**Polyimides.** Synthesis, Characterization, and Applications. Vol. 2. K. L. Mittal, Ed. Plenum, New York, 1984. xvi pp. + pp. 615-1182, illus., + index. \$89.50.

**Position-Sensitive Detection of Thermal Neutrons.** Pierre Convert and J. Bruce Forsyth, Eds. Academic Press, Orlando, Fla., 1983. xxii, 430 pp., illus. \$36. From a workshop, Grenoble, France, Oct. 1982.

**Research on Motivation in Education.** Vol. 1, Student Motivation. Russell Ames and Carole Ames, Eds. Academic Press, Orlando, Fla., 1984. xiv, 340 pp. \$36.50.

**Research Practices in the Study of Kinship.** Alan Barnard and Anthony Good. Academic Press, Orlando, Fla., 1984. xiv, 226 pp., illus. \$32. ASA Research Methods in Social Anthropology, 2.

**Research Techniques in Nondestructive Testing.** Vol. 7. R. S. Sharpe, Ed. Academic Press, Orlando, Fla., 1984. x, 376 pp., illus. \$80.

**Respiratory Distress Syndrome.** Kari O. Raivio et al., Eds. Academic Press, Orlando, Fla., 1984. xiv, 421 pp., illus. \$55. From a symposium, Helsinki, Aug. 1982.

**Responses of Marine Organisms to Pollutants.** John J. Stegeman and G. W. Heath, Eds. Elsevier, New York, 1984. xxviii, 547 pp., illus. \$163. Reprinted from *Marine Environmental Research*, vol. 14, Nos. 1-4. From a symposium, Woods Hole, Mass., April 1983.

**Restoration of Habitats Impacted by Oil Spills.** John Cairns, Jr., and Arthur L. Buikema, Jr., Eds. Butterworths, Boston, 1984. x, 182 pp., illus. \$34.95. An Ann Arbor Science Book. From a workshop, Blacksburg, Va., Nov. 1981.

**Reviews in Perinatal Medicine.** Vol. 5. Emile M. Scarpelli and Ermelando V. Cosmi, Eds. Liss, New York, 1984. xii, 201 pp., illus. \$42.

**Risk Watch.** The Odds of Life. John Urquhart and Klaus Heilmann. Facts on File, New York, 1984. xviii, 214 pp., illus. \$16.95. Translated from the German edition (Munich, 1983).

**Robot Technology.** Vol. 5, Logic and Programming. Michel Parent and Claude Laureau. Kogan Page, London, and Prentice-Hall, Englewood Cliffs, N.J., 1984. 190 pp., illus. \$39.95.

**Serendipitous Discoveries in Radio Astronomy.** K. Kellerman and B. Sheets, Eds. National Radio Astronomy Observatory, Green Bank, W.Va., 1984. viii, 321 pp., illus. Paper, \$7. From a workshop, Green Bank, W.Va., May 1983.

**Stanley Cobb.** A Builder of the Modern Neurosciences. Benjamin V. White, with Richard J. Wolfe and Eugene Taylor. Francis A. Countway Library of Medicine, Boston, 1984 (distributor, University Press of Virginia, Charlottesville). xviii, 445 pp., illus. \$29.50.

**Teacher Shortage in Science and Mathematics.** Myths, Realities, and Research. John L. Taylor, Ed. Teaching and Instruction Division, National Institute of Education, Washington, D.C., 1984. viii, 281 pp. Paper. Summary. x, 52 pp. Paper. From a conference, Washington, D.C., Feb. 1983.

**Technetium in Chemistry and Nuclear Medicine.** Edward Deutsch, Marino Nicolini, and Henry N. Wagner, Jr., Eds. Cortina International, Verona, Italy, 1984 (U.S. distributor, Raven, New York). xviii, 228 pp., illus. \$45.50. From a symposium, Padova, Italy, Sept. 1982.

**Techniques in Pheromone Research.** Hans E. Hummel and Thomas A. Miller, Eds. Springer-Verlag, New York, 1984. xiv, 465 pp., illus. \$59. Springer Series in Experimental Entomology.

**Theoretical Concepts in Physics.** An Alternative View of Theoretical Reasoning in Physics for Final-Year Undergraduates. M. S. Longair. Cambridge University Press, New York, 1984. xiv, 366 pp., illus. \$49.50; paper, \$14.95.

**The Technology of High-Level Nuclear Waste Disposal.** Advances in the Science and Engineering of the Management of High-Level Nuclear Wastes. Vol. 2. Peter L. Hofmann, Ed. Department of Energy Office of Scientific and Technical Information, Oak Ridge, Tenn., 1984 (available as DE82009593 from National Technical Information Service, Springfield, Va.). x, 378 pp., illus. \$17.75. DOE/TIC-4621 (vol. 2). From a meeting, Columbus, Ohio, 1980.

**Vectors in Virus Biology.** M. A. Mayo and K. A. Harrap, Eds. Published for the Society for General Microbiology by Academic Press, Orlando, Fla., 1984. xii, 188 pp., illus. \$37. Special Publications of the Society for General Microbiology, 12. From a symposium, Dundee, U.K., Sept. 1982.

**Viruses and Demyelinating Diseases.** C. A. Mims, M. L. Cuzner, and R. E. Kelly, Eds. Academic Press, Orlando, Fla., 1983. xii, 201 pp., illus. \$39. From a symposium, Edinburgh, Sept. 1982.

**The Voyages of Columbia.** The First True Space Ship. Richard S. Lewis. Columbia University Press, New York, 1984. x, 223 pp., illus. \$24.95.

# Personnel Placement

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## POSITIONS WANTED

**Biochemist.** Ph.D. 1964, clinical chemist, FACB, eligible for California license, toxicology, research, teaching, publications, and laboratory management. Available immediately. 416 North Pinecrest Road, Bolingbrook, Illinois 60439. Telephone: 312-739-5311. X

**Biochemist/Clinical Chemist:** Ph.D. 1970. Research experience in enzymology, metabolism, lipoproteins, and RIA. Seven years of management and R&D experience in clinical chemistry; publications. Strong skills in methodology, instrumentation, toxicology, ASCP, NRCC certified. Seeks R&D/management position in industry/hospital/government. Telephone: 312-957-3609. X

**Biochemist/Engineer:** Antibiotic researcher with expertise in radio, television, and scientific instrument repair; designs custom circuits; uses Basic, Fortran, and Forth; experienced in launch vehicle/space vehicle calibration and launch procedures, only research organizations need respond. Box 71, SCIENCE. X

**Biochemist-Ph.D.** (1984) protein biochemistry/enzymology with knowledge of a wide range of techniques and 1 year of postdoctoral training in molecular cloning, seeks position in industry/private laboratory or government. Box 74, SCIENCE. X

**Cell Physiologist, Computer Scientist, Statistician** wants academic or industrial position. Nine books, 31 scholarly publications, 340 popular articles. PG, 10367 Pawpaw Lake, Mattawan, Michigan 49071. Telephone: 616-668-2049. X

**Cytogeneticist/Cell Biologist.** Ph.D. 1976. Director of medical cytogenetics laboratory. Research interests: chromosome organization, spermatogenesis, embryo culture. Desires position in medical cytogenetics and/or research laboratory in genetics/reproductive biology. Available May 1985. Box 75, SCIENCE. 3/29; 4/5

## POSITIONS WANTED

**Environmental Scientist, M.S., and M.A. ecology, 1985.** Research experience in wastewater treatment and regional ecology. Publications. Will relocate. Available immediately. Tim McDaniel, 1150 Fairfield, Troy, Ohio 45373. 3/29; 4/5

**Immunologist.** Ph.D. 1970. Academic and industrial research experience in cellular and molecular immunology, immunopotentiality, lymphokines, lymphocyte-target cell killing, immunoassay development, hybridoma and monoclonal antibodies. Excellent publications and references. Seeking academic or industrial position. Box 73, SCIENCE. 3/29; 4/5

**Pathotoxicologist.** B.V.Sc., Ph.D. Six years of experience in clinical and general toxicology, preparation of protocols, evaluation of toxicity reports, toxicology data management, and field investigations. Box 66, SCIENCE. Telephone: 319-386-6971 after 4 p.m. X

**Physiologist.** Ph.D. Stanford, 1977. Four years of postdoctoral training. Extensive experience in basic human research including cardiovascular regulation, muscle metabolism, exercise pathophysiology. Aggressive publication and grant funding record. Excellent references. Seeks medical school academic appointment. Box 76, SCIENCE. 3/29; 4/5, 12, 19

**Research Associate (Ph.D. molecular biology, 1981)** working in a leading molecular biology laboratory seeks position in academy/industry or as a senior investigator in a research group in immediate future. Research experience in recombinant DNA technologies including gene screening, cDNA cloning, DNA sequencing and hybridization. Experience in virology, mRNA purification, in vivo and in vitro eukaryotic RNA transcription, antibody staining and cell culture. Strong background in enzymology, protein biosynthesis, and purification from mammalian sources. Box 77, SCIENCE. X

**Research Technician, B.A., molecular biology, 1984.** Undergraduate experience in microbiology, immunology, and genetic engineering. Also, experience in animal surgery. Box 78, SCIENCE. 3/29; 4/5

## POSITIONS OPEN

**ACADEMIC ORTHOPAEDIC SURGEON** at the University of Michigan Medical Center with emphasis in sports medicine. Responsibilities include patient care on the trauma and general orthopaedic services and the teaching of University of Michigan medical students and orthopaedic residents. Candidates must be Board-certified or be eligible for Board-certification, have training and experience in sports medicine, have demonstrated outstanding teaching and clinical care abilities, and be willing to participate in clinical and laboratory research programs. Send curriculum vitae and references to: William S. Smith, M.D., Head, Section of Orthopaedic Surgery—Box 54, Department of Surgery, University of Michigan Medical Center, 1405 East Ann Street, Ann Arbor, Michigan 48109. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.* PCN 243.

**ASSISTANT PROFESSOR (nontenure-track)**—Candidates with background in metabolic aspects of brain mitochondria and demonstrated ability to carry out independent research are invited to apply. Experience in mitochondria isolation and enzyme purification is desirable. Salary is negotiable. Send curriculum vitae to: Dr. H. Moser, John F. Kennedy Institute, Neurology Department, Johns Hopkins University, 707 North Broadway, Baltimore, Md. 21205. *An Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT PROFESSOR ANATOMY AND PHYSIOLOGY

The Biology Department at Mansfield University announces an opening for an assistant professor to teach human anatomy, human physiology, animal physiology, and assist in the General Biology Program. An appropriate Ph.D. degree and active professional involvement in biology and allied health sciences are required. This is a tenure-track position. Salary competitive for a 9-month contract plus a full benefit package. Send résumé, transcripts, and three current letters of recommendation to: Dr. Richard Soderberg, Chairman, Search Committee, Biology Department, Mansfield University, Mansfield, Pa. 16933. Deadline to apply: 15 April 1985.

*Mansfield University actively solicits the applications of qualified blacks and other minorities.*

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### ANATOMIST, ALLIED HEALTH EDUCATION

The University of Oklahoma Health Sciences Center, College of Allied Health, Department of Allied Health Education, invites nominations and applications for a 12-month faculty position with a tenure or nontenure-track option.

Primary responsibilities include teaching gross anatomy with cadaver dissection and neurobiology to allied health students. Secondary teaching responsibilities may include histology and embryology.

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Candidates for this position must have an earned doctorate degree and a minimum of 3 years of teaching experience in anatomy, including cadaver dissection, at a 4-year college/university level. Rank at the assistant/associate/full professor level and salary dependent upon qualifications and experience.

Send complete curriculum vitae and names and addresses of three references by 1 May 1985 to:

Dr. Charles R. Brown, Chairperson  
Allied Health Education Search Committee  
College of Allied Health  
University of Oklahoma Health Sciences Center  
P.O. Box 26901  
Oklahoma City, Oklahoma 73190

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**ASSISTANT PROFESSOR (tenure-track):** Ph.D. biochemistry with 2 to 6 years of postdoctoral experience in renal glycoprotein basement membrane chemistry. Research accomplishment in basement membrane composition, publications, and potential to obtain independent grant funding. Experienced in separation and isolation of kidney basement membranes, protein isolation by conventional chromatography, FPLC and HPLC, PAGE, IEF, peptide mapping, amino acid and carbohydrate analysis, circular dichroism, immunochemistry, and ELISA assays. Experience in isolation and characterization of basement membrane collagens essential. Participation in the graduate programs—Ph.D. pathobiology and residency training.

Applications consisting of curriculum vitae and three letters of recommendation by 20 April 1985 to: Dr. Alfred Michael, Box 491, University Hospital, 420 Delaware Street, SE, Minneapolis, Minn. 55455.

*The University of Minnesota is an Affirmative Action Employer and specifically invites and encourages applications from women and minorities.*

Applications are invited for **TWO ASSISTANT PROFESSORS** in (i) the molecular biology of a lower eukaryotic organism and (ii) animal virology, ideally with expertise in nucleic acid or protein chemistry. Proven research ability with postdoctoral experience is required. Responsibilities will include teaching of health professionals and graduate students. Submit curriculum vitae and two reprints by 30 April 1985 and have three letters of recommendation sent to: D. Michael Gill, Department of Molecular Biology and Microbiology, Tufts University, Schools of Medicine, Veterinary Medicine and Dental Medicine, 136 Harrison Avenue, Boston, Mass. 02111.

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Tenure-track **ASSISTANT OR ASSOCIATE PROFESSORSHIP IN ENVIRONMENTAL HEALTH** is available starting fall quarter 1985. The successful candidate will be expected to develop and teach core courses on the N.E.H.A.C.-accredited ENVIRONMENTAL HEALTH undergraduate curriculum within the Department of Biological Sciences and develop a dynamic research program in an area broadly related to human health and the environment. Persons with experience or interests in toxicology, hazardous waste, or epidemiology are encouraged to apply. Faculty in the department participate in a M.S. program in biological sciences and doctoral program in biochemical sciences. A doctoral degree in environmental health related discipline is required. Postdoctoral or professional experience is recommended. Send complete curriculum vitae, a statement of career and research objectives, and names of three references to: Dr. James Amon, Environmental Health Search Committee, Attention: Biological Sciences, Wright State University, Dayton, Ohio 45435. Closing date: 22 April 1985. *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF ANATOMY

The Department of Anatomy in a Christian medical and dental school is seeking applicants for two full-time faculty positions: (i) teaching in human gross anatomy, and (ii) teaching in histology beginning summer 1985. A Ph.D. in anatomical sciences is required. Preference will be given to applicants having an active research program and at least 2 years of postdoctoral experience. Send curriculum vitae and three letters of reference to: John E. Norvell, Ph.D., Professor and Chairman, Department of Anatomy, Schools of Medicine and Dentistry, Oral Roberts University, Tulsa, Oklahoma 74171. *Oral Roberts University is a Christian ministry that employs without regard to race, color, sex, age, handicap, national origin, or status as a veteran.*

**ASSISTANT PROFESSOR OF FOOD SCIENCE.** Tenure-track, 9-month appointment, to teach (1/3) food processing and conduct research (2/3) in an area of interest to candidate. Physical phenomena in foods or biotechnology are desirable areas. Qualifications include Ph.D. in food science. Postdoctoral/industrial experience an asset. Salary commensurate with experience. To apply, send curriculum vitae, university transcripts, and three letters of reference by 1 May 1985 to: Dr. F. J. Francis, Department of Food Science and Nutrition, University of Massachusetts, Amherst, Mass. 01003. *An Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT PROFESSOR-HUMAN TUMOR IMMUNOLOGY-MOLECULAR MECHANISMS.** The University of Wisconsin, Departments of Human Oncology and Microbiology, are seeking applicants for a tenure-track assistant professor. A highly qualified individual, Ph.D., is sought in the general area of human tumor cellular immunology with an interest in molecular mechanisms of immune effector cell function. Investigative experience in subcellular changes which may be operable in the effects of immunomodulators and T cells, NK cells or macrophages, would be required. Applicants should be knowledgeable in immunological, biochemical, and molecular methods applicable to this problem. Opportunity to interact not only with laboratories in the Wisconsin Clinical Cancer Center but also laboratories in the Department of Medical Microbiology and other laboratories on campus. The successful applicant for this position will be expected to develop a strong independent research program and to participate in the departmental Ph.D. training program. Contact: Ernest C. Borden, M.D., K4/410 CSC, 600 Highland Avenue, Madison, Wis. 53792. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT/ASSOCIATE PROFESSORSHIP IN IMMUNOLOGY

The Immunology/Microbiology Department of Rush Medical College invites applications for a tenure-track faculty position. Applicants must be able to develop or continue a research program involving phagocytic cell surface receptors in the molecular perspective, and to participate in medical, graduate and postgraduate teaching programs. Current departmental interests focus on mechanisms of natural immunity and inflammation, allergic responses, cellular and clinical immunology, viral-host interactions, and molecular genetics. If you are interested in being considered for this position, please contact: Thomas F. Lint, Ph.D. (Selection Committee), or Henry Gewurz, M.D. (Chairman), Immunology/Microbiology Department, Rush Medical College, 1753 West Congress Parkway, Chicago, Ill. 60612. *Rush Medical College is an Equal Opportunity/Affirmative Action Employer.*

### ASSISTANT/ASSOCIATE PROFESSORSHIP FOR VIRAL IMMUNOLOGIST

The Immunology/Microbiology Department of Rush Medical College invites applications for a tenure-track faculty position. Applicants must be able to develop and continue a strong research program in viral pathogenesis and immunology. Current departmental investigations in virology involve human and woodchuck hepatitis B, Newcastle disease, and Rous sarcoma viruses; departmental interests generally focus on the chemistry and biology of host-microbe interactions, natural defense mechanisms, and the inflammatory and allergic responses.

If you are interested in being considered for this position, please contact: Mark Peeples (Selection Committee) or Henry Gewurz (Chairman), Immunology/Microbiology Department, Rush Medical College, 1753 West Congress Parkway, Chicago, Ill. 60612. *Rush Medical College is an Equal Opportunity/Affirmative Action Employer.*



**Dow Chemical U.S.A.**

## RESEARCH BIOCHEMISTS

The Agricultural Products Department of the Dow Chemical Co. is expanding their Insecticide Discovery Group. We are looking for individuals to participate in a multidisciplinary effort devoted to the discovery and development of innovative chemical approaches to crop protection.

### Invertebrate Neurochemist

The applicant should have a Ph.D. in Biochemistry or a related discipline with 0-4 years postdoctoral experience. Research experience with biochemical approaches to the study of nervous system pharmacology and toxicology is required.

### Insect Biochemist

The successful candidate will be expected to develop a goal oriented research program to identify biochemical targets for chemical disruption. The applicant should have a Ph.D. in Biochemistry or a related discipline with 0-4 years postdoctoral experience. Research experience on insect metabolic pathways is required.

### Insect Endocrinologist

The applicant should have a Ph.D. in Biological Sciences or Biochemistry with 0-4 years postdoctoral experience. Research experience in hormone metabolism, regulation or mechanism of action in insects is required.

Dow Chemical offers a salary commensurate with experience and opportunity for professional growth and advancement in a pleasant working environment in the San Francisco bay area.

Qualified candidates may send their resume in confidence to:

**Warren Stimpson, Mgr.**  
Employee Relations Department  
Dow Chemical Co.  
P.O. Box 9002  
Walnut Creek, CA 94598

The Dow Chemical Co. is an affirmative action employer.

## COVALENT TECHNOLOGY CORP.

### Immunodiagnostics Research & Development

COVALENT TECHNOLOGY CORPORATION has developed a novel elegant technology for rapid and simple to perform medical diagnostic test kits. We are seeking an aggressive senior level scientist to participate in research and development of our new technology for detection of infectious agents. The successful candidate will be a principal investigator tasked with the development, optimization, and standardization of rapid immunoassays for viruses, bacteria, fungi, and parasites. Researchers with a PhD in Immunology, Microbiology, or Parasitology, with two or four years postdoctoral experience, and publications on development, critical evaluation, or use of immunodiagnostic procedures for infectious diseases are invited to apply. Working experience with enzyme immunoassays, radioimmunoassays, immunofluorescence or nucleic acid probe assays are important considerations. Oral and written communication skills, strong human relations skills, and a capacity for acquiring new business are necessary.

U.S. citizenship required. Salary will be commensurate with experience. Send your resume, salary history, and references to:

**Mr. A.J. Procassini, COVALENT TECHNOLOGY CORPORATION, 3941 Research Park Drive, Box 1868, Ann Arbor, MI 48106.**

An Equal Opportunity Employer, M/F

## MOLECULAR BIOLOGY OF ONCOGENES

IMMUNEX CORPORATION is a Seattle-based biotechnology corporation specializing in the commercial development of lymphokines and immune response modifiers. We wish to expand our group investigating the molecular biology of oncogenes and cloned lymphokine/lymphokine receptor genes. The projects are aimed at increasing our understanding of cell growth regulation in the lymphoid and hematopoietic systems, and require a collaborative approach in a stimulating multidisciplinary environment.

Two positions are available; one for a recent Ph.D. graduate; the other requiring post-doctoral experience. The company offers competitive salaries, an equity participation program and a full benefits package.

Application, including CV, list of publications and names and addresses of three references should be sent to the **Personnel Officer, Immunex Corporation, 51 University Street, Seattle, WA 98101.** Immunex Corporation is an equal opportunity employer.

**immunex**

## RESEARCH SCIENTISTS

BioTechnica International, Inc., a company specializing in the development of next-generation technologies in the areas of microbial production systems, biochemical engineering, and agricultural biotechnology, has openings at its Cambridge, Massachusetts facility for highly motivated Research Scientists. BTI is seeking to fill positions in the areas of:

### • DNA Sequencing

To set up a centralized DNA sequencing facility. A Ph.D. degree is preferred but not essential.

### • Protein Chemistry

To work on the purification and analysis of products being expressed and secreted in Gram-positive organisms. A Ph.D. degree is required.

BTI offers highly competitive salaries, excellent employee benefits, and opportunities for professional growth in a stimulating and productive environment. Please send a letter of application along with a resume and the names of three references by May 1, 1985, to:

**Director of Administrative Services**  
BioTechnica International, Inc.  
85 Bolton Street  
Cambridge, Massachusetts 02140



## POSITIONS OPEN

**ASSISTANT PROFESSOR OF ANATOMY.** Applications are being accepted for a tenure-track position in the discipline of anatomy available 1 July 1985. Applicants should possess a Ph.D. degree and the ability to teach gross anatomy and assist in the neuroanatomy laboratory. Preference will be given to those applicants possessing a Ph.D. in anatomy. Salary is competitive and commensurate with experience. Send curriculum vitae and references to:

**Dr. James F. May**  
Anatomy Search Committee  
College of Osteopathic Medicine of the Pacific  
College Plaza  
Pomona, Calif. 91766-1889  
*Affirmative Action/Equal Opportunity Employer*

**ASSISTANT PROFESSOR, Biology,** position anticipated 1 July 1985, in Purdue School of Science at IUPUI Columbus Center of Indiana University-Purdue University at Indianapolis (IUPUI), 12-month position. Applicants need teaching breadth (general, microbiology, anatomy, or physiology) with compatible research specialization. Ph.D. and 3 years of university teaching experience preferred. Salary commensurate with experience. Résumé due 12 April to: **Dr. Marvin Rytting, IUPUI Columbus, 2080 Bakalar Drive, Columbus, Ind. 47203.** *An Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT PROFESSOR: NEUROSCIENCE

Assistant professor position available in the Department of Anatomy and Cell Biology, University of Pittsburgh School of Medicine. Research responsibilities: (i) to participate in an ongoing research program as a visual physiologist in studies of physiological-anatomical correlates of primate visual cortex organization, and (ii) to develop an independent research program in the area of anatomical-physiological correlates of visual system organization. Teaching responsibilities: Systems neurobiology in core medical neuroscience course and contribution to graduate neuroscience teaching. Please send curriculum vitae, brief statement of research goals, and the names of three references no later than 30 April 1985 to: **Chairman of Search Committee, Dr. Jennifer S. Lund, Department of Anatomy and Cell Biology, 824 Scaife Hall, University of Pittsburgh School of Medicine, Pittsburgh, Pa. 15261.** *The University is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR OF NUTRITION** specializing in physiology or physiopathology. Tenure-track, 9-month appointment, to conduct research (50 percent) in nutrition physiology and teach (50 percent) nutrition. Qualifications include Ph.D. in nutrition or equivalent with an emphasis on pathophysiology or nutrition/disease interactions. Postdoctoral or clinical experience is an asset. Salary commensurate with experience. To apply, send curriculum vitae, university transcripts, and three letters of reference by 1 May 1985 to: **Dr. R. G. Brown, Department of Food Science and Nutrition, University of Massachusetts, Amherst, Mass. 01003.** *An Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT PROFESSOR OF RESEARCH.** Neuro-immunologist with an interest in endocrinology. Experience in hormone physiology and cell culture preferred. Must have funding for salary and research. Position open 1 July 1985. Send curriculum vitae and three references to: **Leslie P. Weiner, M.D., University of Southern California, School of Medicine, Department of Neurology, 2025 Zonal Avenue, Los Angeles, California 90033.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT/ASSOCIATE PROFESSOR OF VETERINARY MEDICINE,** University of Nevada, Reno. A tenure-track, 12-month research appointment, without teaching responsibilities, is available in the School of Veterinary Medicine to conduct a competitive research program related to diseases of livestock. Research and field facilities are available for large domestic animals. Applicants should have a Ph.D. and/or D.V.M. degree with postdoctoral experience and a strong publication record. Position involves working closely with other researchers in an interdisciplinary cell and molecular biology program. Preference will be given to applicants with advanced training in immunology and demonstrated achievement in large animal disease research. Reno is located adjacent to the Sierra Nevada Mountains/Lake Tahoe region and offers exceptional recreational activities. Submit curriculum vitae by 15 May 1985 to: **R. L. Taylor, D.V.M., Chairman, School of Veterinary Medicine, 5305 Mill Street, Reno, Nevada 89502.** *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSOR OF PHARMACOLOGY/TOXICOLOGY

A tenure-track position is available immediately in the Department of Veterinary Physiology and Pharmacology in association with the Purdue University Cancer Center. A Ph.D. with the D.V.M. or M.D. degree and with postdoctoral experience is preferred. The incumbent must develop a strong independent program in cancer research in a traditional or emerging field of therapy and participate in some aspect of an ongoing comparative oncology program whose projects currently include clinical trials, and studies on tumor blood flow, regional chemotherapy, drug delivery systems, predictive chemotherapy and hyperthermia. The teaching load is negotiable. Applications should include research goals, curriculum vitae, and three references.

Applications should be sent by 1 May 1985 to: **Dr. W. A. Tacker, Chairman, Search Committee, Department of Veterinary Physiology and Pharmacology, School of Veterinary Medicine, Purdue University, West Lafayette, Ind. 47907.**

*Purdue University is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR OF TOXICOLOGY.** The Philadelphia College of Pharmacy and Science invites applications for an anticipated tenure-track position in toxicology. Candidates should have a Ph.D. in toxicology, pharmacology, or related sciences. Preference will be given to individuals with postdoctoral experience. Candidates must be capable of mounting a vigorous research program in support of our graduate programs in pharmacology or toxicology. In addition, they must participate in the teaching of undergraduate toxicology and pharmacy students. The position is to be filled on or before 15 August 1985. Applicants should submit curriculum vitae and list of references to: **Dr. Gary L. Lage, Chairman, Department of Pharmacology & Toxicology, Philadelphia College of Pharmacy & Science, 43rd Street and Kingsessing Mall, Philadelphia, Pa. 19104.** *Equal Opportunity/Affirmative Action Employer.*

### VISITING ASSISTANT PROFESSOR UNIVERSITY OF MONTANA

Applications are invited for a 1-year sabbatical replacement position. During the three academic quarters, applicants must be able to teach one course each in fisheries and invertebrate zoology, and to teach a course in four of the following areas: general zoology, aquatic biology, community ecology, biology and society, seminar in specialty. Review to begin 1 May 1985, until position is filled. Send application letter, transcripts, and three letters of reference to: **John F. Tibbs, Chair, Department of Zoology, University of Montana, Missoula, Montana 59812.** *Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT RESEARCH IMMUNOLOGIST.** Candidate should have at least 2 years of postdoctoral experience in cellular immunology. Experience in mouse tumor immunology desirable. Demonstrated ability to conduct independent research is essential. Salary will be commensurate with qualifications. Applicants should submit curriculum vitae, brief statement of research interests, representative reprints, and names and addresses of three references to: **Dr. S. D. Nathanson, Director, Surgical Research, Education and Research Building, Room 4044, Henry Ford Hospital, 2799 West Grand Boulevard, Detroit, Mich. 48202.**

**Tenure-track ASSOCIATE/ASSISTANT PROFESSOR OF BIOMEDICAL ENGINEERING (BME)** at the Worcester Polytechnic Institute (WPI). WPI offers the M.S. and Ph.D. degrees in BME and the M.S. in clinical engineering. Close cooperation exists with the University of Massachusetts Medical School, local hospitals, and the Massachusetts Biotechnology Research Park, with shared instrumentation including a proposed major center for magnetic resonance imaging. Ph.D. in BME or a related discipline required. Preferred areas of specialization are: biomedical imaging and signal processing, application of optics to biomedicine, but all specialties will be given consideration. Applicants should be interested in developing a strong research program and be committed to quality teaching. WPI is located near the heart of the high technology focus of New England yet offers opportunities for urban, suburban, or rural lifestyles as well as varied winter and summer recreational activities. Send résumé, statement of professional interests, and names of three or more references to: **Dr. Robert A. Peura, Coordinator, BME, WPI, Worcester, Mass. 01609.** Telephone: 617-793-5447. *WPI is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**BRANDEIS UNIVERSITY**—The Department of Chemistry invites applications for a tenure-track **ASSOCIATE OR ASSISTANT PROFESSOR** position, effective September 1986. We seek outstanding individuals in any field. Applications are particularly welcome from those whose research overlaps two or more of the areas of physical, organic, and inorganic chemistry, or who apply those disciplines to problems involving macromolecules, materials science, or biologically significant systems. Established scientists should submit a letter of application and appropriate supporting material. Applicants for the junior position should send curriculum vitae and a statement of research plans, and should arrange for the submission of three letters of recommendation. All material should be received by 15 April 1985. Send application to: **Professor Irving Epstein, Chairman, Department of Chemistry, Brandeis University, Waltham, Mass. 02254.** *An Equal Opportunity/Affirmative Action Employer.*

The Applied Mathematical Sciences Program at the Ames Laboratory is seeking individuals at various levels (**ASSOCIATE MATHEMATICIAN TO SENIOR MATHEMATICIAN**) to conduct research in applied inverse problems or numerical PDE's. Applicants must have experience in both analytical and numerical aspects of inverse problems, or numerical solutions of partial differential equations with emphasis on interface/front tracking. Ph.D. in applied mathematics or related area required. Competitive salary; excellent computing environment. Deadline for applications, including the names of three references, is 12 April or until the positions are filled. Submit résumé to: **Ames Laboratory Personnel Office, 127 Spedding Hall, Iowa State University, Ames, Iowa 50011; attention: Robert Krueger.**

*An Equal Opportunity/Affirmative Action Employer, M/F/V/H*

**ASSOCIATE VICE CHANCELLOR OF GRADUATE SCHOOL AND DIRECTOR, OFFICE OF RESEARCH SERVICES.** The University of North Carolina at Chapel Hill seeks an academically and administratively experienced individual with a record of distinguished research achievement, for a new administrative position available May 1985. Responsibilities include innovatively aiding development of faculty research programs for fostering the University's research relationships with the public and private sectors, facilitating technology transfer of research results, and managing the administrative review and processing of extramural research proposals. Salary will be competitive. *Women and minority candidates are encouraged to identify themselves voluntarily.* Applicants should send résumé and statement of research and administrative experiences, and arrange for four letters of reference to be sent to: **Dr. Royce W. Murray, Search Committee Chairman, Graduate School, 202 South Building 005A, University of North Carolina, Chapel Hill, N.C. 27514.** Review of applications will begin 15 April 1985.

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

**BIOCHEMIST—MOLECULAR ENDOCRINOLOGIST.** Research assistant professor, research associate, and postdoctoral research positions available for studies related to biochemistry of reproduction. Emphasis is on mechanism of hormone action, receptor purification and chemistry, hormone binding inhibitors, and related program areas. Ph.D. in biochemistry preferred. Postdoctoral (NIH) training grant positions in reproductive endocrinology also available. Please forward curriculum vitae, general statement of research experience/interests, and names of three references to:

**Dr. Leo E. Reichert, Jr.**  
Professor and Chairman  
Department of Biochemistry  
Albany Medical College of Union University  
Albany, New York 12208

*Albany Medical College is an Equal Opportunity Employer.*

**BIOLOGICAL OCEANOGRAPHER.** Applications are invited for a tenure-track assistant professorship to begin August 1985. Applicants must have a Ph.D. and a research specialization in zooplankton biology. We are particularly interested in expertise in microzooplankton research. Submit curriculum vitae, selected reprints, letter of application describing research interests, and names and addresses of three references by 15 April to: **Professor R. L. Iverson, Department of Oceanography, Florida State University, Tallahassee, Fla. 32306.** *An Equal Opportunity/Affirmative Action Employer.*

## NATIONAL SCIENCE FOUNDATION (NSF)

NSF's Division of Cellular Biosciences is seeking qualified applicants for positions which periodically become available. These positions are filled on a one- or two-year rotational or temporary basis. The per annum salary range for these temporary positions is \$52,262-\$67,940. The salary range for rotator positions is \$45,000 to \$70,000 (currently limited by statute to \$68,700). The rotator candidate receives a leave of absence from his/her employer and salary is set in accordance with NSF Circular No. 167, Rotator Program. The programs to be filled are:

- **Cell Biology**—includes research directed toward understanding the mechanisms underlying the growth, division, and functions of prokaryotic and eukaryotic cells.
- **Cellular Physiology**—includes areas of cellular function related to plant or animal hormones, immunobiology, or muscle physiology.
- **Developmental Biology**—focuses on the basic mechanisms underlying development throughout the life span of animals, plants, and microorganisms.
- **Regulatory Biology**—includes those areas of tissue, organ, and organismal physiology and endocrinology that explain the initiation, integration, and regulation of animal functions.

Applicants should have a Ph.D. or equivalent experience. In addition, 6 to 8 years of successful research and/or research administration experience pertinent to the position and a broad understanding of current research in those areas of biology covered by the Division of Cellular Biosciences are required.

For information on how to apply call Catherine Handle, 202/357-7840. Hearing impaired individuals should call 202/357-7492.

For technical information about these positions call Dr. Mary E. Clutter, Division Director, 202/357-7905. NSF is an Equal Opportunity Employer.

## POSITIONS IN MARINE POLICY

The Marine Policy and Ocean Management Center (MPOM) of the Woods Hole Oceanographic Institution (WHOI) seeks applicants for 1-2 positions at the Social Scientist and/or Senior Social Scientist levels. These Scientific Staff positions will become available mid 1985.

These positions will be filled by professionals with experience in marine policy research and having professional training in the social sciences, law, economics, or natural sciences.

Appointment as a Social Scientist will be given to an individual who (a) holds a Ph.D. Degree and has sufficient experience to do independent research, and (b) regardless of degrees held, has demonstrated qualities to conduct independent social or policy studies of high quality. These qualities should include: the capacity to identify significant questions concerning marine affairs; the ability to formulate and carry out programs to answer these questions; the ability to exercise judgement and discrimination in the interpretation of results; and finally, the motivation to present the results to the judgement of others through lectures and publications. Experience beyond the Ph.D. is expected.

Appointment as a Senior Social Scientist will be awarded to an individual who has shown continued excellence in research, or otherwise demonstrated a high level of performance in the study of marine affairs. These contributions should have gained the individual a significant international reputation. A Senior Social Scientist is responsible, not only for initiating and conducting independent studies, but also is expected through example, influence and advice, to promote the highest standards within the Institution and to be closely involved in planning the future development of social and policy studies within the Institution.

Both Social Scientists and Senior Social Scientists are expected to pursue independent activities and, with the advice and assistance of MPOM, raise necessary research funds. This may involve collaboration with others in MPOM, elsewhere in the Institution or other Institutions.

For further information and application forms please contact Personnel Manager, Box 54P, Woods Hole Oceanographic Institution, Woods Hole, MA. 02543. Salary will be based on qualifications and experience. Application deadline is 15 June 1985.

*An Equal Opportunity Employer M/F/H.*

## Section Leader of Molecular Pharmacology

Nova Pharmaceutical Corporation, a newly formed company dedicated to the discovery of novel therapeutic entities using the most current techniques, has an immediate opening for a Section Leader of Molecular Pharmacology with at least five years of postdoctoral training. The ideal candidate would be familiar with receptor binding, adenylate cyclase, PI turnover, Quin II and quantitative autoradiography methodology. The ability to initiate and conduct, or to direct, goal-oriented research within a team framework, and a proven publication record, are essential. Pharmaceutical industry experience is preferred. This individual will supervise four Ph.D. and twelve B.S. level scientists.

Nova occupies new facilities at the Francis Scott Key Medical Center in Baltimore, and has strong intra-campus links with The Johns Hopkins University, N.I.D.A., and N.I.A. Nova has a full complement of chemical, biochemical, and pharmacological support personnel.

Nova offers competitive salaries and an excellent benefits package. For further information, please submit a current resume with salary requirements to: **Ms. Lydia Cumor, Personnel Manager, Nova Pharmaceutical Corporation, 5210 Eastern Avenue, Baltimore, MD 21224-2788.** An Equal Opportunity/Affirmative Action Employer.



## DIRECTOR, CLINICAL PATHOLOGY Pharmaceutical Research

The Warner-Lambert/Parke-Davis Pharmaceutical Research Division has an immediate opening for a Director of Clinical Pathology within the Pathology and Experimental Toxicology Department. Warner-Lambert/Parke-Davis, a worldwide leader in drug discovery and development, is located in Ann Arbor, Michigan adjacent to the University of Michigan.

The successful candidate will direct the activities of the clinical biochemistry laboratory, clinical hematology laboratory, biochemical toxicology laboratory, and the cellular pathology laboratory. This person will play a key role in the department management team.

The requirements for this position include a PhD in Clinical Biochemistry or Clinical Pathology, with 8-10 years experience in pharmaceutical toxicology, clinical pathology, and biochemical toxicology; expertise in research reporting; supervision of scientific personnel, and an active publication record is essential. Board certification in Clinical Chemistry, Clinical Pathology, Toxicology or equivalent is required.

Our outstanding scientists enjoy competitive compensation benefits and life style. Qualified applicants may send resumes, reference list and salary requirements in confidence to: **Ms. M. Wolin, Sr. Human Resources Representative, WARNER-LAMBERT/PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, MI 48105.** An Equal Opportunity Employer M/F/H.

**WARNER  
LAMBERT**

## PRESIDENT

Nominations and applications are invited for the position of President of the **Oregon Graduate Center**. The President is responsible for all aspects of the Center and reports to the Board of Trustees. OGC is a rapidly expanding private, non-profit scientific research center and graduate school offering the Masters and Ph.D. degrees. The annual budget exceeds \$8 million.

**Qualifications:** A Ph.D. in the physical sciences or engineering and five years experience in a senior level administrative position in an academic or industrial environment. Must evidence expertise in multi-faceted management methods and have attained a professional reputation within own area of expertise.

**Salary:** Commensurate with qualifications and experience.

**Application:** Nominations should include address and telephone number of nominees. Applications should include letter of interest, complete resume, appropriate supporting materials and names and addresses of three references. Closing date for receipt of applications is **May 31, 1985**.

Please send nominations and applications to:

Jefferson J. Davis, Chairman  
Presidential Search Committee  
Oregon Graduate Center  
19600 N.W. Von Neumann Drive  
Beaverton, OR 97006-1999

An Equal Opportunity/  
Affirmative Action Employer M/F/H/V

## Postdoctoral Scientist Medicinal Chemistry

The Department of Medicinal Chemistry of Smith Kline & French Laboratories is seeking a Postdoctoral Scientist to work in an environment designed to foster innovative research and promote personal and professional growth. Publication of research findings in leading journals and full interaction with the scientific community are strongly encouraged.

Our postdoctoral appointment is for one year and with mutual agreement are renewable for a second year.

The successful candidate will:

- Participate in the design and synthesis of agents that modulate drug and neurotransmitter receptors particularly those in the cardiovascular and gastrointestinal systems.
- Interact closely with scientists of various disciplines involved in the drug discovery process.
- Apply the principles of organic chemistry and molecular modeling to derive structure-activity correlations.

Candidates are required to have:

- A Ph.D. in Medicinal or Organic Chemistry with 0 to 2 years postdoctoral experience.
- Practical knowledge of modern spectral and chromatographic techniques.
- Excellent oral and written communication skills.

Preference will be given to those with some formal training in pharmacology, physiology or related biological sciences. An interest in the relationship between chemical structure and biological activity is essential.

We offer an excellent salary, benefits and relocation package. Please forward your C.V. to George P. Kissell Jr., Senior Employment Consultant, Smith Kline & French Laboratories, 1560 Spring Garden Street, Philadelphia, PA 19101.

We are an Equal Opportunity Employer, M/F/H/V

**SK&F**  
A SmithKline Beckman Company

## POSITIONS OPEN

**BIOLOGY**, assistant professor. Plant biologist broadly trained and an outstanding teacher for a 1-year contract (with possible extension to 2 years) beginning fall term 1985. Team teach one introductory course per term with experienced faculty (for example, ecological biology, cell biology, and genetics) and teach one upper-level course or seminar alone each term (for example, evolution, plant kingdom). Submit curriculum vitae, transcripts, letter indicating teaching interests, and three letters of reference to: **Dr. John Iverson, Earlham College, Richmond, Ind. 47374**. Application review will begin 1 May. *Women and minorities are particularly encouraged to apply. Affirmative Action/Equal Opportunity Employer.*

**CHAIR, DEPARTMENT OF PHARMACOLOGY.** The University of North Carolina at Chapel Hill seeks applicants for chair of its Department of Pharmacology. We seek an individual who has demonstrated leadership in both research and education, and who is compatible with a well-established, dynamic department. Applications should be accompanied by curriculum vitae and sent to: **P. Frederick Sparling, M.D., Chair, Pharmacology Search Committee, Department of Microbiology, 804 Faculty Laboratory Office Building, 231H, University of North Carolina, Chapel Hill, North Carolina 27514**. Applicants are encouraged to apply by 1 May 1985. *The University of North Carolina is an Affirmative Action/Equal Opportunity Employer.*

**CHAIRMAN, DEPARTMENT OF PHARMACOLOGY.** Kirksville College of Osteopathic Medicine invites applications and nominations for the position of chairman. Applications will be accepted through 30 June 1985.

Qualifications include: Ph.D. or equivalent degree in pharmacology or related basic science discipline; a sincere commitment to success in attracting extramural funding; previous administrative experience desired; leadership ability.

Prospective applicants should submit a letter, current curriculum vitae, and the names of three professional references. Applications, nominations, or requests for additional information should be submitted to:

Allen W. Jacobs, D.O., Ph.D.  
Associate Dean for Academic Affairs  
Kirksville College of Osteopathic Medicine  
800 West Jefferson  
Kirksville, Mo. 63501

*Kirksville College of Osteopathic Medicine is an Affirmative Action/Equal Opportunity Employer.*

**CHAIR/HEAD**, Department of Pharmacology—Marshall University School of Medicine, Huntington, West Virginia, announces a search for a chair/head of its Department of Pharmacology. The chair/head has primary responsibility for providing leadership and direction to the faculty of the department in the development, implementation, and evaluation of curriculum in undergraduate and graduate medical education and in conduct of research programs. Candidates should have the degree of M.D. and/or Ph.D. and have a strong commitment to teaching and significant accomplishments in research. Candidates with the degree of M.D. will have a joint appointment in the Department of Internal Medicine and administrative appointment as chief of the Section of Clinical Pharmacology. The position is available 1 July 1985. Salary is competitive. For full consideration, application should be received by 10 May 1985. Interested individuals should send curriculum vitae and names of four references to: **Robert B. Belshe, M.D., Chair, Search Committee for the Chair of the Department of Pharmacology, Marshall University School of Medicine, Department of Medicine, Huntington, West Virginia 25701**. *The Marshall University School of Medicine is an Affirmative Action/Equal Opportunity Employer.*

**DERMATOLOGIST**—The Department of Dermatology, University of Michigan Medical School, is searching for a new faculty member, instructor or assistant professor, with or without clinical title. The primary responsibility will be to staff satellite clinics run by the Department of Dermatology in southeast Michigan. Significant teaching and research is expected. The positions will be available 1 July 1985. Address applications, including curriculum vitae, to: **John J. Voorhees, M.D., Professor and Chairman, Department of Dermatology, University of Michigan Medical School, C-2064 Outpatient Building, Ann Arbor, Michigan 48109-0010**. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

## POSITIONS OPEN

### CHANCELLOR HEALTH SCIENCES CENTER UNIVERSITY OF COLORADO

The University of Colorado Health Sciences Center in Denver, which includes the Schools of Dentistry, Medicine, and Nursing, as well as the University Hospitals, is seeking a chancellor. That individual will be the chief academic and administrative officer of the campus, and will report directly to the President of the University and the Board of Regents.

An earned doctorate or equivalent degree is desirable, as well as experience in scientific and/or health-related activities. Candidates must possess outstanding leadership qualities in the areas of education, research, and delivery of health care. An understanding of the environment of a public educational institution is essential. Applications should be accompanied by complete curriculum vitae as well as a list of references with addresses.

Nominations and applications must be received by 30 April 1985 and should be sent to:

Stuart A. Schneck, M.D., Chairman  
Chancellor's Search Committee  
University of Colorado Health Sciences Center  
4200 East 9 Avenue, Box C-269  
Denver, Colorado 80262

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

### COORDINATORS OF PUBLIC PROGRAMS (Two Positions)

**MESA (Mathematics, Engineering, Science Achievement)** is a \$2-million program that delivers educational services to underrepresented minorities in California schools and universities, ensuring that these students successfully prepare for and major in math-and-science-related fields. As members of MESA's senior staff, coordinators will participate in policy discussions, proposal development, budget decisions, goal-setting, and implementation of program policies through regular site visits to MESA's Regional Centers. The **COORDINATOR OF POST-SECONDARY MESA PROGRAMS** will provide direction and support services to 15 MESA Post-Secondary Centers. The **COORDINATOR OF MESA PRE-COLLEGE PROGRAMS** will provide direction and support services to 16 MESA Pre-College Centers. These Coordinators will interact with other statewide and MESA Centers staff, faculty, industry representatives, and community organizations on activities that impact MESA programs. Salary range is from \$34,500 to \$37,900.

Qualifications: teaching/administrative experience at appropriate level. Advanced degree, preferably with major in mathematics or science. Experience in working with the broad constituency with which MESA interacts.

Submit letter of application, curriculum vitae, and three references to the following. Requests for additional information concerning these positions may also be submitted to:

Dr. Marjorie Gardner  
Chair, Search Committee  
Lawrence Hall of Science  
University of California  
Berkeley, California 94720

Application deadline: 26 April 1985.

### FACULTY POSITION, PROGRAM IN PROTEIN STRUCTURE AND DESIGN UNIVERSITY OF MICHIGAN

Applications are invited for a tenured or tenure-track position associated with the newly established interdepartmental Program in Protein Structure and Design. Candidates must be experienced in the application of NMR and 2D-NMR spectrometry to the 3D structure of proteins and related macromolecules and have a strong research program in this field. A faculty appointment will be given in the Department of Physics, Chemistry or Biological Chemistry with a joint research appointment in the Biophysics Research Division. Salary and professional rank will be commensurate with experience. Interested candidates should send, by 22 May 1985, curriculum vitae documenting qualifications and professional accomplishments and the names and addresses of three references to:

Professor Richard H. Sands  
Chairman, Search Committee  
745 Dennison Building  
University of Michigan  
Ann Arbor, Mich. 48109

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

# Analytical, Physical And Structural Chemistry

In preparation for its move into a new, state-of-the-art research complex located in the Philadelphia suburbs near Valley Forge, PA, the Analytical, Physical, and Structural Chemistry Department of Smith Kline and French Laboratories is seeking first class scientists to fill the following positions.

## ASSOCIATE DIRECTOR

An Associate Director responsible for directing the operation of the Analytical Technology Section consisting of 25 staff members engaged in methods development and impurity profiling of pharmaceutical compounds and intermediates. The Section deals with all aspects of analytical work and includes a semi-preparative chromatography laboratory for preparation of reference standards. This Section also has responsibilities for the evaluation of peptides and genetically engineered proteins for which it is equipped with state-of-the-art amino acid analysis and sequencing equipment. The successful candidate will have a Ph.D. in Analytical/Bioanalytical Chemistry with a minimum of 10 years industrial experience (or an equivalent combination of academia and industry). This position reports to the Director of AP&S Chemistry.

## PEPTIDE/PROTEIN CHEMISTRY

**SENIOR INVESTIGATOR** - The successful Chemist/Biochemist will have a strong background in protein characterization and analysis and assume responsibility for a staff of 4 engaged in sequencing and method development for peptide and protein biopharmaceutical compounds.

**ASSOCIATE SR. INVESTIGATOR** - A Chemist/Biochemist with 1-3 years peptide and/or protein characterization experience.

**ANALYTICAL CHEMIST** - A Chemist/Biochemist experienced in the evaluation of peptides and proteins using chromatographic and electrophoretic methods.

## GAS CHROMATOGRAPHY

**ASSOCIATE SR. INVESTIGATOR** - strong experience in gas chromatography for supervising several scientists engaged in developing methods and impurity profiling. Experience in trace analysis, use of capillary columns and derivatization techniques essential. Bioanalytical experience an asset.

**ANALYTICAL CHEMIST** - experience with capillary columns and selective detectors; capable of trouble shooting and maintaining gas chromatographic equipment.

## LIQUID CHROMATOGRAPHY

**SENIOR INVESTIGATOR** - 3 years pharmaceutical industry experience performing L.C. methods development and validation. A strong background in automation and familiarity with the requirements of the regulatory agencies essential.

**ANALYTICAL CHEMIST** - experience with all modes of HPLC operation and techniques for methods development.

## CHEMICAL ANALYSIS

**ANALYTICAL CHEMIST** - experience in general chemical analysis involving ion chromatography, ion selective electrodes, titrimetry, etc.

## DATA SYSTEMS

**DATA SYSTEMS MANAGER** - Scientist with a BS or MS Chemistry and demonstrated interest in the area of computer data acquisition/handling to manage an HP-1000 (CIS) data system. Preferred experience in RTE-6 operating system, CIS data acquisition software, HPLC, GC.

## POSITION REQUIREMENTS

**SENIOR INVESTIGATOR** - Ph.D. in Chemistry or related discipline with a minimum of several years experience.

**ASSOCIATE SENIOR INVESTIGATOR** - Ph.D. in Chemistry or related discipline with a minimum of one year experience.

**ANALYTICAL CHEMISTS** - BS or MS in Chemistry with experience.

SK&F Laboratories offers an excellent salary, benefits, and relocation package as well as the opportunity for personal and professional growth. Please forward your resume to George P. Kissell, Sr. Employment Consultant, Smith Kline & French Laboratories, a Division of SmithKline Beckman Corporation, 1598 Spring Garden Street, Phila., PA 19101. We are an equal opportunity employer, M/F/H/V.

**SK&F**  
A SmithKline Beckman Company

## POSITIONS OPEN

### CYTOGENETICIST, Ph.D. or M.D.

We are seeking a human cytogeneticist with a strong clinical background to direct a large cytogenetics testing center. The position requires the technical expertise to analyze karyotypes derived from peripheral bloods, bone marrow, amniotic fluid, and solid tissue. Applicants should possess the skill to manage a staff of 18 to 20 technicians in a commercial laboratory setting. American Board of Medical Genetics certification or eligibility is required. Send curriculum vitae to:

Dana Procsal, Ph.D.  
SmithKline Bio-Science Laboratories  
7600 Tyrone Avenue  
Van Nuys, Calif. 91405

*Equal Opportunity Employer, M/F/V/H*

**ECOSYSTEMS ECOLOGIST. UNIVERSITY OF KANSAS, ENVIRONMENTAL STUDIES PROGRAM.** Visiting assistant professor. Ph.D. required. One-year position, renewable up to 3 years. New tenure-track position anticipated in 3 years. Ability to teach in environmental studies and specialty course. Development of an active research program expected. Suitable specialties include plant-animal interactions, ecosystems modeling, nutrient cycling or decomposition processes. Environmental studies teaching experience and/or postdoctoral research experience preferred. Send curriculum vitae, reprints, statement of goals, and three letters of recommendation by 19 April 1985 to: **Dr. Edward A. Martinko, Director, Environmental Studies Program, 224 Snow Hall, The University of Kansas, Lawrence, Kansas 66045.**

### SCHOOL OF MEDICINE IN PUERTO RICO

Seeks—Faculty for Biochemistry, Pharmacology, and Physiology

A School of Medicine requests applications for professors in the above fields. Positions will be on a temporary basis for 2 to 3 months per year when the medical students will be requested to take the courses. Teaching will be mostly during winter and summer months. Appointments will be made based on number of days required per course. Applicants could continue teaching the course during subsequent years. Classes consist of 50 medical students.

Professors will receive travel expenses and salaries according to qualifications and experience.

Please write to:

School of Medicine  
G.P.O. Box 71365  
San Juan, P.R. 00936-7365

**THREE FACULTY POSITIONS** (assistant or associate professor) for candidates with at least 2 years of postdoctoral experience are available for 1 July 1985. Persons with research interests in cardiovascular physiology (emphasis on blood flow to reproductive tissues), smooth muscle physiology (emphasis on cellular basis of uterine contractility), and renal cell mechanisms are preferred. Responsibilities include participation in medical and graduate teaching commitments of the department. Salaries competitive.

Send inquiries along with curriculum vitae and names of three references to: **Dr. Gerald J. Pepe, Chairman, Department of Physiology, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, Virginia 23501.**

*Eastern Virginia Medical School is an Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITION AVAILABLE NEUROSCIENTIST**—single investigator or team—involved in biochemistry, cell biology, or molecular genetics related to Parkinson's disease, other movement disorders, or diseases of aging brain. Must have grant support. *Department of Neurology, Columbia University College of Physicians and Surgeons, is an Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae to: **Dr. Stanley Fahn, Coordinator, Search Committee, Neurological Institute, 710 West 168 Street, New York, N.Y. 10032.**

**POSITION AVAILABLE: RESEARCHERS IN MYOCLONUS.** A faculty position in the Department of Neurology, Columbia University College of Physicians and Surgeons, is available for an investigator in the field of myoclonus. Must have shown evidence of research productivity. Assistant professor level, depending on credentials. Contact: **Stanley Fahn, M.D., Neurological Institute, 710 West 168 Street, New York, N.Y. 10032. Telephone: 212-694-5277. Columbia University is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### FACULTY POSITIONS: MOLECULAR BIOLOGISTS

The Department of Infectious Diseases, College of Veterinary Medicine, University of Florida, has two tenure-track positions for molecular biologists:

- 1) **Associate/Assistant Professor (VM-8501):** Application deadline is 6 May 1985. Dr. Daryl Buss, Search Committee Chairperson.
- 2) **Assistant Professor (VM-8502):** Application deadline is 6 May 1985. Dr. Daryl Buss, Search Committee Chairperson.

Successful candidates will be expected to set up a molecular biology unit to work on the molecular structure and function of microbial and parasitic pathogens and to collaborate with existing faculty in the development of novel vaccines against infectious diseases of veterinary importance. Applicants must have a Ph.D. degree with postdoctoral experience in molecular biology. Salary is negotiable and will be determined by the training, experience, and rank of the successful candidate. Applications should include curriculum vitae outlining academic training, citizenship, research and teaching experience, a list of publications, a statement of professional goals, and the names and addresses of three persons who can provide letters of reference, and they should be sent to:

Search Committee Chairperson  
University of Florida  
College of Veterinary Medicine  
Box J-125, JHMHC  
Gainesville, Fla. 32610

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

**FOREST PATHOLOGIST.** Tenure-track position to be filled for the 1985-1986 academic year at assistant professor level, Department of Botany and Plant Pathology, University of Maine, Orono. Teaching responsibilities will include a professional-level course in forest pathology, an upper-division or a graduate course in the field of specialty, and advising undergraduate and graduate students. The individual will be expected to develop an outstanding research program in one of the following forest pathology areas: host-pathogen interactions, genetics and/or molecular biology of disease resistance, or mechanisms controlling virulence. The position requires an earned Ph.D. and at least one advanced degree in forest pathology. Preference will be given to applicants with strong research training in modern experimental methods and postdoctoral experience. Submit curriculum vitae, transcripts, a statement of research plans, an outline of teaching experience, and three letters of reference by 3 May 1985 to: **Dr. Stellos M. Tavantzis, Chairman, Forest Pathology Search Committee, Department of Botany and Plant Pathology, University of Maine, Orono, Maine 04469.** *An Equal Opportunity/Affirmative Action Employer.*

**TEXAS—GROSS ANATOMY.** Full-time position at assistant/associate professor level available 1 July 1985. Responsibilities, in addition to maintaining an active research program, include instruction in gross anatomy (total body) for dental students, and teaching dental hygiene and graduate students. Ph.D. degree with training in gross anatomy required. Postdoctoral training, record of research and research funding, and teaching experience preferred. Rank and salary commensurate with qualifications. Send curriculum vitae and names and addresses of three references by 1 June to: **Dr. Patricia L. Blanton, Chairman, Department of Gross Anatomy, Baylor College of Dentistry, 3302 Gaston Avenue, Dallas, Texas 75246. Equal Opportunity/Affirmative Action Employer.**

**ST. GEORGE'S UNIVERSITY, SCHOOL OF MEDICINE,** has openings for experienced **LECTURERS** in:

**BIOCHEMISTRY  
NEUROANATOMY  
PHARMACOLOGY  
PHYSIOLOGY**

Prior medical school teaching experience is required. Initial appointments are for 1 year, with renewals possible for periods of 1 to 3 years. Applications will be considered for candidates anticipating a sabbatical leave, or from recent retirees in good health. Level of appointment will depend on the background of applicants. Send curriculum vitae and teaching references to:

Dr. David Brown  
Dean of Pre-Clinical Faculty  
St. George's University, School of Medicine  
Grenada, West Indies

## POSITIONS OPEN

**GEOLOGIST** as visiting professor to teach introductory level courses in geology, field-oriented geology, paleontology, and so forth. One year, half-time appointment (2 days) starting September 1985. Please send curriculum vitae and three recommendations by 15 April to: **Dr. J. L. Kent, Sarah Lawrence College, Bronxville, N.Y. 10708. Affirmative Action/Equal Opportunity Employer. Minorities and women encouraged to apply.**

### MOLECULAR BIOLOGIST

The Diabetes Unit at the Massachusetts General Hospital seeks a research associate with experience in recombinant DNA techniques, DNA sequencing, cloning, and expression of genes. A protein microsequencing facility is operative within the laboratory. Synthetic peptides and oligonucleotides are available via an adjacent core facility. The laboratory is focused on the role of protein phosphorylation in the actions of insulin and peptide growth factors. Salary and rank are commensurate with experience. Send curriculum vitae and three letters of support to: **J. Avruch, Chief, Diabetes Unit, Massachusetts General Hospital, Boston, Mass. 02114.**

### MOLECULAR BIOLOGIST

New, privately funded research unit with a strong protein biochemistry emphasis is seeking a qualified investigator to establish a program to study connective tissue protein genes. The successful candidate will have a record of vigorous independent research utilizing recombinant DNA technology. Direct experience with the collagens preferred. This position is permanent and available fall 1985. Interested individuals should send current curriculum vitae and three references to:

Dr. Robert Burgeson  
Research Unit  
Shriners Hospital for Crippled Children  
3101 Southwest Sam Jackson Park Road  
Portland, Ore. 97201

### TWO TENURE-TRACK POSITIONS

The **DEPARTMENT OF PHYSIOLOGY** in the Medical School wishes to fill two tenure-track positions. The level is negotiable depending on experience and on research support, but one will likely be at the assistant professor level. There is also an opportunity for a joint appointment at the **Dalton Research Center.** The Department of Physiology and Dalton Research Center have recently been recommended for enhancement of their programs by the University. Our focus in this recruitment is on membrane biophysics, and on cellular and molecular biology which can interact with well-established programs in cardiovascular physiology and pathophysiology (hypertension, coronary occlusive disease). Each successful applicant will be expected to establish an independent laboratory, either in the Department of Physiology or at the Dalton Research Center or a combination of both. Other duties will include teaching in the medical physiology course and at the advanced graduate level. This recruitment is part of a long-range effort to develop a multidisciplinary program in cardiovascular studies. Salary and start-up funds will be competitive.

Send current curriculum vitae to:

Dr. Allan W. Jones  
Department of Physiology  
M412, Medical Sciences Building  
University of Missouri  
Columbia, Missouri 65212

by 26 April 1985.

*The University of Missouri is an Equal Opportunity Employer.*

**PHYSIOLOGY.** The University of Wisconsin-Madison, Department of Physiology, has a tenure-track junior faculty position available. Applications are invited from persons with postdoctoral experience and a demonstrated interest in cellular or molecular physiology. Applications are particularly encouraged from persons with expertise in the neurosciences. Duties include both graduate and undergraduate teaching and the establishment of an independent research program. Interested candidates should submit curriculum vitae, complete bibliography, a statement of research interests, and have letters of reference from three individuals sent to: **Richard C. Wolf, Department of Physiology, University of Wisconsin-Madison, 1300 University Avenue, SMI, Madison, Wis. 53706.** To receive full consideration, applications should be received by 1 May 1985. Search will remain open until a suitable candidate is found. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

## Chairperson

### Department of Physiology and Biophysics

#### SUNY Stony Brook

SUNY Stony Brook invites applications (and nominations) for the position of Professor and Chairperson of the Department of Physiology and Biophysics. The candidate should have a vital commitment to academic excellence and national recognition for scholarly accomplishments.

Interested persons should send curriculum vitae and other pertinent information to Harry Fritts, MD, Professor and Chairman, Department of Medicine, SUNY Stony Brook, Health Sciences Center, Stony Brook, NY 11794.

SUNY Stony Brook is an affirmative action/equal opportunity educator and employer. AK# 43-85.

## DIRECTOR

### Scientific Research Institute

Fisheries and Oceans Canada seeks a highly qualified Marine Scientist with an established scientific reputation and proven management skills to provide leadership for the Maurice Lamontagne Institute. The physical plant of the Institute, now under construction near Mont Joli, Quebec, on the south shore of the St. Lawrence, will provide a first class facility for undertaking fisheries and oceanographic research and surveys for the Gulf of St. Lawrence, the St. Lawrence estuary and Hudson and Ungava Bays.

A nucleus of research staff presently located in Quebec City will transfer to the new Institute when it opens, August 1986.

The most challenging and truly unique opportunity offered by this position is a

chance to build a research team for a world class research facility. This task will be facilitated, in part, by the candidate's personal reputation as a marine scientist and manager.

The successful candidate must possess not only fluent but also effective communication skills in both French and English and be equally at ease in government, university and industry environments.

The position offers an attractive remuneration package which is commensurate with its executive level.

If you qualify for this position, please write to Mr. Yvon Tremblay, Peat, Marwick et Associés, 1155 Dorchester Blvd. West, Montreal, Quebec, H3B 2J9, or telephone (514) 879-3205.



Member: Canadian Association of Management Consultants

## Cardiovascular Pharmacologist/ Physiologist In Vivo Hemodynamic

Berlex Laboratories, Inc. is a rapidly growing wholly owned subsidiary of Schering AG West Germany. The pharmaceutical R&D division, located in Northern New Jersey, has an immediate opening for an entry level Ph.D. in pharmacology or physiology with training/experience in **In Vivo Hemodynamic Studies** to participate in the discovery and development of novel therapeutic directions for the treatment of **Cardiovascular Disease**. The successful candidate should possess up to two years of postdoctoral experience, excellent communication skills and effective interpersonal skills. (Schering AG West Germany is not affiliated with Schering Plough of Kenilworth, NJ.)

We provide a competitive salary and benefit package as well as an exceptional environment dedicated to growth and development of both the staff and the Company. Interested candidates are invited to submit resume including salary requirements, to: M.J. Zimmerman, Human Resources Administrator, Berlex Laboratories, Inc., 110 East Hanover Ave., Cedar Knolls, NJ 07927. An Equal Opportunity Employer M/F.

**BERLEX**  
Laboratories Inc.

## NEW JERSEY CENTER FOR ADVANCED BIOTECHNOLOGY AND MEDICINE

## DIRECTOR

The University of Medicine and Dentistry of New Jersey and Rutgers University announce their search for a Director of their joint endeavor, the New Jersey Center for Advanced Biotechnology and Medicine (NJ-CABM). The NJ-CABM will be housed in a new core facility to be built on the shared campus of the Universities. This facility will serve some 20 scientists, their staffs and students, who will conduct basic research in the areas of molecular biology, cell biology and molecular pharmacology. In addition, NJ-CABM will encompass two nearby satellite facilities, which will be devoted to research in the production and separation of cells and cell products and clinical research in pharmacology and metabolism. The programs of the NJ-CABM will be fully integrated with those of the two sponsoring universities. NJ-CABM will also serve the industrial and statewide academic communities of New Jersey through collaborative and educational ventures and by interaction with the Governor's Commission on Science and Technology.

The Director will have broad latitude in and extensive responsibility for the design and conduct of these new programs. This is considered to be a major leadership position in the state's two largest public research-oriented universities. We seek an outstanding scientist with proven administrative skills and creativity to develop a center renowned for scientific excellence, as well as for service to the broad academic and corporate sectors of the State.

Replies should include a statement of interest, a resume and at least three references. They should be addressed to Norman H. Edelman, M.D., Associate Dean for Research, UMDNJ-Rutgers Medical School, P.O. Box 101, Piscataway, NJ 08854. The Universities are equal opportunity employers.

## Anticipated Position

### Director Coastal Ecology Institute Louisiana State University (LSU)

LSU is seeking a director for its Coastal Ecology Institute, a major research division of the university's Center for Wetland Resources. A staff of 25, including 10 Ph.D.'s, 6 of whom are tenured, are employed by the Institute. They are involved in interdisciplinary research focusing on Louisiana's coastal zone but also including a broad range of theoretical and applied projects addressing environmental issues at the regional, national, and international scales.

The successful candidate must be a nationally recognized scientist with a distinguished record of administrative leadership, scholarly activity, and grant-and-contract program development. He or she will be expected to administer existing research programs and develop/conduct new activities, primarily by obtaining support from governmental agencies and the private sector. The appointment is at the level of Associate Professor or Professor, is tenurable, and a joint teaching appointment in the Center's graduate-only Department of Marine Sciences is possible. A Ph.D. in a biological or physical science with a strong interest in applied ecology is mandatory.

Salary is competitive and commensurate with qualifications.

Anticipated approval of the position is July of 1985. Starting date is negotiable, but an appointment as soon after the position is approved as possible is preferred. Applications will be accepted until the position is filled, but are preferred before April 15, 1985. Please include a current curriculum vitae, names of at least three references, and a brief statement of research interests and experience to: **Dr. Jack R. Van Lopik, Dean, Center for Wetland Resources, Louisiana State University, Baton Rouge, LA 70803, (504) 388-6710.**

LSU is an Equal Opportunity Employer.

## Applied bioTechnology Inc.

**Applied bioTechnology**, a growing company specializing in:

- the development of vaccines for the veterinary and human markets
- development of novel products for cancer diagnostics and therapeutics based on oncogene technology

currently has opportunities available for the following:

- **DIRECTOR OF PRODUCT DEVELOPMENT**
- **SENIOR SCIENTISTS**

### ONCOGENES

We are seeking highly-qualified individuals at the Ph.D. level with demonstrated expertise in the analysis of oncogene structure and function. Successful candidates will assume major roles in the direction and development of unique oncogene-based products.

If you are qualified and are interested in a stimulating environment and scientific challenge, combined with competitive salary and benefits plus equity participation, submit your curriculum vitae to: Director of Technology, Applied bioTechnology, Inc., 80 Rogers Street, Cambridge, MA 02142.  
An Equal Opportunity Employer

## POSITIONS OPEN

**NEUROBIOLOGY, ASSISTANT/ASSOCIATE PROFESSOR** (tenure-track). Newly formed Department of Neurosurgery seeks individual to spearhead basic and clinical neuroscientists investigating neural regulation of cerebral vessels and vasospasm. The successful candidate will have experience with combined cellular, molecular, and morphological approaches and the ability to attract outside funding. Send curriculum vitae, statement of research background/goals, and the names of four references by 12 April 1985. **Dr. Michael Shipley, Neurobiology Search, Department of Neurosurgery, University of Cincinnati Medical Center, Mail Location 515, Cincinnati, Ohio 45267-0515. Affirmative Action/Equal Opportunity Employer.**

### NEUROSCIENTIST: JOHNS HOPKINS SCHOOL OF MEDICINE

One or two openings available about July 1985 for Ph.D. or M.D. with background in neurosciences at postdoctoral or instructor level. Areas of investigation: nerve-muscle interactions, acetylcholine receptor turnover, nerve-muscle junction formation. Experience in one or more of: neurophysiology, neuropharmacology, cell culture, receptor metabolism. Reply: **Dr. Daniel B. Drachman, Department of Neurology, Johns Hopkins School of Medicine, 600 North Wolfe Street, Baltimore, Md. 21205.**

**PHYSIOLOGIST.** Tenure-track appointment in the Division of Natural Science & Mathematics, available 12 August 1985, for a broadly trained animal physiologist (Ph.D. required) to teach undergraduate courses in animal physiology, human physiology, human anatomy, and other biological areas. Experience teaching at the college level preferred. Application deadline: 17 April 1985. Submit letter of application, résumé, and three letters of recommendation to: **Personnel Services, Northeastern State University, Tahlequah, Okla. 74464.**

*An Equal Opportunity/Affirmative Action Employer*

**PLANT BIOLOGIST.** Tenure-track, assistant/associate professor. The Department of Biology, University of Colorado, Colorado Springs, seeks a biologist in a forefront area of modern plant science. Teaching responsibilities include participation in team-taught general biology for majors, in physiological and biochemical ecology and advanced work in specialty area. Participation in the development of a graduate program is expected. Preference will be given to individuals with proven research ability and support. Send curriculum vitae, statement of research and career goals, and three letters of recommendation before 12 April 1985 to: **Dr. Robert H. Catlett, Chairman, Department of Biology, University of Colorado, Colorado Springs, Colo. 80933-7150.**

### POSTDOCTORAL ASSOCIATE— STREPTOCOCCAL GENETICS

Position available at the University of Minnesota, 15 May 1985, for one year with possible renewal for one or two additional years. To study plasmid biology in lactic streptococci and use genetic engineering techniques to develop dairy starter cultures. Requires Ph.D. in microbiology, genetics, biochemistry, or related field. Background in gene cloning, recombinant DNA techniques, and microbiology preferred. Competitive stipend plus fringe benefits. Send curriculum vitae and three references to: **Dr. Larry McKay, Department of Food Science and Nutrition, University of Minnesota, 1334 Eckles Avenue, St. Paul, Minn. 55108.** Applications accepted to 26 April 1985 or until position filled. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

**POSTDOCTORAL FELLOW** with interest and some experience in molecular biology (recombinant DNA) to conduct research on gene expression during mammalian spermatogenesis. Position available immediately. Send curriculum vitae and names of three references to: **Dr. Y. M. Bhatnagar, Department of Anatomy, University of South Alabama, College of Medicine, Mobile, Ala. 36688. Telephone: 205-460-6490.**

### POSTDOCTORAL FELLOW OR RESEARCH ASSOCIATE

Positions available to work on cloning viruses which cause a chronic neurological disease. Applicants must have Ph.D. and molecular biology experience. Send curriculum vitae to: **Dr. Raymond Roos, The University of Chicago, Department of Neurology, 5841 South Maryland Avenue, Chicago, Ill. 60637. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

**PLANT NEMATOLOGIST.** Assistant or associate professorial rank. Qualifications include Ph.D. degree in plant pathology, or closely related field. Preference will be given to applicants with research experience. Person employed will be expected to develop an innovative research program on nematode-plant interactions with emphasis on the physiology, molecular biology, and/or genetics of plant-parasitic nematodes. Applications will be received until 15 May 1985 or until a suitable candidate is identified. Forward complete résumé (transcripts, publication list, future research goals, and three references) to: **Dr. W. L. Klarman, Head, Plant Pathology Department, North Carolina State University, Raleigh, N.C. 27695-7616. North Carolina State University is an Equal Opportunity/Affirmative Action Employer.**

**PLANT PHYSIOLOGIST.** Faculty Position. The Faculty of the Department of Biological Sciences, School of Sciences, **SOUTHERN ILLINOIS UNIVERSITY AT EDWARDSVILLE**, anticipates an appointment at the assistant professor level, available September 1985. Duties will include participation in teaching undergraduate botany, plant physiology, or plant genetics courses, and a graduate course in gene cloning. Candidates will be expected to carry out an active research program and to seek outside research funding. Qualifications include a doctoral degree and postdoctoral experience in plant physiology and genetics or a closely related area. Teaching experience will be considered valuable. Closing date for applications is 15 April 1985. Please submit curriculum vitae, three letters of recommendation, copies of recent publications, and a summary of future research plans to:

**Chairman  
Plant Physiologist Search Committee  
Faculty of Biological Sciences  
Southern Illinois University  
at Edwardsville  
Edwardsville, Ill. 62026-1001**

Southern Illinois University at Edwardsville is located in a rural setting, 25 minutes from downtown St. Louis. The campus occupies 2,600 acres and has an enrollment of about 10,000 students. The Department of Biological Sciences has a faculty of 14 members and confers bachelor's and master's degrees.

*An Affirmative Action/Equal Opportunity Employer*

### POPULATION BIOLOGIST/ECOLOGIST

The University of Ottawa, Department of Biology, has a tenure-track position available for appointment during the 1985-1986 academic year. Applications are invited from persons holding a Ph.D. and having relevant postdoctoral experience, and research interests in the general area of population biology/ecology. The successful candidate will be expected to maintain an active, externally funded research program and to contribute to undergraduate and graduate teaching. The appointee will become a member of the Ottawa-Carleton Centre for Graduate Studies and Research in Biology, a cooperative program between the University of Ottawa and Carleton University which includes active collaboration with scientists from several government laboratories. The University of Ottawa is a bilingual institution; the ability to lecture in both French and English immediately on appointment is essential.

Applicants should submit, by 15 April 1985, curriculum vitae and a brief description of teaching interests and future research plans, and should arrange to have three letters of recommendation sent to: **Dr. B. J. R. Philogène, Chairman, Search Committee, Department of Biology, University of Ottawa, Ottawa, Ontario, Canada K1N 6N5.**

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

**POSTDOCTORAL POSITION** available immediately in an active, stimulating, and well-equipped laboratory in New York City for a Ph.D. in biochemistry or microbiology. Research area includes control of gene expression and recombination mechanisms in *Bacillus subtilis*. Techniques include DNA sequencing and recombinant DNA technology. Salary: \$20,000. Send curriculum vitae and names of two references to:

**Dr. David Dubnau  
Department of Microbiology  
Public Health Research Institute  
of the City of New York, Inc.  
455 First Avenue  
New York, N.Y. 10016  
An Equal Opportunity Employer**

# Esso Chemie B.V. seeks electron microscopist.

Esso Chemie B.V. is part of the Exxon Chemical Company, a worldwide operating chemical concern. Esso Chemie B.V. produces and markets an extensive range of chemical products and semimanufactured articles. The company has three manufacturing plants in The Netherlands, where aromatic hydrocarbons, oxide alcohols and plasticizers are produced.

Applications are invited from qualified electron microscopists for a position in the research laboratory of Esso Chemie's Aromatics Technology Division, which is located in Rotterdam, The Netherlands. During 1985, the laboratory will be equipped with a Philips transmission electron microscope EM-420 T and a Philips scanning electron microscope SEM 515.

The successful candidate for this position will help advance catalyst research projects through the characterization of catalytic materials with high resolution scanning and transmission electron microscopy.

To qualify you will have:

- thorough knowledge of and considerable experience with

state-of-the-art high resolution electron microscopic equipment and techniques;

- a PHD, Master's Degree, or the equivalent, in physics or chemistry;
- a keen interest in applying high resolution electron microscopy to catalysis research;
- the enthusiasm and determination to excel in your field through cooperation with other Exxon laboratories in the U.S.A. and academic institutions.

You are not older than 35 years and preferably not older than 30 years.

Employment with Esso Chemie B.V. can be on a permanent basis or a 2 to 3 year contract may be arranged.

## Interested?

Please, send a brief curriculum vitae covering the criteria listed above within one month to Mr. D.B. Vorthoren, Manager Aromatics Technology Division, P.O. Box 7225, 3000 HE Rotterdam, The Netherlands.



## POSITIONS OPEN

**POSTDOCTORAL POSITION IN PHYSICAL OCEANOGRAPHY/RESEARCH CORPORATION, UNIVERSITY OF HAWAII.** A postdoctoral position is available to do research on theoretical and observational aspects of small-scale oceanic motions. The applicant must hold a Ph.D. in physical oceanography or a related field and should have a strong background in fluid and ocean dynamics. Salary will range from \$26,220 to \$30,972, dependent upon qualifications. Application, with curriculum vitae and names and addresses of three references, should be sent to:

**Dr. Peter Muller**  
Department of Oceanography  
University of Hawaii  
Honolulu, Hawaii 96822

*An Equal Opportunity/Affirmative Action Employer.* Deadline for applications is 31 May 1985. Starting date is between 1 June and 1 August 1985.

**POSTDOCTORAL POSITION** available spring 1985 for Ph.D. with training in cellular immunology as part of a multidisciplinary group in the study of autoimmune diseases of the nervous system and mechanisms of viral-induced autoimmunity. Send curriculum vitae and three references to: **Dr. Howard Weiner, Harvard Medical School, Enders Research Building 408, 300 Longwood Avenue, Boston, Mass. 02115.**

**POSTDOCTORAL POSITION** available immediately to determine DNA sequences essential for the transcriptional control of plant heat shock and stress genes. The research involves cloning, in vitro mutagenesis, *Agrobacterium* vector construction, DNA sequencing and transcript mapping. Send curriculum vitae and the names of three references to: **William B. Gurley, Department of Microbiology and Cell Science, 1059 McCarty Hall, University of Florida, Gainesville, Florida 32611.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION IN NEUROENDOCRINOLOGY.** Research will focus on the development of CNS mechanisms involved in the generation of circadian rhythms. Strong background in cell biology and neuroanatomy is desirable. Available spring/summer 1985. Send curriculum vitae and three letters of recommendation to: **Dr. Steven M. Reppert, Children's Service, Massachusetts General Hospital, Boston, Mass. 02114.**

**POSTDOCTORAL POSITION.** One position will be available 1 July 1985 to study molecular aspects of toxinogenesis in *Corynebacterium diphtheriae*. The project will use gene cloning, DNA sequencing, and other molecular methods to study regulation of diphtheria toxin production and mode of action of the toxin. Background in microbial genetics, molecular biology, or biochemistry preferred; knowledge of bacterial pathogenesis helpful. Submit curriculum vitae and names of three references to: **Dr. Randall K. Holmes, Chairman, Department of Microbiology, c/o Personnel Division, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814-4799.** Curriculum vitae will not be returned. *Equal Opportunity/Affirmative Action Employer.*

**TWO POSTDOCTORAL POSITIONS** are available to study the enzymatic mechanisms of DNA replication. The two systems under active investigation are the interaction of the primosome of *Escherichia coli* with its assembly sites on single-stranded DNA and the replication of pBR322 plasmid DNA in a completely reconstituted system using purified proteins. Starting salary \$18,000; recent Ph.D.'s are preferred. Applicants should send their curriculum vitae, a description of their current research, and the names of three references to:

**Dr. K. J. Mariani**  
Memorial Sloan-Kettering Cancer Center  
1275 York Avenue, Box 97  
New York, N.Y. 10021

**POSTDOCTORAL RESEARCH TOXICOLOGIST** to study the role of hydrolases in the metabolism of chemicals. Candidates must have a strong background in enzymology, biochemical pharmacology, and toxicology with experience in enzyme purification, radiometric assays, tissue culture, in vivo metabolism, pharmacokinetics, electron microscopy, enzyme immunoassay, and HPLC. Strong research background, as evidenced by publications, required; \$19,300 per year. Ph.D. in biochemistry plus 2 years of experience. Send résumé to: **Dr. Sarjeet Gill, Department of Entomology, University of California, Riverside, Calif. 92521.** *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately, to participate in ongoing studies of stress proteins in normal and abnormal mammalian embryonic development. Training in techniques of molecular biology and/or cell biology (electron microscopy) required. This is a collaborative program between Professor C. L. Markert in Biology and Professor F. Naftolin in Obstetrics-Gynecology. Starting salary: \$18,000 per year. Send curriculum vitae and names of three references to: **Dr. Frederick Naftolin, Chairman of Obstetrics-Gynecology, Yale University School of Medicine, 333 Cedar Street, New Haven, Connecticut 06510.** *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available—Molecular, Immunologic and Biologic Study of AIDS. Experience in cell culture and clinical virology and molecular approaches to the disease helpful. Send curriculum vitae to:

**Jay Levy**  
Cancer Research Institute, 1282-M  
University of California  
San Francisco, Calif. 94143

**POSTDOCTORAL POSITION** available to purify and characterize cell suspension culture metabolites that stimulate corn protoplast colony formation using HPLC, GC and GC-MS. Minimum qualifications are a Ph.D. in a plant science discipline, chemistry, or related field. Experience in plant cell and tissue culture, analytical chemistry preferred. Laboratory experience in analytical chemistry should be referred to in one letter of recommendation. Send transcripts and curriculum vitae and request that three letters of recommendation be written to: **D. A. Somers, Department of Agronomy and Plant Genetics, University of Minnesota, 303 Agronomy, 1509 Gortner Avenue, St. Paul, Minn. 55108,** by 30 April 1985. *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

### POSTDOCTORAL POSITION MEMBRANE LIPID BIOSYNTHESIS

Applications are invited for a position available from 1 September to carry out research on membrane lipid biosynthesis in bacteria. These studies concern the control of bilayer stability in anaerobes. Experience with lipids and/or enzymes involved in lipid metabolism is desirable. Send curriculum vitae and names of three referees to: **Dr. Howard Goldfine, Department of Microbiology, G2, University of Pennsylvania School of Medicine, Philadelphia, Pa. 19104.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available immediately for 2 years. Research involves investigation of isolation, purification, and determination of kinetic properties of enzymes in the synthesis of organic phosphates in erythrocytes, particularly avian red cells. Curriculum vitae and three letters of recommendation should be sent to: **Dr. R. E. Isaacs, Basic Science Research, Research Service (151), VA Medical Center, 1201 Northwest 16 Street, Miami, Fla. 33125,** and Department of Medicine, University of Miami. *Equal Opportunity/Affirmative Action Employer.*

### UNIVERSITY OF CALIFORNIA, IRVINE (UCI) POSTDOCTORAL RESEARCH

Postdoctoral position available for research on the neurobiology of the striatum. Research includes: (i) quantitative autoradiography/image analysis of receptors for dopamine, serotonin; (ii) studies of regional differences in striatal structure and function; and (iii) the influence of denervation, aging, and pathology on forebrain receptors. Applicant with background in neurochemistry/pharmacology or anatomy should send résumé and names and addresses of three references to: **Dr. John F. Marshall, Department of Psychobiology, University of California, Irvine, Calif. 92717.**

#### UCI

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL-RESEARCH ASSOCIATE** position available on or after 1 July to study mechanisms of glycosylation and sulfation of macromolecules [see *J. Biol. Chem.* 259, 4263 (1984); *PNAS* 81, 7051 (1984); and *Cell* 39, 295 (1984)]. Send curriculum vitae and three letters of recommendation to: **Dr. C. B. Hirschberg, Department of Biochemistry, St. Louis University School of Medicine, 1402 South Grand Boulevard, St. Louis, Mo. 63104.** *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### POSTDOCTORAL RESEARCH

Position to study prokaryotic and eukaryotic genetic recombination and DNA repair in vivo and in vitro. Experience in DNA and/or protein biochemistry essential; background in bacterial genetics helpful. Suburban location. Extensive interaction with molecular biologists on campus and at nearby NIH and Johns Hopkins University. Available June or sooner. Total compensation package: \$19,000 to \$22,000 per year. Send curriculum vitae with three references to: **Dr. John Hays, Department of Chemistry, University of Maryland Baltimore County (UMBC), Catonsville, Md. 21228.** *UMBC is an Equal Opportunity/Affirmative Action Employer. We welcome applications from qualified women and minority candidates.*

**PRINCIPAL INVESTIGATOR—MOLECULAR BIOLOGIST.** Conduct research in cell growth factors, utilizing expertise in protein and nucleic acid purification and synthesis. Ph.D. in biochemistry or microbiology; 40 hours a week; \$40,000 per annum. Requires 5 years of experience or 5 years as microbiology research investigator. Send your résumé to: **William Opel, Administrator, Huntington Medical Research Institute, 734 Fairmont Avenue, Pasadena, Calif. 91105.**

**POSITION: PROFESSOR OF NEUROSCIENCES AND EDUCATION** in an Interdisciplinary Program within the Department of Human Development, Cognition, and Learning.

**Level:** Associate professor or advanced assistant professor with an earned doctorate degree. Salary would be competitive and commensurate with qualifications.

**Background:** Joint specialization in the behavioral neurosciences and in a subdiscipline in education or psychology. Ability to bridge basic research in neurosciences with educational/clinical practice. Research interest in relating neuroscience concepts with educational and clinical concepts. Ability to supervise students in educational and clinical contexts.

**Duties:** Provide leadership in the development of the pre-doctoral Ed.M. Program in Neurosciences and Education; teach courses; and guidance to pre-doctoral and doctoral students specializing in the area.

**Starting date:** September 1985

**Contact:** Send curriculum vitae, letters of recommendation, and reprints to: **Edward D. Mysak, Ph.D., Chairman, Search Committee, Teachers College, Columbia University, Box 160, New York, New York 10027.**

*Teachers College is an Equal Opportunity Employer.*

### RESEARCH ASSOCIATE/BIOCHEMIST

Requires Ph.D. and must have 2 to 3 years of experience in purification of Ca-ATPase from erythrocyte membrane. Five-day, 40-hour week; \$17,299 per year. Send résumé to: **Maryland Department of Employment and Training, Room 201B, 1123 North Eutaw Street, Baltimore, Maryland 21201.** Refer to order number 5015167.

**RESEARCH ASSOCIATE** to study oculomotor and sensory development in infants. Ph.D. required. Strong technical/quantitative background and real-time computer skills necessary. Send curriculum vitae and names of references to: **Dr. L. Hainline, Department of Psychology, Brooklyn College of City University of New York, Brooklyn, N.Y. 11210.** *An Equal Opportunity/Affirmative Action Employer.*

### RESEARCH ASSOCIATE

Participate in faculty projects on animal behavior, behavioral neuroscience, and human psychophysiology. Knowledge of microcomputers and programming skills (Focal, Basic, and Fortran); machine language: PDP 12, 6502 and Z80) preferred. Experience with on-line computerized experimental control, data acquisition, and processing as well as familiarity with related interfacing techniques also desirable. Minimum qualifications: Earned doctorate in biopsychology or related field with at least 5 years of postdoctoral research and publications. Salary commensurate with experience and qualifications. Reply by 8 April to:

**Professor Stanley Novak**  
Department of Psychology  
Box 389  
Hunter College of City University of New York  
695 Park Avenue  
New York, New York 10021  
*An Equal Opportunity/Affirmative Action Employer*



## Don't miss the 1985 AAAS Annual Meeting & Exhibit

Science and Engineering:  
Diversity and Convergence

26-31 May 1985  
Los Angeles

For further information, see the 8 March or  
5 April issues of *Science*  
or call (202) 842-9530.

## Carbohydrate Chemist/Biochemist

Genzyme Corporation, a Boston-based biotechnological company with a commitment to developing carbohydrate and protein products for human therapeutic use, has an opening for a skilled Ph.D. scientist with expertise in structural carbohydrate chemistry.

Applicants should have extensive experience in the isolation of glycoproteins and structural analysis of their oligosaccharide moieties by exoglycosidase digestion and chromatography. Additional experience in the chemical modification of oligosaccharides and/or polysaccharides would be a plus.

Qualified applicants should send their resumes with salary requirements, in confidence, to: Ms. Cindy Caracci.

Genzyme Corporation  
75 Kneeland Street  
Boston, MA 02111



## SCIENCE

News Department Reprint Series

## Tumor Viruses and Oncogenes

During the past 2 to 3 years interest in oncogenes—genes that can cause cells to become cancerous—has surged. A series of discoveries is providing important clues to the origins of cancer and to the normal mechanisms that regulate the growth and development of cells.

This collection of articles from *Science* by Jean L. Marx, Gina Kolata, and Roger Lewin covers many of those discoveries, including: Recent advances in understanding how oncogenes might work; the relation of oncogenes to naturally occurring growth factors; a description of the discovery of human T-cell leukemia virus—one of the best candidates for a viral cause of human cancer. This series is available now.

Single copies \$2.00, twenty or more \$1.00 each.  
Orders must be prepaid.

Write to AAAS, Dept. TVO, 1515 Massachusetts Ave., N.W., Washington, D.C. 20005.

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## POSITIONS OPEN

The NASA/Goddard Space Flight Center is seeking a **PROJECT SCIENTIST** for the Solar Optical Telescope. Salary range: \$44,430 to \$67,940, depending on qualifications and experience. All candidates must possess professional experience or graduate education in an appropriate field of physics, astronomy, engineering, or mathematics with documented experience in research, including publications in scientific, technical journals. Candidate must have ability to resolve issues between science and management and be of sufficient stature to speak authoritatively for the scientific program of the Solar Optical Telescope. Candidates should submit an SF-171 (application for federal employment) and a list of publications by 24 April 1985 to: **Beverly A. Pair, NASA/Goddard Space Flight Center, Personnel Division, Code 225-J, Greenbelt, Md. 20771; telephone: 301-344-7622. U.S. citizenship is required. Equal Opportunity Employer.**

Applications are invited for **THREE RESEARCH ASSOCIATE POSITIONS** in the Experimental Cardiology Section from individuals with a doctoral degree and 1 to 3 years of postdoctoral experience in subcellular and molecular aspects of heart function. Salary (\$20,000 to \$23,000) commensurate with experience; appointments will be made for 1 to 3 years. Submit curriculum vitae and three reference letters by 30 April 1985 to: **Secretary, Experimental Cardiology Section, Department of Physiology, University of Manitoba, Winnipeg, Manitoba, Canada R3E 0W3. In accordance with Canadian immigration requirements, this advertisement is directed in the first instance to Canadian citizens and permanent residents.**

### RESEARCH ASSOCIATE (POSTDOCTORAL)

Research on iron metabolism and iron-binding proteins. Experience with EPR and other physical chemical techniques useful. Respond to: **Dr. George W. Bates, Department of Biochemistry and Biophysics, Texas A&M University, College Station, Texas 77843. Texas A&M University is an Equal Opportunity Employer.**

The California Space Institute is seeking a **SCIENTIST OR ENGINEER** for an academic research staff position to participate in studies of advanced space technologies, in particular those related to improved or new propulsion systems, materials processing, heat, and power. Candidate must be capable of developing, over a period of approximately 1 year, his/her own externally funded research program. Candidate must have related experience and academic qualifications including publication record. Advanced degree preferred (Ph.D. or equivalent). Salary range \$29,600 to \$37,400 commensurate with qualifications. Send résumé and at least three references to: **Elaine Cox, California Space Institute A030, Scripps Institution of Oceanography, La Jolla, Calif. 92093, by 1 May 1985. The University of California at San Diego is an Equal Opportunity/Affirmative Action Employer.**

**SCIENTIST, RESEARCH.** Participate in the genetic engineering and research of human genes. Produce and develop vaccines and therapeutic hormones using recombinant DNA procedures. Minimum: B.S. or equivalent in biochemistry and 3 years of experience in genetic engineering. Applicants must have background in cloning, molecular genetics, isolation of genes, sequencing of genes, and expression of genes using recombinant DNA techniques, \$2700 per month. Job site: Emeryville, California. Applicants send résumé to: **P.O. Box 865, Sacramento, Calif. 95804, by 12 April 1985 and refer to number 4442.**

**SENIOR NMR LABORATORY FELLOW—WESTERN PSYCHIATRIC INSTITUTE & CLINIC,** a division of the University of Pittsburgh, now seeks a seasoned professional to assume high-level laboratory research responsibilities. Credentials will include a Ph.D. in biophysics, physics, or physical chemistry as well as experience in high-field, high-resolution NMR of biological materials and solid-state studies. Candidate will be involved in NMR analysis of brain tissue utilizing  $^{13}\text{C}$  and  $^{31}\text{P}$  NMR techniques as well as  $^{13}\text{C}$  and  $^{31}\text{P}$  NMR solid-state studies. Strong oral/written communications are essential as we will rely on your expertise to interpret the NMR spectra and contribute in the writing of data, grant applications and presentations. For immediate consideration, please contact: **Personnel Administrator, telephone: 412-624-2410, or send your résumé to: WESTERN PSYCHIATRIC INSTITUTE & CLINIC, 3811 O'Hara Street, Pittsburgh, Pa. 15213. Equal Opportunity Employer.**

## POSITIONS OPEN

### SENIOR HYDROGEOLOGIST

Seek person for permanent, year-round appointment with appropriate tenured or tenure-leading academic rank. Position is part of a teaching-research curriculum in hydrology being expanded by the Conservation and Survey Division and the Department of Geology. Partial graduate teaching appointment included. Will initiate and conduct hydrogeologic research in quantitative and qualitative hydrology, low-temperature geodynamic processes and aquifer analysis. Geology offers B.S., M.S., and Ph.D., while C&S encompasses state geological survey, water survey, soil survey, and remote sensing center. Requires Ph.D. in hydrogeology. Knowledge in numerical modeling, low-temperature geochemistry and automated data systems desirable. Apply by 15 April (or until suitable candidates apply thereafter) to: **Dr. Norman Rosenberg, Search Chair, 411 Administration Building, University of Nebraska-Lincoln, Lincoln, Neb. 68588-0433. Affirmative Action/Equal Opportunity Employer.**

### SENIOR RESEARCH BIOLOGIST (CANADA)

A leading Canadian pharmaceutical company with modern research facilities located at Kirkland, Quebec, a suburban community 15 miles from downtown Montreal, has a challenging opening available for a senior scientist in its Biology Research group. The position would involve working on a skin pharmacology program aimed at producing novel therapeutic approaches to the treatment of psoriasis. Candidates should have Ph.D. or equivalent in pharmacology or biochemistry with a sound basic knowledge of cell biology of the skin and ideally some experience with the culture of keratinocytes.

Reply, in confidence, providing curriculum vitae and list of publications to: **The Employment Manager, MERCK FROSST CANADA, INC., P.O. Box 1005, Pointe Claire/Dorval, Quebec, Canada H9R 4P8.**

**PROMEGA BIOTEC,** a high-growth biotechnology company, is expanding both its Research and Development and its Production Divisions and is seeking to fill positions on the **SENIOR SCIENTIST** and **LABORATORY TECHNICIAN** levels.

Experience and training in the following areas is needed: recombinant DNA methodologies, RNA and DNA hybridization analysis, organic synthesis, plant and animal tissue culture, gene expression, in situ hybridization, and protein separation. A record of professional achievement, the ability to work with a scientific team, and the ability to communicate scientific work orally and in writing are needed.

Promega offers a competitive salary, comprehensive company-paid benefits, and a challenging environment in which to apply your professional capabilities.

To apply, forward curriculum vitae with references to: **Personnel/R&D, Promega Biotec, 2800 South Fish Hatchery Road, Madison, Wis. 53711.**

### SPEECH SCIENTIST

**ASSISTANT/ASSOCIATE PROFESSOR** in communication disorders. Specialization: clinical applications of speech science. Teach graduate and undergraduate courses and conduct research at the Callier Center for Communication Disorders. Ph.D. required; CCC strongly preferred. Please send letter of interest and curriculum vitae by 30 April 1985 to: **Academic Search Number 527, University of Texas at Dallas, P.O. Box 830688, Richardson, Texas 75083-0688.**

*An Equal Opportunity/Affirmative Action Employer*

**ZOOLOGIST.** Tenure-track appointment in the Division of Natural Science & Mathematics, available 12 August 1985, for a broadly trained zoologist (doctorate required) to teach undergraduate courses in fisheries and zoology, including introductory courses. College teaching experience preferred. Ability to teach parasitology desirable. Application deadline: 17 April 1985. Submit letter of application, résumé, and three letters of recommendation to: **Personnel Services, Northeastern State University, Tahlequah, Okla. 74464.**

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### SENIOR SCIENTIFIC PROGRAMMER

G. D. Searle & Co., a major pharmaceutical firm, is seeking an individual to join the laboratory automation department of their large research division.

Responsibilities include designing and writing real-time applications and system programs for micro and VAX minicomputers. The successful candidate will work with scientific research and laboratory automation staff to develop latest state of the art automation solutions.

If you possess an M.S. in a scientific field with course work in computer science and at least 2 years of experience programming for laboratory automation, this is an outstanding opportunity for you. Please submit your résumé and salary requirements to:

**Barbara Gardner, Number 3D2-5  
Searle Research and Development Division  
4901 Searle Parkway  
Skokie, Ill. 60077**

*Equal Opportunity Employer, M/F/H/V*

**SENIOR SCIENTIST**—Mead Johnson, a subsidiary of Bristol-Myers, is looking for an individual with a Ph.D. degree in microbiology with research experience in the study and control of intestinal microecology to join its Food Product Research Department at our corporate location in Evansville, Indiana.

This individual will have an opportunity to participate in independent and team research to develop new products which aid in health maintenance and disease prevention. This is a "hands on" position for a person with good planning interaction and reporting skills.

Résumés should be sent to: **William K. Kromann, Manager, Professional Employment, 6K44, Mead Johnson & Company, 2404 Pennsylvania, Evansville, Ind. 47721.**

**SITE-SPECIFIC MUTAGENESIS AT MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)—POSTDOCTORAL POSITION** available to investigate heme redox chemistry, protein structure, and monooxygenase mechanisms through the study of novel proteins generated by site-directed mutagenesis. Extensive experience in recombinant DNA techniques is essential. Some experience in protein purification/enzyme kinetics would be useful. Appointment will be for 2 to 3 years with an initial salary of \$18,500, and will be in the toxicology/biotechnology program of the Department of Applied Biological Sciences in collaboration with Drs. G. A. Petsko and D. Ringe of the Department of Chemistry. Send curriculum vitae and three letters of reference to: **Dr. Michael A. Marletta, 56-229, 77 Massachusetts Avenue, Cambridge, Mass. 02139. MIT is an Equal Opportunity/Affirmative Action Employer.**

## ASSISTANTSHIPS

### GRADUATE ASSISTANTSHIPS

Assistantships in Ph.D. program available for a limited number of qualified graduate students. All students supported by teaching or research assistantships carrying 12-month stipends, plus tuition and dependency allowances. Active research programs include behavior, cell biology, development, genetics, molecular biology, neurophysiology, and physiology. For further information, write: **Director of Graduate Admissions, Department of Biology, Wesleyan University, Middletown, Conn. 06457.**

## TRAVEL AWARDS

### INTERNATIONAL SCHOOL OF BIOPHYSICS COURSE ON MOLECULAR NEUROBIOLOGY

The M. G. F. Fourtes Memorial Trust announces the availability of **TWO TRAVEL AWARDS** for young neurobiologists who wish to go to the course entitled **Molecular Neurobiology: Generation of Diversity and Specificity in the Nervous System** organized by the International School of Biophysics and held in Erice, Italy, on 14 to 24 July 1985. Interested applicants who wish to be considered for a travel award should submit their application by 15 May, briefly summarizing their research as related to the course, and two letters of recommendation to: **Dr. Rita Levi-Montalcini, Institute of Cell Biology, CNR, Via Romanos, 18A, Rome, Italy 00196.**

# GI Research

ALZA Corporation, pioneer and leader in drug delivery systems, is furthering its research commitment to gastro-intestinal function. We are looking for a talented, well trained PhD with background in GI physiology and pharmacology and interest in motility, absorption and cyto protection.

Salary and rank are commensurate with background and experience. ALZA encourages and provides an excellent environment for internal and external professional growth. We offer an outstanding benefits package. Send your resume to ALZA, Employment Dept., Attn: Darlene Markovich, 950 Page Mill Road, P.O. Box 10950, Palo Alto, CA 94303-0802. We are an equal opportunity employer.

alza

## SCIENCE JOURNALIST

The Research News staff of *Science* has an opening for a writer specializing in coverage of neurobiology, cognitive psychology, and behavior, as well as research in the social sciences.

Regular reporting of developments in these areas requires substantial familiarity with the literature, attendance at scientific meetings, and the ability to establish contacts with leading researchers.

The successful candidate is probably currently doing pre- or postdoctoral research in one of these fields. Experience in journalism is not absolutely required, but a demonstrable ability to write clear, interesting, and understandable articles for a broad scientific audience is essential.

We regret we cannot accept telephone inquiries.

Applicants should submit a résumé, not more than three writing samples, and a letter of interest to:

Carolyn Bell  
Personnel Manager  
SCIENCE  
1515 MASSACHUSETTS AVENUE, NW  
Washington, D.C. 20005

Equal Opportunity Employer

**THE INTERNATIONAL LABORATORY FOR RESEARCH ON ANIMAL DISEASES (ILRAD)**, Nairobi, Kenya, is an internationally funded, major institution with the mandate of developing improved methods of control for important diseases of livestock. At present the diseases under study are trypanosomiasis and theileriosis. The multidisciplinary research programme includes biochemistry, molecular biology, immunology, cell biology, pathology, parasitology, electron microscopy, and entomology with appropriate supporting units. Applications for the following positions are invited:

### IMMUNOLOGIST—REFERENCE: SC/L4/85/1

An experienced immunologist to join the Laboratory's basic research programme on the immune system of ruminants. The successful candidate will be expected to lead a research group in the application of current immunological knowledge to the analysis of the ruminant immune system and relate such research to the induction and control of specific immune responses to parasite antigens, with particular emphasis on antigens of trypanosomal and theilerial parasites. Candidates should have at least 5 years of postdoctoral experience in relevant areas of immunology research, proven leadership ability, and an interest in host-parasite interactions. Prior experience of research in ruminant immunology or parasitic disease would be advantageous, but is not essential.

### IMMUNO-PARASITOLOGIST—REFERENCE: SC/L6/85/1

A scientist to conduct comparative investigations of mechanisms of acquired and innate resistance to African pathogenic trypanosomes in susceptible and naturally resistant domestic livestock and wildlife. Candidates will have a first degree in biology, medicine, or veterinary medicine, a doctorate in immunology, and a minimum of 3 years of postdoctoral experience, preferably in the area of parasite immunity. The successful candidate will be expected to develop a research programme to identify host immunological and pathological mechanisms which relate to resistance or susceptibility to trypanosomiasis. Experience of research in domestic ruminants would be an advantage.

### IMMUNOGENETICIST—REFERENCE: SC/L6/85/2

A scientist to study the bovine major histocompatibility complex in cattle. The successful candidate will be expected to expand the repertoire of reagents available to define products of the genes of the bovine major histocompatibility complex and to participate in studies on the functional role of such products in the induction and control of cellular immune responses in cattle, especially as related to resistance or susceptibility to disease. Candidates will have a first degree in biology, medicine, or veterinary medicine, a doctorate in the immunogenetics of livestock or man, and a minimum of 3 years of postdoctoral experience in the same areas.

### IMMUNOLOGIST—REFERENCE: PD/L6/85/3

A postdoctoral fellow to join an ongoing research programme on the definition of cellular immune responses of cattle to antigens of trypanosomal and theilerial parasites at the level of the regional lymph nodes. Candidates will have a first degree in biology, medicine, or veterinary medicine, a doctorate in immunology or immunopathology, and proven ability in the cannulation of lymphatic vessels in domestic ruminants.

### RESEARCH ASSOCIATE (IMMUNOGENETICS)—REFERENCE: RA/L6/85/3

An experienced research associate to join a research group studying the bovine major histocompatibility gene complex. The successful candidate will be responsible for the operation of a bovine MHC antigen typing facility including the production and testing of alloantisera and monoclonal antibodies against bovine MHC antigens. Candidates will have a B.Sc degree or its equivalent and at least 4 years of experience in tissue typing man or domestic animals. A postgraduate qualification in immunogenetics would be advantageous.

### RESEARCH ASSOCIATE (ACAROLOGY)—REFERENCE: RA/TU/85/1

A research associate to supervise the rearing and maintenance of laboratory tick colonies, to provide suitably infected ticks for research on theileriosis and other tick-borne diseases, and to participate in research on infection rates in ticks, tick behaviour on the host, and in vitro protozoan development. Responsible for training technical and field staff. Candidates will have a science degree or equivalent qualification and at least 5 years of experience in acarology and protozoology. Experience in the handling of domestic livestock is essential.

### RESEARCH ASSOCIATE (BIOSTATISTICS/COMPUTERS)—REFERENCE: RA/Ad/85/1

A research associate to provide statistical/computing services to the research and administrative units. The successful candidate will be responsible for the provision and installation of comprehensive scientific software for microcomputer systems, advising on experimental design and methods of data analysis relating to laboratory and field studies, and the development of statistical methodology and modelling applicable to animal diseases, in particular trypanosomiasis and theileriosis. Candidates will have a degree in mathematics and statistics. Postgraduate qualifications in relevant areas of biostatistics and computing will be advantageous. Candidates should have a strong interest in the application of statistical methods to the bioscience and experience of modelling and data base management on modern micro-computer systems.

These are **INTERNATIONAL STAFF POSITIONS** and the salaries will be paid in U.S. dollars. Initial salary level will be determined by qualification and experience. Moving, housing, commutation, and education allowances are paid and there are medical and retirement benefits. Applications should include current curriculum vitae and the names and addresses of three referees. Applications, citing the position reference number, should be sent by 30 April 1985 to:

Chief Personnel Officer, ILRAD  
P.O. Box 30709  
Nairobi, KENYA

## PUBLIC MEETING

The National Research Council has formed a scientific committee chaired by Dr. Jacob Fabrikant, to consider the biological effects and risks to human health due to internally deposited alpha particle-emitting radionuclides. The Committee welcomes members of the public to comment on the metabolism, dosimetry, and toxicity of such naturally occurring radionuclides as radium, uranium, thorium, radon, and specific man-made radionuclides like plutonium at a scheduled **PUBLIC MEETING**. The meeting will begin at 8:30 a.m. on 15 May 1985 at the National Academy of Sciences Building located at 2101 Constitution Avenue, NW, Washington, D.C. 20418. Since space is limited, please notify: **Dr. William L. Lappenbusch, preferably by letter, or by telephone: 202-334-2743** by 30 April 1985 of your interest in attending and/or speaking at this meeting. Selected speakers should submit 15 summary statements prior to the meeting for distribution to the Committee.

## FELLOWSHIPS

**POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS** (2 to 3 years) available 1 July 1985—Research opportunities for qualified Ph.D. or M.D. in an interdisciplinary group investigating lipoprotein structure and metabolism. Research areas include studies of structure and metabolism of apoprotein-lipid complexes, immunochemical characterization of lipoproteins using monoclonal antibodies, ultracentrifugal and biophysical studies on hydrodynamic properties of lipoproteins, metabolism of lymph lipoproteins, and regulation of lipoprotein metabolism in cultured liver cells. Persons with an excellent academic record and background in biochemistry, immunology, cell biology, or biophysics will be considered. Preference will be given to candidates familiar with techniques in immunochemistry, monoclonal antibody production, protein chemistry, affinity chromatography, or cell culture. Stipends range from \$16,000 to \$26,000, depending on experience. *U.S. citizenship or permanent residency required.* Please send curriculum vitae and three letters of recommendation to: **Dr. Trudy Forte, Biology and Medicine Division, Lawrence Berkeley Laboratory, M.S. 1-213, University of California, Berkeley, Calif. 94720. An Equal Opportunity Employer, M/F/H.**

### POSTDOCTORAL FELLOWSHIPS

Departments of  
Cellular and Developmental Biology  
Organismic and Evolutionary Biology  
Harvard University

A limited number of postdoctoral research positions become available from time to time. Appointments are funded through research grants awarded to faculty members and are ordinarily for 1 year, sometimes renewable. For a list of faculty members who have postdoctoral positions available, write to the respective departmental office: **Harvard University, 16 Divinity Avenue, Cambridge, Mass. 02138.** (Do not send applications.)

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**NEW ZEALAND SENIOR AND POSTDOCTORAL RESEARCH FELLOWSHIPS.** The National Research Advisory Council offers 14 fellowships to be taken up in 1986 for research in government departments in fields of importance to New Zealand. **SENIOR RESEARCH FELLOWSHIPS**—Applicants should have a distinguished record of scientific research and/or administration in a relevant field. **POSTDOCTORAL RESEARCH FELLOWSHIPS**—Applicants should hold a doctorate or equivalent degree and have relevant postdoctoral research experience. Preference will be given to applicants with sound research proposals of significant national importance. Prior contact with the institution of choice is advisable. Applicants must have a good working knowledge of English and meet New Zealand immigration requirements. Salaries, which are taxable, range from NZ\$25,684 to NZ\$46,682. Return travel to New Zealand is provided. Application forms and information booklets may be obtained from any New Zealand diplomatic post, including: **The New Zealand Embassy, 37 Observatory Circle, NW, Washington D.C. 20008** (telephone: 202-328-4840) or by writing to: **The National Research Advisory Council, Box 12240, Wellington, New Zealand.** Applications must be received in New Zealand by 1 August 1985.

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP**, July 1985—Pathologist or other biomedical scientist (M.D., D.D.S., D.V.M., Ph.D.) for 1- or 2-year program at the Armed Forces Institute of Pathology beginning July 1985. Excellent research training and educational opportunity. Above average stipend provided as a grant from the American Registry of Pathology. *Equal Opportunity position; women and minorities encouraged.* Send curriculum vitae and brief statement of interests and qualifications to: **Box 69, SCIENCE.**

### PREDOCTORAL AND POSTDOCTORAL FELLOWSHIPS IN MOLECULAR BIOLOGY

Graduate fellowships and postdoctoral fellowships are available to qualified applicants with a science or medical background who wish to pursue an M.Sc. or a Ph.D. programme, or postdoctoral studies in molecular biology in the Faculty of Medicine at Memorial University of Newfoundland. Research activities carried out in modern, well-equipped Health Sciences Centre include regulation of gene expression, with emphasis on translational and post-transcriptional control; structure, function, and replication of DNA; enhancer sequences; nuclear matrix and transcription; interactions of viruses and cell surfaces; structural relationships in viruses; mechanisms of cell transformation by oncogenic viruses; polymorphism of major histocompatibility complex genes as related to diseases; thyrotropin receptor gene and its regulation; genetics and function of bacterial pili; drug resistance transfer plasmids; RNA metabolism and degradation. Teaching opportunities available.

Application forms and further information may be obtained from:

**Dr. Alfred T. H. Burness**  
Molecular Biology Group Chairman  
Faculty of Medicine  
Memorial University of Newfoundland  
St. John's, Newfoundland, Canada A1B 3V6

**POSTDOCTORAL FELLOWSHIP IN THE CELLULAR AND MOLECULAR ASPECTS OF REPRODUCTIVE BIOLOGY.** Postdoctoral fellowship will be available 1 February 1986 in a National Institutes of Health-funded training program. Training faculty research areas include cell biology and biochemistry of fertilization; cell biology and morphology of implantation, placenta and early development; cellular endocrinology. Candidates must be U.S. citizens or permanent residents, and at time of appointment, must have doctoral degree with either no postdoctoral training or less than 1 year of such training. For further information, send curriculum vitae and statement of research interests to: **Dr. Stanley Meizel, Director, Reproductive Biology Training Grant, Department of Human Anatomy, School of Medicine, University of California Davis, Davis, Calif. 95616.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

### NEUROBIOLOGY OF AGING TRAINING

for M.D.'s and Ph.D.'s. Several fellowships, supported by the National Institute of Aging, are now available for Ph.D.'s and post-residency M.D.'s who are interested in research training in the neurobiology of aging and/or Alzheimer's disease. We particularly encourage applicants with diverse backgrounds who wish to apply their past training to problems of the aging CNS. Such backgrounds could include: molecular biology, biochemistry, pharmacology, neuropathology, neurology, psychiatry, medicine, gerontology, neural sciences, and others. The training program offers an intense research apprenticeship in fundamental research, brief circulation through a variety of laboratories, seminars, and clinical correlations. Twenty potential preceptors are in the Departments of Anatomy, Brain Research, Medicine, Neurology, and Psychology. The University of Rochester is notable for its absence of barriers among laboratories and departments so work in laboratories outside the formal preceptor list is also possible. There are over 70 laboratories devoted to the study of the nervous system. Molecular biology and immunology are other areas of strength at the University of Rochester. U.S. citizens or permanent U.S. residents only please! Apply to: **Dr. Paul D. Coleman, Department of Anatomy, University of Rochester, Medical Center, Rochester, N.Y. 14642.**

## FELLOWSHIPS

### HARVARD SCHOOL OF PUBLIC HEALTH POSTDOCTORAL FELLOWSHIPS



Interdisciplinary Programs in Health (IPH) invites applications from promising graduates of advanced degree programs in the natural or social sciences interested in turning to research in environmental health and public policy. The program focuses on the scientific and analytical foundations for environmental decisions. In addition to individual research, recent group projects include monographs on the molecular and cellular basis of toxicity and on the susceptible individual and environmental regulation. Further studies will be adapted to interests of fellows. Studies on ground-water contamination and risk analysis are under consideration.

Fellow will be appointed for a term of 1 year starting September 1985. Award may be renewed. Application deadline: 19 April 1985. Decisions announced in May.

For information, write to:

**Professor Donald F. Hornig**  
Director, IPH  
Harvard School of Public Health  
665 Huntington Avenue  
Boston, Massachusetts 02115

## CONFERENCE

**THE SECOND PRINCETON-LIPOSONE CONFERENCE**, an international symposium titled "Lipids in Cell Biology," will be held 29 April through 1 May 1985 at the Princeton Scanton Conference Center in Princeton, New Jersey. The conference is cosponsored by The Liposome Company, Inc., and Princeton University, Department of Physics. For further information, contact: **Hope Baxter, Conference Coordinator, The Second Princeton-Liposome Conference, P.O. Box 2417, Princeton, N.J. 08540-0417; telephone: 609-452-7060.**

## SYMPOSIA

### SYMPOSIUM ON REGULATORY FACTORS IN DEVELOPMENT AND REPRODUCTION

To be held at the University of Michigan on 23 and 24 May 1985. Sponsored by The Center for Population Research of the Reproductive Science Branch, NICHD, and the Consortium for Research in Developmental and Reproductive Biology at the University of Michigan.

The meeting will consist of three half-day sessions devoted to talks on regulatory mechanisms at the molecular, intracellular, intercellular, inter-organ, and environmental level.

The invited speakers include: Merton R. Bernfield (Stanford), Lutz Birnbaumer (Baylor), William Bleisch (Cal Tech), Frank H. Bronson (Texas, Austin), Craig H. Heller (Stanford), Thomas F. Martin (Wisconsin), Paul Primakoff (Connecticut), Lola Reed (Einstein), Ursula Storb (Washington, Seattle), Michael O. Thorne (Virginia), and F. Eugene Yates (UCLA).

Space available for a small number of relevant posters. For information and registration please write or call: **Diane Belleba, Consortium for Research in Developmental and Reproductive Biology, 300 North Ingalls, Room 1123, Ann Arbor, Michigan 48109. Telephone: 313-763-0247.**

**COMPUTER-ASSISTED AUTORADIOGRAPHY WORKSHOP.** The Autoradiographic Image Processing Center at Drexel University, in cooperation with the University of Pennsylvania, will hold a 4-day symposium/workshop on <sup>14</sup>C 2-deoxy-d-glucose Autoradiography and Computer-Assisted Image Analysis at Drexel University on 28 to 31 May 1985. A broad discussion of 2-DG autoradiography and computer-assisted image processing will be complemented by "hands-on" training in the use of Drexel's IBM-PCXT-based image analysis system. There will be no registration fee; however, participants will be expected to cover their own expenses. For further information, contact: **Dr. Donald McEachron, telephone: 215-877-2279, no later than 19 April.** Subject to space limitations.

Revised 29 March 1985

## Information for Contributors

### The Editors of *Science*

Manuscripts should be addressed to the Editor, *Science*, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005. Submit three copies together with a letter of transmittal giving

1) the names and telephone numbers of the authors;

2) the title of the paper and a statement of its main point;

3) three to eight keywords to be used for indexing;

4) the names, addresses, telephone numbers, and fields of interest of four to six persons in North America but outside your institution who are qualified to referee the paper;

5) the names of colleagues who have reviewed the paper;

6) the total number of words (including text, references, and figure and table legends) in the manuscript; and

7) a statement that the material has not been published and is not under consideration for publication elsewhere.

Before being reviewed in depth, most papers are rated for their interest and overall suitability by a member of the Board of Reviewing Editors. When papers are submitted in disciplines for which there is no appropriate member of the Board of Reviewing Editors the initial screening is done by editorial staff members in consultation with outside experts in those areas. Papers that are not in the highest rating category are returned to the authors within about 2 weeks. The others are reviewed in depth by two or more outside referees. Authors are then notified of acceptance, rejection, or need for revision within 6 to 10 weeks from the date of receipt. As stated in the editorial of 18 January 1985 (*Science*, volume 227, page 249), there can be no resubmissions, either of papers returned after initial screening or of papers returned after in-depth review.

### Conditions of Acceptance

When a paper is accepted for publication in *Science* it is understood by the editors that any materials necessary to verify the conclusions of the experi-

ments reported will be made available to other investigators under appropriate conditions.

It is also understood that a paper accepted by *Science* will not be released to the press or the public before its publication.

### Selection of Manuscript

In selecting papers for publication, the editors give preference to those of general significance that are well written, well organized, and intelligible to scientists in different disciplines. An attempt is made to balance the subject matter in all sections of *Science*. Membership in the AAAS is not a factor in selection.

Papers accepted for publication are edited to improve the accuracy and effectiveness of communication and to bring them within the specified length limits. When the author's meaning is not clear, the editor may consult the author by telephone; when editing is extensive, the manuscript may be returned to the author for approval and retyping before the type is set.

Six categories of signed papers are published: general articles, research articles, reports, letters, technical comments, and book reviews.

**General articles.** General articles (up to 5000 words) are expected to (i) review new developments in one field that will be of interest to readers in other fields; (ii) describe a current research problem or a technique of interdisciplinary significance; or (iii) discuss some aspect of the history, logic, philosophy, or administration of science and public affairs. Readers should be able to learn from a general article what has been firmly established and what are unresolved questions; speculation should be kept to a minimum.

Many of the general articles are solicited by the editor. Both solicited and unsolicited articles undergo review.

General articles should include a note giving authors' names, titles, and addresses; a summary (50 to 100 words); an introduction that outlines for the general reader the main point of the paper; and

brief subheadings to indicate the main ideas. The reference list should not be exhaustive; a maximum of 40 references is suggested.

**Research articles.** A research article (up to 4000 words) is expected to contain new data representing a major breakthrough in its field. The article should include an author note, abstract, introduction, and sections with brief sideheads. There should be a short introductory section outlining for the general reader the main point of the paper, a description of the experiments and the results, and then a discussion or conclusion. A maximum of 30 references is suggested.

**Reports.** Reports are expected to contain important research results or reliable theoretical calculations whose essence can be expressed briefly. Preference is given to reports of discoveries that will be of broad interdisciplinary interest or of unusual interest to the individual discipline. Reports should include an abstract and an introductory paragraph. The total number of words, including the references and notes and figure and table legends, should not exceed 2000. A maximum of 20 references is suggested.

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ion of the comments and are given an opportunity to reply in the same issue if the comments are accepted. The comments, and sometimes the reply, are subjected to the usual review procedures.

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## Manuscript Preparation

**Typing.** Use double-spacing throughout the text, tables, figure legends, and references and notes, and leave margins of at least 2.5 centimeters.

**Titles.** Titles should be short, specific, and amenable to indexing. For general articles the maximum length is 52 characters and spaces; for research articles and reports the maximum is 108 characters.

**Summaries or abstracts.** These should convey to the general reader the main point of the paper and outline the results or conclusions. A reader should be able to learn from the summary the purpose of the study and the reason for its importance.

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The whole text should be intelligible to readers in more than one discipline. Technical terms should be defined.

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**References and notes.** Number references and notes in the order in which they are cited in the text. Place references cited only in tables or figure legends after the text references. Use conventional abbreviations for well-known journals; provide complete titles for other journals. For references with up to three authors provide all the names; for more than three, provide the name of the first author only. For style, see a recent issue of *Science*.

**Acknowledgments.** Gather all acknowledgments into a brief statement at the end of the references and notes.

**Informed consent.** Investigations on human subjects must include a statement indicating that informed consent was obtained after the nature and possible consequences of the studies had been fully explained.

**Figures.** For each figure submit three glossy prints of sufficient size to permit relettering but not larger than 22 by 28 centimeters (8½ by 11 inches). Transparencies, slides, negatives, or oversized figures cannot be accepted. On the back of every figure write the first author's name and the figure number and indicate the correct orientation. Authors requesting the use of color will be asked to pay \$600 for the first figure and \$300 for each additional figure, to cover the cost of reprints. Illustrations reprinted from other publications must be credited. It is the author's responsibility to obtain permission to reprint such illustrations in *Science*.

**Tables.** Tables should supplement, not duplicate, the text. They should be numbered consecutively with respect to their citation in the text. Each table should be

typed, with its legend (double-spaced), on a separate sheet. Give each column a heading with units of measure indicated in parentheses. Do not change the unit of measure within a column.

**Equations and formulas.** Use quadruple-spacing around equations and formulas that are to be set off from the text. Define all symbols.

## Printing and Publication

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