

This book will appeal to researchers in this field as well as to the general audience of physicists and mathematicians seeking assurance that supermanifolds are mathematically respectable objects rather than formal tricks with "anticommuting numbers."

JEFFREY M. RABIN

*Enrico Fermi Institute, University of Chicago, Chicago, Illinois 60637*

## Adaptations

**The Colonisation of Land.** Origins and Adaptations of Terrestrial Animals. COLIN LITTLE. Cambridge University Press, New York, 1984. viii, 290 pp., illus. \$99.50.

Study of the adaptations of terrestrial groups of animals and plants and their origins from aquatic stocks has long been a classic example of the confluence of different biological disciplines, particularly physiology and biochemistry, functional morphology, and paleontology. Among animal groups, the origin of terrestrial vertebrates and the apparently related question of the history of movement from salt water to freshwater in primitive gnatostome fishes have been an especially rich vein for workers such as Baldwin, Berrill, Romer, and Watson, and among invertebrates the mollusks and arthropods have received considerable attention. In recent years, however, notwithstanding an excellent volume edited by Panchen, the subject as a whole has received less attention, perhaps in part owing to the decline of comparative approaches to organ-level physiology.

Little, who is an authority on molluscan osmoregulation, has now produced the first really thorough review of the relevant characteristics of the various animal groups that have colonized the land environment, including taxa from flatworms to vertebrates. It is a long and careful literature review with a single concluding synthetic section. Little emphasizes the common problems faced by invaders from the water: osmoregulation and nitrogen excretion, respiration, behavior, and sensory adaptations, reproduction, and (to a lesser extent) biomechanics in the absence of a strongly supporting fluid medium. He gives an interesting counterpoint to the discussion in a treatment of the filter or plankton feeders, larger forms with hydrostatic skeletons, and most notably the echinoderms and cephalopod mollusks that have never managed to invade land. He delves into the relative success of differ-

ent groups, measured by species diversity or biomass. And he also takes up the collateral question of the problems faced by terrestrial groups in reinvading fresh or salt water.

All of this is familiar in parts, but Little's review is more than a convenient summary. The broad range of data that he covers turns out no longer to support the easy generalizations that have long dominated this field of work. One view that needs to be revised is the simple scenario for the relationship between environment and the pattern of nitrogen excretion that predicts excretion of ammonia in the water and urea or uric acid on land. In oligochaetes, for example, "The ratio of urea to ammonia changes with nutritional state, but is probably more related to the control of acid-base balance than to availability of water." Also, with respect to respiration Little notes a fact of which biologists have become increasingly aware—that elimination of carbon dioxide is a more complex problem than uptake of oxygen. But most important of all, he demonstrates that it is no longer sufficient to consider the various subjects of classical physiology in isolation from each other. This fine review clears the way for future biologists who will take up this fascinating subject in the light of modern advances and produce the next generation of generalizations.

KEITH S. THOMSON

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New Haven, Connecticut 06520*

## Books Received

**Equations of Mathematical Physics.** V. S. Vladimirov. Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). 464 pp., illus. \$10.95. Translated from the Russian edition (Moscow, 1981) by Eugene Yankovsky.

**Erythrokinetics.** Radioisotopic Methods of Investigation and Mathematical Approach. Maria Ważewska-Czyżewska. Published for the National Library of Medicine and the National Science Foundation by the National Center for Scientific, Technical and Economic Information, Warsaw, 1984 (available as PB 84-201979 from the National Technical Information Service, Springfield, Va.). 221 pp., illus. \$15.

**Ethylene and Plant Development.** J. A. Roberts and G. A. Tucker, Eds. Butterworths, Boston, 1985. x, 416 pp., illus. \$99.95. From a conference, Sutton Bonington, March 1984.

**Evaluation of Short-Term Tests for Carcinogens.** Report of the International Programme on Chemical Safety's Collaborative Study on In Vitro Assays. John Ashby *et al.*, Eds. Elsevier, New York, 1985. x, 752 pp., illus. \$139. Progress in Mutation Research, vol. 5.

**Evolutionary Aspects of Gonadotropins.** Edited by Institute of Endocrinology, Gunma University. Center for Academic Publications Japan, Tokyo, 1984 (U.S. distributor, International Specialized Book Services, Beaverton, Ore.). 210 pp., illus. \$28. Gunma Symposia on Endocrinology, vol. 21. From a symposium, Maebashi, Japan, Dec. 1983.

**The Evolving Universe.** Donald Goldsmith. 2nd ed. Benjamin/Cummings, Menlo Park, Calif., 1985. xiv, 562 pp., illus., + plates. \$31.95.

**Experimental Behavioral Ecology and Sociobiology.** In Memoriam Karl von Frisch 1886-1982. Bert Hölldobler and Martin Lindauer, Eds. Sinauer, Sunderland, 1985. xiv, 488 pp., illus. \$55; paper, \$30. From a symposium, Mainz, Germany, Oct. 1983.

**Histocompatibility Testing 1984.** E. D. Albert, M. P. Baur, and W. R. Mayr, Eds. Springer-Verlag, New York, 1984. xxviii, 764 pp., illus. \$98. From a conference, Munich, May 1984.

**Hot-Electron Transport in Semiconductors.** L. Reggiani, Ed. Springer-Verlag, New York, 1985. xvi, 275 pp., illus. \$43.50. Topics in Applied Physics, vol. 58.

**Human Intelligence.** Perspectives and Prospects. Robert Kail and James W. Pellegrino. Freeman, New York, 1985. x, 224 pp., illus. \$19.95; paper, \$12.95. A Series of Books in Psychology.

**The Hypothalamus of the Rhesus Monkey.** A Cytoarchitectonic Atlas. Ruth Bleier. Photomicrographs and plates prepared by Inge Siggelkow. University of Wisconsin Press, Madison, 1985. xiv, 122 pp., \$50.

**I'll Take Tomorrow.** The Story of a Courageous Woman Who Dared to Subject Herself to a Medical Experiment—the First Successful Heart-Lung Transplant. Mary Gohlke with Max Jennings. Evans, New York, 1985. 204 pp. \$12.95.

**Neutron Contamination from Medical Electron Accelerators.** Recommendations of the National Council on Radiation Protection and Measurements. National Council on Radiation Protection and Measurements, Bethesda, Md., 1984. vi, 128 pp., illus. Paper, \$14. NCRP Report No. 79.

**New Approaches to Research on Cereal Carbohydrates.** Robert D. Hill and Lars Munk, Eds. Elsevier, New York, 1985. xii, 415 pp., illus. \$101.75. Progress in Biotechnology, vol. 1. From a conference, Copenhagen, Denmark, June 1984.

**New Approaches to Vaccine Development.** Rosemary Bell and G. Torrigiani, Eds. Schwabe, Basel, 1984 (distributor, World Health Organization, Geneva). viii, 519 pp., illus. Paper. From a meeting, Geneva, Oct. 1983.

**Nonhuman Primate Models for Human Growth and Development.** Elizabeth S. Watts, Ed. Liss, New York, 1985. x, 327 pp., illus. \$46. Monographs in Primatology, vol. 6. From a symposium, Atlanta, Aug. 1982.

**Nonlinear System Theory.** John L. Casti. Academic Press, Orlando, Fla., 1985. xii, 261 pp. \$45. Mathematics in Science and Engineering, vol. 175.

**Normal Human Aging.** The Baltimore Longitudinal Study of Aging. Nathan W. Shock *et al.* National Institutes of Health, Bethesda, Md., 1985 (available from the Superintendent of Documents, Washington, D.C.). xxii, 400 pp., illus., + appendixes. \$18. NIH Publication No. 84-2450.

**Notes on Radiation Effects on Materials.** J. N. Anno. Hemisphere, Washington, D.C., 1984. x, 342 pp., illus. Paper, \$24.95.

**The Nuclear Connection.** A Reassessment of Nuclear Power and Nuclear Proliferation. Alvin Weinberg, Marcelo Alonso, and Jack N. Barkenbus. Paragon House, New York, 1985. viii, 295 pp., illus. \$27.95; paper, \$19.95. A Washington Institute Book.

**Nutrient Requirements of Dogs.** 2nd ed. National Academy Press, Washington, D.C., 1985. viii, 79 pp. Paper, \$10.25.

**Permafrost.** Fourth International Conference, Final Proceedings. (Fairbanks, Alaska, July 1983.) National Academy Press, Washington, D.C., 1984. xvi, 413 pp., illus. \$32.50.

**Phase Transformations and Material Instabilities in Solids.** Morton E. Gurtin, Ed. Academic Press, Orlando, Fla., 1984. x, 217 pp., illus. \$17. Publication No. 52 of the Mathematics Research Center, The University of Wisconsin-Madison. From a conference, Madison, Wis., Oct. 1983.

**Physical Methods on Biological Membranes and Their Model Systems.** F. Conti *et al.*, Eds. Plenum, New York, 1985. x, 459 pp., illus. \$65. NATO Advances Science Institutes Series A, vol. 71. From an institute, Alto Villa Milicia, Italy, Sept. 1982.

**Physicians of Western Medicine.** Anthropological Approaches to Theory and Practice. Robert A. Hahn and Atwood D. Gaines, Eds. Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.). x, 345 pp. \$54. Culture, Illness, and Healing.

**Physics of Highly Charged Ions.** R. K. Janev, L. P. Presnyakov, and V. P. Shevelko. Springer-Verlag, New York, 1985. x, 330 pp., illus. \$52. Springer Series in Electrophysics, vol. 13.

**Picosecond Optoelectronic Devices.** Chi H. Lee, Ed. Academic Press, Orlando, Fla., 1984. xiv, 406 pp., illus. \$60.

**Plant Diseases.** Infection, Damage and Loss. R. K. S. Wood and G. J. Jellis, Eds. Blackwell Scientific, Palo Alto, Calif., 1984. viii, 327 pp., illus. \$44. From a symposium, Dec. 1982.

**The Plutonium Business and the Spread of the**

(Continued on page 573)

## AAAS NEWS

(Continued from page 546)

zoology, University of Texas, Austin, member of Section G since 1946, 9 February 1985.

**William G. Bos**, Department of Chemistry, University of Louisville, member since 1982, 13 June 1985.

**George B. Brown**, former vice president, Sloan-Kettering Institute for Cancer Research, member of Section C since 1946, 22 April 1985.

**C. Fred Burrell** of Richmond, California, member of Section B since 1976, 16 January 1985.

**Cornelia Post Channing**, professor of physiology, University of Maryland Medical School, member of Section N since 1972, 8 April 1985.

**C. Daniel Cole**, professor of physics, University of Lowell, member of Section B since 1963, 25 May 1985.

**Harold J. Coolidge**, former executive secretary, Pacific Science Board, National Academy of Sciences, member of Section G since 1948, 15 February 1985.

**Doris E. Curran** of Seattle, Washington, member of Section G since 1947, 9 February 1985.

**Troy Cook Daniels**, dean, School of Pharmacy, University of California, San Francisco, member of Section C since 1945, 9 February 1985.

**Richard F. Davis** of Adelphi, Maryland, member of Section O since 1955, 3 January 1985.

**William J. Dempsey, Sr.**, retired U.S. Geological Survey geophysicist, member of Section E since 1963, 6 April 1985.

**Arthur J. Draper** of Hamden, Connecticut, member since 1984, 20 May 1985.

**Thomas Bradford Drew**, professor emeritus, Massachusetts Institute of Technology, member of Section M since 1942, 5 May 1985.

**Harold Foote**, former president, Commonwealth Associates (Jackson, Michigan), member of Section M since 1933, 7 June 1985.

**O. H. Gaebler** of Detroit, Michigan, member of Section C since 1929, 19 March 1985.

**Katherine Godlewski** of Palo Alto, California, member of Section J since 1971, 22 April 1985.

**J. Herbert Hollomon**, former assistant secretary for science and technology of the U.S. Department of Commerce, member of Section M since 1948, 1 May 1985.

**Sister Marie P. Kernaghan**, former head of the science department, Maryville College, member of Section B since 1934, 27 March 1985.

**Irene Kline** of Cleveland, Ohio, member of Section N since 1955, 9 June 1985.

**Vincent Depaul Larkin** of Garden City, New York, member of Section N since 1956, 23 May 1985.

**R. Bruce Lindsay** of Portsmouth, Rhode Island, member of Section B since 1921, 2 March 1985.

**James A. MacNab**, professor emeritus, Portland State University, member of Section G since 1926, 29 May 1985.

**Harry B. Neustein**, Los Angeles Children's Hospital, member of Section N since 1956, 28 April 1985.

**Jeffrey S. O'Neal** of Clifton, New Jersey, member of Section C since 1979, 11 March 1985.

**Archie M. Palmer** of Washington, D.C., member of Section M since 1948, 1 March 1985.

**John J. Pisano**, National Heart, Lung and Blood Institute, National Institutes of Health, member of Section C since 1965, 26 March 1985.

**John H. Pomeroy**, former manager of international research program on moon rocks gathered by Apollo astronauts, member of Section C since 1960, 14 March 1985.

**G. Elliot Robinson** of Hanover, Massachusetts, member of Section K since 1963, 30 March 1985.

**Douglass F. Roy** of Redding, California, member of Section G since 1960, 25 January 1985.

**Helmuth G. Schneider** of Westfield, New Jersey, member of Section C since 1959, 25 February 1985.

**Arthur T. Schramm**, chairman of the board, Food Materials Corporation, member of Section C since 1965, 24 May 1985.

**Francis P. Shepard**, professor emeritus of submarine geology, Scripps Institution of Oceanography, member of Section E since 1982, 25 April 1985.

**William Sichak** of Plainfield, New Jersey, member of Section B since 1960, 13 May 1985.

**Frank C. Starr, Jr.**, of Wilmington, Delaware, member since 1982, 8 March 1985.

**J. H. Tatsch** of Fredericksburg, Texas, member since 1984, 30 April 1985.

**K. C. Tsou**, School of Medicine, University of Pennsylvania, member of Section N since 1953, 27 January 1985.

**Frank Verbrugge**, director, University Computer Services and professor of physics, University of Minnesota, member of Section B since 1962, 15 January 1985.

**George W. White** of Champaign, Illinois, member of Section L since 1928, 20 February 1985.

## BOOKS RECEIVED

(Continued from page 549)

**Bomb**. Walter C. Patterson. Sierra Club Books, San Francisco, 1985. xvi, 272 pp. \$16.95.

**Polymers as Biomaterials**. Shalaby W. Shalaby *et al.*, Eds. Plenum, New York, 1984. x, 389 pp., illus. \$62.50. From a symposium, Seattle, March 1983.

**Powder Technology**. Koichi Iino, John Keith Beddow, and Genji Jimbo, Eds. Hemisphere, Washington, D.C., 1984. xvi, 823 pp., illus. \$108.50. From a symposium, Kyoto, Japan, Sept. 1981.

**Prehistoric Hunter-Gatherers**. The Emergence of Cultural Complexity. T. Douglas Price and James A. Brown, Eds. Academic Press, Orlando, Fla., 1985. xviii, 454 pp., illus. \$60. Studies in Archaeology. Based on a conference, Vancouver, B.C., Aug. 1983.

**Primates in Nature**. Alison F. Richard. Freeman, New York, 1985. xii, 558 pp., illus. \$27.95; paper, \$17.95.

**Principles of Gene Manipulation**. An Introduction to Genetic Engineering. R. W. Old and S. B. Primrose. 3rd ed. Blackwell Scientific, Palo Alto, Calif., 1985. xiv, 409 pp., illus. Paper, \$21. Studies in Microbiology, vol. 2.

**Problems of Antiviral Therapy**. Charles H. Stuart-Harris and John Oxford, Eds. Academic Press, Orlando, Fla., 1984. x, 347 pp., illus. \$30. From a colloquium, London, Sept. 1982.

**Proceedings of the 39th Industrial Waste Conference**. (West Lafayette, Ind., May 1984.) Butterworth, Boston, 1985. xiv, 970 pp., illus. \$79.95.

**Production Gas Carburising**. G. Parrish and G. S. Harper. Pergamon, New York, 1985. viii, 321 pp., illus. \$40; paper, \$15.75. Pergamon Materials Engineering Practice Series.

**Quadratic and Hermitian Forms**. Winfried Scharlau. Springer-Verlag, New York, 1985. x, 421 pp., \$48.50. Grundlehren der mathematischen Wissenschaften 270.

**Social Psychiatry**. Vladimir Hudolin, Ed. Plenum, New York, 1984. xx, 874 pp. \$97.50. From a congress, Zagreb, Yugoslavia, Aug. 1981.

**Sociology and Anthropology in the People's Republic of China**. Report of a Delegation Visit, February-March 1984. Alice S. Rossi, Ed. National Academy Press, Washington, D.C., 1985. x, 161 pp. Paper, \$3.

**Software Engineering**. Marc Thorin. Butterworths, Boston, 1985. x, 130 pp., illus. Paper, \$18.95.

**Soil Reclamation Processes**. Microbiological Analyses and Applications. Robert L. Tate III and Donald A. Klein, Eds. Dekker, New York, 1985. xii, 349 pp., illus. \$59.50. Books in Soils and the Environment.

**Solitons in Nuclear and Elementary Particle Physics**. A. Chodos, E. Hadjimichael, and C. Tze, Eds. World Scientific, Singapore, 1984 (U.S. distributor, Taylor and Francis, Philadelphia). x, 314 pp., illus. \$40. From a workshop, Lewes, Del., June 1984.

**Spread Spectrum Communications**. Vol. 2. Marvin K. Simon *et al.* Computer Science Press, Rockville, Md., 1985. xx, 358 pp., illus. \$49.95. Electrical Engineering, Communications and Signal Processing.

**Storage Carbohydrates in Vascular Plants**. Distribution, Physiology and Metabolism. D. H. Lewis, Ed. Cambridge University Press, New York, 1985. xii, 284 pp., illus. \$69.50. Society for Experimental Biology Seminar Series, 19. From a seminar, Oxford, England, Dec. 1980.

**Structure and Representations of Q-Groups**. Dennis Kletzing. Springer-Verlag, New York, 1984. vi, 290 pp. Paper, \$16. Lecture Notes in Mathematics, vol. 1084.

**The Structure of Biological Science**. Alexander Rosenberg. Cambridge University Press, New York, 1985. xii, 281 pp., illus. \$37.50; paper, \$12.95.

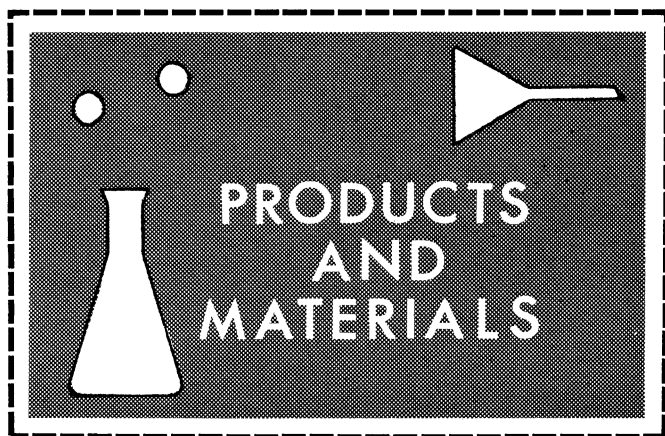
**Sunlight and Health**. Michael J. Lillyquist. Dodd, Mead, New York, 1985. xii, 223 pp. \$15.95.

**Syngensis and Epigenesis in the Formation of Mineral Deposits**. A Volume in Honour of Professor G. Christian Amstutz on the Occasion of His 60th Birthday with Special Reference to One of His Main Scientific Interests. A. Wauschkuhn, C. Kluth, and R. A. Zimmermann, Eds. Springer-Verlag, New York, 1984. xiv, 653 pp., illus. \$61.50. From a symposium, Feb. 1983.

**System Design with Microprocessors**. D. Zissos. 2nd ed. Academic Press, Orlando, Fla., 1984. viii, 191 pp., illus. Paper, \$19.50.

**The Wonder of Being Human**. Our Brain and Our Mind. John Eccles and Daniel N. Robinson. New Science Library (Shambhala), Boston, 1985 (distributor, Random, New York). xiv, 183 pp., illus. Paper, \$8.95. Reprint, 1984 edition.

**The X-Ray Universe**. Wallace Tucker and Riccardo Giacconi. Harvard University Press, Cambridge, Mass., 1985. xii, 201 pp., illus. \$20. The Harvard Books on Astronomy.



### Electrophoresis Unit

The "Mighty Small" (SE250) is a dual-gel miniature electrophoresis device for rapid screening of proteins and nucleic acid fractions. This vertical slab unit features an integral heat exchange system. Cooling permits gels to be run in 30 to 40 minutes. Sandwiches are mounted against opposing sides of a molded central core which houses the serpentine heat exchanger and supports the electrodes. A notched alumina plate forming the back of each 8- by 10-cm sandwich promotes rapid removal of heat from the gel to the upper buffer. Sandwiches are sealed for gel casting in optional casting stands. Each upper buffer chamber requires 75 ml; the lower chamber requires 150 ml. A molded safety lid with cables fully covers the unit. Hoefer Scientific Instruments. Circle 585.

### Rotary Shaker

The Infors RS-306 is a pallet-type shaker. This high-capacity device does not require bolting to the floor. Speed may be adjusted from 20 to 400 rpm with a potentiometer and digital display. A three-phase asynchronous motor with a static frequency converter is efficient and heat-stable. Throw diameter is normally 50 mm but a 100-mm throw diameter is available. Frames will accommodate six type S trays (700 by 400 mm) that hold 330 100-mm flasks. The pallet is designed for easy relocation with a fork-lift. Bioengineering Associates. Circle 583.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (on pages 522A and 570A) and placing it in a mailbox. Postage is free.

—RICHARD G. SOMMER

### DNA Transilluminator

The Spectroline TC-302 ultraviolet transilluminator is designed to analyze thin-layer chromatography plates and electrophoresis gels in sizes up to 20 by 20 cm. Its 20 by 20 cm Longlife filter improves intensity and offers greater durability. Six medium wave (ultraviolet-B) tubes offer 8000  $\mu\text{W}/\text{cm}^2$  of filter at 302 nm. A cooling fan maintains peak operating irradiance. Irradiance is uniform to within 10 percent over 70 percent of the filter surface area. There is an automatic timer. Spectronics. Circle 586.

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### Primary Cell Culture Medium

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### Literature

*Liquid Chromatography Columns* is devoted to the Vydac line of silica-based columns. Various substrates are characterized and many models are offered. The Separations Group. Circle 577.

*Vacuum Pumps* features turbomolecular liquid transfer devices, their design specifications, and research applications. Alcatel Vacuum Products. Circle 578.

*Chemistry Software* comprises ligand-binding analysis programs for saturation and displacement binding assays. London Software. Circle 595.

*Forensic Serology, Immunology and Biochemistry* is a source book for practicing forensic serologists. Price \$13. U.S. Government Printing Office. Circle 596.

*Cryoscope* describes a device (Cryette WR) to measure freezing-point depression of solutions. Precision Systems. Circle 597.

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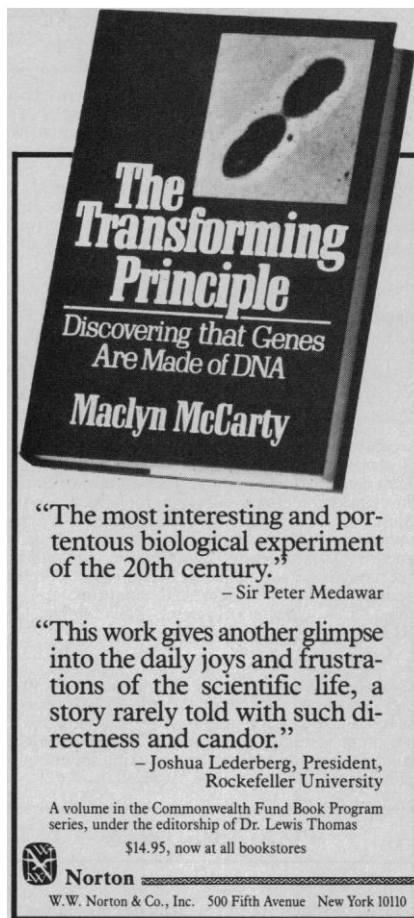
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- understanding mechanisms of oxidant toxicity in the lung

HEI has available relevant materials about the research topics, directions for preparing applications, and material about the Institute to all interested investigators.

Requests and inquiries should be directed to: Mr. Thomas P. Grumbly, Acting Executive Director, The Health Effects Institute, 215 First Street, Cambridge, Massachusetts, 02142, 617/491-2926. Full applications will be accepted until October 22, 1985. Preliminary applications are welcome at any time. An Affirmative Action/Equal Opportunity Employer.

## The Health Effects Institute

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**Cardio-thoracic Surgeon**; inactive for 13 years; mature; wishes academic position. Box 169, SCIENCE. X

**Cardiovascular Pharmacologist**, Ph.D. 1977. Experienced in antihypertensive and diuretic drug development. Methods include hemodynamics, clearance, and autonomic preparations. Also skilled with in vitro methods and drug receptor theory. Publications, IND preparation, and 7 years of supervisory experience. Seeking industrial position; no geographical restriction. Box 162, SCIENCE. X

**Cell Biologist/Experimental Pathologist**, Ph.D. Research interests during last 10 years have been the differentiation and early diagnosis of human cancer. Extensive experience in electron microscopy, cytochemistry, autoradiography, two-dimensional gel electrophoresis, affinity chromatography, and organ culture techniques. Numerous publications. Seeking position in industry or academic institution. Box 168, SCIENCE. 8/9, 16, 23, 30

**Cell/Molecular Biologist**, Ph.D. Teaching experience and publications. Seeking teaching position in small college. Box 164, SCIENCE. X

**Foreign Representative**. American diplomat/scientist living in Switzerland; Ph.D. Princeton; would like to represent your organization abroad. Box 165, SCIENCE. 8/9; 9/6

## POSITIONS WANTED

**Biochemist/Toxicologist**, Ph.D. Postdoctoral experience. Skilled in teratology, pharmacokinetics, dermal and vaginal toxicity, enzymology, protein and lipid purification, and characterization. Experienced in toxicological evaluation of new drugs for FDA approval and potential health risks to chemical pollutants. HPLC, GC, TLC, PAGE, cell culture, GLP regulations, and publications. Academia, industry, or government. New Jersey-New York area only. Box 167, SCIENCE. X

**Diplomphysiker**. Dr. rer. nat. from TU Berlin, Germany, Indian national, 5 years of research experience; 15 publications on radiation dosimetry and related fields; seeks suitable position in R&D. Box 163, SCIENCE. X

**Microbiologist**, M.S. Molecular biology: viral/ bacterial plasmid: RNA/DNA; cloning; sequencing; protein/nucleic acid gels; Northern/Southern; in vitro transcription. General virology techniques: tissue culture; in vitro virus infection. Immunology: electrophoresis/silver staining of cerebrospinal fluid/serum globins; intravenous injection; organic analysis of carbohydrate antigens. Technical writing; library research. K. M. Whittaker, University of Pennsylvania, 4510 Chester Avenue, Philadelphia, Pa. 19143. Telephone: 215-387-6564. X

**Research Technician**: Research experience in physiology laboratory. Experience with HPLC systems, tissue culture, radioimmunoassays, in vitro and in vivo animal studies, chemical analysis, laboratory management, and computers. Seeking industrial or academic position. Box 159, SCIENCE. X

## POSITIONS OPEN

**ASSISTANT PROFESSOR**. Tenure track, Ph.D., research position in plant science. Emphasis on genetic, physiological mechanisms such as stress tolerance, pest-resistance, photosynthesis, and plant habits affecting productivity of major vegetables in South Florida. Candidate should also be familiar with molecular genetic techniques. Research involves field and laboratory studies in basic and applied genetics and interaction with other disciplines. Send résumé, transcripts, and three letters of reference before 6 September 1985 to: **Dr. H. H. Bryan**, Search and Screen Committee, Tropical Research and Education Center, University of Florida, 18905 Southwest 280 Street, Homestead, Fla. 33031.

**ASSISTANT PROFESSOR OF ENTOMOLOGY**—Applications are invited for a tenure-track, 12-month appointment. Duties: to develop a field research program on reproductive, flight, or feeding behaviors of mosquitoes and sand flies. Basic qualifications: Ph.D. and postdoctoral experience. Send letter of application, résumé, and three letters of recommendation to: **Dr. G. F. O'Meara**, Florida Medical Entomology Laboratory, University of Florida, 200 9th Street, SE, Vero Beach, Fla. 32962.

### ASSISTANT/ASSOCIATE PROFESSOR IN BACTERIOLOGY

The Department of Veterinary Microbiology and Parasitology in the College of Veterinary Medicine at Texas A&M University, has a vacancy for an assistant or associate professor in the area of pathogenic bacteriology, bacterial immunity, or bacterial genetics. This is a full-time, tenure-track position. Applications will be considered from individuals with the Ph.D. degree. Possession of the D.V.M. degree and certification by the ACVM are desirable. The successful candidates will have proven teaching and research abilities with a demonstrated ability to secure competitive funding.

Rank and salary will be negotiable and competitive. Applications will be received until 31 August or until the position is filled.

Applications should be submitted together with a list of publications and names of three references to:

**Dr. I. R. Tizard**  
Department of Veterinary Microbiology  
and Parasitology  
College of Veterinary Medicine  
Texas A&M University  
College Station, Texas 77843

*Texas A&M University is an Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF BIOLOGICAL SCIENCES (DEVELOPMENTAL BIOLOGY) BROCK UNIVERSITY

Applications are invited for a tenure-track position from individuals with a Ph.D. and postdoctoral experience with research interests in any area of developmental biology, particularly its cellular, molecular, or genetic aspects. The successful candidate will be expected to teach developmental biology to upper-level undergraduates and graduate students, to participate in team-taught courses at the first- or second-year level, and to carry on independent research. The response deadline is 1 October 1985; the appointment will be effective 1 July 1986.

Please send curriculum vitae and the names of three referees to: **Chairman, Search Committee, Department of Biological Sciences, Brock University, St. Catharines, Ontario, Canada L2S 3A1**. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

### Harvard University ASSISTANT PROFESSOR CELLULAR AND DEVELOPMENTAL BIOLOGY (CDB)

The Department of Cellular and Developmental Biology intends to make one and possibly more appointments at the assistant professor level, effective 1 July 1986. Our department covers a broad range of topics in cellular biology and developmental/molecular genetics. We are seeking outstanding candidates in these fields. We are particularly interested in possible appointments in the areas of vertebrate development, neurobiology, plant molecular biology, and cell biology. However, we will consider exceptional applicants in other fields as well. *We encourage applications from women and minority groups.* Applications should include curriculum vitae, reprints of publications, and a statement of research plans. Complete applications and three letters of recommendation, solicited by the applicant, should be received no later than 31 October 1985 by:

**Diane Baldwin, Administrator**  
CDB Search Committee  
Cellular and Developmental Biology  
The Biological Laboratories  
Harvard University  
16 Divinity Avenue  
Cambridge, Mass. 02138

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

### UNIVERSITY OF COLORADO HEALTH SCIENCES CENTER DEPARTMENT OF BIOCHEMISTRY, BIOPHYSICS AND GENETICS ASSISTANT PROFESSOR, MOLECULAR BIOLOGY

Applications are sought to fill a tenure-track teaching/research position in molecular biology, to begin on or about 1 January 1986. Candidates should have significant postdoctoral experience and will be selected primarily on the basis of their general qualifications. To apply, send curriculum vitae, list of publications, and the names and addresses of at least three references by 15 October to: **Committee for Molecular Biology, B-121, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colo. 80262**. *The University of Colorado is an Affirmative Action/Equal Opportunity Employer.*

**BIOCHEMIST—Renal Physiology, Micro-Enzymology, Membrane Transport**. Position available for Ph.D. The successful candidate is expected to demonstrate excellence in biochemical research, preferentially in cell membrane physiology and enzymology. Applicants should send their curriculum vitae to: **Dr. Michèle G. Brunette, Research Center—Maison-neuve Hospital, 5415 l'Assomption Boulevard, Montreal, Quebec, Canada HIT 2M4**.

**CHEMIST**. Environmental consulting firm has immediate opening for a self-motivated individual to supervise an organics laboratory. Must be experienced with GC procedures for pesticide, herbicide, and volatile organics analyses according to EPA, APHA, and ASTM protocols. LC experience desirable. Send résumé and salary requirements to: **Dr. Henry J. Kanla, Environmental & Chemical Sciences, Inc., P.O. Box 1393, Aiken, S.C. 29802**. *An Equal Opportunity Employer.*



## SENIOR RESEARCH BIOLOGIST

### MICROBIOLOGY

The Sterling-Winthrop Research Institute announces an opening for a Senior Research Biologist in its Microbiology Department.

We are seeking an individual to develop a new Skin Microbiology Program with emphasis on animal model development and examination of factors affecting bacterial involvement in skin disease. A broad based background in medical microbiology or dermatology is desired with strong consideration given to individuals with research experience in host-parasite interactions especially involving anaerobic microflora.

The successful candidate will possess a PhD in microbiology or a related discipline with 1-2 years post-doctoral experience. This position will involve supervision of other scientific and technical staff and require demonstrated skills in written and oral communication.

We offer an attractive salary and benefits package with the opportunity for professional growth. The Institute is located near Albany, NY, which is a major center for summer and winter recreational activities.

Please send CV including salary requirements in confidence to:

Nancy E. Laranjo, Employee Relations Administrator



**STERLING-WINTHROP  
RESEARCH INSTITUTE**

A Division of Sterling Drug Inc.  
Columbia Turnpike, Rensselaer, NY 12144  
Equal Opportunity Employer M/F/H/V

## A POSTDOCTORAL POSITION IN NEUROPSYCHOPHARMACOLOGY

is available in the Life Sciences Division of the Los Alamos National Laboratory. Participate in studies of the behavioral and neurochemical effects of psychoactive drugs in laboratory animals. Candidates with training in behavioral pharmacology, neuropharmacology, or related fields are encouraged to apply. We offer a comprehensive benefits package with a starting salary of \$27,900 - \$29,376 per year.

Interested candidates should send a copy of their vita to James M. O'Donnell, Los Alamos National Laboratory, LS-7, MS M881, Los Alamos, New Mexico 87545. For information regarding this position, contact Dr. O'Donnell at (505) 667-9843 or (505) 667-9551.

**To formally apply**, please send your vita and three letters of reference to:

Carol M. Rich  
PostDoc-DV

Personnel Administration Division  
Los Alamos National Laboratory  
Los Alamos, New Mexico 87545  
An Affirmative Action/Equal  
Opportunity Employer  
U.S. Citizenship Required



## DIRECTOR, OCEAN SCIENCE AND TECHNOLOGY PROGRAMS

The Office of Naval Research seeks an outstanding individual to serve in this Federal Senior Executive Service (SES) position. Salary range is \$61,296-\$68,700, depending on qualifications. (In addition to salary, career SES appointees are eligible to compete for performance awards and bonuses).

The Director, Ocean Science and Technology Programs, is responsible for the coordination and vertical integration of Navy ocean science and technology pro-

grams. The incumbent is the senior manager for ocean science and technology in ONR and the senior advisor to the ONR Technical Director and the Chief of Naval Research/Chief of Naval Development on the Naval research and development program in ocean sciences. The incumbent's role is to manage the planning, assessment, evaluation and coordination of the broad range of complex research and development issues characterizing the Navy ocean science and technology effort, which

involves a budget of approximately \$115 million in research, exploratory development and advanced development funding.

Candidates should possess a broad knowledge of basic research and exploratory development in ocean sciences and demonstrated experience in program leadership.

Interested persons should submit a resume or Standard Form SF-171, Application for Federal Employment (available at Federal Job Information Centers or from the address below), to:

**OFFICE OF NAVAL RESEARCH**  
CIVILIAN PERSONNEL DIVISION, CODE 791SC  
ATTN: ANNOUNCEMENT #85-48 (S)  
800 North Quincy Street • Arlington, VA 22217-5000

**Applications will be accepted through 13 September 1985 and must be received by that date. Applicants are requested to complete the appropriate supplemental forms. For further information and supplemental forms, please call (202) 696-4705.**

AN EQUAL OPPORTUNITY EMPLOYER

U.S. CITIZENSHIP REQUIRED

THE UNIVERSITY OF ALBERTA  
DEAN  
FACULTY OF SCIENCE  
EDMONTON, ALBERTA, CANADA

The University of Alberta is seeking an academic and administrative leader for its Faculty of Science.

The Faculty of Science consists of 340 full-time academic staff, 260 support staff in 13 departments which offer bachelors', masters', and doctoral programs. The departments are Botany, Chemistry, Computing Science, Genetics, Geography, Geology, Linguistics, Mathematics, Physics, Psychology (jointly with the Faculty of Arts), Statistics and Applied Probability, and Zoology.

In addition to offering undergraduate programs to 4450 full-time students, the academic staff members are actively involved in graduate instruction and research. Research activities generate approximately \$11 million of grant and contract support.

The successful candidate will have proven administrative ability and must be recognized in a field of research that enhances the activities of the faculty. The dean will provide leadership for the faculty and must be dedicated to excellence in teaching and research.

Written nominations or applications for the position, accompanied in the latter case by a résumé of qualifications and experience and the names of three referees, should be submitted by 15 October 1985 to:

Dr. J. Peter Meekison  
Vice President (Academic)  
The University of Alberta

Edmonton, Alberta, Canada T6G 2J9

The University is an Equal Opportunity Employer.



ONCOGEN

IMMUNOLOGIST/  
IMMUNOCHEMIST

ONCOGEN, a biotechnology company founded in 1983, conducts research and development for cancer diagnostics and therapeutics. We are affiliated with Bristol-Myers Company, Genetic Systems, and Syntex Corporations. Our Immunotherapy Program is currently seeking an Immunologist/Immunochemist to direct the development, scale-up, and production of monoclonal antibodies.

Successful candidates will have a Ph.D., or an equivalent combination of education and experience in a chemical or biological science with emphasis in immunochemistry, cell biology, immunology, molecular biology, or other related disciplines.

Experience must include hybridoma technology, cell culture technology, assay development, and related techniques. Industrial bioprocess and regulatory compliance experience strongly desired. Your record should demonstrate accuracy, creativity and dependability in order to contribute to a fast-paced, stimulating state-of-the-art company.

ONCOGEN offers a competitive salary and benefits package. Our stimulating research environment is located in the highly desirable Pacific Northwest. Please send resume including publications, salary history, and a description of technical accomplishments and proficiency to:

Personnel Manager

ONCOGEN

3005 First Avenue  
Seattle, WA 98121

Equal opportunity employer m/f

POSITIONS OPEN

The Department of Biology at Georgia State University invites applications for an anticipated tenure-track position (ASSISTANT PROFESSOR level) with expertise in ZOOLOGY. Preference will be given to candidates with specialization in developmental or vertebrate biology. Candidate should have 2 to 3 years of postdoctoral experience and demonstrate evidence of outstanding potential for independent research. Salary will be commensurate with qualifications. The successful candidate will have a major responsibility in instruction in introductory biology and will be expected to develop a graduate course in area of specialization. Applications, including curriculum vitae, reprints, a statement of research plans, and three letters of reference, should be sent to: **Chairman, Department of Biology, Georgia State University, Atlanta, Georgia 30303.** Deadline for receipt of applications is 1 October 1985. *Georgia State University, a unit of the University System of Georgia, is an Equal Educational Opportunity Institution and is an Equal Opportunity/Affirmative Action Employer in compliance with Title IX and other Civil Rights laws.*

**ASSISTANT RESEARCH SCIENTIST** position available immediately for a recent Ph.D. in cell or molecular biology, with at least 1 year of postdoctoral experience to study the structure, function, and mutagenesis of the APRT gene in mammalian cells. The successful candidate must have a broad background in cell genetics and peptide immunochemistry, with experience in recombinant DNA technology. He/she must be capable of working independently on a project involving the preparation of specific antibodies against chemically synthesized peptides and analysis of cellular RNA by preparation of radiolabeled RNA probes. Salary for 40 hours per week will be \$16,300, plus \$4,000 in fringe benefits per annum. Send curriculum vitae, list of publications, and names of three references to: **Dr. Jay Tischfield, Department of Anatomy, Medical College of Georgia, Augusta, Ga. 30912.** *Equal Opportunity Employer/Affirmative Action Program. J 3077.*

ASSOCIATE RESEARCH SCIENTIST

The Department of Pharmacology is seeking an associate research scientist with an M.D. or Ph.D. degree to participate in studies on the developmental changes of catecholamine responsiveness in cultured cardiac cells. The successful candidate will have experience in techniques of cell cultures and in the pharmacology of hormone or drug responses. Attention will be paid to the adrenergic receptor complex and its modifications as a function of development and innervation. Interested persons should send curriculum vitae and the names of three references to:

Dr. Brian F. Hoffman  
Department of Pharmacology  
College of Physicians & Surgeons  
Columbia University  
630 West 168 Street  
New York, N.Y. 10032

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

DIRECTOR, AERONOMY LABORATORY (AL).

The Environmental Research Laboratories, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, in Boulder, Colorado, is seeking applicants for a scientific manager to serve as director, AL. Consisting of over 60 employees and having an annual budget of \$4 million, AL conducts an integrated program of fundamental theoretical and experimental research into atmospheric composition, chemistry, and dynamics. Position is career-reserved in the Senior Executive Service. Salary is \$61,296 to \$72,300 per annum, negotiable based on experience, scientific achievements, and technical/managerial qualifications. **Qualifications:** Broad background in atmospheric research to conceive, design, direct, and evaluate complex theoretical and experimental research programs. Competence in physical sciences sufficient to make informed judgments on likelihood of progress in AL programs. Personal research in atmospheric sciences. Executive competence in broad areas of administration such as program planning and evaluation, multi-group coordination, resource acquisition and administration, organizational representation, and human resource utilization including EEO. **To apply:** Interested persons should contact: Evelyn Fritz NOAA/NCASC, Personnel, RAS/DC2, 11400 Rockville Pike, Rockville, Md. 20852; telephone: (301)-443-6667 for application forms. **Reference Vacancy Number NS85-01.** Position announcement closes 10 September 1985. *An Equal Opportunity Employer.*

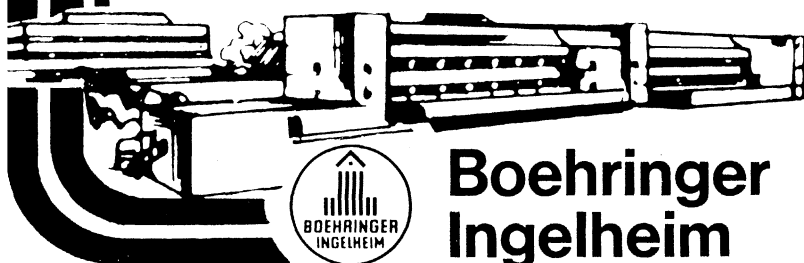
DRUG TRANSPORT  
SCIENTIST

BOEHRINGER INGELHEIM PHARMACEUTICALS, Inc., a highly respected and rapidly growing pharmaceutical company is currently seeking to add a qualified scientist to its Research and Development staff.

The candidate we seek will conduct studies on drug absorption/transport in various systems, including in vivo, in situ, and in vitro models. The individual will assist in the development of these models and subsequently will be responsible for their use in the context of a drug development program. **A masters degree or equivalent experience in a biomedical discipline is required,** and it is desirable that the candidate have some background in transport phenomena as well as some surgical experience with experimental animals. The candidate will also assist in studies on drug distribution, metabolism, and excretion.

Our state-of-the-art research facility, combined with a congenial atmosphere and a highly competitive compensation/benefits package, including generous relocation assistance, makes this an excellent opportunity for an individual interested in developing a career in pharmaceutical research.

Please send complete resume and salary history to: Dept. MAL, R&D, BOEHRINGER INGELHEIM PHARMACEUTICALS, Inc., 90 East Ridge, P.O. Box 368, Ridgefield, CT 06877. We are an equal opportunity employer m/f/h.



## POSITIONS OPEN

**UNIVERSITY OF PENNSYLVANIA**, Department of Medicine. The Cardiovascular-Pulmonary Division seeks an **ASSISTANT PROFESSOR OF MEDICINE**: Board-qualified or -certified in pulmonary medicine with particular interest in cell biology of the lungs. Research to be conducted both on tissue cultures and experimental preparations. Background of research experience in cell and tissue culture essential. Available 1 July 1986. Salary commensurate with experience. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.* Send reply to: Michael McNicholas, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.

**UNIVERSITY OF PENNSYLVANIA**, Department of Medicine. The Cardiovascular-Pulmonary Division seeks an **ASSISTANT PROFESSOR OF MEDICINE**: Board-qualified or -certified in pulmonary medicine with particular interest in clinical disorders of the control of breathing. Research to be conducted both on animals and on humans in ventilatory control. Background of research experience in control of breathing essential. Available 1 July 1986. Salary commensurate with experience. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.* Send reply to: Michael McNicholas, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.

**UNIVERSITY OF PENNSYLVANIA**, Department of Medicine. The Cardiovascular-Pulmonary Division seeks an **ASSISTANT PROFESSOR OF MEDICINE**: Board-qualified or -certified in pulmonary medicine with particular interest in immunobiology of the lungs. Research to be conducted both on cells, animals, and humans. Background of research experience in control of breathing essential. Available 1 July 1986. Salary commensurate with experience. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.* Send reply to: Michael McNicholas, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.

**UNIVERSITY OF PENNSYLVANIA**, Department of Medicine. The Cardiovascular-Pulmonary Division seeks an **ASSISTANT PROFESSOR OF MEDICINE**: Board-qualified or -certified in pulmonary medicine with particular interest in water exchange in the lungs. Research to be conducted both on animals and on humans. Background of research experience is essential. Available 1 July 1986. Salary commensurate with experience. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.* Send reply to: Michael McNicholas, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.

**UNIVERSITY OF PENNSYLVANIA**, Department of Medicine. The Cardiovascular-Pulmonary Division seeks an **ASSOCIATE PROFESSOR OF MEDICINE OR RESEARCH MEDICINE** with particular interest in the cellular biology of the airways. Secretory mechanisms favored but not exclusive. Background of research productivity in field essential. Available 1 July 1986. Salary commensurate with experience. *The University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer, M/F.* Send reply to: Michael McNicholas, Cardiovascular-Pulmonary Division, Department of Medicine, Hospital of the University of Pennsylvania, 874 Maloney Building, 3600 Spruce Street, Philadelphia, Pa. 19104.

**CHEMIST**—A research position to conduct studies on monoclonal antibodies is available immediately. A Ph.D. in chemistry or biochemistry is required. Applicant will be responsible for and should have experience in linking drugs and isotopes to antibodies, synthesizing linker compounds, and testing antibodies for reactivity and specificity following conjugation. Salary commensurate with experience. Send résumé, names of three references, and a summary of your experience to: Dr. Allen Lichter, Department of Radiation Therapy, University of Michigan Medical School, 1405 East Ann Street, Box 56, Ann Arbor, Michigan 48109. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

## Research Scientist Immunology

Ortho Pharmaceutical, a Johnson & Johnson Company, is respected throughout the world for its commitment to developing immunological breakthroughs that improve the quality of life.

We currently have an excellent opportunity in the Biochemistry Department of the Immunobiology Division for an individual with 3-5 years' postdoctoral experience to initiate and conduct basic research related to endocrine effects of thymic hormones, including inter-relationships with other hormone systems and mechanisms of action on the cell surface. Work will involve both in-vitro and animal experiments.

A Ph.D. in Biochemistry, or equivalent, with training in endocrinology, neuroendocrinology or cellular immunology is required. Your qualifications should also include experience in endocrinology, with laboratory emphasis in immunoassays, receptor assays and/or bioassays; background in cellular immunology a plus.

We offer an atmosphere that fosters professional growth and advancement, an excellent salary and the outstanding benefits you would expect of a member of the Johnson & Johnson Family of Companies. For prompt and confidential consideration, forward a resume, including salary history and requirements, to: Dr. Gideon Goldstein, Dept. 26, ORTHO PHARMACEUTICAL CORPORATION, P.O. Box 300, Route 202, Raritan, NJ 08869-0602. An Equal Opportunity Employer m/f.

### ORTHO PHARMACEUTICAL CORPORATION

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*A Johnson & Johnson Company*



## RESEARCH SCIENTIST

An excellent opportunity exists for a motivated scientist to conduct innovative exploratory research on polysaccharide degrading enzymes and other aspects of microbial biochemistry with an interdisciplinary research team conducting discovery research in the area of gastrointestinal tract microbiology and physiology of food producing animals. With thorough knowledge of bacterial biochemistry and physiology, the applicant will be expected to establish a basic research program in the area of complex polysaccharide (feed) degradation, associative (attachment) events mediated by enzyme mechanisms which may limit the rate or extent of fermentation, and/or identify related processes amenable to pharmaceutical manipulation which may improve performance in clinically healthy livestock.

Minimum qualifications include a Ph.D. in microbiology or biochemistry. Relevant postdoctoral experience in enzymology and quantification of activities particularly in anaerobic bacteria is highly desirable. Demonstrated ability in cell wall systems and structure/function relationships preferred. Individual must be capable of independent research but also serve as a member of a research team whose goal is to understand the biology of digestion and absorption in food producing animals.

Kalamazoo is a medium sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits including numerous lakes and four-season climate. Upjohn offers an excellent salary, commensurate with experience and an outstanding benefits program.

For confidential consideration, please call inside Michigan, collect 616-323-6767 or from outside Michigan, toll free 1-800-253-8600 Ext. 3-6767, to request an employment application sent to you immediately. Please refer to Ad Number 15706-A when calling.

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**A century of caring**

The Upjohn Company is an equal opportunity employer m/f



UNIVERSITY OF CALIFORNIA  
AT BERKELEY (UCB)  
NAVAL BIOSCIENCES LABORATORY  
(NBL)

The Division of Molecular Parasitology of the Biological and Environmental Health Sciences, School of Public Health and the MacArthur Foundation Consortium in Parasite Biology

The NBL is substantially expanding its research program in the molecular biology, genetics, and molecular and cellular immunology of parasitic organisms. We are seeking applicants for several positions at the **POSTDOCTORAL FELLOW AND ASSISTANT PROFESSOR** (professional research series) **LEVELS**. Graduate student fellowships in the interdisciplinary graduate group in parasitology, which includes both UCSF and UCB programs, are also available. Candidates for senior-level positions must have a doctoral degree and significant experience, documented by publication, in one of the above-mentioned disciplines but not necessarily with, nor excluding, parasitic organisms. Senior appointees are expected to develop a strong, extramurally funded research program, as well as to contribute to the teaching program in molecular parasitology. Candidates for postdoctoral positions should have experience in one or more of the following areas: molecular genetics, biology, immunology, biochemistry, pharmacology, and/or parasitology.

Successful candidates will join a large and active multidisciplinary research consortium dedicated to applying contemporary biological technologies to problems of parasitic disease.

Applicants should submit curriculum vitae, bibliography, and a short outline of research interests to: **Dr. Nina Agabian, Naval Biosciences Laboratory, Building 844, Naval Supply Center, Oakland, California 94625-5010**, by October 1985. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

MALE REPRODUCTION,  
DEVELOPMENT  
AND ONCOLOGY

The College of Physicians and Surgeons  
of Columbia University

The Department of Urology, in conjunction with the basic science departments and the International Center for Studies in Reproductive Sciences, invites applications for positions at the **postdoctorate, research associate, assistant professor, and associate professor** levels. Applicants for these research appointments should have strong backgrounds in endocrinology, biochemistry, immunology, and/or cell biology and be adept in contemporary molecular techniques involving protein purification, cell culture, monoclonal antibodies, and/or recombinant DNA. Those recruited will receive appointments in one of the basic science departments and shall participate or collaborate in innovative and expanding research programs to elucidate the mechanisms underlying prostate growth and tumorigenesis, sex determination, gonadal growth and onco-genesis, proliferation and differentiation of male germ cells, fertilization, and early embryogenesis. Please send curriculum vitae, research summary, and the names of four referees to: **Dr. Anthony R. Bellvé, Director of Research, Department of Urology, College of Physicians and Surgeons of Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Equal Opportunity Employer.*

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA  
AT BERKELEY (UCB)  
NAVAL BIOSCIENCES LABORATORY (NBL)  
POSITIONS IN CELL AND MARINE BIOLOGY

The Naval Biosciences Laboratory, an organized research unit of the University of California, Berkeley, has openings at the assistant and associate professor level in the professional research series. We are seeking candidates with a strong background in molecular genetics, biochemistry, and/or immunology with at least 2 to 4 years of postdoctoral experience to establish independent research programs in the areas of (i) marine biology (prefer molecular genetics approaches to marine organisms biofouling/biodegradation) and/or (ii) the regulation of gene expression (chromatin structure, DNA modification, recombination/gene conversion). This is a full-time, non-tenure-track research position funded from a contract between the Office of Naval Research and UCB, subject to UCB academic personnel guidelines, and requires the individual to assume project leader responsibilities, including supervision of laboratory personnel and development of independent funding.

Send curriculum vitae and three references by 1 October 1985 to: **Nina Agabian, Ph.D., Acting Director, Naval Biosciences Laboratory, Building 844, Naval Supply Center, Oakland, California 94625-5010.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

West Virginia University (WVU), School of Medicine, is seeking a Board-certified physician with an established record of scholarly achievement and clinical service to **CHAIR its DEPARTMENT OF MEDICINE**. The department, encompassing general medicine and all subspecialties, is an integral component of the rapidly expanding programs and facilities at the WVU Medical Center. Applicants should submit their curriculum vitae and names and addresses of three references by 13 September 1985 to: **Dr. Robert S. McCuskey, Professor and Chairman of Anatomy, WVU Medical Center, Morgantown, W. Va. 26505.** *West Virginia University is an Affirmative Action/Equal Opportunity Employer.*

**MOLECULAR VIROLOGIST.** The University of Pennsylvania has a faculty position available in molecular virology. The position is in the Section of Viral Oncology, Department of Clinical Studies, New Bolton Center, the rural campus near Kennett Square.

Duties will include research, teaching, and service. Emphasis will be placed on the development of a research program on the molecular biology of the bovine leukemia virus (BLV). The precise area of this program will be complementary to ongoing studies of the molecular mechanism of BLV-induced leukemogenesis and the regulation of viral transcription in BLV-infected and leukemic cells. Service responsibilities will include consulting in diagnostic virology. Teaching will relate to graduate students as well as students of veterinary medicine.

Qualifications are a Ph.D. degree and at least 2 years of postgraduate experience in research on molecular aspects of RNA tumor viruses. Further experience with recombinant DNA technology, gene cloning and sequencing, and gene expression in prokaryotic and eukaryotic systems would be an advantage. Rank and salary will depend on qualifications and experience. Applications should include curriculum vitae and names of three referees. They should be addressed to: **Dr. Jorge F. Ferrer, Chief, Section of Viral Oncology, Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, Kennett Square Pa. 19348.** *The University of Pennsylvania is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

Position for **EXPERIENCED MOLECULAR BIOLOGIST** interested in exploring the molecular biology of adrenergic receptors (open immediately). Projects of interest include cDNA and genomic cloning, gene expression, and regulation. Ph.D. or equivalent prior experience in molecular biology required. Position and salary commensurate with experience. Applications including curriculum vitae, list of publications, and names of two or three references should be sent to:

**Robert J. Lefkowitz/Marc G. Caron**  
Howard Hughes Medical Institute  
Box 3821, Department of Medicine  
Duke University Medical Center  
Durham, North Carolina 27710

POSITIONS OPEN

CHAIRPERSON  
DEPARTMENT OF PHYSIOLOGY  
AND BIOPHYSICS  
THE UNIVERSITY OF TEXAS  
MEDICAL BRANCH AT GALVESTON

Applications and nominations are invited for the position of chairperson of the Department of Physiology and Biophysics. Candidates must be highly qualified individuals with nationally recognized credentials in research and senior academic accomplishments with administrative experience or potential. The position offers excellent opportunity to develop an internationally leading academic department due to outstanding resources, scientific environment, and faculty positions.

Application or nomination should include curriculum vitae. Address correspondence to:

**James C. Thompson, M.D., Chairman**  
Department of Surgery  
The University of Texas Medical Branch  
Galveston, Texas 77550

*The University of Texas Medical Branch is an Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS IN MICROBIOLOGY

Tenure-track faculty positions. Applicants are expected to develop an independent research program and must have solid training and research experience in **MOLECULAR VIROLOGY, MOLECULAR BIOLOGY, MOLECULAR PATHOGENESIS, MOLECULAR GENETICS, or MOLECULAR IMMUNOLOGY**. Teaching responsibilities are limited and include participation in courses for graduate and medical students. Curriculum vitae, names of three references, and a summary of research interests should be sent to:

**Dr. Dennis J. O'Callaghan**  
Professor and Chairman  
Department of Microbiology and Immunology  
Louisiana State University Medical Center  
1501 Kings Highway  
Shreveport, La. 71130

*Affirmative Action/Equal Opportunity Employer*

**IMMUNOLOGY.** The University of Pennsylvania has a tenure-track position available in the field of viral immunology. This position is assigned to the Section of Viral Oncology, Department of Clinical Studies, New Bolton Center, the rural campus near Kennett Square.

Duties will include research, teaching, and service. Emphasis will be placed on the development of an active research program on the immunobiology of the bovine leukemia virus (BLV). This program may include studies on mechanisms of BLV-induced leukemogenesis at the host, cellular, and molecular levels, including identification and characterization of the target cells for neoplastic transformation. Service responsibilities will include consulting in diagnostic immunology. Teaching will relate to graduate students, as well as students of veterinary medicine. The appointee will be expected to assume a leadership role in the field of immunology on this campus.

Qualifications are a Ph.D. degree or the equivalent and at least 2 years of postgraduate experience in research. A D.V.M. or M.D. degree would be an advantage. Experience in viral immunology and monoclonal antibody techniques would also be an advantage. Rank and salary will depend on qualification and experience. Applications should include curriculum vitae and the names of three referees. They should be addressed to: **Dr. Jorge F. Ferrer, Chief, Section of Viral Oncology, Department of Clinical Studies, School of Veterinary Medicine, University of Pennsylvania, Kennett Square, Pa. 19348.** *The University of Pennsylvania is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

**MOLECULAR BIOLOGIST**—A position at the research associate/research assistant professor level is available to study inherited defects of steroidogenesis. A Ph.D. and postdoctoral fellowship in molecular biology are required, and experience in cDNA cloning and DNA sequencing analysis is highly desirable. The successful applicant will join an active research group in a new, well-equipped facility at a leading medical school. Salary and benefits are competitive. Please send curriculum vitae, relevant reprints, and names of references to: **Perrin C. White, M.D., Department of Pediatrics, Room N-236, New York Hospital/Cornell Medical Center, 525 East 68 Street, New York, N.Y. 10021.**

## **SENIOR SCIENTIST**

### **Drug Disposition/Pharmacokinetics**

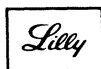
THE LILLY RESEARCH LABORATORIES, a division of Eli Lilly and Company, is seeking candidates for a Senior Scientist position in the area of drug disposition/pharmacokinetics.

Applicants must have a doctoral degree and should possess a good understanding of the physiological and physical chemical mechanisms which govern absorption, distribution, metabolism, and excretion of drugs. Good analytical technique in the analysis of biological fluids is required. Postdoctoral experience is desirable, but not required.

The primary responsibilities involve directing a laboratory research program to evaluate the interaction of chemical structural changes with the physiological mechanisms that govern pharmacokinetic behavior in animals.

Qualified candidates should send their curriculum vitae to:

John W. Crooks, Manager  
College Relations (DDP)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285



An Equal Opportunity  
Employer M/F

THE LILLY RESEARCH LABORATORIES, a division of Eli Lilly and Company, is seeking applicants for two positions in our division of Molecular and Cell Biology. The laboratories are located in a new state-of-the-art research facility located at the Lilly Corporate Center.

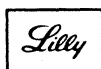
## **SENIOR PROTEIN BIOCHEMIST**

Applicants for this position should possess a doctoral degree and have postdoctoral experience in protein biochemistry, protein purification, and related analytical methodology. Experience with amino acid sequencing, especially gas phase, is desirable and knowledge of the latest analytical protein separation techniques is essential. The applicant will join a multidisciplinary team working on the production, isolation, and characterization of proteins produced by recombinant DNA technology.

## **ASSOCIATE CHEMICAL/BIOCHEMICAL ENGINEER**

Applicants for this position should have a BS or MS degree in Chemical or Biochemical Engineering and have experience related to cell culture technology. The person in this position will function in a multidisciplinary team involved with scale-up of mammalian cell culture in a research environment. Experience in fermentation technology, instrumentation, and mammalian cell culture is desirable in this position.

Qualified candidates for either position should send their curriculum vitae and/or resume to:



An Equal Opportunity  
Employer M/F

John W. Crooks, Manager  
College Relations (MCB)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285

## **Research In Infectious Diseases**

## **R&D Challenges At DU PONT**

Major expansion of our Infectious Disease Diagnostics Program has created the following immediate career opportunities for Ph.D.'s interested in advancing the state-of-the-art in diagnostics technology and with an interest in product-oriented research and development.

### **MICROBIOLOGISTS**

Experience in isolation, purification and characterization of antigens from bacteria, fungi and/or mammalian viruses is required. Immunochemistry and/or immunoassay development experience is desirable.

### **CLINICAL MICROBIOLOGISTS**

Extensive experience with current test procedures and innovative approaches to clinical testing with a broad range of clinically important microorganisms is required. Background in coordinating research programs and clinical evaluations is highly desirable.

### **IMMUNOLOGISTS**

Extensive experience in cellular immunology and hybridoma technology is required. Background in immunochemistry and/or immunoassay development would be valuable.

### **BIOORGANIC/ ORGANIC CHEMISTS**

Experience with liquid phase peptide/protein synthesis and knowledge of protein coupling chemistries and procedures for attachment of biological materials to polymers or proteins is required. Extensive experience with synthesis, isolation and characterization of biological/natural products is highly desirable.

You will enjoy highly competitive compensation commensurate with credentials plus liberal benefits including relocation. You will also find ample opportunities for professional growth and recognition. For immediate consideration, send curriculum vitae and list of references in complete confidence, indicating area of interest, to: **Dr. S.T. Toy, Employee Relations Department, Room X50086, E.I. du Pont de Nemours & Co., Inc., Wilmington, DE 19898.**



REG. U.S. PAT. & TM. OFF.  
An Equal Opportunity Employer M/F

## GROUP LEADER LOS ALAMOS NATIONAL LABORATORY

The Life Sciences Division is seeking a person to assume scientific leadership and management of a new Biophysics/Neurobiology Group. The group mission is to use advanced physical techniques in the description and understanding of molecular structure and function as well as the pursuit of fundamental questions in neurobiology utilizing advanced noninvasive techniques, i.e., nuclear resonance spectroscopy and neuromagnetometry.

### Responsibilities:

- recruiting top scientific personnel
- obtaining program funding
- interacting with Laboratory personnel to promote the group's research goals.

### Requirements:

- demonstrated research excellence in biophysics with emphasis in the areas of explaining protein function in terms of protein structure and/or neurobiology with emphasis on the use of non-invasive tools for the understanding of neural mechanisms which underlie data integration, storage, and retrieval
- proven ability to interact effectively
- proven ability to develop outstanding and fundable research programs
- demonstrated professional-level experience in management of scientific people and programs
- excellent oral and written communication skills
- Ph.D. and postdoctoral training in biophysics, neurobiology and/or a related scientific discipline.

### About Los Alamos:

The Laboratory, a national resource for multifaceted scientific research, is operated by the University of California for the United States Department of Energy. Our physical location in the picturesque mountains of Northern New Mexico offers an informal lifestyle with exceptional outdoor recreational activities.

To apply, send your resume with salary history in confidence to:

Sandra Harding  
50726-DU

Personnel Administration Division  
Los Alamos National Laboratory  
Los Alamos, New Mexico 87545  
An Affirmative Action/Equal  
Opportunity Employer  
U.S. Citizenship Required



## POSITIONS OPEN

### DEAN COLLEGE OF MEDICINE UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

Applications and nominations for the position of dean of the College of Medicine at the University of Arkansas for Medical Sciences (UAMS) are requested. The College enrolls approximately 540 M.D. students, 400 housestaff, and 100 graduate students. Educational programs include participation in six Area Health Education Centers and an active continuing education program statewide. Clinical service programs are conducted at the University Hospital, Arkansas Children's Hospital, two VA Hospitals, and numerous affiliated community hospitals.

The dean reports to the chancellor and is responsible for all programs in the College of Medicine. Applicants should have prior administrative experience. To apply, submit curriculum vitae by 1 September 1985 to:

John P. Shock, M.D.  
Chairman, Search Committee  
University of Arkansas for Medical Sciences  
4301 West Markham Street, Slot Number 523  
Little Rock, Ark. 72205

*UAMS is an Affirmative Action Employer.*

### FACULTY POSITIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS

The University of Texas Health Science Center at Dallas invites applications for junior or senior level positions available in fall 1986. Applicants must have postgraduate experience in molecular biology or biochemistry and be capable of developing an independent research program.

Teaching responsibilities include instructing medical and graduate students in selected areas of biochemistry and molecular biology. Applicants should send curriculum vitae, brief summaries of past research experience, their proposed research program, and the names of three people who can provide letters of reference to:

Biochemistry Search Committee  
University of Texas Health Science Center at Dallas  
5323 Harry Hines Boulevard  
Dallas, Texas 75235

*An Equal Opportunity/Affirmative Action Employer*

### FACULTY POSITION IN ENDOCRINOLOGY DIRECTOR, DIABETES CENTER

Applications are invited for a position at the level of assistant professor to establish and direct a Diabetes Center in the Section of Endocrinology and Metabolism at Rush Medical College and the Rush-Presbyterian-St. Luke's Medical Center. Successful candidates should be Board-certified in medicine and endocrinology and have strong clinical and research interest in a diabetes-related area.

Responsibilities include participation in teaching and patient care within a division newly committed to both clinical and basic research in the role of hormones in the etiology and development of atherosclerosis. Inquiries and résumé to:

John D. Bagdade, M.D.  
Section of Endocrinology and Metabolism  
Rush-Presbyterian-St. Luke's Medical Center  
1753 West Congress Parkway  
Chicago, Ill. 60612

*Equal Opportunity/Affirmative Action Employer*

**FACULTY POSITIONS IN FISHERIES.** The Marine Sciences Research Center has established a new Living Marine Resources Institute. We intend to appoint two new faculty members to tenure-track lines most likely at the assistant professor level. Candidates should have experience and interest in addressing problems in fishery biology and/or management through research in one of the following areas: genetics, ecology, biochemistry, physiology, population dynamics, or fish biology. Positions require a Ph.D. or equivalent. Appointments are expected to be available between 1 September 1985 and 1 February 1986. Salary range: \$23,000 to \$30,000 per academic year. Review of applications will begin on 15 August 1985 and continue until acceptable candidates are found. Send résumé, statement of research interests, copies of no more than three reprints, and the names of three references to: Chairman, Fishery Selection Committee, Marine Sciences Research Center, SUNY-Stony Brook, Stony Brook, N.Y. 11794-5000. *SUNY-Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer.* AK Number 162-85.

## POSITIONS OPEN

### FACULTY POSITIONS

The University of Florida, College of Veterinary Medicine, is seeking applications and nominations for several faculty positions. Detailed position descriptions are available upon request.

### DEPARTMENT OF INFECTIOUS DISEASES

**Assistant Professor of Immunology:** Application deadline is 15 September 1985. Position Number VM-8412. Dr. R. E. Bradley, Search Committee Chairperson.

### DEPARTMENT OF PREVENTIVE MEDICINE

**Assistant Professor of Food Animal Disease Research:** Application deadline is 15 September 1985. Position Number VM-8506. Dr. D. D. Buss, Search Committee Chairperson.

Letters of application or nomination should include curriculum vitae outlining citizenship, academic training, teaching and practice experience, present professional activities and Board-certification. Also needed are a list of publications, a statement of professional goals, and the names of three persons who can provide letters of reference. Salary will be commensurate with training and experience (and academic rank) of the successful applicant. *The University of Florida is an Equal Opportunity/Affirmative Action Employer.* Correspondence should be addressed to the appropriate Search Committee chairperson at:

College of Veterinary Medicine  
University of Florida  
Box J-125, JHMH  
Gainesville, Fla. 32610-0125

### HEAD, COMMUNICATIONS AND DOCUMENTATION

The International Center for Agricultural Research in the Dry Areas (ICARDA) invites applications for the position of Head, Communications and Documentation, to be based at the headquarters in Aleppo, Syria.

### RESPONSIBILITIES:

Direct the Department of Communications and Documentation which is primarily responsible for gathering, producing, and disseminating information on the Center's research and training activities. Involves writing and editing, production of internal and external newsletters and other publications, graphic arts, audiovisual presentations, printing and computerized storage, and retrieval of scientific information.

### QUALIFICATIONS:

Bachelor of science or advanced degree in agricultural journalism or closely related field; at least 10 years in responsible position in agricultural information/communication work; some international experience preferred; demonstrated competence in supervision of a staff and management of overall agricultural information operations. Knowledge of French desirable.

### CONDITIONS OF APPOINTMENT:

International tax-free salary based on background and experience; use of car; allowance toward housing; annual home leave; noncontributory medical insurance scheme and pension fund.

Candidates should submit two copies of their curriculum vitae and samples of work, plus names of two referees, quoting Reference COMM/1/85 to:

Dr. Mohammed A. Nour, Director General, ICARDA, P.O. Box 5466, Aleppo, Syria.

### MANAGER—TISSUE PROCESSING LABORATORY

This supervisory position is in a high-volume quality and service-oriented tissue processing (histopathology and electron microscopy) laboratory, with five full-time employees. Implementation of new ultrastructural and histologic techniques, and subsequent training of personnel will be ongoing managerial responsibilities. ASCP certification as a HT/HTL and a minimum of 5 years of relevant experience are required. Strong administrative and organizational skills are essential, including effective communication and interaction with people. This is a permanent, full-time position; salary commensurate with qualifications and abilities. Letters of application, curriculum vitae, and at least three letters of reference should be sent to: Dr. C. W. Leathers, Washington Animal Disease Diagnostic Laboratory, P.O. Box 2037 C.S., Pullman, Wash. 99165; telephone: 509-335-9696. *Washington State University is an Equal Opportunity/Affirmative Action Employer. We encourage minority, women, handicapped, Vietnam-era and disabled veterans, and aged persons to apply and identify themselves as such in their applications.*

**Announcement  
INTERNATIONAL SYMPOSIUM ON  
HIGHLY TOXIC CHEMICALS:  
Detection and Protection Methods  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada  
25 to 27 September 1985**

This symposium, to be held in Saskatoon, will consider the hazards of manufacturing highly toxic chemicals, the methods of detecting such compounds (sampling, analysis) and the appropriate methods of prevention, intervention (emergency measures, detoxification, treatment), and protection. Such knowledge also could be applied by those investigating alleged use of chemical warfare agents. Several sessions will be devoted to the methyl isocyanate incident (Bhopal), with Dr. J. M. Dave from Jawaharlal Nehru University, New Delhi, India, as a keynote speaker. Other sessions will consider: modeling and predicting the dispersion of toxic gases; hydrogen sulfide toxicity; legal aspects of catastrophic events; approach to investigations; laboratory methodology; remote sensing; and protective clothing and handling under accident and recovery conditions. An industrial exhibition of analytical instruments (particularly those for field use), detection kits, and protective equipment will complement the symposium.

Both original and previously published material will be considered. Persons interested in presenting a short communication are asked to submit an abstract by **25 August 1985**; persons or companies interested in attending can obtain further information (and a copy of the preliminary program) by contacting:

**Highly Toxic Chemicals Detection  
and Protection Symposium  
c/o Toxicology Research Centre  
University of Saskatchewan  
Saskatoon, Canada S7N 0W0  
Telephone: 306-966-7441  
Contact person: Dr. D. G. Irvine**

## BIOLOGIST

A challenging opportunity exists at The Upjohn Company for a motivated individual, with either an M.S. or B.S. degree, to engage in discovery research in gut microbiology. The person would participate in a series of studies to assess the responses of the ruminal microbial population to pharmaceutical agents. Duties would include assaying fermentation products obtained from incubations of ruminal and gastrointestinal samples. The individual would also participate in basic exploratory research aimed at elucidating key processes (e.g.,  $H_2$  turnover, cellulose hydrolysis) in the degradation of organic matter in the gastrointestinal tracts of feed-producing animals.

Only individuals with a research M.S. degree or persons with a B.S. degree with demonstrated competency in analytical techniques will be considered. Degrees in microbiology are preferred, but persons with other degrees (e.g., biochemistry) with microbiological expertise will be considered. Experience with gas and gas-liquid chromatography, spectrophotometry, and the handling of microorganisms is essential. Experience with *in vitro* incubation techniques, and knowledge of animal physiology is desired. The individual must have strong oral and written communication skills, be capable of working independently, and not have a history of allergies to large animals.

Kalamazoo is a medium sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits including numerous lakes and four-season climate. Upjohn offers an excellent salary, commensurate with experience and an outstanding benefits program.

For confidential consideration, please call inside Michigan, collect 616-323-6767 or from outside Michigan toll free 1-800-253-8600 Ext. 3-6767, to request an employment application sent to you immediately. Please refer to Ad Number 17721-A when calling.

**Upjohn**

**A century of caring**

The Upjohn Company is an equal opportunity employer m/f

## Neuropharmacologist

**Ph.D. Level**

Continued expansion at the **Warner-Lambert/Parke-Davis Pharmaceutical Research Division** has generated an immediate opportunity within the Neurological Diseases Group in the Pharmacology Department.

The successful candidate will have:

Ph.D. or equivalent in pharmacology or physiology and up to five years of postdoctoral experience with a documented record of research excellence.

Research experience in the pharmacology of pain and/or the cerebral circulation. Experience in the area of neuropeptides and sensory nerve function is desired.

Excellent communication skills and the capacity to assume leadership roles in a team approach to drug discovery and development.

Our research facilities adjacent to the University of Michigan campus in Ann Arbor, Michigan are among the finest and best equipped in the world and are devoted exclusively to the discovery and development of new drugs. We offer excellent compensation, benefits and work environment. Send resume with salary requirements and references in confidence to: **Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Road, Ann Arbor, MI 48105.** An Equal Opportunity Employer M/F/H.

**WARNER  
LAMBERT**

## HOFFMANN-LA ROCHE

### Senior Scientist

#### Animal Health

Hoffmann-LaRoche, a leader in the animal health industry, has a career opportunity for a PhD to conduct research to characterize the interrelationships of animal physiology and biochemistry with animal growth and nutrition.

Objectives will include the discovery of new methods of altering animal growth performance and the support and extension of existing Roche products in animal agriculture.

Qualifications: PhD in Animal Biochemistry and/or Physiology and a comprehensive understanding of food animal growth.

Roche offers an attractive compensation package and a professional environment. Please send resume to: Eleanor M. Malone, Professional Employment & Staffing Specialist



**HOFFMANN-  
LA ROCHE INC.**  
Nutley, NJ 07110

An equal  
opportunity employer

*Products that matter  
from people who care*

## POSITIONS OPEN

### MOLECULAR BIOLOGIST The University of Texas System Cancer Center (UTSCC) Science Park—Research Division

Applications are invited for a faculty position (assistant or associate professor level) in a multidisciplinary research laboratory studying cellular and molecular mechanisms of carcinogenesis. Research programs at Science Park, located in Buescher State Park 40 miles east of Austin, include somatic cell genetics, DNA repair and mutagenesis, carcinogen metabolism and adduct formation, tumor promotion, virology, mechanism of lymphomagenesis, normal and tumor cell differentiation, biochemical genetics and growth factors. Candidates would be expected to have or establish an independent research program. Preference will be given to individuals who have extensive expertise and commitment in the area of molecular biology. The Science Park provides competitive salary and benefits, a stimulating research environment, postdoctoral and graduate students, and opportunities for interaction with faculty at nearby institutions, including the University of Texas Health Science Center in Houston, University of Texas at Austin, and Texas A & M University. Interested applicants should send complete curriculum vitae, the names of three references, and a brief statement of research interests to: **Dr. Thomas J. Slaga, Director, UTSCC, Science Park—Research Division, P.O. Box 389, Smithville, Texas 78957; Telephone: 512-237-2403. An Equal Opportunity/Affirmative Action Employer.**

### MOLECULAR BIOLOGIST

Assistant professor, tenure-track position. Candidate will be expected to conduct an independent research program related to cancer biology capable of attracting external funding. The candidate will also be expected to participate in the development of other programmatic areas, related to his or her area of expertise, in the Division of Hematology and Oncology. The candidate will be responsible for educational and teaching efforts of the division in the area of molecular biology of cancer. Submit curriculum vitae, three letters of recommendation, and a statement of research interests to: **Dr. Herbert A. Cooper, Department of Pediatrics, Division of Pediatric Hematology/Oncology, University of North Carolina, Chapel Hill, N.C. 27514. Women and minorities are encouraged to apply. An Equal Opportunity/Affirmative Action Employer.**

### MOLECULAR BIOLOGY OF BRAIN TUMORS

The Division of Neurosurgery and the Department of Medical Microbiology and Immunology have an opening for a **research faculty position** for an individual with a primary interest in oncogenes. Candidates should possess a strong background in molecular biology and research experience and interests in some aspect of the role of oncogenes in tumorigenesis. The successful candidate will be expected to develop a strong, independent research program as part of an ongoing research effort in the biology of brain tumors. The position includes a liberal start-up package in an environment with strong support in molecular biology and the neurosciences. Appointment is on a 12-month basis, salary is commensurate with experience, and the starting date is negotiable. Applicants should send curriculum vitae, a summary of research plans, and the names of at least three references to: **Stephen Zimmer, Ph.D., Department of Medical Microbiology and Immunology, University of Kentucky College of Medicine, 800 Rose Street, Lexington, Kentucky 40536-0084. The University of Kentucky is an Equal Opportunity Employer, M/F.**

**POST-Ph.D.** to work on carcinogen binding. Experience in ESR, NMR, gel electrophoresis, and protein isolation. Closes 15 November 1985. Send résumé to: **Dr. L. H. Piette, Utah State University, UMC 09, Logan, Utah 84322. Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available to study the electrophysiology of secretory cells of the intestinal immune system. We are interested in control mechanisms of stimulus secretion coupling. A background in electrophysiology and experience with the micro-electrode technique are necessary. The stipend will be consistent with MRC guidelines and the position is available 15 September 1985. Please send curriculum vitae with references to: **Dr. J. D. Huizinga, Ph.D., Department of Neurosciences, Health Sciences Centre, Room 3N5C, McMaster University, Hamilton, Ontario, Canada L8N 3Z5; telephone: 416-525-9140, extension 2590.**

## POSITIONS OPEN

### MOLECULAR CARDIOLOGIST

A tenure-track faculty position is available to study the molecular and genetic basis of cardiac muscle development. Experience with recombinant DNA techniques is essential; experience with somatic cell genetics is desirable.

Send curriculum vitae, a brief description of research experience and interests, and the names of three references to: **Dr. Robert Roberts, Chief, Section of Cardiology, Department of Medicine, Baylor College of Medicine, 6535 Fannin Street, M.S. F-905, Houston, Texas 77030. Equal Opportunity Employer.**

**MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)**—Department of Applied Biological Sciences is seeking a **POSTDOCTORAL ASSOCIATE** to study trichothecene mycotoxin metabolism. Requires a Ph.D. degree in biochemistry, chemistry, or related discipline. Some experience in enzyme kinetics and/or analytical techniques for structure proof preferred. Send two copies of résumé to: **Professor Michael Marletta, 56-229, 77 Massachusetts Avenue, Cambridge, Mass. 02139. MIT is an Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL FELLOW

Postdoctoral fellowship in epidermal biology/biochemistry available immediately in Dermatology Unit, The University of Rochester School of Medicine and Dentistry, to study epidermal alteration caused by ultraviolet irradiation at the molecular level using monoclonal antibody probes. Send curriculum vitae and references to: **Dr. Lowell A. Goldsmith, University of Rochester Medical Center, P.O. Box 697, Rochester, N.Y. 14642. Affirmative Action/Equal Opportunity Employer, M/F/H.**

### POSTDOCTORAL POSITION IN CELL AND MOLECULAR BIOLOGY AND PHARMACOLOGY

Postdoctoral research position available to study the cell and molecular biology and pharmacology of arterial pressure control mechanisms in a collaborative interdisciplinary environment. Interests include molecular mechanisms of neurotransmitter storage and release, presynaptic regulation, and molecular mechanisms of cell signalling at neurovascular synapses including peptides, transmitters, and receptor transduction. Projects provide opportunity for training with integrated facilities of transmission and scanning electron microscopy, cell culture, hybridoma technology, receptor techniques, and molecular biology. Salary open with opportunity to progress to assistant professorship. Interested candidates should send curriculum vitae and a brief statement of research objectives to: **Dr. Thomas E. Gaffney, Chairman, Department of Pharmacology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, South Carolina 29425.**

**POSTDOCTORAL POSITION.** Opportunity to participate in: (i) studies of apolipoproteins in clinical patients and in patients participating in family studies; (ii) studies of apolipoprotein characterization by biochemical, immunologic, and monoclonal antibody procedures; and (iii) the initiation of studies designed to characterize polymorphisms of apolipoprotein genes and relate these polymorphisms to immunologic characteristics of apoproteins. Multiple apolipoprotein radioimmunoassays and Southern blot DNA technology are currently operational in the laboratory. Position is supported by NIH training grant, supplemented to institutional levels. U.S. citizen or immigrant visa required. Write to: **B. A. Kottke, M.D., Ph.D., Atherosclerosis Research Unit, Mayo Clinic, Rochester, Minn. 55905. Telephone: 507-285-5902. An Equal Opportunity/Affirmative Action Institution.**

The Laboratory of Experimental Oncology, Department of Pathobiology, College of Veterinary Medicine, University of Tennessee, Knoxville, is inviting applications for a **POSTDOCTORAL POSITION** for research on metabolism of chemical carcinogens in human and animal cells in vitro. Experience in basic in vitro techniques and biochemistry/pharmacology of enzyme-mediated xenobiotic metabolism required. Stipend: \$18,000 per annum. Send curriculum vitae and two letters of reference to: **Dr. H. M. Schuller, Department of Pathobiology, College of Veterinary Medicine, P.O. Box 1071, Knoxville, Tennessee 37901-1071.**

The University of Tennessee Institute of Agriculture is an Equal Opportunity/Affirmative Action/Title XI/Section 504 Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITION IN MOLECULAR NEUROBIOLOGY** available immediately for 2 years, for study of the mechanisms by which nerve growth factors promote axon formation and development of the neural circuitry, using cDNA probes. Experience in molecular biology, biochemistry, and/or cell biology is desirable. Send curriculum vitae, list of publications, and names of three references to: **Dr. Douglas N. Ishii, Department of Physiology and Biophysics, Colorado State University, Fort Collins, Colorado 80523.**

**POSTDOCTORAL POSITION.** A position is available immediately to study the regulation of bile acid and cholesterol metabolism in hepatocyte monolayer cultures. Experience in enzymology and lipid biochemistry would be helpful. Salary is commensurate with qualifications and experience. Interested individuals should send résumé and three letters of reference to: **Dr. Z. Reno Vlahcevic, Division of Gastroenterology, Medical College of Virginia of Virginia Commonwealth University, MCV Station Box 711, Richmond, Va. 23298.**

**POSTDOCTORAL POSITION** available immediately in the area of structural analysis of biomolecular assemblies using advanced methods of electron microscopy and computer image processing. Methods of EM preparation and 3-D reconstruction are being developed to obtain high resolutions structural information on macromolecules. Strong mathematical background and interest in structural biology desired. Please submit curriculum vitae and names of three references to: **Dr. J. Frank, Wadsworth Center for Laboratories and Research, New York State Department of Health, Albany, N.Y. 12201.**

**POSTDOCTORAL POSITIONS** available for biochemists and molecular biologists to study the effects of DNA nucleotide sequence on DNA damage and repair and oncogene activation. Studies use site-directed mutagenesis, DNA sequencing, oligonucleotide synthesis, protein isolation, computer modeling, and bacterial and mammalian cell transformation. Send curriculum vitae and three letters of reference to: **Michael D. Topal, Ph.D., Lineberger Cancer Research Center, University of North Carolina, Chapel Hill, North Carolina 27514.**

**POSTDOCTORAL POSITIONS.** Available 1 September 1985 to study human sperm fertility and its regulation by cAMP and calcium in a collaborative program between the laboratories of Drs. J. Tash and D. Wolf. Individuals interested in cell biology-biochemistry of fertilization or image processing are encouraged to apply. Address curriculum vitae and names of references to: **Dr. Don P. Wolf, University of Texas Medical School, 6431 Fannin, Suite 3270, Houston, Tex. 77030. An Equal Opportunity Employer. Women and minorities are encouraged to apply.**

**POSTDOCTORAL RESEARCH ASSOCIATE** available immediately for studies of disordered fatty acid metabolism, including metabolite elucidation (Ge/Ms) and synthesis, as well as animal model studies. Ph.D. in bio-organic chemistry, biochemistry, or other related areas. Send curriculum vitae and names of three references to: **Kou-Yi Tserny, Ph.D., or Charles L. Hoppel, M.D., Research Service, VA Medical Center, Cleveland, Ohio 44106. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH POSITION** available immediately for a minimum of 3 years to study cell surface phenotype, DNA content, and kinetic properties of lymphoma cells using the flow cytometer as the main analytical instrument. Independent research in related areas such as lymphoma growth regulation and differentiation, and anti-idiotypic antibody production will be encouraged. At least 2 years of experience in cell biology and/or cellular immunology is required. Stipend commensurate with experience. Please send curriculum vitae and names of references to: **Raul C. Braylan, M.D., Professor, Department of Pathology, Box J-275, JHMC College of Medicine, University of Florida, Gainesville, Florida 32610.**

**RESEARCH ASSOCIATE** to develop and conduct research in metabolic and endocrine aspects of growth and development and food intake regulation and identify blood borne factors, isolate biologically active compounds, and develop technology to regulate biologically important events in this field. Require Ph.D. in physiology with 2 years of experience. Salary: \$22,215 per year. Apply with résumé to: **Georgia Department of Labor, 794 Prince Avenue, Athens, Georgia 30613. Control Number GA 5079831.**



## POSITIONS OPEN

A **POSTDOCTORAL POSITION** is available for a suitable, qualified applicant interested in studying the role of viral oncogene expression in leukemogenesis. Applicants should have experience in molecular biology and an interest in immunobiology. The research program of the Trudeau Institute emphasizes the use of animal models of cancer and infectious disease to analyze mechanisms of protective immunity. The starting salary in 1985 is \$16,000 plus a liberal fringe benefits package. Subsidized housing is available.

The Trudeau Institute is a not-for-profit, pure research institute located on the shore of Saranac Lake, 10 miles from Lake Placid, N.Y. Send résumé and names of three references to:

David Hines, Ph.D.  
Trudeau Institute  
P.O. Box 59  
Saranac Lake, N.Y. 12983

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## YALE UNIVERSITY POSTDOCTORAL RESEARCH FELLOW

A postdoctoral research position is available immediately for study of the molecular biology of cell surface receptors. Background in molecular genetics and/or nucleic acid biochemistry is required. Opportunity to apply recombinant DNA techniques to the solution of problems in cell biology as a member of a multidisciplinary team investigating the structure and function of cell surface receptors for polypeptide growth factors and biogenic amines. Salary will range from \$16,000 to \$22,000, commensurate with years of relevant postdoctoral experience. Applicants should send curriculum vitae, a statement of relevant experience, and the names of three references to: Dr. John P. Perkins, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately to study the synthesis and mechanism of action of immunotoxins; candidates should have a strong background in protein biochemistry. Send résumé and names of three references to: **Dr. Tom Oeltmann, Division of Oncology, A2127 Medical Center North, Vanderbilt University, Nashville, Tenn. 37232.**

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## POSTDOCTORAL RESEARCH ASSOCIATE

Recent Ph.D. to carry out research on the mechanisms of action on various nucleic acid substrates of several kinetically distinct forms of a nuclease (BAL 31 nuclease) and to work on cloning/sequencing of the nuclease gene(s). Experience in nucleic acid enzymology and molecular cloning desirable. Some supervisory responsibility. Position available immediately for 2 years at starting salary of \$20,000 per year. Send curriculum vitae and names of three references to: **Dr. Horace Gray, Jr., Department of Biochemical and Biophysical Sciences, University of Houston, Houston, Texas 77004.** *An Affirmative Action/Equal Opportunity Employer.*

**RESEARCH ASSISTANT PROFESSOR.** To study synaptic transmission with regard to vestibular systems. Qualified applicant must be capable in intracellular recording and must also have some knowledge of statistical distributions and their relevance to quantal analysis of synaptic transmission. Contact: **Dr. John Hackett, Box 449, Department of Physiology, University of Virginia, Charlottesville, Va. 22908.** *An Affirmative Action/Equal Opportunity Employer.*

**RESEARCH ASSOCIATE** available immediately for a Ph.D. in biochemistry or toxicology to participate in an ongoing project concerning metabolic alterations of the liver during carcinogenesis in experimental animals. Qualified individuals should be familiar with biochemical procedures, including enzyme assays and protein and nucleic acid purification. Starting salary is \$18,000 and renewal after 1 year. Send curriculum vitae and names of two references to: **H. Shinozuka, M.D., Ph.D., Department of Pathology, University of Pittsburgh, School of Medicine, 777A Scaife Hall, 3550 Terrace Street, Pittsburgh, Pa. 15261.**

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE** position available after November 1985. For studies of the population biology of bacteria and their viruses and plasmids. Background in either microbial (molecular) genetics or population biology and an intense interest in the mechanisms of evolution. Salary commensurate with experience. Send curriculum vitae and the names and addresses of three references to: **Bruce R. Levin, Department of Zoology, University of Massachusetts, Amherst, Mass. 01003.** Telephone 413-545-2782, by 1 November 1985. *An Affirmative Action/Equal Opportunity Employer.*

## RESEARCH ASSOCIATES BIOLOGY AND BIOCHEMISTRY

The College of Biological Sciences, University of Minnesota, has a limited number of non-faculty openings for scientists who have completed the Ph.D. and some postdoctoral training and who wish to continue independent research careers. While such research associates may work in collaboration with faculty, they will be expected to obtain independent funding, including stipend, prior to appointment. Appointments must be renewed annually, but may be continued indefinitely, depending on funding, facilities, and evaluation of contribution.

Participating units are the Departments of Biochemistry, Botany, Ecology and Behavioral Biology, Genetics and Cell Biology, Microbiology, the Bell Museum of Natural History, and the Gray Freshwater Biological Institute. Availability of positions in each unit will depend on space, facilities, research interests, and success in obtaining external funding.

Apply to: **The Research Associate Program, College of Biological Sciences, University of Minnesota, 109 Zoology Building, 318 Church Street, SE, Minneapolis, Minn. 55455.** Provide curriculum vitae and list of publications, a one- to two-page statement of research plans, a list of facilities and equipment required, and three letters of recommendation. Indicate the unit or faculty member with which affiliation is desired.

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

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As a \$3.1 billion international leader in the health care products industry, scientific research and development is a key to Abbott Laboratories' continued growth. Our expansion in a number of diversified areas is testament to the success of our R&D efforts and the importance that Abbott places on its scientists and their vital contributions. The following positions are now available in our Diagnostics and Pharmaceutical Divisions.

### DIAGNOSTICS

#### PROTEIN BIOCHEMIST

Candidate must possess a Ph.D. in Biochemistry and strong experience in the chemical modification of proteins and the use of bifunctional and heterofunctional linking agents. Experience with carbohydrate chemistry and radioisotopes preferred. **Reply to Dept. SHW.**

#### PROTEIN BIOCHEMIST/ IMMUNOLOGIST

This position requires a highly creative individual with a Ph.D. in Biochemistry/Immunology. At least 2 years of post-doctorate experience is preferred. A background in protein purification, FPLC, HPLC, the preparation of enzyme conjugates and solid phase immunoassay development is essential. **Reply to Dept. SHW.**

#### CELLULAR IMMUNOLOGIST

An M.S. Degree in Immunology is required along with experience in cellular immunology and mammalian tissue culture. A familiarity with immunological mechanisms and cell products is also required. **Reply to Dept. SHW.**

In addition to an exceptional scientific environment, Abbott can provide excellent salaries and benefits including profit sharing and stock purchase plan. We are located in an attractive suburban area on the Lake Michigan shoreline, 30 miles north of Chicago. For confidential consideration, please send resume with salary history to **CORPORATE PLACEMENT**, referencing the appropriate department. Abbott is an Affirmative Action Employer.

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Responsibilities include the custom synthesis of radio-labeled compounds (carbon-14, tritium, sulfur-35) for use in Drug Disposition studies. The synthesis of unlabeled products/compounds containing stable isotopes also required. Qualified candidates will have direct experience in the synthesis of carbon-14 labeled products and the ability to work on a semi-micro scale. Knowledge of chromatography (HPLC, TLC, GLC) and spectroscopy (NMR, MS, IR), and strong written communication skills also essential. **Reply to Dept. CG.**

#### MEETING BOUND?

Abbott representatives will be recruiting for the Ph.D. Chemist — Radiochemistry position while attending the International Symposium on the Synthesis and Applications of Isotopically Labeled Compounds this Sept. 3-6 in Kansas City. To set up a potential interview at the meeting send your resume to Dept. CG.

## THE FIRST WORD IN...SUCCESS

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE—PHYSIOLOGICAL PLANT ECOLOGY.** Study evapotranspiration, soil/plant water relations, and gas exchange of sagebrush steppe and monocultures established on simulated waste management sites. Field work will be conducted on the Idaho National Engineering Laboratory. Applicants should have experience with gas exchange and water relations techniques, expertise in computer modeling, and strong background in soil science. Salary: \$18,000 plus benefits. Position available 1 October. Send résumé, letter providing details of relevant experience, and three letters of recommendation by 1 September to: Jay E. Anderson, Department of Biological Sciences, Idaho State University, Pocatello, Idaho 83209. An Equal Opportunity Employer.

**RESEARCH BIOCHEMIST, Ph.D.** As key scientist, molecular mechanism of thyroid hormone action at cell level; 7-year term appointment; start at \$30,500 per year. U.S. citizen. If Civil Service rated, must be GS-12. Requisites must include experience, publications in mitochondrial oxidative phosphorylation, experience with proton motive force desirable, also protein fractionation, thyroid physiology. Columbia University appointment possible. Send résumé: Dr. K. Sterling, VA Medical Center, 130 West Kingsbridge Road, Bronx, N.Y. 10468. An Equal Opportunity Employer.

## RESEARCH SCIENTISTS

Positions available for research scientists with M.S. or Ph.D. in cell biology or other appropriate discipline to work in the following areas:

- Regulation of growth and differentiation, as well as transformation and mutagenesis of human epithelial cell cultures. Experience in epithelial cell culture techniques and the purification of cellular proteins is desirable.
- Investigation of the mechanism of retinoid actions against preneoplastic and neoplastic epithelial lesions. Experience in electron microscopy, cell kinetics, and biochemistry is desirable.
- Studies of the mechanisms of cell renewal in normal airway epithelium. Experience in electron microscopy and cell kinetics is desirable.

Responsibilities include working with a multidisciplinary team in planning and conducting research. Send curriculum vitae to:

J. G. Kerr  
Department B 61  
SOUTHERN RESEARCH INSTITUTE  
P.O. Box 55305  
Birmingham, Alabama 35255-5305

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**SENIOR RESEARCH DIRECTOR** for biotechnology firm. Biological sciences Ph.D. and 10 years of experience in industrial R&D preferred. Should have managerial experience of multiple projects, including supervision of senior scientists. Knowledge of agricultural biologics and diagnostics desirable. Responsibilities include: produce needs for animal and plant health, establishing contracts with agricultural research institutions, establish and monitor MBO's for research projects, product clearances, or patent filings. Send inquiry and response to: Personnel Director, 241 East Saginaw, Suite 517, East Lansing, Mich. 48823.

## DEPARTMENT OF AGRICULTURE (USDA) AGRICULTURAL RESEARCH SERVICE (ARS)

Director, U.S. Salinity Laboratory, Riverside, California. ARS is seeking a **SUPERVISORY SOIL SCIENTIST, AGRICULTURAL ENGINEER**, or a **PLANT PHYSIOLOGIST** to direct a research program on crop-water management with special emphasis on problems associated with saline and sodic soils. Candidates must have knowledge of: (i) crop-water management problems related to saline and sodic soils; (ii) soil chemistry and soil physics; and/or (iii) engineering principles related to soil and water; and/or (iv) plant physiology/chemistry principles of plant growth and metabolism. Ph.D. is desirable. Must be U.S. citizen. Salary is commensurate with experience with salary range of \$44,430 to \$67,940 per annum. For information on the research program and/or position, contact: William G. Chace, telephone: 415-486-3227. For information on application procedures/forms, contact: Rita Millard (telephone: 301-344-3138), USDA, Agricultural Research Service, Personnel Operations Branch, Western Section-WO9, Room 107, Building 003, BARC-W, Beltsville, Maryland 20705. Deadline date is 11 September 1985. An Equal Opportunity Employer.

## POSITIONS OPEN

### RESEARCH ASSISTANT

Basic research in cell motility involving monoclonal antibodies against contractile proteins. Strong background in immunology and/or biochemistry required with minimum of one year of laboratory experience. Opportunity to learn immunocytochemistry using light and electron microscopic techniques. Salary commensurate with experience.

Send résumé and three references to: Dr. S. Lowey, Rosenstiel Basic Medical Sciences Research Center, Brandeis University, Waltham, Mass. 02254. An Equal Opportunity/Affirmative Action Employer.

### STATE TOXICOLOGIST MAINE BUREAU OF HEALTH

The Division of Disease Control, Maine Bureau of Health, has a vacancy in the position of state toxicologist. The position requires knowledge in toxicology/chemistry and skills in quantitative risk assessment. The qualified candidate must have either a master's degree in chemistry and 2 years of experience in chemistry and toxicology or a Ph.D. in chemistry or toxicology. Preference will be given to candidates with training in statistics, epidemiology, toxicology, environmental science, or sanitary engineering.

Contact person: Knut Ra, Maine Bureau of Health; telephone: 207-289-3591.

The Johns Hopkins University, School of Medicine, seeks an **ACADEMIC VETERINARIAN** to supervise the research and training activities of the surgical research laboratories. The individual will collaborate with the faculty in the development of animal models for anesthesiology and surgery. The successful candidate will have a primary appointment in the Division of Comparative Medicine (50 percent), with a secondary appointment in the Department of Surgery (50 percent). Duties in comparative medicine include participation in the residency training program in the laboratory animal medicine, shared provision of clinical care for laboratory animals within the institution, and consultation with investigators concerning laboratory animals. Candidates should be Board-certified or -eligible for certification by the American College of Laboratory Animal Medicine (ACLAM) or be Board-certified by the American College of Veterinary Surgery (ACVS) with an interest in experimental surgery and laboratory animal medicine. Experience in personnel supervision and administration is required. Candidates are expected to conduct independent or collaborative research in an area of their choice. Salary and academic rank will be commensurate with experience. Send curriculum vitae and the names of five references to: John D. Strandberg, D.V.M., Ph.D., Director, Division of Comparative Medicine, The Johns Hopkins School of Medicine, 720 Rutland Avenue, Baltimore, Maryland 21205. Telephone: 301-955-3273.

## COURSE

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## ASSISTANTSHIPS

### IMMEDIATE AVAILABILITY—TEACHING ASSISTANTSHIPS IN PHARMACOLOGY

The graduate program in pharmacology at Northeastern University has two teaching assistantships with a start date of 16 September 1985. The doctoral program offers traditional coursework in biomedical sciences and research training in CNS, receptor, biochemical, and behavioral pharmacology by a growing, dynamic department. Stipend of \$6,400 for 9 months, plus tuition allowance. Telephone: 617-437-4182, or write: Norman R. Boisse, Ph.D., Head, Section of Pharmacology, Northeastern University, Boston, Mass. 02115.

## EXCHANGE PROGRAMS

### OPPORTUNITIES FOR STUDY AND RESEARCH IN CHINA

The Committee on Scholarly Communication with the People's Republic of China (CSCPRC) announces opportunities under the 1986-1987 National Program for Advanced Study and Research in the PRC for graduate students and postdoctoral scholars in the social sciences and humanities. This program offers support for long-term study and research at Chinese universities and research institutes. In addition, the Visiting Scholar Exchange Program supports short-term scholarly visits for both American and Chinese scholars in the sciences, as well as the social sciences and humanities. Application is open to citizens and permanent residents of the United States regardless of national origin, sex, or religious affiliation. The number of grants depends on available funding, which is provided by the U.S. Information Agency, Department of Education, National Endowment for the Humanities, National Science Foundation, and the Starr and Ford Foundations. Address inquiries to: CSCPRC, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington, D.C. 20418.

Postmark/mailling deadline for applications: 12 October 1985.

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIP IN PAIN RESEARCH

One or 2 years beginning immediately at the University of California, San Francisco, in the Departments of Pharmacology, Anatomy, Physiology. Applicants must have completed a Ph.D. or M.D., D.D.S., D.V.M., with at least 1 year of relevant research. Contact: Dr. Howard L. Fields, M-794, Department of Neurology, University of California, San Francisco, Calif. 94143. These NIH fellowships are limited to citizens or permanent residents of the United States. The University of California is an Equal Opportunity Employer.

**POSTDOCTORAL FELLOWSHIP IN INSULIN ACTION.** M.D. or Ph.D. with background in biochemical or cell biological research interested in working on the mechanism of insulin action. Major areas of investigation include membrane reactions sensitive to insulin, characterization and identification of insulin mediators, mechanisms for generation of insulin mediators, mechanisms by which mediators control enzymes, and ultrastructural analysis of ligand-receptor interactions and metabolism. Send curriculum vitae, bibliography, and names of three references to: Leonard Jarett, M.D., Department of Pathology and Laboratory Medicine, Hospital of the University of Pennsylvania, 3400 Spruce Street/G2, Philadelphia, Pa. 19104. Openings available immediately.

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**POSTDOCTORAL FELLOWSHIPS IN NEUROPHARMACOLOGY** at St. Louis University School of Medicine are available immediately through a NINCDS training grant. Research encompasses an emphasis on neurotransmitter and neuropeptide biochemistry, physiology, and pharmacology. Open to U.S. citizens or permanent residents with a M.D., Ph.D., or equivalent degree. Send curriculum vitae and three letters of reference to: Dr. Thomas C. Westfall, Department of Pharmacology, St. Louis University School of Medicine, 1402 South Grand Boulevard, St. Louis, Mo. 63104, or telephone 314-664-9800, extension 551. St. Louis University is an Equal Opportunity Employer.

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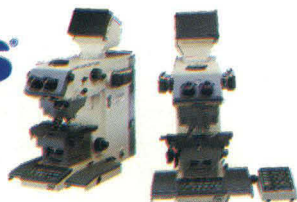
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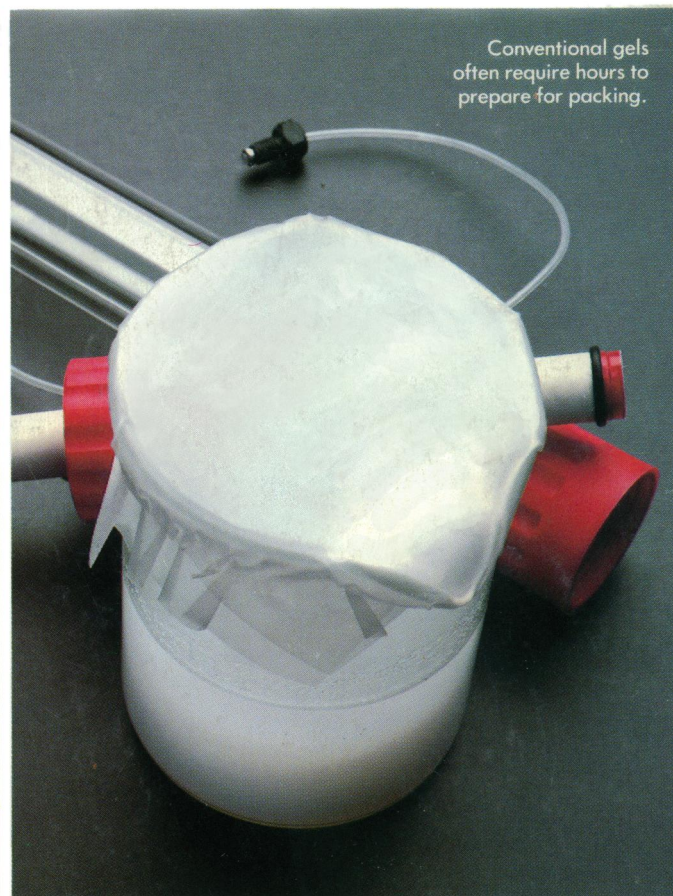
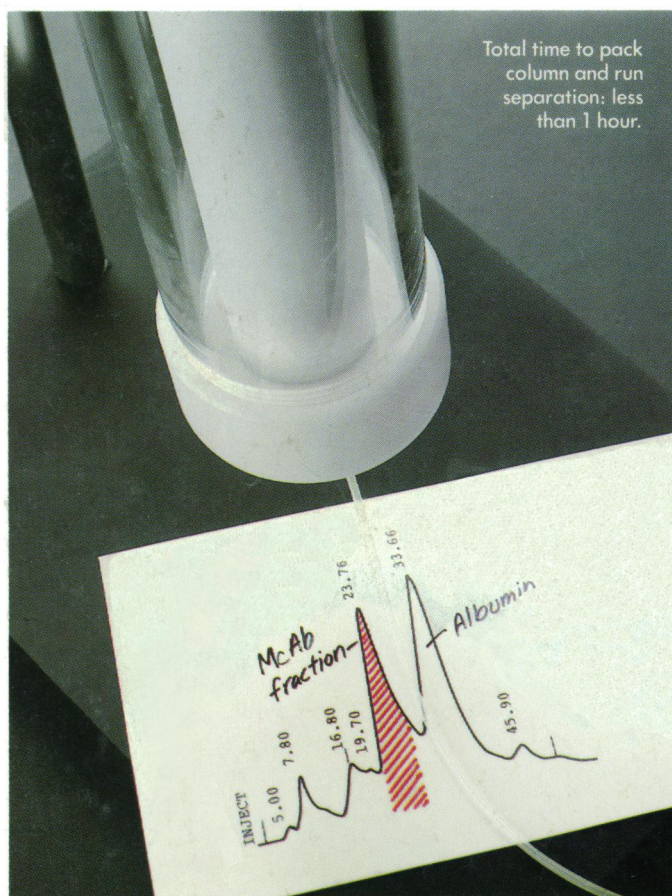
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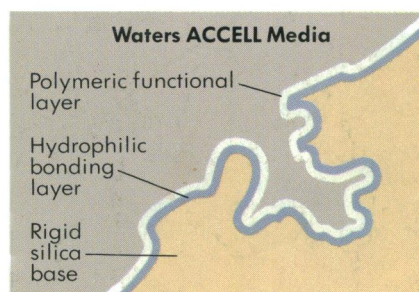


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