

"Cross-bedded Middle Saalian meltwater sands of the channel-fill type in an exposure south-west of Neu Wolmstorf, Lower Saxony. . . . In the large channel, on the left, a floe of fine sand, which must have been transported in a frozen state, is seen." [Photo by J. Ehlers; from J. Ehlers and F. Grube's chapter in *Glacial Deposits in North-West Europe*]

Denmark, Germany, and the Netherlands. This geographic framework serves adequately for organizational purposes. Although correlations and mapped boundaries tend to be left hanging at international borders, overlap and conflicts of interpretation are minimized. This reviewer shares the editor's regret that coverage could not be extended to include the whole of glaciated northern Europe. True, the British Isles as local centers of glacier outflow call for treatment in a separate volume. True, too, that "certain well-known difficulties" militate against similar treatment of Eastern and Western bloc nations. Nevertheless, one wonders why Finland was not included in this review of Scandinavian glaciation.

The chapters range from systematic summaries of the glacial history of Norway (J. Mangerud), Sweden (Lundqvist), Denmark (Sjørring), Germany (Ehlers), and the Netherlands (J. D. de Jong and G. C. Maarleveld) to brief status reports on research in progress. This reviewer particularly welcomes the study by Vorren *et al.* of glaciomarine sedimentation and stratigraphy on Norway's continental shelf west of Tromsø; welcome too is B. Strömberg's review of the current status of the Swedish varve chronology.

The publisher has not stinted on space or crowded the 409 figures in this generously illustrated volume. Ninety-five color plates splendidly illustrate features discussed in the text, but many are phys-

ically separated from the relevant pages and no list of plates is provided.

The volume affords a broad-ranging and rather well-balanced introduction to the Quaternary geology of a large area of northwestern Europe. For the scientist with an interest either in the European Quaternary or in Quaternary stratigraphy, sedimentation, and geomorphology, this volume will prove a stimulating and valuable acquisition.

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#### Books Received

**Advances and Challenges in Insect Rearing.** E. G. King and N. C. Leppla, Eds. USDA Agricultural Research Service, New Orleans, 1984 (available from the Superintendent of Documents, Washington, D.C.). xvi, 306 pp., illus. Paper. \$8. Stock No. 001-000-04393-5.

**Advances in Biotechnological Processes.** Vol. 2. Avshalom Mizrahi and Antonius L. van Wezel, Eds. Liss, New York, 1984. xx, 302 pp., illus. \$56.

**Advances in Diagnostic Visual Optics.** G. M. Breinin and I. M. Siegel, Eds. Springer-Verlag, New York, 1983. x, 247 pp., illus. \$26. Springer Series in Optical Sciences, 41. From a symposium, Tucson, Oct. 1982.

**Advances in Enzymology and Related Areas of Molecular Biology.** Vol. 56. Alton Meister, Ed. Interscience (Wiley), New York, 1984. viii, 520 pp., illus. \$50.

**Advances in Microbial Ecology.** Vol. 7. K. C. Marshall, Ed. Plenum, New York, 1984. xii, 223 pp., illus. \$39.50.

**Advances in Nuclear Physics.** Vol. 13. J. W. Negele and Erich Vogt, Eds. Plenum, New York, 1984. xiv, 320 pp., illus. \$49.50.

**Advances in Nuclear Science and Technology.** Vol. 16. Jeffery Lewins and Martin Becker, Eds. Plenum, New York, 1984. xiv, 572 pp., illus. \$89.50.

**Agricultural Sustainability in a Changing World Order.** Gordon K. Douglass, Ed. Westview, Boul-

der, Colo., 1984. xiv, 282 pp., illus. \$25. Westview Special Studies in Agriculture Science and Policy. From a conference, Claremont, Calif., April 1982.

**Air Pollution Modeling and Its Application III.** C. De Wispelaere, Ed. Plenum, New York, 1984. xii, 727 pp., illus. \$95. NATO—Challenges of Modern Society, vol. 5. From a meeting, Ile des Embiez, France, Sept. 1982.

**Alcoholism in the Elderly.** Social and Biomedical Issues. James T. Hartford and T. Samorajski, Eds. Raven, New York, 1983. xvi, 288 pp., illus. \$49. Aging Series, vol. 25.

**The American Darters.** Robert A. Kuehne and Roger W. Barbour. University Press of Kentucky, Lexington, 1984. vi, 177 pp., illus., + plates. \$45.

**Animal Behavior.** An Evolutionary Approach. John Alcock. 3rd ed. Sinauer, Sunderland, Mass., 1984. xx, 596 pp., illus. \$25.

**Animal Behavior.** Neurophysiological and Ethological Approaches. Kiyoshi Aoki, Susumu Ishii, and Hiromichi Morita, Eds. Japan Scientific Societies Press, Tokyo, and Springer-Verlag, New York, 1984. xx, 274 pp., illus. \$39.50. From five symposia, 1979–1982.

**Biological and Environmental Effects of Arsenic.** Bruce A. Fowler, Ed. Elsevier, New York, 1983. x, 281 pp., illus. \$89.50. Topics in Environmental Health, vol. 6.

**Biology and Chemistry of Plant Trichomes.** Eloy Rodriguez, Patrick L. Healey, and Indira Mehta, Eds. Plenum, New York, 1984. viii, 255 pp., illus. \$39.50. From a symposium, Vancouver, Canada, July 1980.

**The Biology of Immunologic Disease.** Frank J. Dixon and David W. Fisher. Sinauer, Sunderland, Mass., 1984. xvi, 399 pp., illus. \$27.95. A Hospital Practice Book.

**Biomembranes and Cell Function.** Fred A. Kummerow, Gheorghe Benga, and Ross P. Holmes, Eds. New York Academy of Sciences, New York, 1983. viii, 195 pp., illus. Cloth or paper, \$40. Annals of the New York Academy of Sciences, vol. 414. From a workshop, New York, Aug. 1982.

**Biotechnology.** A New Industrial Revolution. Steve Prentis. Braziller, New York, 1984. 192 pp., illus., + plates. \$18.50.

**Cardiac Metabolism.** Angela J. Drake-Holland and Mark I. M. Noble, Eds. Wiley-Interscience, New York, 1983. x, 552 pp., illus. \$75.

**Cardiovascular Pharmacology.** Michael J. Antonaccio, Ed. 2nd ed. Raven, New York, 1984. xiv, 592 pp., illus. \$39.50.

**Cell and Muscle Motility.** Vol. 5, The Cytoskeleton. Jerry W. Shay, Ed. Plenum, New York, 1984. xvi, 417 pp., illus. \$49.50.

**Cell Fusion.** Gene Transfer and Transformation. Roland F. Beers, Jr., and Edward G. Bassett, Eds. Raven, New York, 1984. xvi, 421 pp., illus. \$49.50. Miles International Symposium Series, No. 14. From a symposium, Baltimore.

**Cell Fusion.** Pitman, London, 1984 (U.S. distributor, CIBA Pharmaceutical Company, West Caldwell, N.J.). x, 291 pp., illus. \$35. Ciba Foundation symposium 103. From a symposium, London, May 1983.

**Chemical Taxonomy, Molecular Biology, and Functions of Plant Lectins.** Irwin J. Goldstein and Marilyn E. Etzler, Eds. Liss, New York, 1983. xii, 302 pp., illus. \$38. Progress in Clinical and Biological Research, vol. 136. From a symposium, Asilomar, Calif., May 1983.

**Contemporary Topics in Polymer Science.** Vol. 4. William J. Bailey and Teiji Tsuruta, Eds. Plenum, New York, 1984. xvi, 1013 pp., illus. \$125. From a symposium, Palm Springs, Calif., Nov. 1980.

**The Contribution of Genetics to the Study of Parasitic Protozoa.** David Walliker. Research Studies Press, Letchworth, England, and Wiley, New York, 1984. x, 218 pp., illus. \$59.95. Tropical Medicine Series, 4.

**Controlled Atmospheres for Heat Treatment.** R. Nemenyi, G. H. J. Bennett, Ed. Pergamon, New York, 1983. xvi, 240 pp., illus. \$40; paper, \$17. Pergamon Materials Engineering Practice Series. Translated from the Hungarian.

**Controversies in Obesity.** Barbara C. Hansen, Ed. Praeger, New York, 1983. xiv, 325 pp., illus. \$37.50. Endocrinology and Metabolism Series, vol. 5. From a symposium, Ann Arbor, Mich.

**CRC Handbook of Coastal Processes and Erosion.** Paul D. Komar, Ed. CRC Press, Boca Raton, Fla., 1983. xii, 305 p., illus. \$70. CRC Series in Marine Science.

**The Crisis in Higher Education.** Joseph Froomkin, Ed. Academy of Political Science, New York, 1984. x, 177 pp. Paper, \$7.95. Proceedings of the Academy of Political Science, vol. 35, No. 2.

**Current Issues in Toxicology.** H. C. Grice, Ed. Springer-Verlag, New York, 1984. 114 pp., illus. Paper, \$14.50.

**Developmental Processes in Normal and Diseased Muscle.** Hans M. Eppenberger and Jean-Claude

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## LETTERS

(Continued from page 1044)

for at least 12 days. No "Reed scholar" I encountered believes Lazear could not understand his own notes.

Lazear is certainly not the first junior researcher who did key work for which the head of the research team is remembered. Reed's supporters maintain, however, that Reed helped plan the experiments and provided the definitive proof with his controlled studies. In his firsthand account, for example, Truby says that Reed and the board discussed mosquito studies with two visiting English researchers in July and showed them the board's facilities for raising the insects. This was some time before Reed left for the United States. The board also discussed human experimentation and the need to volunteer themselves before Reed departed.

Franklin and Sutherland build up their case against Reed by vividly reconstructing events with telling details. When asked the sources for some of these details, Sutherland said they did not go back to documents from the period but relied on other accounts, including del Regato's, and used some "extrapolation." As I said in my article, it is sometimes difficult to tell where established fact ends and imaginative reconstruction begins.—COLIN NORMAN

## Formaldehyde Risk Assessment

The published version of our response to William R. Havender's comments on formaldehyde (Letters, 11 May, p. 556) contains two inadvertent misstatements that should be corrected for proper interpretation. The "further argument on linearity" (second column, first full paragraph) is inappropriately attributed to Havender. It is we who make the argument that the "best estimate" dose-response functions for genotoxic carcinogens may well be linear at low doses, not he. Further, the formula for saturable Michaelis-Menton enzyme kinetic and transport processes is incorrectly stated. The correct form of the second line of this equation is as follows:

$$(\sim \text{low } [S]) V_{\max}[S]/K_m$$

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## BOOKS RECEIVED

(Continued from page 1092)

Perriard, Eds. Karger, Basel, 1984. x, 293 pp., illus. \$114. Experimental Biology and Medicine, vol. 9. From a workshop, Boldern, Switzerland, 1983.

**Dictionary of Ceramic Science and Engineering.** Loran S. O'Bannon. Plenum, New York, 1984. xvi, 303 pp. \$45.

**A Dictionary of the Environment.** Michael Allaby. 2nd ed. New York University Press, New York, 1983 (distributor, Columbia University Press, New York). vi, 529 pp. \$50.

**Drug Safety in Clinical Practice.** Peter I. Folb. Springer-Verlag, New York, 1984. xii, 194 pp., illus. Paper, \$15.

**Drugs, Neurotransmitters, and Behavior.** Leslie L. Iversen, Susan D. Iversen, and Solomon H. Snyder, Eds. Plenum, New York, 1984. xvi, 532 pp., illus. \$65. Handbook of Psychopharmacology, vol. 18.

**Dual Models.** Magnus J. Weininger. Cambridge University Press, New York, 1983. xii, 156 pp., illus. \$19.95.

**Evaluation Methods for Environmental Standards.** William D. Rowe et al. Frederick J. Hageman, Ed. CRC Press, Boca Raton, Fla., 1983. xxii, 282 pp., illus. \$69.

**Evolution and the Genetics of Populations.** S. D. Jayaker and Laura Zonta, Eds. Associazione Genetica Italiana, Padova, 1983. 162 pp., illus. Paper, \$15. Supplement to *Atti Associazione Genetica Italiana*, vol. 29. From a workshop, Pavia, Italy, Sept. 1982.

**Evolution of Hormone-Receptor Systems.** Ralph A. Bradshaw and Gordon N. Gill, Eds. Liss, New York, 1983. xxii, 503 pp., illus. \$88. UCLA Symposium on Molecular and Cellular Biology, New Series, vol. 6. From a symposium, Squaw Valley, Calif., March 1982.

**The Evolution of Programs.** Nachum Dershowitz. Birkhäuser, Boston, 1983. 359 pp. \$24.95; paper, \$16.95. Progress in Computer Science, No. 5.

**Field, Thermionic, and Secondary Electron Emission Spectroscopy.** A. Modinos. Plenum, New York, 1984. xii, 375 pp., illus. \$55.

**Finite Elements for Electrical Engineers.** P. P. Silvester and R. L. Ferrari. Cambridge University Press, New York, 1983. x, 209 pp., illus. \$39.50; paper, \$14.95.

**A First Course in the Mathematical Foundations of Thermodynamics.** David R. Owen. Springer-Verlag, New York, 1984. xviii, 135 pp., illus. \$26. Undergraduate Texts in Mathematics.

**Foods That Fight Cancer.** A Diet and Vitamin Program That Protects the Entire Family. Patricia Hausman. Rawson, New York, 1984. xvi, 252 pp. \$16.95.

**Formation and Evolution of Galaxies and Large Structures in the Universe.** Jean Audouze and Jean Tran Thanh Van, Eds. Reidel, Boston, 1984 (distributor, Kluwer Boston, Hingham, Mass.). xviii, 453 pp., illus. \$58. NATO ASI Series C, vol. 117. From an institute, La Plagne, France, March 1983.

**Fossils for Amateurs.** A Guide to Collecting and Preparing Invertebrate Fossils. Russell P. MacFall and Jay Wollin. 2nd ed. Van Nostrand Reinhold, New York, 1983. x, 374 pp., illus. \$18.50; paper, \$12.50.

**General Physics.** Douglas C. Giancoli. Prentice-Hall, Englewood Cliffs, N.J., 1984. xx, 892 pp., illus. \$33.95.

**Genetic Engineering and New Pollution Control Technologies.** James B. Johnston and Susan G. Robinson. Noyes, Park Ridge, N.J., 1984. x, 133 pp. \$32.

**Glacial Geology.** An Introduction for Engineers and Earth Scientists. N. Eyles, Ed. Pergamon, New York, 1983. xiv, 409 pp., illus. Paper, \$17.95.

**Heidelberg Colloquium on Spin Glasses.** (May 1983). J. L. van Hemmen and I. Morgenstern, Eds. Springer-Verlag, New York, 1983. viii, 356 pp., illus. Paper, \$18. Lecture Notes in Physics, vol. 192.

**The High Nitrogen Compounds.** Frederic R. Benson. Wiley-Interscience, New York, 1984. viii, 679 pp., illus. \$125.

**Histoire de la Matière et de la Vie.** Guy Norel. Maloine, Paris, 1984. 276 pp., illus. Paper, 95 F. Recherches Interdisciplinaires.

**How to Avoid a Cesarean Section.** Christopher Norwood. Simon and Schuster, New York, 1984. 240 pp. \$14.95.

**Human Diversity.** Richard Lewontin. Scientific American Books, New York, 1984 (distributor, Freeman, New York). xii, 179 pp., illus. \$27.95. Scientific American Library.

**Human Gene Mapping 7.** Robert S. Sparkes et al., Eds. Karger, Basel, 1984. vi, 666 pp., illus. Paper, \$68. *Cytogenetics and Cell Genetics*, vol. 37, Nos. 1-4. From a conference Los Angeles, Aug. 1983.

**International Halley Watch Amateur Observers' Manual for Scientific Comet Studies.** Stephen J.

Edberg. Sky Publishing, Cambridge, Mass., and Enslow, Hillside, N.J., 1983. Variously paged, illus. Paper, \$9.95.

**The International Solar Polar Mission.** Its Scientific Investigations. K.-P. Wenzel, R. G. Marsden, and B. Battrick. European Space Agency, Paris, 1983 (distributor, ESTEC, Noordwijk, Netherlands). iv, 317 pp., illus. Paper, 175 F. ESA SP-1050.

**Interpretation of Liver Biopsies.** Richard J. Stenger. Raven, New York, xii, 164 pp., illus. \$34.

**Intervention in the Aging Process.** William Regelson and F. Marott Sinex, Eds. Liss, New York, 1983. Two volumes. Part A, Quantitation, Epidemiology, and Clinical Research. xvi, 335 pp., illus. \$52. Part B, Basic Research and Preclinical Screening. xiv, 389 pp., illus. \$60. Modern Aging Research, vols. 3A and 3B. From a symposium, Boston, Nov. 1982.

**An Introduction to Experimental Astronomy.** An Observational Workbook. Roger B. Culver. Freeman, New York, 1983. vi, 196 pp., illus. Paper. \$9.95.

**Jelliffe: American Psychoanalyst and Physician.** John C. Burnham. His Correspondence with Sigmund Freud and C. G. Jung. William McGuire, Ed. University of Chicago Press, Chicago, 1983. xx, 324 pp., illus. \$20.

**Kahn on Codes.** Secrets of the New Cryptology. David Kahn. Macmillan, New York, 1984. viii, 344 pp. \$19.95.

**Koobi Fora Research Project.** Vol. 2, The Fossil Ungulates: Proboscidea, Perissodactyla, and Suidae. J. M. Harris, Ed. Clarendon (Oxford University Press), New York, 1983. xviii, 321 pp. \$95.

**Kurt Koffka.** An Unwitting Self-Portrait. Molly Harrower. University Presses of Florida, Gainesville, 1984. xvi, 334 pp., illus. \$30.

**Landscape Ecology.** Theory and Application. Zev Naveh and Arthur S. Lieberman. Springer-Verlag, New York, 1984. xviii, 358 pp., illus. \$39.80. Springer Series on Environmental Management.

**The LMTO Method.** Muffin-Tin Orbitals and Electronic Structure. Hans L. Skriver. Springer-Verlag, New York, 1984. x, 281 pp., illus. \$32.50. Springer Series in Solid-State Sciences, vol. 41.

**Mind and Immunity.** Behavioral Immunology. An Annotated Bibliography 1976-1982. Steven E. Locke and Mady Hornig-Rohan, Eds. Praeger, New York, and Institute for the Advancement of Health, New York, 1983. x, 248 pp. \$35.

**Mind Wars.** The True Story of Government Research into the Military Potential of Psychic Weapons. Ronald M. McRae. St. Martin, New York, 1984. xxx, 155 pp. \$12.95.

**Minorities.** Community and Identity. C. Fried, Ed. Springer-Verlag, New York, 1983. x, 418 pp., illus. \$25. Dahlem Workshop Reports. Life Sciences Research Report 27. From a workshop, Berlin, Nov. 1982.

**The Miracle of Existence.** Henry Margenau. OX Bow Press, Woodbridge, Conn., 1984. viii, 143 pp. \$16.

**Mobile Source Emissions Including Polycyclic Organic Species.** D. Rondia, M. Cooke, and R. K. Haroz, Eds. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 387 pp., illus. \$56.50. NATO ASI Series C, vol. 112. From an institute, Liege, Belgium, Aug. 1982.

**Modern Management Techniques in Engineering and R & D.** Jack Balderston et al. Van Nostrand Reinhold, New York, 1983. xvi, 299 pp., illus. \$38.50.

**The Nuclear Weapons Industry.** Kenneth A. Bertsch and Linda S. Shaw. Investor Responsibility Research Center, Washington, D.C., 1984. iv, 405 pp., illus. Paper, \$22; to corporations, \$45.

**Nucleic Acids.** The Vectors of Life. Bernard Pullman and Joshua Jortner, Eds. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). x, 578 pp., illus. \$74. From a symposium, Jerusalem, May 1983.

**Occupational Lung Disease.** J. Bernard L. Gee, W. Keith C. Morgan, and Stuart M. Brooks, Eds. Raven, New York, 1984. xxxii, 264 pp., illus. \$39.50. From a conference, Chicago, March 1982.

**The Ocean Almanac.** Robert Hendrickson. Doubleday, Garden City, N.Y., 1984. xxvi, 446 pp. + plates. Paper, \$13.95.

**Of Mice, Models, and Men.** A Critical Evaluation of Animal Research. Andrew N. Rowan. State University of New York Press, Albany, 1984. x, 323 pp. \$34.50; paper, \$12.95.

**On the Brink.** Defense, Deficits, and Welfare Spending. James L. Clayton. Ramapo Press, New York, and National Strategy Information Center, New York, 1984. xviii, 158 pp. Paper, \$8.95.

**The Painful Prescription.** Rationing Hospital Care. Henry J. Aaron and William B. Schwartz. Brookings Institution, Washington, D.C., 1984. xii, 161 pp. \$22.95; paper, \$8.95. Studies in Social Economics.

**Parkinson's Disease.** A Guide for Patient and Family. Roger C. Duvoisin. 2nd ed. Raven, New York, 1984. xiv, 206 pp., illus. \$20.50; paper, \$12.95.

**The Parvoviruses.** Kenneth I. Berns, Ed. Plenum, New York, 1984. xiv, 410 pp., illus. \$59.50. The Viruses.

**Pascal Applications for the Science.** Richard E. Crandall. Wiley, New York, 1984. x, 246 pp., illus. Paper, \$14.95.

**The Problem-Oriented Medical Record for High-Risk Obstetrics.** Curtis L. Cetrulo and Anthony J. Sbarra, Eds. Plenum, New York, 1984. xxiv, 486 pp., illus. \$55.

**Processing of RNA.** David Apirion, Ed. CRC Press, Boca Raton, Fla., 1984. vi, 352 pp., illus. \$125.

**Progress in Atomic Spectroscopy.** Part C. H. J. Beyer and Hans Kleinpoppen, Eds. Plenum, New York, 1984. xxxiv, 617 pp., illus. \$85. Physics of Atoms and Molecules.

**Progress in Botany.** Morphology, Physiology, Genetics, Taxonomy, Geobotany. Vol. 45. Karl Esser *et al.*, Eds. Springer-Verlag, New York, 1983. xviii, 404 pp., illus. \$66.40.

**Progress in Energy and Combustion Science.** Vol. 8. N. A. Chigier, Ed. Pergamon, New York, 1983. vi, 363 pp., illus. \$144.

**Progress in Fracture Mechanics.** Fracture Mechanics Research and Technological Activities of Nations Around the World. G. C. Sih and D. Francois, Eds. Pergamon, New York, 1983. xii, 179 pp., illus. \$35. International Series on the Strength and Fracture of Materials and Structures.

**Proterozoic Geology.** L. G. Medaris, Jr., *et al.*, Eds. Geological Society of America, Boulder, Colo., 1983. viii, 315 pp., illus. \$49. The Geological Society of America Memoir 161. From a symposium, Madison, Wis., May 1981.

**The Proto-Spin Theory of the Universe.** Lawrence L. Carlini. Vantage, New York, 1983. xvi, 124 pp., illus. \$10.95.

**Psychic Discoveries behind the Iron Curtain.** Sheila Ostrander and Lynn Schroeder. Prentice-Hall, Englewood Cliffs, N.J., 1984. xii, 443 pp. Paper, \$7.95.

**Psychology and the Liberal Consensus.** Charles C. Anderson and L. D. Travis. Wilfrid Laurier University Press, Waterloo, Canada, 1983 (U.S. distributor, Humanities Press, Atlantic Highlands, N.J.). x, 153 pp. \$17.25.

**The Psychosocial Dimensions of Cancer.** A Practical Guide for Health Care Providers. Richard J. Goldberg and Robert M. Tull. Free Press (Macmillan), New York, and Collier Macmillan, London, 1984. viii, 280 pp. \$19.95.

**Radiologic Atlas of the Colon and Rectum.** Jakob Altaras. Urban & Schwarzenberg, Baltimore, 1984. xviii, 300 pp. \$65. Translated from the German edition.

**Random Linear Operators.** A. V. Skorohod. Reidel, Boston, 1984 (distributor, Kluwer Boston, Hingham, Mass.). xvi, 199 pp. \$43. Mathematics and Its Applications (Soviet Series). Translated from the Russian edition (1978).

**Real Time Programming 1983.** G. M. Bull, Ed. Published for the International Federation of Automatic Control by Pergamon, New York, 1983. x, 111 pp., illus. \$26. IFAC Proceedings Series. From a workshop, Hatfield, U.K., March 1983.

**Structural Equation Geometry.** The Inherent Properties of Curves and Coordinate Systems. J. Lee Kavanau. Science Software Systems, Los Angeles, 1983. xxviii, 506 pp., illus. Paper, \$16.95.

**Sublittoral Ecology.** The Ecology of the Shallow Sublittoral Benthos. R. Earll and D. G. Erwin, Eds. Clarendon (Oxford University Press), New York, 1983. x, 277 pp., illus. \$35. From a symposium, London, March 1981.

**Surgery in America.** From the Colonial Era to the Twentieth Century. A. Scott Earle, Ed. 2nd ed. Praeger, New York, 1983. xx, 408 pp., illus. \$49.95.

**Systems Development without Pain.** A User's Guide to Modeling Organizational Patterns. Paul T. Ward. Yourdon, New York, 1984. xiv, 272 pp., illus. Paper, \$27.50.

**Systems Research Methodological Problems.** Prepared by USSR State Committee for Science and Technology, USSR Academy of Sciences, Institute for Systems Studies. Pergamon, New York, 1983. x, 260 pp. \$67.50. Advances in Systems Research Series, vol. 1. Translated from the Russian edition by E. L. Nappelbaum, Yu. A. Yaroshevskii, and D. G. Zaydin.

**Turing's Man.** Western Culture in the Computer Age. J. David Bolter. University of North Carolina Press, Chapel Hill, 1984. xii, 264 pp., illus. \$19.95; paper, \$8.95.

**Twins.** Nature's Amazing Mystery. Kay Cassill. Atheneum, New York, 1984. xxiv, 309 pp. Paper, \$7.95. Reprint, 1982 ed.

**U.S. Energy Policy.** Crisis and Complacency. Don E. Kash and Robert W. Rycroft. University of Oklahoma Press, Norman, 1984. xviii, 334 pp., illus. \$19.95.

**Vibrios in the Environment.** Rita R. Colwell *et al.*, Eds. Wiley-Interscience, New York, 1984. x, 634 pp., illus. \$45. Environmental Science and Technology.

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**Microbiologist.** M.S. Experienced with all phases of electron microscopy, tissue culture, and some medical research experience. Good with technical writing and computers, knowledge of German. Desires position in research. Box 89, Kingston, R.I. 02881. X

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Experienced, energetic, bilingual **Entomologist** seeks position. B.S. zoology, M.S. medical-veterinary entomology. Salary negotiable. Telephone: 809-723-5571, 722-2666 daytime; 809-769-8595 evenings. Or write: P.O. Box 11501, Fdez. Juncos Station, Santurce, P.R. 00910. 6/8, 15

**Pharmacologist** Ph.D./M.B.A., 12 years of teaching and academic administrative experience. Good interpersonal skills, marketing orientation. Seeks industrial/government position. Box 150, SCIENCE. X

**Physiologist.** B.S. (biology) 1981, M.S. (physiology) 1983. Strong background in endocrinology, cell physiology, and biochemistry. Experienced in high-efficiency protein radiiodination, development of membrane receptor binding assays, in vitro superfusion of tissues, tissue culture, and a broad variety of biochemical techniques. Good at programming in BASIC. Seeks a research position. Box 145, SCIENCE, or telephone: 415-591-9248. X

**Physiologist.** M.D., Ph.D., 35 years in basic research in nutrition and gastroenterology, seeks senior research position in academia or industry. Box 146, SCIENCE. X

**Reproductive Biology** (Ph.D.), animal breeding (M.Sc.), veterinary science (B.Sc.); 20 publications. Seeking research, teaching, or industry position. Box 152, SCIENCE. 6/8, 15

## POSITIONS OPEN

**ANALYTICAL CHEMISTRY—Assistant Professor.** The Department of Chemistry of Seton Hall University anticipates one tenure-track position as of January 1985. Applications are invited from analytical chemists with demonstrated research excellence and a commitment to teaching at the graduate and undergraduate levels. The individual should complement the research areas of our faculty and participate in our B.S., M.S., and Ph.D. programs. Send a résumé, a brief description of future research plans, and the names of at least three references to: **Faculty Search Committee, Department of Chemistry, Seton Hall University, South Orange, N.J. 07079.** Seton Hall is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minority group candidates. Closing date for applications is 1 September 1984.

## ANATOMISTS PHYSIOLOGISTS

The American University of the Caribbean, School of Medicine, located in Montserrat, British West Indies, seeks to fill positions in gross anatomy, neuroanatomy, histology, and general human physiology. Main duty is to provide instruction to first year medical students. Salary and benefits are competitive. Forward résumés to: **Selection Committee, Medical Education Information Office (S), 100 NW 37 Avenue, Miami, Fla. 33125.**

**ASSISTANT/ASSOCIATE PROFESSOR**—Applications are invited for a full-time faculty research position in the Pathology Department, Medical College of Georgia, Augusta, Georgia. Applicants should have a Ph.D. degree and broad based training in biological and biochemical sciences. Previous or current research funding experience desirable. An interest in protein synthesis and separation, cell separation and cell membrane chemistry, and sickle cell disease would be an advantage. Participation in Ph.D. graduate programs in the department will be expected. Send curriculum vitae and letter of inquiry to: **Dr. A. B. Chandler, Chairman, Pathology Department, Medical College of Georgia, Augusta, Georgia 30912.** Equal Opportunity Employer, M/F. J1729.

**ASSISTANT PROFESSOR OF BIOLOGY**—Qualifications include a doctorate in biology with training in physiology preferred. Duties include: teaching freshman-level biology courses and an upper division physiology course for biology majors and health pre-professionals, student advisement, and departmental and school committees. Position available August 1984, nontenure-track with opportunity for annual renewal. Salary commensurate with qualifications. Send curriculum vitae, transcripts (unofficial), and three letters of recommendation to: **Dr. J. H. Arrington, Chairman, Department of Natural Sciences, South Carolina State College, Orangeburg, S.C. 29117.** Closing date for applications is 22 June 1984.

South Carolina State College is an Affirmative Action/Equal Opportunity Employer.

**THE UNIVERSITY OF WESTERN ONTARIO**  
London Canada

## DEAN OF MEDICINE

Applications and nominations are invited for the position of Dean of Medicine, with the appointment to be effective 1 July 1985. The appointment is for a period of seven years, renewable. Candidates should have an established reputation as an academic researcher and teacher and should have the necessary administrative and inter-personal skills to provide leadership for the continuing development of the academic programs and research within the Faculty.

The University of Western Ontario has a total enrollment of approximately 15,000 full-time undergraduates, 1,700 full-time graduates and 3,500 full-time equivalent students engaged in part-time studies. The University is located in the City of London, which has a population of 260,000 and is approximately 180 km south-west of Toronto.

The Faculty of Medicine has over 350 full-time and a large number of part-time faculty members in 22 different departments. The undergraduate medical program admits 105 students each year. In addition the Faculty is responsible for teaching basic health science courses for students in other faculties. There are over 400 interns and residents, and about 180 graduate students. The Faculty is very active in research, both on campus and in affiliated teaching hospitals. The Faculty is part of a Health Sciences Centre which also includes the Faculty of Dentistry, the Faculty of Nursing and the Faculty of Applied Health Sciences.

Nominations and applications should be submitted by October 1, 1984 to:

**Professor J. C. Leith**  
**Vice-President (Academic) and Provost**  
**Room 107, Stevenson-Lawson Building**  
**The University of Western Ontario**  
**London, Ontario N6A 5B8**

Applicants should include a curriculum vitae and the names of at least three referees.

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

*An Equal Opportunity Employer*

## TOXIC HAZARDS SPECIALIST

Vanderbilt University has a position available for a Toxic Hazards Specialist. Excellent opportunity for creative individual with B.S. (M.S. preferred) degree in public health, industrial hygiene, toxicology, or related field. Position entails development of comprehensive safety program for use and disposal of hazardous chemical and biological materials. Requires knowledge of safety procedures in handling hazardous materials, good organizational and communications skills and knowledge of governmental regulations. Salary 20K plus. Send resume to:

**VANDERBILT UNIVERSITY**  
**Personnel Services**  
**Room 104**  
**Peabody Administration Bldg.**  
**Nashville, TN 37203**

*An Equal Opportunity/  
Affirmative Action Employer*

## POSITIONS OPEN

**ASSISTANT PROFESSOR**—Tenure-track position in Anatomy Department. Candidates should have a Ph.D. with postdoctoral research experience and ability to obtain extramural grant support. Research interest in cell biology desired, especially in areas such as membrane structure and function, cell adhesion, cytoskeleton, and extracellular matrix. Individuals will participate in teaching in one of the areas of anatomy. Superb research facilities available in new building. Send curriculum vitae, brief statement of research interests, and names of three references by 30 June to:

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

*An Equal Opportunity/Affirmative Action Employer*

## ASSISTANT PROFESSOR OF PHARMACOLOGY

The Department of Pharmacology at Tulane University School of Medicine invites applications for a tenure-track faculty position at the assistant professor level. Applicants should have at least 2 years of postdoctoral training and hold the Ph.D. and/or M.D. degree(s). They should exhibit potential for developing a strong independent research program in the area of renal pharmacology, toxicology, cardiovascular, or hematopharmacology. Excellence in teaching medical and graduate students is expected. Applicants should send curriculum vitae, list of publications, a brief statement of research interests, and at least three names of references to: **James W. Fisher, Ph.D., Professor and Chairman, Department of Pharmacology, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, La. 70112.** Applications should be received by 1 September 1984 and the position is expected to begin by 1 January 1985.

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

Permanent position for **BIOLOGICAL OCEANOGRAPHER** available 1 September 1984. Ph.D. required. Teaching experience preferred. Ability to attract outside funding desirable. Position requires teaching at undergraduate level and field research as part of a team of marine vertebrate ecologists/oceanographers working in western North Atlantic waters. Salary negotiable. Applicant should submit a résumé, a statement of research interest, and names of three references by 1 July to: **Ocean Research and Education Society, 19 Harbor Loop, Gloucester, Mass. 01930.** *An Equal Opportunity/Affirmative Action Employer.*

## HARVARD MEDICAL SCHOOL CELL AND DEVELOPMENTAL BIOLOGY/ENDOCRINOLOGY

Applications are invited for postdoctoral and/or research associate positions to study mammalian spermatogenesis, fertilization, and embryogenesis. The research projects, directed by Dr. Anthony R. Bellvé and Dr. John D. Biggers, focus on events regulating the proliferation and differentiation of somatic, germinal, and embryonic cells. Candidates experienced in protein purification, endocrinology (growth factors), cell culture, microinjection and/or hybridoma techniques are particularly welcome. Appointments are for 2 to 3 years. Send curriculum vitae and list of references to: **Dr. Anthony R. Bellvé, Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School, 45 Shattuck Street, Boston, Mass. 02115.**

*Equal Opportunity/Affirmative Action Employer*

## CHAIRPERSON OF NEUROLOGICAL SCIENCES

Rush Medical College and Presbyterian-St. Luke's Hospital is seeking candidates for chairperson, Department of Neurological Sciences. Qualifications for this position include experience and strengths in administration, teaching, and research as well as clinical expertise in neurology. *Rush-Presbyterian-St. Luke's Medical Center is an Equal Opportunity/Affirmative Action Employer.* Candidates should submit written inquiries and curriculum vitae by 1 September 1984 to:

**Jan Fawcett, M.D.**  
**Professor and Chairman**  
**Department of Psychiatry**  
**Chairman, Search Committee for Chairperson**  
**of Neurological Sciences**  
**1720 West Polk Street**  
**Chicago, Illinois 60612**

## POSITIONS OPEN

**BEHAVIORAL ECOLOGIST.** Three-quarter position to replace faculty on sabbatic leave, starting September 1984. Teaching includes a freshman-level course on the animal phyla, one-half of upper division course in animal ecology and associated laboratory, animal behavior, graduate seminar, and graduate-level course in area of research interest. Ph.D. required. Send curriculum vitae, statement of research interests, transcripts, and three letters of recommendation postmarked by 30 June 1984 to: **Behavioral Ecology Search Committee, Department of Zoology, University of Montana, Missoula, Montana 59812.** *An Affirmative Action/Equal Opportunity Employer.*

**BIOLOGY: GENETICS.** One-year appointment; (target level) instructor or assistant professor; M.S. in genetics required. Ph.D. preferred; college teaching experience preferred. Teaching assignments in upper division courses in genetics and general biology. Send curriculum vitae, three letters of reference, and copies of transcripts by a 29 June 1984 deadline to: **Chairperson, Department of Biology, Southeast Missouri State University, Cape Girardeau, Mo. 63701.** *An Equal Opportunity/Affirmative Action Employer, M/F.*

## BIOLOGY

Applications are invited for a position in the Life Science Division, Scarborough Campus, University of Toronto. Candidates, who should have research experience in recombinant DNA techniques and an interest in the application of these techniques to plant or animal systems, will be expected to obtain an NSERC University Research Fellowship. The successful candidate will be required to pursue independent research and to teach in the undergraduate program on the Scarborough Campus. NSERC fellowships are restricted to Canadian citizens and permanent residents of Canada at the time of nomination. The closing date for applications, which should consist of curriculum vitae and three letters of reference, is 1 August 1984. Applications should be sent to: **Dr. Joan Grusec, Chairman, Life Science Division, Scarborough Campus, University of Toronto, 1265 Military Trail, Scarborough, Ontario, Canada M1C 1A4.**

## CANCER PHARMACOLOGIST

Applications are invited for a tenure-track position at the assistant professor level in the Department of Pharmacology and Cancer Center at Northwestern University Medical School. Minimal requirements include the Ph.D. and/or M.D. degree and at least 2 years of postdoctoral research experience in some area of cancer pharmacology. First preference will be given to candidates with research interests in molecular mechanisms of action of antineoplastic drugs, immunopharmacology (cancer related), biological response modifiers, or the application of modern molecular biological techniques to mechanisms of chemical carcinogenesis; however, no outstanding cancer pharmacologist is excluded from consideration. The department is rapidly growing with 24 faculty members; approximately half the faculty work in the area of molecular and biochemical pharmacology, including drug metabolism, drug-enzyme interaction, mechanisms of carcinogenesis, and pharmacokinetics, and the other half in excitable membrane electrophysiology and neurochemistry of receptors. Research programs are well funded by external sources, and a highly stimulating academic atmosphere is created.

Interested applicants should submit curriculum vitae with complete bibliography, and a brief (one to two pages) statement of research interests, and have three letters of reference forwarded to:

**Toshio Narahashi, Ph.D., Professor and Chairman**  
**Department of Pharmacology**  
**Northwestern University Medical School**  
**303 East Chicago Avenue**  
**Chicago, Illinois 60611**

*Affirmative Action/Equal Opportunity Employer*

**CELLULAR IMMUNOLOGIST/MOLECULAR BIOLOGIST.** Applications are requested for the **DIRECTOR** of the Laboratory of Cellular Immunology/Molecular Biology, Section of Hematology/Oncology, Loyola University School of Medicine. Joint appointments in medicine and one of the basic science departments are available as assistant or associate professors. A Ph.D. and postdoctoral training are required. Hard money support is available for salary and laboratory operating budget. Send curriculum vitae to: **Dr. Richard I. Fisher, Chief, Section of Hematology/Oncology, Loyola University School of Medicine, 2160 South First Avenue, Maywood, Ill. 60153.**

# U.S. DEPARTMENT OF AGRICULTURE (USDA) AGRICULTURAL RESEARCH SERVICE (ARS)

## National Program Leaders

Highly qualified scientists are needed to assume the duties of national program leaders on the Agricultural Research Service's National Program Staff in the following seven areas:

<b>Plant Physiology</b>	<b>Entomology</b>
<b>Veterinary Medicine</b>	<b>Fiber Technology</b>
<b>Ruminant Nutrition</b>	<b>Weed Science</b>
<b>Forage and Range</b>	

The successful candidates will focus on building broad multi-disciplinary research programs to solve national agricultural problems. ARS's research programs are conducted throughout the United States and in several foreign countries. These positions require sound scientific credentials and a broad knowledge of scientific disciplines involved in ARS's extensive research program in the respective disciplines. Candidates must demonstrate skills for program planning, setting research priorities, allocating resources, and evaluation programs.

These positions are located at Beltsville, Maryland. Grade level is GM-15. Salary range is \$50,252 to \$65,327, based on qualifications and experience. U.S. citizenship is required. *USDA is an Equal Opportunity/Affirmative Action Employer.* Send SF-171 by 16 July to:

**Judi Ruth (Code NPS)**  
**Agricultural Research Service, USDA**  
**Room 318D, Building 003, BARC-West**  
**Beltsville, Maryland 20705**  
**Telephone: 301-344-2701**

Applicants will be informed of eligibility or ineligibility. Eligible candidates will be informed when positions have been filled.

# CSIRO

## RESEARCH FELLOW/SENIOR RESEARCH FELLOW DYNAMICAL METEOROLOGIST A\$25,342 to A\$37,274

### DIVISION OF ATMOSPHERIC RESEARCH MORDIALLOC, VICTORIA

**GENERAL:** CSIRO conducts scientific and technological research in laboratories located throughout Australia and employs about 7500 staff, of whom some 2900 are professional scientists. The organization's research activities are grouped into five Institutes: Animal and Food Sciences, Biological Resources, Energy and Earth Resources, Industrial Technology, and Physical Sciences. The CSIRO Division of Atmospheric Research is a member of the Institute of Physical Sciences.

The Division of Atmospheric Research maintains broadly based research programs in dynamical meteorology, boundary layer physics, climatology, radiation, cloud physics, and atmospheric chemistry. Total staff numbers approximately 130.

The Division's Large Scale Dynamics program is concerned with the study of processes which determine the general circulation of the atmosphere on length scales of 1000 kilometers and greater, together with its variability and the climatic consequences of this variability.

**DUTIES:** To undertake research into the observational analysis and diagnostic aspects of the program and, in collaboration with other members of the group, to contribute to related theoretical and modelling studies of the atmosphere.

**QUALIFICATIONS:** A Ph.D. degree or equivalent qualifications in the physical sciences with demonstrated research ability and experience in dynamical meteorology. Experience in the analysis and interpretation of atmospheric data is highly desirable.

**TENURE:** A term of 3 years with the possibility of a further 2-year term. Australian government superannuation benefits available.

**APPLICATIONS:** Stating full personal and professional details, the names of at least two referees, and quoting reference Number A1848, should be directed to:

**The Chief**  
**CSIRO Division of Atmospheric Research**  
**Private Bag Number 1**  
**Mordialloc, Victoria 3195**  
**Australia**

By 6 July 1984.



National Research  
Council Canada

Conseil national  
de recherches Canada

# ENGINEERS AND SCIENTISTS (Materials Science)

The National Research Council's Industrial Materials Research Institute (IMRI) pursues applied research in the field of materials science. Recently established at Boucherville in the Montreal area, at a cost of \$27 million, the Institute is working in close cooperation with Canadian industry to assist with its expansion and international competitiveness.

Studies at IMRI are geared towards developing materials with new properties and improving the characteristics of existing ones.

The successful candidates will participate in research relating to one or more of the following:

Plastics and composites; metals and alloys, glass and ceramics; development and application of coating techniques; development of sensors and CAD/CAM. These scientists and engineers will also study the manufacturing process in order to optimize and automate forming processes, automation/robotization of assembly processes (welding in particular), characterization of materials and the evaluation of service performance.

Candidates should have a university degree in metallurgy, welding, mechanics, physics, chemistry, electricity, electronics or scientific computing, and at least five (5) years' experience in research and development. **Knowledge of French is essential for all positions.** Certain positions require knowledge of both English and French.

Benefits are fully competitive, and salary will be commensurate with qualifications.

Please forward a resume and a list of publications to the Employment Officer, National Research Council, Ottawa (Ontario) K1A 0R6. In your reply, please quote competition number IGM 1984.

# Canada



## POSITIONS OPEN

### CHEMISTRY

#### STAFF OFFICER

The Board on Chemical Sciences and Technology of the National Research Council seeks candidates with a Ph.D. or equivalent in chemistry, biochemistry, chemical engineering, or closely related area, with some postdoctoral experience, preferably in science policy.

Incumbent will work under the staff director to plan and direct a scientific advisory committee for a federal R&D center and to provide staff support for the Board. Excellent writing/communications/organizational skills and microcomputer familiarity needed. Send résumé to: **Dr. William Spindel, Board on Chemical Sciences and Technology, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418. An Equal Opportunity Employer, M/F/H.**

The Division of Pulmonary and Critical Care Medicine in the Department of Internal Medicine at The University of Michigan Medical School has a position available for **CHIEF of the Pulmonary and Critical Care Medicine Section** at the Veterans Administration Hospital in Ann Arbor. Candidates must be Board-certified in internal medicine and Board-eligible in pulmonary, have a strong record of research accomplishments, and meet faculty level requirements. Send inquiries with curriculum vitae to: **John G. Weg, M.D., Chief, Division of Pulmonary and Critical Care Medicine, University of Michigan Medical Center, 1405 East Ann Street, Ann Arbor, Mich. 48109.**

*The University of Michigan is a nondiscriminating, Affirmative Action Employer.*

West Virginia University invites applications and nominations for the position of **DEAN of the College of Agriculture and Forestry and Director of the Agricultural and Forestry Experiment Station**. The dean is responsible for all educational, research, extension and service programs of the college and experiment station. Qualifications include an earned doctorate, a record of academic and research excellence, a firm commitment to the mission of a comprehensive land grant university, and ability to communicate effectively with faculty, staff, students, and representatives of commodity groups. Demonstrated administrative leadership is desired. Applications including a résumé, other supporting material, and names of three references will be accepted until 15 July 1984. Nominations and applications should be addressed to: **Chairman of the Search Committee, School of Dentistry, Medical Center, West Virginia University, P.O. Box 6305, Morgantown, West Virginia 26506-6305.**

*West Virginia University is an Affirmative Action/Equal Opportunity Employer.*

### ECOLOGIST

Sabbatical replacement position. Santa Clara University, a Jesuit institution, seeks a Ph.D. to teach a general ecology course (lecture and laboratory) for the fall term of the 1984-1985 academic year. *We are an Equal Opportunity Employer through Affirmative Action.* Send résumé and have three letters of recommendation sent to: **Dr. William Eisinger, Biology Department, University of Santa Clara, Santa Clara, Calif. 95053, by 22 June 1984.**

### FACULTY POSITION LABORATORY FOR ATMOSPHERIC RESEARCH—METEOROLOGIST

The Laboratory for Atmospheric Research at Washington State University has a tenure-track position at the assistant or associate professor level available in August 1984. Preference will be given to candidates with a proven research record as evidenced by scholarly publications. Responsibilities include research and teaching in air pollution related aspects of meteorology. Specific academic duties include teaching air pollution meteorology and related topics at the graduate level, advising and directing graduate students, and teaching introductory-level meteorology to nonscience students. The successful applicant will be expected to develop and carry on an active research program in meteorology and/or atmospheric science and serve as a meteorological resource scientist in a multidisciplinary air pollution research group. An earned doctorate in meteorology or atmospheric science is required.

Interested persons should submit a current résumé by 20 July 1984 to: **Dr. Hal Westberg, Director, Laboratory for Atmospheric Research, Washington State University, Pullman, Wash. 99164-2730.** Additional information may be obtained by telephoning: **509-335-1526.** *Washington State University is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### DIRECTOR—PROGRAM IN CELLULAR AND MOLECULAR BIOLOGY

The University of Nevada, Reno, invites applications for a position as director of a newly established graduate program in cellular and molecular biology. Candidates must hold the Ph.D. degree or equivalent, have at least 5 years of experience in academic teaching and/or research, and have an outstanding record of accomplishment in teaching and research in an area of science relevant to cellular or molecular biology.

The director will be responsible for building, developing, and administering a joint program in cellular and molecular biology in the Colleges of Agriculture, Arts and Science, and Medicine at the University of Nevada, Reno.

Send curriculum vitae and three references by 15 July 1984 to: **Thomas R. Kozel, Ph.D., Professor and Chairman of Microbiology, School of Medicine, University of Nevada, Reno, Nevada 89557.** Search will be extended if suitable candidate is not found.

*Affirmative Action/Equal Opportunity Employer*

Full-time academic appointment in Department of Psychiatry, University of Michigan Medical School, as **DIRECTOR OF THE MEDICAL PSYCHIATRY PROGRAM**, a unit which will provide both inpatient and outpatient care for patients suffering from a combination of psychiatric and medical/surgical illnesses, to include geriatric patients. Responsibilities will include program administration, supervision of psychiatric residents, medical students and other trainees, clinical care and clinical research. Position requires commitment to and demonstrated ability in clinical research. Board-certification in psychiatry or Board-eligibility with intention to take boards in near future is also required. Please send curriculum vitae to: **Robert O. Friedel, M.D., Professor and Chairman, Department of Psychiatry, University of Michigan Medical Center, Ann Arbor, Michigan 48109.**

*The University of Michigan is an Affirmative Action Employer.*

### EXECUTIVE DIRECTOR

Research foundation to prevent blindness seeks national executive director at headquarters in Baltimore. Requires strong basic science background and minimum of 5 years of administrative experience. Fund-raising experience important. Unusual opportunity for the right person. Send résumé in confidence to: **Marcia Snyder, Acting Executive Director, RP Foundation Fighting Blindness, 8331 Mindale Circle, Baltimore, Md. 21207.**

The Chemistry Department of the University of California, Los Angeles, is considering making one or more regular **FACULTY APPOINTMENTS IN ORGANIC CHEMISTRY**. One or more of these may be at the assistant professor level, and one or more may be at a higher level. For at least one of these positions, the department is particularly interested in applicants specializing in synthetic organic chemistry; applicants with interests in other areas of organic chemistry will also be considered. Candidates are being sought who give evidence of potential distinction in scholarship and teaching, and who show exceptional promise of a creative and active career as research scientists. Applicants for more senior positions must have an exceptional record of demonstrated accomplishment in these areas. *The University of California is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minority candidates.* A complete application for the junior position should include curriculum vitae, a one- to two-page description of proposed research, and letters of recommendation from at least three professional references. Applications should be completed by 1 July 1984 and directed to: **Chairman, Organic Search Committee, Department of Chemistry, University of California, Los Angeles, Calif. 90024.**

**PATHOLOGIST.** The University of Michigan Medical School, Department of Pathology, is seeking a pathologist (Board-certified or -eligible) in anatomic pathology for an academic position that will involve responsibility for service activities in the Anatomic Pathology Laboratories. An interest and training in independent research and teaching related to medical students, fellows, and house officer staff is preferred. Candidates should contact: **Peter A. Ward, M.D., Professor and Chairman, Department of Pathology, University of Michigan Medical School, 1315 Catherine Road, Ann Arbor, Michigan 48109; telephone: 313-763-6384. PC 07.**

## POSITIONS OPEN

### ECOLOGIST (PLANT)

Temporary position: 15 August to 15 May 1985

**VISITING ASSISTANT PROFESSOR.** The Department of Biology at Idaho State University (ISU) is accepting applications for a temporary position of visiting assistant professor for the academic year to begin 5 August 1984. The successful applicant will teach undergraduate biometry, plant ecology, and range and forest ecology. Other duties will be assigned by the chairperson. A doctoral degree is required. Salary will be \$19,000. Send application, official transcripts, and three letters of recommendation to: **The Chairperson, Department of Biology, Idaho State University, Pocatello, Idaho 83209, by 1 July 1984.** *ISU is an Affirmative Action/Equal Opportunity Employer. Applications from women and minorities are encouraged.*

### FACULTY POSITION

#### MOLECULAR GENETICIST

The Division of Clinical Immunology and Rheumatology is inviting applications for a tenure-track position at the assistant/associate professor level. A strong commitment to research excellence will be the main criterion of selection. Training in molecular biology is required and research interests in the areas of immunology or mechanisms of inflammation preferred. Candidates must have demonstrated research ability and will be expected to establish a strong independent research program. Preference will be given to candidate holding an M.D. degree. Opportunities for participating in graduate programs of basic science departments are available. Curriculum vitae, a statement of research goals and interests, and names of three referees should be sent by 1 August 1984 to: **John E. Volanakis, M.D., Molecular Geneticist Search Committee, Division of Clinical Immunology and Rheumatology, University of Alabama in Birmingham, Birmingham, Alabama 35294.** *An Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITION

#### BIOCHEMISTRY AND MOLECULAR BIOLOGY

The Department of Biochemical and Biophysical Sciences at the University of Houston invites applications for a new faculty position commencing 1984-1985. Candidates are being sought with postdoctoral experience, recognized scientific accomplishments, and unusual promise in the fields of biochemistry or molecular biology. Individuals who will contribute to a planned broadly based biotechnology program involving microbial, plant, and animal orientations are encouraged to apply. The new faculty member will be expected to establish a vigorous independent research program of quality and to participate actively in the undergraduate and graduate instruction of the department. The University of Houston is a state supported institution with an enrollment of about 30,000. Applicants should send curriculum vitae, a summary of their research goals, copies of major publications, and the names of three references by 15 July 1984 to: **Dr. Allen Bartel, Department of Biochemical and Biophysical Sciences, University of Houston—University Park, 4800 Calhoun, Houston, Texas 77004.**

*An Affirmative Action/Equal Opportunity Employer*

### HEAD—DIVISION OF EXPERIMENTAL RADIOTHERAPY

The University of Southern California (USC) is seeking applicants for the position of head of the Division of Experimental Radiotherapy. Candidates should qualify for full academic appointment. All inquiries to:

**Zbigniew Petrovich, M.D.  
Professor and Chairman  
Department of Radiation Oncology  
USC School of Medicine  
Kenneth Norris Cancer Hospital Research Institute  
1441 Eastlake Avenue, G-34  
Los Angeles, Calif. 90033  
Telephone: 213-224-6627**

### IMMUNOLOGIST

We seek an immunologist to join our research group. Our interests are in pulmonary immunology. The candidate should have a record of research productivity. The candidate will interact with three other investigators. We offer a faculty position at The Medical College of Wisconsin, 1000 square feet of research space, and 2 years of support. We are housed at a VA Medical Center which offers additional benefits. Contact: **Dr. N. J. Calvanico, Research Service/151, VA Medical Center, Wood, Wisconsin 53193.** *An Equal Opportunity Employer.*

## RESEARCH ASSOCIATES (2)

Cetus Corporation, a leader in biotechnology, is currently seeking additional personnel for our Protein Chemistry Department.

Duties will include assisting in maintenance and operation of amino acid analyzer & sequencer, purification and biochemical characterization of native & cloned human proteins.

Successful candidates should have B.S./M.S. in Biology or Biochemistry with a minimum of 2 years' experience in protein chemistry especially in the areas of high & low pressure liquid chromatography, protein assays, gel electrophoresis and isoelectric focusing.

This is an opportunity to join a dynamic company that encourages professional growth.

Send resume or apply in person to:

**Cetus Corporation**  
Box Science SC-010  
1400 Fifty-third Street  
Emeryville, CA 94608



An equal opportunity employer  
m/f/handicapped.

## RESEARCH ASSISTANT

The Upjohn Company, a world leader in research and development of pharmaceuticals located in Kalamazoo, Michigan has an immediate opening for an assistant in our Diabetes and Gastrointestinal Diseases Research Unit.

The successful candidate will assist in the investigation of the effects of various chemical substances on the gastrointestinal system; conduct screening for gastric antisecretory, diarrheogenic, cytoprotective and other biological activities, conduct lead evaluation studies in rats, dogs or other animals; and analyze data statistically and write research reports.

This position requires a B.S. in biological science, preferably physiology or biochemistry and a minimum of two years directly related research experience, or M.S. degree. Experience with radioimmunoassay, animal surgery, quantitative assay methods and drug administration to animals is also required.

Kalamazoo is a mid-sized Southwestern Michigan community offering an excellent mix of cultural/recreational opportunities including lakes, nearby colleges, and a four-season climate. The Upjohn Company offers an excellent salary, benefits, and relocation plans.

For confidential consideration, please call inside Michigan, collect (616) 323-6767 or from outside Michigan, toll free 1-800-253-8600, Extension 6767, to request an employment application sent to you immediately. Please refer to Ad number 16063-A when calling.

**Upjohn**

The Upjohn Company is an Equal Opportunity Employer M/F



## The International Atomic Energy Agency

seeks

### Safeguard Inspectors

Duties include preparing for, carrying out, evaluating and reporting on safeguards inspections at nuclear facilities around the world. Required qualifications include a university degree in a nuclear or related discipline and relevant experience in a nuclear field, preferably plant operation. Fixed-term contract for two years with the possibility of further extension if service is satisfactory. Tax-free emoluments depending on qualifications and experience, between US\$ 32,500-US\$ 34,500 per annum. Additional allowances for dependents. Travel and removal expenses paid. Six weeks annual leave.

Send curriculum vitae with an indication of your nationality under Vacancy Notice No. 8/84 to the **Division of Personnel, International Atomic Energy Agency, P.O. Box 100, A-1400 Vienna, Austria.**

## SENIOR STATISTICIAN

Sterling-Winthrop Research Institute, the research division of Sterling Drug, Inc., a Fortune 200 pharmaceutical company, has an opening for a Senior Statistician in our biometrics department.

This position will provide support for our department of toxicology's preclinical research with particular emphasis on statistical issues related to teratology studies and chronic and acute toxicity investigations. Development of analytical procedures, design and analysis of laboratory experiments, and interpretation of experimental results are major responsibilities of this position. Additional duties include the review of toxicology protocols and reports, as well as consultation with preclinical scientists.

The successful candidate will have a PhD in statistics or biostatistics with a minimum of 2-3 years of related experience. A good working knowledge of statistical issues related to toxicological problems is required.

Located in the center of major summer and winter recreational and cultural activities, the Institute offers career development opportunities within a dynamic, professional environment.

Interested candidates should send resume including salary requirements in confidence to:



**William F. Sheldon**  
Employee Relations Administrator  
**STERLING-WINTHROP RESEARCH INSTITUTE**  
A Division of Sterling Drug, Inc.  
Columbia Turnpike, Rensselaer, N.Y. 12144  
Equal Opportunity Employer M/F/H

# DRUG METABOLISM

The Drug Metabolism Department of Smith Kline & French Laboratories is seeking qualified scientists interested in conducting research in a state-of-the-art high tech environment. This department, located in suburban Philadelphia (King of Prussia) will be relocating in 1-2 years to a new, ultra-modern R&D complex currently under construction and only minutes away from the present location. Expansion has created the need to fill the following positions:

## SENIOR INVESTIGATOR/ BIOANALYTICAL METHODS

As part of a hypothesis oriented, collaborative research group, the primary responsibilities will include: Supervision of the development of new methods including HPLC, GLC, MS and immunoassay for analysis of novel drug structures and their metabolites in biologic media; initiation and conduct of a basic research program in drug metabolism and/or an area of personal scientific expertise which will assist in the development and discovery of new drugs; the design and conduct of human and laboratory animal pharmacokinetic studies; participation in drug discovery and drug development teams; and the preparation of reports and publication of basic research results in the scientific literature.

The successful candidate will have:

- Ph.D. in analytical chemistry, organic chemistry or related area required.
- Six or more years of post graduate experience in bioanalytical methods development (including HPLC, GLC and MS) and in analysis of drugs and their metabolites in biological media required.
- Experience in the development of immunoassay techniques for use in pharmacokinetic studies required.
- Experience in qualitative and quantitative peptide analysis preferred.
- Proven research ability evidenced by outstanding publications record required.
- Proven ability in the direction of major research projects and in the supervision of analytical personnel required.
- Excellent verbal and written communications skills required.

## ASSOCIATE SENIOR INVESTIGATOR/ BIOMEDICAL MASS SPECTROMETRY

As part of an innovative, collaborative and expanding mass spectrometry unit within the Department of Drug Metabolism, the primary responsibilities will include: the initiation and conduct of a basic research program in drug metabolism and/or an area of personal scientific expertise which will assist in the development and discovery of new drugs; study of the metabolism of novel pharmaceutical agents in laboratory animals and man; elucidation of the mechanism of formation of novel metabolic products; development of quantitative mass spectrometric methods for the analysis of pharmaceutical agents and their metabolites in biologic media; study of the pharmacokinetics and metabolism of stable isotope labeled drugs in humans; and the publication of results in the scientific literature.

The successful candidate will have:

- Ph.D. in chemistry, biochemistry, pharmacology or related area, plus two or more years of Postdoctoral experience in the isolation and identification of drug metabolites required.
- Experience in the daily operation and maintenance of quadrupole and magnetic sector mass spectrometers required.
- Experience in bioanalytical methods development (including HPLC, GLC and quantitative mass spectrometry) and in analysis of drugs and their metabolites in biologic media required.
- Experience in pharmacokinetic studies of stable isotope analogues preferred.
- Experience in LCMS and MS/MS techniques preferred.
- Proven research ability evidenced by an outstanding publications record required.
- Supervisory experience; excellent communication and interpersonal skills required.

If you are interested in personal and professional growth as well as an excellent salary, benefits and relocation package, please forward your C.V. in confidence and a list of publications to: George P. Kissell, Senior Employment Consultant, Smith Kline & French Laboratories, a division of SmithKline Beckman Corporation, 1570 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

**SK&F**  
A SmithKline Beckman Company

## POSITIONS OPEN

**FACULTY POSITIONS.** Two faculty positions September 1984. One-year appointment to teach one-quarter courses in comparative anatomy, animal physiology, histology, general biology, and zoology. Ph.D. required. Nontenure-track appointment as instructor/coordinator of laboratories. Includes preparation and instruction in laboratories in general biology and botany, teaching plant taxonomy and ecology in alternate years, responsibilities for purchasing, supervision of student assistants, and operation of the greenhouse. Master's degree required. Study and/or teaching at a liberal arts college preferred for both positions. Agnes Scott College is a 4-year liberal arts college for women in the Atlanta area. Send applications, curriculum vitae, transcripts, and names of three references to: **Dr. Sandra T. Bowden, Chair, Department of Biology, Agnes Scott College, Decatur, Ga. 30030.** Applications should be received by 1 July 1984.

## IMMUNOLOGICAL/MICROBIOLOGICAL RESEARCH FACULTY OF DENTISTRY THE UNIVERSITY OF ALBERTA

Applications are invited for a full-time position as a **Research Scholar in Immunology and/or Microbiology.** The successful candidate must have a research degree in immunology or microbiology with an interest in immunochemistry and bacterial ecology related to periodontal diseases. Research will be directed toward characterization of the interaction of surface components of oral bacteria with secretory antibodies and other secretory glycoproteins and also with serum antibodies. These positions will be dependent upon successful application for a competitive award by an external granting agency. Appointment as scholar will be on a long-term basis and will enjoy the privileges of the University academic rank at which the appointment is made (assistant professor, associate professor, or professor level, presently \$29,720 to \$41,820; \$37,420 to \$53,658; and from \$48,010). *The University of Alberta is an Equal Opportunity Employer but in accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.* Interested applicants should forward their curriculum vitae, outlines of their research experience, and names of three referees to: **Dr. J. A. Hargreaves, Director of Graduate Studies and Research, Faculty of Dentistry, The University of Alberta, Edmonton, Alberta, Canada T6G 2N8.** The closing date for applications is 1 July 1984.

## MANAGER: PROJECT DEVELOPMENT

A position is available in the corporate development program of a U.S. agricultural company. Qualifications are:

- 1) Ph.D. in agronomy, horticulture, or related field.
- 2) Familiarity with new technologies in plant genetic engineering, tissue culture, and cell biology.
- 3) Familiarity with general agricultural business, seeds, and plants.
- 4) Person with interest in marketing preferred.

Send résumé to:

**Dr. Irwin Y. E. Chu**  
Corporate Vice President—Research & Development  
George J. Ball, Inc.  
P.O. Box 335  
West Chicago, Ill. 60185

**MOLECULAR BIOLOGIST:** Tenure-track position, assistant professor, starting September 1984. Ph.D. degree with teaching and research experience in recombinant DNA and hybridoma technology. Prefer applicants with related postdoctoral experience. Successful candidate will direct undergraduate program in biotechnology, teach courses related to the program, and supervise undergraduate research. Salary competitive. Applications close 22 June 1984. Submit résumé, three letters of reference, and official transcripts to: **Dr. Marion Kayhart, Chairperson, Department of Biology, Cedar Crest College, 30th and Walnut, Allentown, Pa. 18104.**

**ORGANIC CHEMIST—**Doctoral degree in organic chemistry with training in steroid chemistry and radiosynthetic techniques desirable but not necessary. To direct a new research program for synthesized position-specific steroids and their analogs for tumor detection and therapy in experimental systems. Salary and level of faculty appointment dependent on qualifications. Please send curriculum vitae to: **William D. Bloomer, M.D., Chairman, Radiotherapy, THE MOUNT SINAI MEDICAL CENTER, One Gustave L. Levy Place, New York, N.Y. 10029.** An Equal Opportunity Employer.



**NATIONAL INSTITUTE OF ARTHRITIS, DIABETES,  
AND DIGESTIVE AND KIDNEY DISEASES  
OFFICE OF THE DIRECTOR**

**DIRECTOR  
DIVISION OF  
DIGESTIVE DISEASES**

**(and Associate Director for  
Digestive Diseases)—Dual Position**

Incumbent must be a recognized and respected leader in the field of digestive diseases related research, with experience and expertise in the development of new knowledge and new technology in digestive diseases. Responsibilities include identifying research needs and opportunities; planning, developing and implementing a high quality extramural research and research training program in the field; and conducting laboratory investigations in digestive diseases related research.

**Salary Range**—\$58,938 to \$66,400 per annum

Position information, SF-171 (application), and qualifications requirements may be obtained by contacting:

**Mr. Clifford Moss, Executive Secretary  
Search Committee for Director,  
Division of Digestive Diseases  
Building 31, Room 9A34  
National Institutes of Health  
Bethesda, Maryland 20205  
(301) 496-4231**

Applications must be postmarked no later than July 31, 1984.

**AN EQUAL OPPORTUNITY EMPLOYER**



**DIRECTOR, CHEMICALS  
AND STATISTICAL  
POLICY DIVISION  
Senior Executive Service**

The U.S. Environmental Protection Agency (EPA) is seeking a Director, Chemicals and Statistical Policy Division. The director manages (through three subordinates) the technical and policy analyses of regulations developed by the agency's program office, the quality assurance of the statistical bases for agency activities, agency-wide integration of activities to control chemical substances, and resolution of technical issues affecting rule-making decisions. Maintains working relationships and exchanges information with top-level scientists in universities, other federal agencies, private organizations, and industry.

Candidates must have substantive experience which has provided a good basic knowledge of the principles of organization, management, and administration and substantive specialized (operating administrative or managerial) experience in a type of work comparable to the position to be filled. Additionally, to be rated qualified for the position, applicants must have the following **mandatory factors**: (i) experience in managing an organization responsible for projects and activities that require expertise in several specialized, highly technical fields; (ii) demonstrated ability to identify key technical and policy issues, to conceptualize alternative solutions, and to provide top agency management with a sound basis for decision-making; and (iii) experience working with regulatory program offices and experts in the field to identify and develop mechanisms for resolving scientific issues that affect rule-making. The following **desirable factors** will be used to rate successful applicants: (i) demonstrated ability to communicate effectively, both orally and in writing, with technical and nontechnical individuals and groups; (ii) experience performing statistical or scientific analyses; and (iii) familiarity with the scientific and policy issues raised in toxic chemical regulatory programs.

Location: Washington, D.C.

Salary range: \$58,938 to \$63,646 plus civil service benefits.

Telephone inquiries: **Edna Morse, telephone: 202-382-3328.**

Application submissions: please submit a completed SF-171, available at Federal Job Information Centers and federal agency personnel offices, postmarked by 13 July 1984 to: **Edna Morse, Environmental Protection Agency, 401 M Street, SW, Mail Code PM-212, Washington, D.C. 20460.** A summary describing specifically how your background and experience relate to all factors will be appreciated.

*An Equal Opportunity Employer*

National Institute of Environmental Health Sciences  
National Institutes of Health  
Public Health Service  
Department of Health and Human Services

**SCIENTIFIC DIRECTOR.**

The National Institute of Environmental Health Sciences (NIEHS), located in Research Triangle Park, North Carolina; conducts, fosters, and coordinates research and research training on the biological effects of chemical, physical, and biological substances in the environment. In addition to directing, developing and evaluating the NIEHS Intramural Research Program, the incumbent serves as an expert consultant to the Institute Director, Federal agencies and other organizations in the field of environmental health. The Intramural Research Program currently is allocated 177 of the Institute's 567 permanent positions and an operating budget of approximately \$14 million.

This is a Civil Service position in the Senior Executive Service (SES) with a salary range from \$58,938 to \$66,000 per annum, depending on qualifications. Physicians may be eligible for an additional comparability allowance up to \$10,000 per year. (Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.) The individual selected, if not presently in the SES, must serve a one-year probationary period.

Position information and qualification requirements may be obtained by contacting:

**Alvin L. Wade, Jr.  
NIEHS Personnel Office, P.O. Box 12233  
Research Triangle Park, NC 27709  
(919) 541-4318**

Applications consisting of a Personal Qualifications Statement, SF-171 (available at all Federal Job Information Centers and Federal Personnel Offices); a curriculum vitae; and a bibliography, should be submitted to the above address and postmarked not later than 7/13/84.

*An Equal Opportunity Employer*

**HEALTH SCIENTIST ADMINISTRATOR  
DIVISION OF BLOOD DISEASES  
AND RESOURCES  
NATIONAL HEART, LUNG, AND  
BLOOD INSTITUTE**

The National Heart, Lung, and Blood Institute is seeking applicants for the position of a Program Administrator in the Blood Diseases Branch of the Institute's Division of Blood Diseases and Resources, with an annual salary of \$36,152 (GS-13) with potential for advancement to GS-14 (\$42,722). The Branch has responsibility for planning, developing and administering an extramural program of basic and applied, clinical and non-clinical research in the areas of thrombosis and hemostasis and red blood cell disorders. Currently it supports research in these areas with a budget of about \$52 million, primarily in research grants. The incumbent for this position will be responsible for the scientific administration of grants and contracts in the Thrombosis and Hemostasis Program, evaluating and integrating knowledge in this area, developing and recommending plans for payment of research grants and contracts, initiating actions for support of targeted research, including the development of workshops, and projecting scientific and budgetary needs.

Applicants must have a Ph.D., M.D. degree or equivalent, with independent research experience in basic or clinical research, supported by grants and/or contracts, and substantial experience and training in disciplines related to thrombosis and hemostasis. The position to be filled is in the Career Civil Service. Those interested in being considered for this position should submit an SF-171 (Personal Qualifications Statement) along with a Curriculum Vitae and Bibliography to the NHLBI Personnel Office, National Institutes of Health, Public Health Service, 9000 Rockville Pike, Building 31, Room 5A-34, Bethesda, Maryland 20205. For additional information, please call Ms. Kathryn M. Osbourn (301) 496-6477. Deadline for applications is July 16, 1984.

**AN EQUAL OPPORTUNITY EMPLOYER**

## POSITIONS OPEN

**IMMUNOLOGIST.** Research position available for Ph.D. immunologist to study immune complexes and idiotypes of autoantibodies in human diseases. Experience with hybridoma production, isoelectric focusing, and electrophoretic transfer techniques required. Applicants should submit curriculum vitae, statement of research interests, and two letters of reference to: **Vincent Agnello, M.D., New England Medical Center, Box 405, 171 Harrison Avenue, Boston, Mass. 02111.**

**IMMUNOPATHOLOGY FACULTY POSITION.** The Department of Pathology, Medical College of Georgia, Augusta, Georgia, invites applications for a faculty position at the rank of assistant or associate professor. The candidate should have a Ph.D. or M.D./Ph.D. degree with demonstrated leadership in research and teaching. The position will have the responsibility of directing a hospital laboratory performing service in immunochemistry and immunopathology. The position is available immediately. Applicants should submit curriculum vitae and references to: **The Chief, Section of Anatomic Pathology, Medical College of Georgia, Augusta, Georgia 30912. Equal Opportunity Employer, M/F. J1417.**

### MEDICAL RESEARCH TECHNICIAN

Will conduct purification of human DNA methyltransferase to homogeneity. Purification of a specific DNA binding protein from human placenta. Preparation of recombinant DNA clones containing inserts of hypomethylated human DNA. Characterization of the recombinant DNA by blot and solution hybridization. Must have background in: (i) isolating DNA binding proteins from mammalian tissues, (ii) working in the field of DNA methylation, and (iii) electrophoresis and blot hybridization of DNA. Must have Ph.D. in biochemistry; 40 hours per week, \$14,489 per year. Apply at: **Louisiana Office of Employment Security, 617 St. Charles Avenue, New Orleans, La. 70130. Refer to Job Order Number 416829.**

**PHARMACOLOGIST.** Emory University has a new position at assistant professor or associate professor rank which requires doctoral or equivalent degree; for assistant professor at least one year of postdoctoral research experience and potential to develop independent research program; for associate professor five or more years of experience in research and teaching in pharmacology or related discipline, evidence of excellent independent research, and current grant support. Strong commitment to research and teaching essential. Molecular, cellular, or neurophysiological research approaches to pharmacological problems preferred. Starting date negotiable. Curriculum vitae, description of career goals, proposed research program, and three letters of recommendation must be received by 15 August 1984. Address to: **Dr. Neil C. Moran, Chairman, Department of Pharmacology, Emory University, Atlanta, Ga. 30322.**

*An Affirmative Action/Equal Opportunity Employer*

**PHARMACOLOGY.** The Department of Pharmacology is seeking applications for two positions in pharmacology at the assistant professor level. Responsibilities include the teaching of pharmacology to medical and graduate students and developing an independent research program. Research interests are not determinant and may be in the areas of neuro-, psycho-, cardiovascular or autonomic pharmacology, toxicology, drug metabolism, aging, drug abuse, chemotherapy, basic receptor mechanisms or clinical pharmacology. Interested candidates should send their curriculum vitae and bibliography as well as the names and addresses of three references to:

**William R. Martin, M.D.  
Professor and Chairman  
Department of Pharmacology  
University of Kentucky  
College of Medicine  
Lexington, Kentucky 40536**

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

**Ph.D. OR POSTDOCTORAL ANALGESIC PHARMACOLOGIST, ENTRY LEVEL.** Primary background in biochemistry, pharmacology, or physiology with research experience involving either opiate or non-narcotic analgesia, CNS pharmacology, or fundamental pain mechanisms. U.S. citizens or permanent resident holders only. Send résumé and publication list to: **Dr. T. J. Logan, Manager, Ph.D. Recruiting, Procter & Gamble Company, P.O. Box 39175, Cincinnati, Ohio 45247. An Equal Opportunity Employer.**

## POSITIONS OPEN

Applications are invited for a 2-year term appointment in the **DEPARTMENT OF PHYSIOLOGY**, College of Medicine at the University of Saskatchewan. Applicants must have a Ph.D., D.D.S., D.V.M., or M.D. and postdoctoral training. The successful applicant will be required to assume a major teaching responsibility in the departmental programs for medical and health science students. Moreover research development will be encouraged independently, or collaboratively within one of the established units of the department. Appointment will be made at the lecturer or assistant professor level. This position is available 1 July 1984. Address inquiries to:

**N. M. McDuffie, Professor and Head  
Department of Physiology  
College of Medicine  
University of Saskatchewan  
Saskatoon, Saskatchewan, Canada S7N 0W0**

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

### PLANT MOLECULAR BIOLOGIST/ BIOCHEMIST

Assistant professor, tenure-track, 9-month appointment. Salary/starting date negotiable. Will teach advanced undergraduate/graduate level plant molecular biology/biochemistry, participate in teaching general biochemistry, and develop a strong research program in plant molecular biology/biochemistry. Ph.D. required. A complete application must include curriculum vitae, copies of two most significant publications, brief statement of current and future research plans, and three letters of reference. Deadline: 31 July 1984 or until suitable candidate has been selected. Address correspondence to: **T. Snider, Search Committee Chairman, Department of Biochemistry, Colorado State University (CSU), Fort Collins, Colo. 80523. CSU is an Equal Opportunity/Affirmative Action Employer. Equal Opportunity Office: 314 Student Services Building.**

**POSTDOCTORAL FELLOW**—The Department of Human Genetics has an opening for a postdoctoral fellow to join a program for the development of monoclonal antibodies to human neuroblastoma. The group intends to use the antibodies for conjugation with radioactive nucleides and drugs for therapy. Interested candidates should apply to: **Dr. Roger Kennett, Department of Human Genetics, University of Pennsylvania, Richards Building, Hamilton Walk, Philadelphia, Pa. 19104. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL FELLOW** to join interdisciplinary research on the morphology, physiology, and neurotransmitter chemistry of the auditory system. Research focuses on the structural basis for signal processing with state-of-the-art and classical neuroanatomical techniques, including Golgi-EM, EM autoradiography, immunocytochemistry, and computer graphics. Electrophysiological and biochemical collaborations with a congenial and stimulating neuroscience faculty. Competitive salary, long-term support available. Strong background in neurobiology required. Contact: **D. K. Morest, Department of Anatomy, University of Connecticut Health Center, Farmington, Conn. 06032.**

*An Affirmative Action/Equal Opportunity Employer, M/W/H*

**POSTDOCTORAL FELLOW IN NEUROEMBRYOLOGY** to join well-established study of synapse formation in the auditory system. Research focuses on tissue and cellular interactions with state-of-the-art and classical neuroanatomical techniques, including transplantation and cell culture. Interdisciplinary approach involving electrophysiological and biochemical collaborations with a congenial neuroscience faculty. Competitive salary, long-term support. Strong background in neurobiology required. Contact: **D. K. Morest, Department of Anatomy, University of Connecticut Health Center, Farmington, Conn. 06032.**

*An Affirmative Action/Equal Opportunity Employer, M/W/H*

### POSTDOCTORAL POSITION—TUMOR VIROLOGY

Available immediately to study roles of SV40 T Ag and the associated p53 host tumor antigen in oncogenic transformation, studies especially involving biochemical and protein chemical techniques. Send curriculum vitae and names of three references to: **Dr. Robert Carroll, Department of Pathology, New York University Medical School, 550 First Avenue, New York, N.Y. 10016.**

## POSITIONS OPEN

**POSTDOCTORAL — BIOCHEMIST/MOLECULAR BIOLOGIST** position is available immediately in NIH-supported research on cloning and characterization of genes that are regulated by hormones in mammalian steroidogenic tissues. Send curriculum vitae and three letters of reference to: **Dr. Israel Hanukoglu, Department of Biology, Technion-Israel Institute of Technology, Haifa 32000, Israel.**

### POSTDOCTORAL OPPORTUNITIES IN BIOLOGY AT INDIANA UNIVERSITY—BLOOMINGTON

The Department of Biology and the Institute for Molecular and Cellular Biology regularly have openings for postdoctoral fellows to work with faculty on externally funded research projects and to teach within the department. The department and the institute have strong programs in **GENETICS, MICROBIOLOGY, MOLECULAR, CELLULAR AND DEVELOPMENTAL BIOLOGY, PLANT SCIENCES, AND ORGANISMAL, ECOLOGICAL AND EVOLUTIONARY BIOLOGY.** Individuals wishing to have more information about these opportunities or to apply for positions which may become available should write to: **Postdoctoral Opportunities, Department of Biology, Indiana University, Bloomington, Ind. 47405.** Applicants should include a résumé, copies of current publications, and the names, addresses, and phone numbers of their references. *Indiana University is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available immediately to study cholesterol in membranes and cells and/or functional consequences of membrane structure. Send curriculum vitae and three letters of reference to: **Dr. Philip L. Yeagle, Department of Biochemistry, State University of New York (SUNY)/Buffalo School of Medicine, Buffalo, N.Y. 14214. SUNY/Buffalo is an Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** in the Boston area, available 1 July 1984. Laboratory research interests in hormonal regulation of gene and oncogene expression in liver cells. Applicants with expertise in nucleic acid biochemistry, recombinant DNA technology, microinjection of somatic cells, will be considered. Send curriculum vitae and three letters of recommendation to: **Dr. Lawrence J. Wangh, Department of Biology, Brandeis University, 415 South Street, Waltham, Mass. 02254.**

**POSTDOCTORAL POSITIONS IN STUDIES OF THE NEUROCHEMICAL, METABOLIC, AND ELECTROPHYSIOLOGICAL FEATURES OF NEURAL TRAUMA with EMPHASIS ON MECHANICAL BRAIN INJURY.** Two- to 3-year fellowships available in 1985 to participate in a multidisciplinary research training program focusing on brain injury. Biomechanical program emphasizes basic science studies of clinical features on neural trauma. Applicants would have opportunity to learn and incorporate a number of methodologies into their research interests including neuropathology, autoradiographic studies of brain glucose utilization, cerebral blood flow, ICP dynamics, and blood brain barrier function as well as clinical electrophysiological and behavioral methods. Appointments pay \$20,000 per year and are within the Division of Neurosurgery, Medical College of Virginia. The requirements are U.S. citizenship or permanent residency, and a Ph.D. degree or equivalent. Send résumé, including statement of research interests and goals, and copies of publications by 1 August 1984 to: **Anthony Marmarou, Ph.D., Division of Neurosurgery, Box 508, MCV Station, Richmond, Virginia 23298. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available to study chromatin structure relationships in gene regulation. A strong background in genetics, molecular biology, and physical biochemical/structural areas is required. Prior postdoctoral experience is required. Submit complete résumé and names of three references by 15 July 1984 to: **Dr. R. E. Harrington, Department of Biochemistry, University of Nevada, Reno, Nev. 89557. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available 1 July 1984 to study the transformation of plants with genes of agricultural value and gene regulation in crop plants. Individuals seeking this position should have a background in genetics, physiology, or biochemistry and have a strong interest in crop improvement. Send curriculum vitae and recommendations to: **Dr. David Hildebrand, Department of Agronomy, University of Kentucky, Lexington, Ky. 40546-0091; telephone: 606-257-7319. An Equal Opportunity/Affirmative Action Employer.**

# Head of Pharmacology

## KENT, ENGLAND

The Wellcome Foundation Limited is a major group of pharmaceutical and chemical companies with headquarters in the UK and a turnover close to £700m.

This is a key senior appointment reporting to the Director of Therapeutic Research Division. The department is active on a wide variety of forward-looking research projects and comprises some 60 personnel — including scientists, technicians and clerical/secretarial staff.

The prime responsibility of the position will be to direct, manage and co-ordinate the department's activities and resources to meet the overall research objectives within defined cost, quality and time parameters. There is also a requirement to co-ordinate "the development of the science" and ensure that a consistency of high quality of scientific and technical performance is sustained.

Candidates must be able to demonstrate a substantial scientific and managerial track record in a relevant field and have the maturity to promote and develop scientific excellence through personal leadership and motivation. As a senior scientist, the successful candidate must also be capable of contributing to the general debate on scientific research methodology objectives and maintaining a contemporary scientific perspective in this important area of research.

The salary and benefits package will reflect the importance of the position and includes a company car and generous assistance with relocation expenses.

Please write with full c.v. to  
Alan Murdoch, Personnel Officer,  
The Wellcome Research Laboratories,  
Langley Court, Beckenham, Kent BR3 3BS, England.



**Wellcome**

## PHYSICIANS POSITRON EMISSION TOMOGRAPHY NUCLEAR MEDICINE DEPARTMENT CLINICAL CENTER NATIONAL INSTITUTES OF HEALTH

The Clinical Center of the National Institutes of Health is seeking research physicians/clinicians for the Positron Emission Tomography (PET) program managed by the Nuclear Medicine Department. This program, operated jointly with the Institutes, features both "head only" and whole body PET tomographs, "state of the art" computer facilities, and a hospital-based cyclotron.

Various appointments are available, ranging from fellowships to senior staff positions. Candidates should be board eligible in nuclear medicine or radiology and preferably should also evidence training in neurology/psychiatry or neurosurgery. Positions may include some management/program coordination duties, therefore such past experience should be indicated in making application.

Appointment will be made in either the Federal Civil Service or the U.S. Public Health Service Commissioned Corps. Salary and benefits will be commensurate with qualifications and method of appointment.

Applications will be accepted until June 30, 1984. Please address inquiries to:

**Ms. Nancy Saltzman  
Clinical Center Personnel Office  
Building 10, Room 7C306  
National Institutes of Health  
9000 Rockville Pike  
Bethesda, MD 20205  
(301) 496-6924**

U.S. Citizenship Required

*NIH is an Equal Employment Opportunity Employer*

## ENVIRONMENTAL SCIENTISTS

Lockheed Engineering and Management Services Company (EMSCO) in Las Vegas, Nevada, has open positions for scientists to conduct a National Acid Rain Survey in fall 1984. These positions will be funded by the U.S. Environmental Protection Agency through an existing contract with Lockheed. The survey will be conducted nationwide in areas with lakes deficient of natural acid buffering mechanisms. Areas include the Northeast, Southeast, Central Northern states, and Rockies, Cascades, and Sierra Nevada mountain ranges. More than 2500 lakes will be sampled. As many as six teams (ten personnel per team) of helicopters and field laboratories will be assembled to conduct the study. The study will be intensive and will require extended travel for 75 days at various locations throughout the United States. Lockheed will require the temporary services of as many as 33 scientists.

Vacancies exist for supervisors, scientists, and technicians. Scientific training should be in one of three technical areas:

- 1) Environmental science
- 2) Aquatic science
- 3) Chemistry

All college degree levels will be considered. Experience in limnology, lake characterization, field monitoring, or analysis of aqueous samples is preferred.

Those individuals interested in submitting résumés for this position should reply to:

Stephen L. Pierett  
Lockheed-EMSCO  
P.O. Box 15027  
Las Vegas, Nevada 89114

Recent graduates should include a formal transcript with the résumé. Lockheed is an Equal Opportunity/Affirmative Action Employer.

## SPECIAL ASSISTANT FOR LABORATORY AFFAIRS Salary Commensurate with Experience Excellent Benefits

The University of California, Office of the President, located in Berkeley, California, is seeking a special assistant for laboratory affairs to assist the senior vice president and the president of the University in their oversight of four Department of Energy (DOE) Laboratories by: developing information for the Regents' Committee; providing staff support to three evaluation committees; preparing annual reports; conducting special studies; serving as consultant during contract negotiations between the University and DOE; providing liaison with other University and government offices; assisting faculty, Academic Senate Committees, and laboratory staff on major research proposals and programs and developing policy recommendations. Requires: experience in scientific and technical research, writing, speaking, complex analyses; ability to acquire quickly a working knowledge of current University of California and DOE Laboratory policies, goals, and priorities; ability to interact effectively with a variety of high-level individuals; and ability to obtain a security clearance. Preference to candidates with management experience and knowledge of federal government process relating to DOE Laboratories. Send résumé, salary history, and letter of application no later than 30 June 1984 to:

Screening Committee-4  
University of California, Berkeley  
2199 Addison Street, Number 275  
Berkeley, Calif. 94720  
An Affirmative Action/Equal Opportunity Employer

## POSITIONS OPEN

**POSTDOCTORAL POSITION** in the area of molecular biology to study the biochemical-genetics of F plasmid replication, its control and plasmid partitioning is available immediately. Projects include cloning, DNA sequencing, in vitro replication and regulation of plasmid gene expression. Background in biochemistry, genetics, or molecular biology preferred. The position is part of a NCI training grant and therefore only U.S. citizens or permanent residents can be considered. Send curriculum vitae and names of references to: **Dr. Bruce C. Kline, Section of Microbiology, Department of Cell Biology, Mayo Clinic, Rochester, Minnesota 55905. An Equal Opportunity/Affirmative Action Institution.**

**POSTDOCTORAL POSITION:** The Dana-Farber Cancer Institute is seeking to fill one research position at the postdoctoral level to study the biochemistry and regulation of mammalian liver cytochrome P-450 with emphasis on the P-450-mediated biotransformation of cholesterol and steroid hormones. Experience in biochemistry, enzymology, or a related biological science desired. Joint appointment will be held in an appropriate department at Harvard Medical School. Send résumé, including copies of representative publications, with two letters of recommendation to: **Dr. David J. Waxman, Dana-Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION in MOLECULAR BIOLOGY of MUSCLE DEVELOPMENT** to use recombinant DNA and gene transfer to study developmental regulation of muscle genes. Candidates should have a strong background in either (i) classical chick experimental embryology or cell culture, or (ii) gene cloning and/or gene transfer. Salary commensurate with experience. Submit letter of interest with curriculum vitae and names of three references to: **Dr. Charles P. Ordahl, S-1334, University of California, San Francisco, San Francisco, Calif. 94143.**

**POSTDOCTORAL POSITION** for 2 years (\$15,000 per year) available 1 September 1984 for human rotavirus research involved with monoclonal antibodies and peptide antigens. Background in protein biochemistry and molecular biology desired. Send curriculum vitae and two references to:

John H. Hughes, Ph.D.  
Children's Hospital  
Columbus, Ohio 43205

Positions available immediately for Ph.D. level **RESEARCH ASSOCIATES** at the Duke University Marine Biomedical Center. Salary range: \$25,000 to \$30,000 depending on capability and past experience. Nontenure-track 1-year appointments with possibility of 2- to 3-year extensions. Good benefits package. Persons sought with training and experience in each of the following categories: (i) polymer chemistry, (ii) physical/organic chemistry, (iii) computer modeling/enzyme kinetics, and (iv) scanning and transmission electron microscopy. Research focus will be on immobilized enzymes and active site analogs. Contact: **Dr. Bonaventura, Duke University Marine Biomedical Center, Beaufort, N.C. 28516.**

Duke University is an Affirmative Action/Equal Opportunity Employer.

**SENIOR FACULTY**, Multi-year contract position available for:

**NEUROPHYSIOLOGIST  
BIOCHEMIST  
MICROBIOLOGIST**

Responsibilities include teaching medical students and **RESEARCH**. Interested candidates should send curriculum vitae and all supportive evidence (teaching experience and current grant support information and grant track record) to: **Search Committee, Dr. Arnold L. Nagler, Associate Dean, Preclinical Medical Education, New York College of Osteopathic Medicine, Old Westbury, Long Island, New York 11568.**

**SENIOR RESEARCH ASSOCIATE (TECHNICAL) IN MOLECULAR BIOLOGY.** Opening is available immediately for experienced individual to work in established laboratory studying muscle gene structure/regulation. Rewarding atmosphere for technical excellence, independence, and creativity. Competitive salary commensurate with level of skill and experience. Interested individuals should submit a letter of interest with curriculum vitae and names of two references who can attest to experience/competence to: **Dr. Charles P. Ordahl, S-1334, University of California, San Francisco, San Francisco, Calif. 94143.**

## POSITIONS OPEN

### UNIVERSITY OF QUEENSLAND

**POSTDOCTORAL position—PARASITOLOGY**—in immunoparasitology available immediately to study immunity to gastrointestinal nematode parasites in relation to the genetics of the host. The project is expected to be funded for 2 years.

Salary per annum: A\$24,353. Reference 17684.

**POSTDOCTORAL position and project leader—PARASITOLOGY**—Cattle tick vaccines—Available immediately to develop a vaccine for the control of the cattle tick *Boophilus microplus*. The project is funded for 2 years with an option for extension. Preference to applicants with expertise in immunology.

Salary per annum: A\$24,353 with superannuation and reasonable removal expenses. Reference 18884.

Applications to: **The Staff Officer, University of Queensland, 4067, St. Lucia, Australia**, by 30 June 1984. Please supply names of three referees and submit a separate application for each position.

**TWO POSTDOCTORAL POSITIONS** for individuals with background and interest in membrane lipids and drug actions. Physiological and pharmacological influences on lipid metabolism: phospholipids in the auditory system; drug effects on liposomes. Send curriculum vitae, description of research interests and goals, and names of two references to: **Jochen Schacht, Ph.D., The University of Michigan, Department of Biological Chemistry, Ann Arbor, Mich. 48109.**

*Nondiscriminatory, Affirmative Action Employer*

**THE AUSTRALIAN NATIONAL UNIVERSITY** invites applications for appointment to the position of **PROFESSOR** in the **DEPARTMENT OF STATISTICS, RESEARCH SCHOOL OF SOCIAL SCIENCES**. The present head of the department, Professor E. J. Hannan, is to retire at the end of 1986 and it is expected that the appointee will then assume the headship of the department. The Department of Statistics is well-established with a high reputation for research and the training of Ph.D. scholars. The present interests of people in the department include time series analysis, statistical data analysis in social, biological, and medical sciences, applications of numerical analysis to statistical computing, spatial probabilistic and statistical problems, and stochastic point processes. The Research School wishes to appoint a scholar, committed to basic research in statistics, who can provide long-term leadership in the department. It will be an advantage if the appointee is interested in those parts of statistics that are important in the social sciences. The appointee will be expected to strengthen the links with other parts of the school which use statistical methods. A professor is appointed to retiring age (65 years). Headship of a department is for a limited term of years; reappointment as head for further terms is possible. Salary: A\$52,063 per year. Current exchange rates: A\$1 = U.S.\$91 = C\$1.16. Grants are provided towards travel and removal, assistance with housing, superannuation. Maternity leave is available. The university reserves the right not to make an appointment or to make an appointment by invitation at any time. Prospective applicants should obtain further particulars from: **The Registrar, The Australian National University, G.P.O. Box 4, Canberra, ACT 2601, Australia**, with whom applications close on 30 June 1984.

*The University is an Equal Opportunity Employer*

### RESEARCH FELLOW DEPARTMENT OF EXPERIMENTAL PATHOLOGY

Merck, Sharp and Dohme Research Laboratories is now seeking a **senior research pathologist/electron microscopist** to join our Experimental Pathology Department located in Rahway, New Jersey.

The successful candidate must have a Ph.D. (or equivalent) and 5 years of postdoctoral experience in experimental pathology, electron microscopy, and histology. Scientists with ongoing programs and publications in experimental hepatocarcinogenesis, immunopathology, or pathology of the extracellular matrix will be given preference.

Salary, benefits, and growth potential are excellent. Send résumé to:

Susan R. Jenkins  
Merck & Company, Inc.  
P.O. Box 2000  
Rahway, N.J. 07065

*An Equal Opportunity Employer*

## Requests for Applications For Research Funds

*The Health Effects Institute (HEI) announces its intention to make available requests for applications for research funds.*

The Health Effects Institute is a non-profit research organization founded in 1980. It was established co-operatively by the United States Environmental Protection Agency and the automotive industry but is governed by an independent 3-member Board of Directors: Archibald Cox, Carl M. Loeb Professor, Harvard University; William O. Baker, Chairman Emeritus, Bell Laboratories; and Donald Kennedy, President, Stanford University. The HEI funds research directed to understanding and evaluating the health effects of mobile source emissions. The research program was developed by HEI's Health Research Committee whose chairman is Walter Rosenblith, Institute Professor and former Provost of the Massachusetts Institute of Technology.

The Health Effects Institute currently has thirty studies underway at 25 universities and research centers in 14 states and in West Germany.

This set of research topics is the first set of requests to be issued under the Institute's Phase Two Research Agenda. The topics will be addressed through full research applications on the following subjects:

1. Mechanisms of carbon monoxide toxicity
2. Acute effects of carbon monoxide on cardiac rhythm
3. Mechanisms of oxidant injury

And preliminary applications on:

4. New methods for assessing health risks from automotive emissions

In addition to these topics, the HEI will also consider applications in other areas. These include full applications from new investigators and preliminary applications from established investigators on novel and important research in connection with the health effects of automotive emissions.

The Health Effects Institute will make available a packet of descriptive material about the research topics, directions for preparing applications, and material about the Institute to all interested investigators.

All requests and inquiries should be made to or through:

Dr. C. W. Powers, Executive Director, The Health Effects Institute, 215 First Street, Cambridge, Massachusetts, 02142, 617/491-2926.

## BIOCHEMICAL EPIDEMIOLOGIST

The Epidemiology Branch of the Biometry and Risk Assessment Program, National Institute of Environmental Health Sciences, National Institutes of Health, seeks epidemiologists to develop laboratory approaches to environmental epidemiologic studies and to use these approaches in field studies. Applications will be considered for positions ranging from tenure-track staff fellows to tenured senior investigators (GS-13/14).

A Ph.D. or M.D. degree with a strong background in biology/biochemistry is required; experience with use of laboratory assays in collaborative clinical or epidemiologic studies would be desirable. (Salary range \$25,000 to \$53,661; physicians may be eligible for Comparability Pay up to \$10,000 per year.) Send C.V. and Bibliography to Ms. Eleanor Dovre, NIEHS Personnel Office, Post Office Box 12233, Research Triangle Park, North Carolina 27709. Telephone (919) 541-7513. Women and minority groups are encouraged to apply. U.S. citizenship required. NIEHS is an equal opportunity employer.

## SPECIAL EXPERT NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE

The Laboratory of Pharmacology, National Institute of Environmental Health Sciences, Research Triangle Park, North Carolina invites applications for a position of Special Expert in the Molecular and Comparative Pharmacology Section. The incumbent will be responsible for examining the mechanism of membrane function and their interaction with environmental chemicals. This position requires a Ph.D. degree or the equivalent training and experience in biochemistry, physiology, or a related area, and proven research productivity in one or more of the following areas: transport by epithelial membranes, or by isolated membrane vesicles, or purification, characterization, or reconstitution of membrane proteins. An individual must have the same level of qualifications as required for the GS-13 grade level in the Federal Government. This is a non-tenured position, lasting two (2) years with extension possible for talented researcher. Salary will be commensurate with candidate's qualifications and experience, but may not exceed Level V of the Executive Schedule (\$66,000 per annum).

Please submit a Standard Form 171 (Personal Qualifications Statement), curriculum vitae, bibliography, and three recommendations to:

NIEHS Personnel Office  
Mr. Bruce Wiggins (HN-V242)  
P.O. Box 12233 (MD 1-01)  
Research Triangle Park, N.C. 27709

NIEHS is an Equal Opportunity Employer, women and minorities are encouraged to apply.

## RESEARCH ASSISTANT

MS in biological sciences or BS with 2 or more years experience in biological research. Must be willing to work with laboratory animals and have some exposure to use of radioisotopes and enzyme assays. Experience with HPLC and/or cell culture a plus. Our laboratory is involved in various aspects of cell metabolism with an emphasis on ornithine decarboxylase and polyamine biosynthesis.

Send curriculum vitae and salary history to:

Personnel Services Manager

Merrell Dow

**MERRELL DOW  
RESEARCH INSTITUTE  
2110 East Galbraith Road  
Cincinnati, Ohio 45215  
Equal Opportunity Employer M/F**



## POSITIONS OPEN

### POSTDOCTORAL POSITIONS IN PHARMACOLOGY AND MOTOR PHYSIOLOGY

Two research fellowships available for 1 to 2 years. Salary \$17,000 to \$20,000, depending on experience. Benefits. In pharmacology, the fellow will work in Dr. C. P. Chen's laboratory on uptake and clearance of therapeutic agents in the liver. In motor physiology, the fellow will work in Dr. L. Glenn's laboratory on electrophysiological recordings of spinal motoneurons. Send curriculum vitae and names of three references to: **F. Brahim, Ph.D., Director of Research, Ohio College of Podiatric Medicine, 10515 Carnegie Avenue, Cleveland, Ohio 44106. Equal Opportunity Employer.**

**RESEARCH ASSOCIATE**—Perform original research on basic problem of plasmid biology as analyzed in the bacterial species, *Staphylococcus aureus* in Department of Plasmid Biology. In charge of own laboratory. Teach and supervise graduate students and younger scientists in performance of the research program; 4 years of experience or 4 years of related experience—research physician; M.D.—medicine. Research experience in basic genetics and molecular genetics of staphylococcal antibiotic resistance-determining plasmids; \$40,000 per year; 40 hours/5 days per week. Send résumé to: **Box 153, SCIENCE**

### VIROLOGY—IMMUNOLOGY FACULTY POSITION

Ph.D. to teach virology and immunology to second-year medical students. Assist in teaching laboratories. Three-member Ph.D. department. Demonstrated successful teaching excellence preferred. Interdisciplinary research with clinical faculty encouraged. Cultural suburban living. Rank and salary commensurate with qualifications. Begin July or August. Send curriculum vitae plus names, addresses, and telephone numbers of four current references by 25 June to: **Dr. E. H. Whitten, Associate Dean, The University of Health Sciences, College of Osteopathic Medicine, 2105 Independence Boulevard, Kansas City, Mo. 64124. Telephone: 861-283-2402. Applications encouraged from all qualified persons.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available July 1984 to study kinetics and structure of glycolytic enzymes of red cells. Experience in enzymology and protein purification preferred. Send inquiries, with curriculum vitae and names, addresses, and telephone numbers of three references to: **Dr. Sergio Piomelli, Division of Pediatric Hematology-Oncology, 630 West 168 Street, New York, N.Y. 10032. Columbia University is an Equal Opportunity/Affirmative Action Employer.**

**RESEARCH ASSOCIATE** (Postdoctoral), Rockefeller University. Position available in NIH-supported Mass Spectrometric Biotechnology Research Resource. Basic and collaborative research and service work in biomedically oriented mass spectrometry. Areas of activity include studies in massive particle bombardment mass spectrometry, assays of neuro and hypothalamic peptides, and cholesterol metabolism. Major equipment in laboratory consists of CF-252 fission fragment ionization MS, pulsed ion bombardment MS, VG 70-250 MS/data system, biospect quadrupole MS/data system, and chemical physics MS/data system. Prefer recent Ph.D. with training and/or experience in biomedical MS. Will consider biochemist with strong interest in MS. Salary: \$22,500 per year. Send application to: **F. H. Field, Rockefeller University, 1230 York Avenue, New York, N.Y. 10021. An Equal Opportunity Employer.**

**TECHNICAL DIRECTOR, MUSCULOSKELETAL ANALYSIS LABORATORY.** Applications are being received for a technical director of the Musculoskeletal Analysis Laboratory at University Hospital, Stony Brook. The successful candidate will be skilled in the computerized measurement of human locomotor kinetics and kinematics and in multi-channel EMG and force plate analysis. A thorough knowledge of muscle anatomy and physiology is required. The candidate must either hold a Ph.D. or have completed all requirements for a Ph.D. in basic health sciences or engineering. The salary range is \$24,000 to \$30,000. Curriculum vitae may be sent to: **Roger Dee, M.D., Department of Orthopedics, T-18, Health Science Center, Room 020, State University of New York (SUNY)-Stony Brook, Stony Brook, N.Y. 11794. SUNY at Stony Brook is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**Postdoctoral Positions:** One in cellular immunology, lymphokines; one in bacterial cell walls and inflammation. Instruments available include a fluorescence activated cell sorter, a gas chromatograph-mass spectrometer, and a sedimentation field flow fractionator. Send résumé to: **Dr. M. M. Sigel or Dr. A. Fox, Department of Microbiology and Immunology, University of South Carolina School of Medicine, Columbia, S.C. 29208. Telephone: 803-733-3275. An Equal Opportunity/Affirmative Action Employer.**

### PROFESSOR AND HEAD

Department of Entomology at Oklahoma State University. Responsible for leadership and management of departmental programs. An entomologist or scientist in a related discipline is sought who has an outstanding record of accomplishments in research, teaching, or extension with evidence of capability in administration. Closing date: 31 July 1984. Send letter of application and professional résumé to: **Dr. Richard C. Berberet, Chairman of Search and Screen Committee, Department of Entomology, Oklahoma State University, Stillwater, Okla. 74078. Telephone: 405-624-5527. Affirmative Action/Equal Opportunity Employer.**

### PROTEIN CHEMIST

The W. Alton Jones Cell Science Center invites applications for the position of head of the protein chemistry laboratory. The candidates should be willing to collaborate closely with the recombinant DNA laboratory and with several tissue culture laboratories that are engaged in the isolation, characterization, and modification of bioeffectors produced by various differentiated cell types. Expertise in modern microtechniques of protein sequencing is expected. Particular consideration will be given to candidates with background in conformational studies of proteins and experience in synthetic peptide chemistry. Synthetic peptides will be used for structure-function studies in cell cultures and for raising antibodies. Salary negotiable. Applicants should send curriculum vitae and references to: **Dr. Gordon Sato, W. Alton Jones Cell Science Center, 10 Old Barn Road, Lake Placid, New York 12946.**

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is a rapidly growing chemical R&D firm developing innovative transdermal and controlled release drug delivery systems. We present varied technical and business exposure, where scientific challenge is combined with technical accomplishment. Openings exist for:

### PHARMACEUTICAL ENGINEER

College graduate with a minimum of 5 years experience in pharmaceutical manufacturing and/or process developing environment. Supervisory experience is necessary.

### PROJECT MANAGER

PhD. candidates in any field of chemistry or life sciences. Minimum of 5 years supervisory experience at laboratory level in the pharmaceutical industry. Successful candidates will possess demonstrated creative ability and innovative approaches to problem solving. Opportunity for rapid growth and equity participation. Moleculon offers a competitive salary and excellent benefits. Submit resume and salary requirements to: Personnel Department

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For further information, telephone **Dick Charles at SCIENCE: 212-730-1050**, or write: **1515 Broadway, New York, N.Y. 10036.**

\*At a 15% premium.

# MOLECULAR BIOLOGIST/ DNA CHEMIST

The Upjohn Company's Molecular Biology Group has a position open for a person with a BS or MS in biochemistry, chemistry, microbiology or related field. Laboratory experience in some aspect of molecular biology and a strong background in organic chemistry are required. The individual will participate in designing and developing vectors for the expression of cloned genes, using oligonucleotide synthesis as a tool.

Upjohn offers a stimulating research environment, opportunity for career growth, competitive salary and benefits, and relocation assistance.

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 a four-season climate.

For confidential consideration, please call from outside Michigan toll-free 1-800-253-8600, ext. 3-6767, or inside Michigan collect 616-323-6767 to request an employment application be sent to you immediately. Please refer to Ad Number 16545-J when calling.

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## RESEARCH SCIENTISTS

Kallestad, a leading medical diagnostic company located in Austin, Texas, is seeking highly motivated scientists in the following areas:

### Virology:

Successful candidate will have Ph.D. with animal virus experience, strong leadership ability, and good communications skills.

### Organic Chemistry:

Ph.D. or M.S. with experience in synthesis and conjugation of large and small molecular weight compounds to various proteins, as well as purification and characterization of these compounds.

### Recombinant DNA:

Requires Ph.D. in molecular biology and at least 2 years of experience in contemporary sequencing, cloning, and hybridization techniques.

### Bacteriology:

Position requires Ph.D. plus at least 2 years experience in identification and characterization of bacterial surface antigens.

### Technical Staff:

B.S. or M.S. level personnel with at least 2 years of research experience will be considered for positions in the above areas.

Austin is located in the hill country of Central Texas. The University of Texas and numerous high technology companies provide Austin with a rich intellectual and cultural environment. Nearby lakes and rivers provide excellent opportunities for outdoor recreation.

Kallestad offers competitive salary and benefits. Please send resume and salary requirements to: Personnel Office, Kallestad Laboratories, 2000 InterFirst Tower, Austin, Texas, 78701.

Kallestad is an equal opportunity employer.

**Kallestad**  
LABORATORIES, INCORPORATED

## HOFFMANN-LA ROCHE

Hoffmann-La Roche is a leader in the research, development and manufacture of pharmaceutical and animal health products. The following career opportunities are in Nutley, NJ with one exception noted below:

### Sr. Scientist Molecular Genetics

Initiate a basic research program in Eukaryotic Molecular Biology and participate in pharmaceutical research projects using recombinant DNA or high level eukaryotic expression vectors.

**Qualifications:** PhD in Eukaryotic Molecular Biology with a minimum of 2 years postdoctoral training with a strong background in recombinant DNA and high level eukaryotic expression vectors. (Position AS)

### Group Leader Product Development & Applications

Responsible for the development of new animal drug dosage forms, vitamins and carotenoids for specific animal health and fine chemical business needs. Develop new approaches to meet product objectives and establish stability and performance parameters and assist in scale-up applications.

**Qualifications:** PhD in Pharmaceutical Research, Chemistry or Biochemistry. Minimum of 5 years product development experience and 1 year as a project leader. Knowledge of drug delivery systems, coatings, pastes, drenches, boluses and tablets essential. (Position WC)

### Assistant Research Group Chief Rumen Microbiology

Conduct research in rumen microbiology, physiology, and nutrition to identify and initiate development of new products in ruminant animals. Objectives include the discovery of new methods for altering growth performance of

**Qualifications:** PhD in Ruminant Nutrition with extensive training in anaerobic microbiology and rumen physiology. Industrial experience preferred. Location: Research farm in Wrightstown, NJ (Position HE)

### Sr. Scientist Biochemist/Nutritionist

Conduct research to identify and develop applications of vitamins, carotenoids, nutrients, and growth factors in animal agriculture. Supervise studies at basic biochemical and physiological levels in animal models pertinent to field conditions for food animals.

**Qualifications:** PhD in Animal Nutrition, Biochemistry, or Physiology. Understanding of food animal growth. Experience in instrumental analysis and computer techniques. (Position DS)

### Medical Epidemiology Coordinator

Assist with the design, coordination and monitoring of post marketing surveillance studies. Coordinate epidemiological data and handle adverse reaction data.

**Qualifications:** BS required. MS in Statistics or Epidemiology preferred. Minimum of 5 years pharmaceutical research experience desirable. (Position DC)

Roche offers an outstanding compensation package including an attractive bonus and an environment that encourages professional growth. Please send resume including present salary and indicating position of choice to: Eleanor M. Malone, Professional Employment & Staffing Specialist,



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Nutley, NJ 07110

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## POSITIONS OPEN

**POSTDOCTORAL POSITION.** Molecular genetics of chromosome replication, partitioning, and cell division in *Escherichia coli* [see *Mol. Gen. Genet.* 193:263 (1984)]. Experience in bacterial genetics and recombinant DNA essential. Send curriculum vitae and names of three references to: **Dr. Peter Kuempel, MCDB Box 347, University of Colorado, Boulder, Colo. 80309. Telephone: 303-492-7952.** *The University of Colorado, Boulder, is an Affirmative Action/Equal Opportunity Employer.*

**RESEARCH ASSOCIATE** opportunity in anesthesiology. One- to 3-year appointment available for clinically trained anesthesiologist, U.S. or Canadian citizen, in the following research programs:

- Dr. G. A. Gronert, **metabolism and striated muscle.**
- Dr. J. D. Michenfelder, **cerebral metabolism and blood flow.**
- Drs. K. Rehder, R. E. Hyatt, J. R. Rodarte, **respiratory physiology.**
- Dr. D. K. Rorie, **smooth muscle physiology.**
- Dr. R. A. Van Dyke, **biochemistry and pharmacology.**
- Dr. T. L. Yaksh, **pharmacology of pain and stress.**

Contact: **Dr. Kai Rehder, Chairman, Division of Anesthesia Research, Mayo Clinic, Rochester, Minnesota 55905. Telephone: 507-285-5821.** *An Equal Opportunity/Affirmative Action Institution.*

## RESEARCH ASSOCIATE

Applications are invited for a research associate or postdoctoral fellow in cell biology. The appointment is of 3-year duration and renewable. The candidate should be able to develop his/her independent projects within the grant framework which consists of problems in intracellular transport (nucleocytoplasmic exchange) and nuclear mitotic events (breakdown and reassembly). Experience with molecular biology or protein chemistry techniques would be an advantage. Forward curriculum vitae and three references to:

**Dr. Gerd Maul**  
**The Wistar Institute**  
**36th Street at Spruce**  
**Philadelphia, Pa. 19104**  
*An Equal Opportunity/Affirmative Action Employer, M/F/H/V*

## SENIOR RESEARCH BIOLOGIST Canada

A leading Canadian pharmaceutical company with modern research facilities located in Kirkland, Quebec, a suburban community 15 miles from downtown Montreal, has permanent posts available for senior research biologists.

Candidates should be able to set up and direct research projects in one of the following areas: (i) Regulation and control of leukotrienes in physiological and pathological processes, (ii) novel approaches to pulmonary pharmacology, and (iii) regulation of keratinocyte proliferation as a basis for the development of novel treatments to skin diseases.

Reply in confidence providing curriculum vitae and list of publications to: **the Employment Manager, Merck Frost Canada Inc., P.O. Box 1005, Pointe Claire/Dorval, Quebec, Canada H9R 4P8.**

## GRADUATE STUDY

**GRADUATE STUDY IN BIOMEDICAL SCIENCE.** The University of Tennessee College of Veterinary Medicine has two funded positions for Ph.D. candidates in a variety of funded projects including toxicology, hematology, reproductive physiology, animal models of human genetic diseases, metabolic livestock diseases, molecular biology, microbiology, and immunology. Appropriate candidates will include individuals with professional medical degrees or a M.S. in biological sciences. Stipends commensurate with qualifications. Available 1 July 1984. Applications accepted until filled. Contact: **Dr. R. L. Michel, Office of Research and Graduate Programs, P.O. Box 1071, Knoxville, Tenn. 37901-1071. Telephone: 615-546-9230.** *The University of Tennessee is an Equal Opportunity/Affirmative Action/Title XII Section 504 Employer.*

## CONFERENCE

The New York Academy of Sciences  
Conference On

### MEDICAL AND BIOLOGICAL EFFECTS OF LIGHT: IMPLICATIONS FOR THE DESIGN OF INTERIOR LIGHTING ENVIRONMENTS

31 October to 2 November 1984

The Barbizon-Plaza Hotel  
New York City

Environmental light produces numerous biological effects related to health beyond simply affecting vision and cutaneous pigmentation. Some of these involve direct responses of circulating or cutaneous chemicals to light waves; others are mediated by the brain and neuroendocrine organs. Understanding of these effects may be important for the design of interior environments that optimize health.

The conference will feature a limited number of poster presentations. The deadline for submission of abstracts is 15 July 1984. The abstracts should include the name of the author(s), institution, and a 100- to 200-word summary of the work to be presented. Send abstracts to: **Richard J. Wurtman, M.D., Massachusetts Institute of Technology, E25-604, Cambridge, Mass. 02139.**

Chairs: **John T. Potts, Jr., M.D.,** Massachusetts General Hospital, and **Richard J. Wurtman, M.D.,** Massachusetts Institute of Technology.

For conference program and registration information, contact: **Conference Department, The New York Academy of Sciences, New York, N.Y. 10021. Telephone: 212-838-0230.**

## TRAINING PROGRAM

**RESEARCH CAREER TRAINING OPPORTUNITIES** in endocrinology and metabolism in Endocrine Research Unit, Mayo Clinic, and Mayo Graduate School of Medicine. Candidates must have an M.D. (or its equivalent), Ph.D., or D.V.M. degree, and must be either U.S. citizens or permanent residents of the United States. Physician trainees may be eligible to obtain clinical training in endocrinology as a part of this program. Investigators in the Endocrine Research Unit have interests in the areas of human and animal bone and calcium metabolism, hormone action, and molecular biology as it relates to hormone action. Address inquiries to: **Dr. R. Kumar, Mayo Clinic, Endocrine Research Unit, 5-164 West Joseph Building, Rochester, Minn. 55905. Telephone: 507-285-4300.** *An Equal Opportunity/Affirmative Action Institution.*

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIPS IN BIOMEDICAL SCIENCE.** The University of Tennessee College of Veterinary Medicine has two funded positions for postdoctoral fellows in a variety of funded projects including toxicology, hematology, reproductive physiology, animal models of human genetic diseases, metabolic livestock diseases, molecular biology, microbiology, and immunology. Appropriate candidates will include individuals with professional medical degrees or a Ph.D. in biological sciences. Stipends commensurate with qualifications. Available 1 July 1984. Applications accepted until filled. Contact: **Dr. R. L. Michel, Office of Research and Graduate Programs, P.O. Box 1071, Knoxville, Tenn. 37901-1071. Telephone: 615-546-9230.** *The University of Tennessee is an Equal Opportunity/Affirmative Action/Title XII Section 504 Employer.*

**POSTDOCTORAL FELLOWSHIP IN THE CELLULAR AND MOLECULAR ASPECTS OF REPRODUCTIVE BIOLOGY.** Postdoctoral fellowships are anticipated in an NIH-funded training program. Research areas include: Cell biology and biochemistry of fertilization (S. Meizel, J. Hedrick, D. Katz, R. Nuccitelli); cell biology and morphology of implantation, placenta and early development (A. Enders, A. Hendrickx, B. King); cellular endocrinology (J. Turgeon). Candidates must be U.S. citizens or permanent residents, and at time of appointment must have doctoral degree with either no postdoctoral training or less than 1 year of such training. Fellowships will be awarded as positions become available between 1 September 1984 and 1 August 1985. For further information, send your curriculum vitae and a statement of research interests to: **Dr. Stanley Meizel, Director, Reproductive Biology Training Grant, Department of Human Anatomy, School of Medicine, University of California Davis, Davis, Calif. 95616.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIPS.** The Cancer Research Center of the University of North Carolina (UNC) at Chapel Hill will have openings in 1984-1985 for persons completing graduate studies to train with investigators in basic cancer-related research in tumor virology, chemical carcinogenesis, drug development, cancer cell biology, and tumor immunology. Training available in recombinant DNA technology, gene expression, DNA replication, molecular enzymology, cell cycle analysis, and combined programs. Unique resources and departmental affiliations. Candidates must be U.S. citizens or permanent residents. Send for brochure and apply with curriculum vitae, three letters of recommendation, a statement of research interests, and graduate school records to: **Director, Cancer Research Center, Box 30, MacNider Building, Chapel Hill, N.C. 27514.** *UNC's Cancer Research Center is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL FELLOWSHIP** to study genomic alterations in human cancer [*Nature* 301:89-92; *Science* 220:1175-1177], available fall or winter 1984. Send curriculum vitae and names and telephone numbers of three referees to: **Dr. Andrew Feinberg, Johns Hopkins University School of Medicine, 600 North Wolfe Street, Oncology 1-127, Baltimore, Md. 21205.** *Equal Opportunity Employer.*

## POSTDOCTORAL FELLOWSHIPS IN REPRODUCTION

The University of Miami (UM) training program in reproductive biology anticipates several openings on or after 1 July. This multidisciplinary and interdepartmental program offers training in many areas related to the reproductive sciences, and research can be at the molecular, cellular, and whole animal level. These are NRSA fellowships, and only U.S. citizens and permanent residents are eligible for appointment. For further information please write: **Dr. J. David Puett, Program Director, REPCEND Laboratories (D-5), University of Miami School of Medicine, P.O. Box 016190, Miami, Fla. 33101.** *UM is an Equal Opportunity Employer.*

## REQUEST FOR PROPOSALS

The EPA/NCSSU Acid Deposition Program, a cooperative research program between the U.S. Environmental Protection Agency (EPA) and North Carolina State University (NCSSU), is seeking **PROPOSALS** for research considering effects of acid deposition on aquatic biota. For further information and submission details, send a self-addressed envelope to: **EPA/NCSSU Acid Deposition Program, 1509 Varsity Drive, Raleigh, N.C. 27606.** Deadline for requesting information is 2 July 1984.

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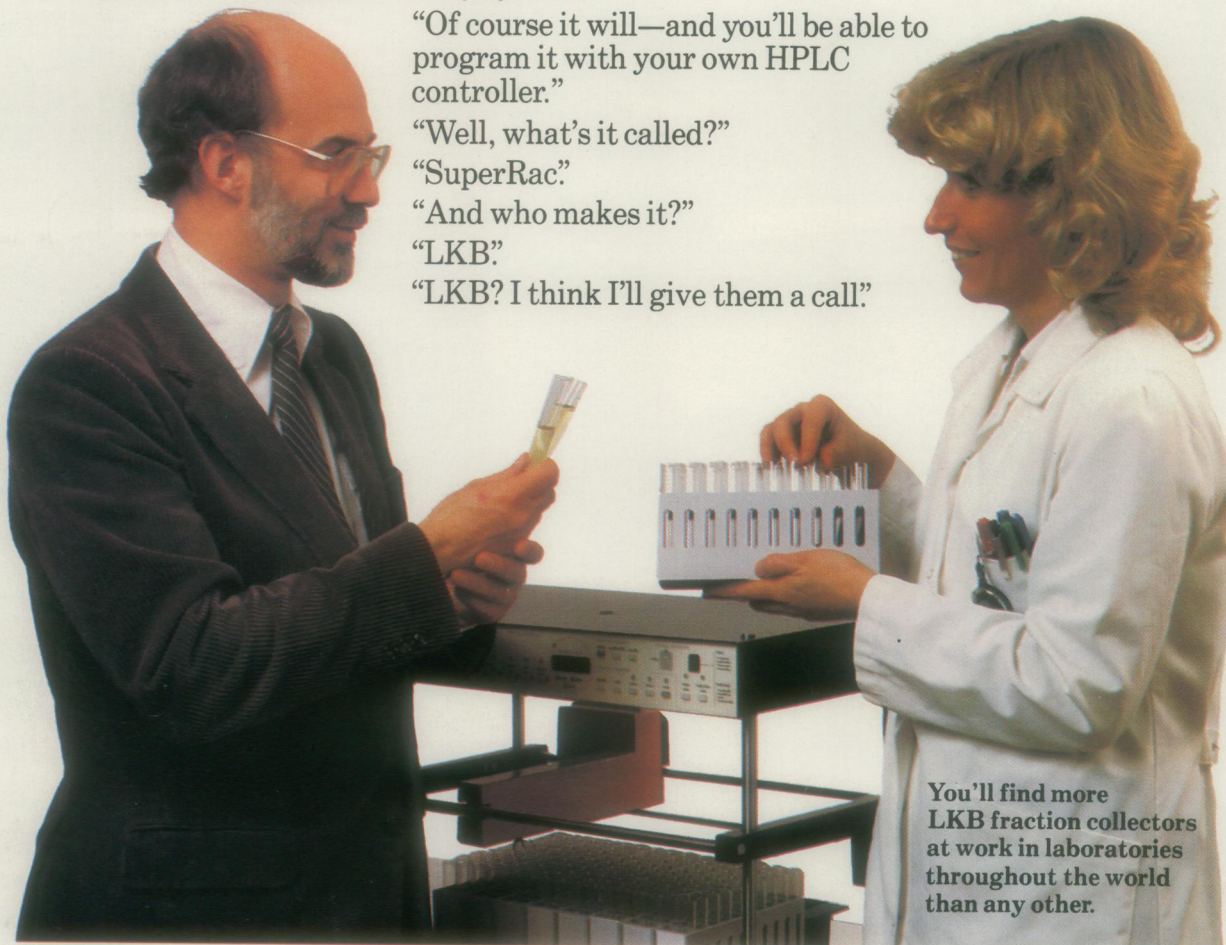
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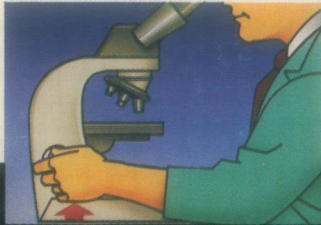
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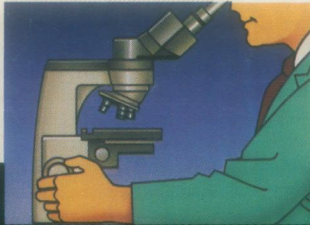


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