

ago. These inhabitants built irrigation systems, apartment houses, roads, and cities. Nevertheless, as Graf describes, they strove to adapt to the unique southwestern landscape rather than to dominate it. Whether or not this ethic is compatible with modern society is certainly debatable. There is no question, however, that in the long run neither adaptation nor dominance can succeed without sound scientific study of this sensitive landscape.

VICTOR R. BAKER

Department of Geosciences,  
University of Arizona,  
Tucson 85721

## Wave Dynamics

**Ocean Wave Modeling.** THE SWAMP GROUP. Plenum, New York, 1985. vi, 256 pp., illus. \$49.50. From a symposium, Miami, May 1981.

The scientific prediction of surface waves may be dated from Sverdrup and Munk's 1947 *Wind, Sea, and Swell: Theory of Relations for Forecasting*. That report was stimulated by the need for the Allied forces to have sea and swell forecasts before the invasion of North Africa, and it appeared in classified form in 1943. The complete prediction comprises two essentially distinct parts, the prediction of the wind field, which is the province of meteorologists, and the prediction of the resulting response of the ocean surface, which is the province of oceanographers. The present monograph, like that of Sverdrup and Munk, deals with the latter problem.

The starting point is the transport equation

$$\frac{\partial F}{\partial t} + \mathbf{v} \cdot \nabla F = S_{in} + S_{nl} + S_{ds}$$

which governs the evolution of the surface-wave field in space ( $\mathbf{x}$ ) and time ( $t$ );  $F = F(f, \theta; \mathbf{x}, t)$  is the two-dimensional spectral density in frequency  $f$  and direction of propagation  $\theta$ ,  $\mathbf{v} = \mathbf{v}(f, \theta)$  is the group velocity,  $S_{in}$  is the input from the wind,  $S_{nl}$  is the nonlinear transfer through wave interactions, and  $S_{ds}$  is the dissipation. This approach is distinct from that of Sverdrup and Munk, which was based on quasi-empirical relations between characteristic parameters of the wave and wind fields and antedated the introduction of statistical concepts (by Pierson, Neumann, and James in 1955) in the treatment of ocean waves. It became practical only in the early 1960's, after the theoretical studies of Phillips (1957)

and Miles (1957), which provided a basis for the representation of  $S_{in}$ , and the discovery of resonant interactions by Hasselmann (1960) and Phillips (1960), which provided the basis for the representation of  $S_{nl}$ ; the representation of  $S_{ds}$  was, and remains, empirical. It should perhaps be emphasized that these predictions are for deep water and that to extend them to water of a depth that is half, or less than half, of the wavelength would introduce further complications, especially if (as in coastal regions) the depth varies significantly.

The SWAMP (for Sea Wave Modeling Project) Group, which comprises 25 scientists from 11 institutions in the Federal Republic of Germany, Italy, Japan, the Netherlands, Norway, the United Kingdom, and the United States, has carried out a comparison of ten different models for the integration of the transport equation, using various parameterizations of the input terms, for seven hypothetical test cases. The first half of the present monograph discusses the various types of models and the principles on which they are based and describes the test cases. The second half presents the individual models and describes their predictions for some or all of the test cases.

There are (not unexpectedly) striking differences among the predictions of the models for particular test cases, and it is evident that we are not yet able to provide reliable forecasts of the surface-wave field induced by a strong front, let alone a hurricane. This is due in part to limitations in our basic understanding of the physics (the air flow over waves is turbulent), but the principal shortcomings of the models appear to stem from limitations in the parameterization of the nonlinear interactions ( $S_{nl}$ ) and in the assumed form of the dissipation ( $S_{ds}$ ). Nevertheless, much progress has been made, and the present ("second generation") models represent a significant advance over earlier ("first generation") models, in which nonlinearity was either absent or crudely represented and in which it had been necessary to increase the linear input  $S_{in}$  by one or more orders of magnitude over the theoretical values. Future ("third generation") models, already under development, will incorporate more sophisticated parameterizations of  $S_{nl}$  and may exploit our theoretical knowledge to its present limits, after which the lack of a rational model of dissipation and the effects of finite, variable depth are likely to present barriers to further progress.

We have come a long way from Sverdrup and Munk, but much remains to be done if we are to take full advantage of

the data soon to be (if not already) available from satellite technology. The present monograph provides a valuable survey of the state of the art as of 1981.

JOHN MILES

*Institute of Geophysics and Planetary Physics, University of California, San Diego, La Jolla 92093*

## Books Received

**Clinical Management of Infant Great Apes.** Charles E. Graham and James A. Bowen, Eds. Liss, New York, 1985. xii, 213 pp., illus. \$48. Monographs in Primatology, vol. 5. From a workshop, Atlanta, Aug. 1982.

**Clinical Pharmacology of Antianginal Drugs.** U. Abshagen, Ed. Springer-Verlag, New York, 1985. xvi, 552 pp., illus. \$162. Handbook of Experimental Pharmacology, vol. 76.

**Coal Geology and Coal Technology.** Colin R. Ward, Ed. Blackwell Scientific, Palo Alto, Calif., 1984. x, 345 pp., illus. \$70; paper, \$39.

**Computer Contracts.** An International Guide to Agreements and Software Protection. Hilary E. Pearson. Chapman and Hall, New York, and Methuen, Toronto, 1985. xiv, 306 pp. \$29.95.

**Computer-Based Automation.** Julius T. Tou, Ed. Plenum, New York, 1985. x, 652 pp., illus. \$85. From a conference, Taipei, Dec. 1983.

**Concepts in Marine Pollution Measurements.** Harris H. White, Ed. University of Maryland Sea Grant College, College Park, 1984. xiv, 743 pp., illus. \$12.50. From a workshop, Pensacola, Fla., April 1982.

**A Concise Introduction to the Theory of Numbers.** Alan Baker. Cambridge University Press, New York, 1985. xiv, 95 pp. \$29.95; paper, \$9.95.

**Congenital Metabolic Diseases.** Diagnosis and Treatment. Raul A. Wapnir, Ed. Dekker, New York, 1985. xvi, 429 pp., illus. \$75. Clinical Pediatrics, vol. 2. From a conference.

**Consensus and Confrontation.** The United States and the Law of the Sea Convention. Jon M. Van Dyke, Ed. University of Hawaii Law of the Sea Institute, Honolulu, 1985. xii, 576 pp., illus. \$29.50. From a workshop, Honolulu, Jan. 1984.

**Consequences of Martin's Axiom.** D. H. Fremlin. Cambridge University Press, New York, 1984. xii, 325 pp. \$54.50. Cambridge Tracts in Mathematics, 84.

**Contemporary Sensory Neurobiology.** Manning J. Correia and Adrian A. Perachio, Eds. Liss, New York, 1985. xii, 359 pp., illus. \$58. Progress in Clinical and Biological Research, vol. 176. From a symposium, Galveston, Tex., May 1984.

**Deciphering the Senses.** The Expanding World of Human Perception. Robert Rivlin and Karen Gravelle. Simon and Schuster, New York, 1984. 237 pp., illus. Paper, \$7.95.

**Deserts.** James A. MacMahon. Knopf, New York, 1985. 640 pp., illus. Paper, \$14.95. The Audubon Society Nature Guides.

**Determination of Surface Structure by LEED.** P. M. Marcus and F. Jona, Eds. Plenum, New York, 1984. xii, 565 pp., illus. \$89.50. IBM Research Symposia Series. From a conference, Yorktown Heights, N.Y., June 1980.

**Developments in Cell Biology, 1.** Secretory Processes. R. T. Dean and P. Stahl. Butterworths, Boston, 1985. xii, 234 pp., illus. \$62.95.

**Dictionary of Technology.** English German. Rudolf Walther, Ed. Elsevier, New York, 1985. 1126 pp. \$134.50.

**Ecology of European Rivers.** B. A. Whitton, Ed. Blackwell Scientific, Palo Alto, Calif., 1984. xii, 644 pp., illus. \$99.

**Ecology of Natural Resources.** François Ramade. Wiley, New York, 1985. xiv, 231 pp., illus. \$54.95. Translated from the French edition (Paris, 1981) by W. J. Duffin.

**Experimental and Applied Physiology.** Richard G. Pfanzer. 3rd ed. Brown, Dubuque, Iowa, 191985. x, 380 pp., illus. Spiral-bound.

**Expert Systems.** Artificial Intelligence in Business. Paul Harmon and David King. Wiley, New York, 1985. xii, 283 pp., illus. Paper, \$16.95.

**The Fascination of Physics.** Jacqueline D. Spears and Dean Zollman. Benjamin/Cummings, Menlo Park, Calif., 1985. xvi, 549 pp., illus. \$25.95.

**Fault and Fold Tectonics.** W. Jaroszewski. Wendy L. Kirk, Transl. Ed. Horwood, Chichester, England, Halsted (Wiley), New York, and PWN-Polish Scientific Publishers, Warsaw, 1985. x, 565 pp.,

illus. \$97. Ellis Horwood Series in Geology. British Micropalaeontological Society Series. Translated from the Polish edition (Warsaw, 1980).

**FDR's Splendid Deception.** Hugh Gregory Gallagher. Dodd, Mead, New York, 1985. xvi, 250 pp. \$16.95.

**First Colloquium in Biological Sciences.** (New York, Nov. 1983.) Walter N. Scott and Fleur L. Strand, Eds. New York Academy of Sciences, New York, 1984. xviii, 621 pp., illus. Paper, \$140. Annals of the New York Academy of Sciences, vol. 435.

**Fish Migration.** Brian A. McKeown. Croom Helm, London, and Timber Press, Portland, Ore., 1984 (distributor, International Specialized Book Services, Portland, Ore.). x, 224 pp., illus. \$29.

**Fishes of the North-eastern Atlantic and the Mediterranean.** Vol. 1. P. J. P. Whitehead *et al.*, Eds. Unesco Press, Paris, 1984 (U.S. distributor, Unipub, New York). 510 pp., illus. \$63.50.

**Foundations of Psychoneuroimmunology.** Steven Locke *et al.*, Eds. Aldine (Walter de Gruyter), New York, 1985. xxii, 480 pp., illus. \$59.95.

**Foundations of Quantum Mechanics II.** G. Ludwig. Springer-Verlag, New York, 1985. xvi, 416 pp., illus. \$77. Texts and Monographs in Physics. Translated from the German edition by Carl A. Hein.

**Foundations of Radiation Hydrodynamics.** Dimitri Mihalas and Barbara Weibel Mihalas. Oxford University Press, New York, 1984. xviii, 718 pp. \$75.

**Fundamentals of General Topology.** Problems and Exercises. A. V. Arkhangel'skii and V. I. Ponomarev. Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.). xvi, 415 pp. \$69. Mathematics and Its Applications. Translated from the Russian edition (Moscow, 1974).

**Fungal Protoplasts.** Applications in Biochemistry and Genetics. John F. Peberdy and Lajos Ferenczy, Eds. Dekker, New York, 1985. xii, 354 pp., illus. \$69.75. Mycology Series, vol. 6.

**Fusion Reactions below the Coulomb Barrier.** S. G. Steadman, Ed. Springer-Verlag, New York, 1985. xviii, 351 pp., illus. Paper, \$23.70. Lecture Notes in Physics, vol. 219. From a conference, Cambridge, Mass., June 1984.

**Genetic Consequences of Nucleotide Pool Imbalance.** Frederick J. de Serres and William Sheridan, Eds. Plenum, New York, 1985. x, 523 pp., illus. \$69.50. Basic Life Sciences, vol. 31. From a conference, Research Triangle Park, N.C., May 1983.

**Genetics.** Monroe W. Strickberger. 3rd ed. Macmillan, New York, and Collier Macmillan, London, 1985. xxii, 842 pp., illus. Cloth.

**Genome Rearrangement.** Melvin Simon and Ira Herskowitz, Eds. Liss, New York, 1985. xxii, 336 pp., illus. \$48. UCLA Symposia on Molecular and Cellular Biology, New Series, vol. 20. From a symposium, Steamboat Springs, Colo., April 1984.

**Gentlemen of Science.** Early Correspondence of the British Association for the Advancement of Science. Jack Morrell and Arnold Thackray, Eds. Royal Historical Society, London, 1984 (distributor, Boydell and Brewer, Woodbridge, Suffolk, U.K.). viii, 382 pp. £10. Camden Fourth Series, vol. 30.

**Grasslands.** Lauren Brown. Knopf, New York, 1985. 608 pp., illus. Paper, \$14.95. The Audubon Society Nature Guides.

**The Great Inertia.** Scientific Stagnation in Traditional China. Wen-yuan Qian. Croom Helm, Dover, N.H., 1985. xiv, 155 pp. \$27.50.

**The Grizzly in the Southwest.** Documentary of an Extinction. David E. Brown. University of Oklahoma Press, Norman, 1985. xx, 274 pp., illus. \$19.95.

**Halley's Comet, 1755-1984.** A Bibliography. Compiled by Bruce Morton. Greenwood, Westport, Conn., 1985. xvi, 281 pp. \$35.

**Hammersmith Cardiology Workshop Series.** Vol. 2. Attilio Maseri, Ed. Raven, New York, 1985. xviii, 226 pp., illus. \$49.50.

**Hand Function and the Neocortex.** A. W. Goodwin and I. Darian-Smith, Eds. Springer-Verlag, New York, 1985. x, 314 pp., illus. \$34.50. Experimental Brain Research Supplementum 10. From a symposium, Melbourne, Aug. 1983.

**Handbook of Discourse Analysis.** Vol. 1. Disciplines of Discourse. Teun A. van Dijk, Ed. Academic Press, Orlando, Fla., 1985. xviii, 302 pp., illus. \$59.50.

**Handbook of Toxic and Hazardous Chemicals and Carcinogens.** Marshall Sittig. 2nd ed. Noyes, Park Ridge, N.J., 1985. xxvi, 950 pp., illus. \$96.

**Heat Transfer in Medicine and Biology.** Analysis and Applications. Vol. 1. Avraham Shitzer and Robert C. Eberhart, Eds. Plenum, New York, 1985. xxvi, 428 pp., illus. \$65.

**The Heritage of Logical Positivism.** Nicholas Rescher, Ed. University Press of America, Lanham, Md., 1985. x, 174 pp., \$23.50; paper, \$11.25. CPS Publications in Philosophy of Science. From a conference, Pittsburgh, Dec. 1982.

**International Wildlife Law.** An Analysis of International Treaties Concerned with the Conservation of Wildlife. Simon Lyster. Grotius, Cambridge, England, 1985. xxiv, 470 pp., illus. \$37; paper, \$17.50.

A Publication of the Research Centre for International Law, University of Cambridge.

**Interpretation of Aerial Photographs.** Thomas Eugene Avery and Graydon Lennis Berlin. 4th ed. Burgess, Minneapolis, 1985. x, 556 pp., illus. \$31.95.

**Interpretation of Clinical Laboratory Tests.** Reference Values and Their Biological Variation. Gérard Siest *et al.*, Eds. Biomedical Publications, Foster City, Calif., 1985. xvi, 459 pp., illus. \$47.50.

**Introducing CAL.** A Practical Guide to Writing Computer-Assisted Learning Programs. Keith Hudson. Chapman and Hall, New York, 1985. x, 171 pp., illus. \$39.95; paper, \$19.95.

**Ion Exchange and Solvent Extraction.** A Series of Advances. Vol. 9. Jacob A. Marinsky and Yizhak Marcus, Eds. Dekker, New York, 1985. xvi, 486 pp., illus. \$85.

**Kinetic Energy Storage.** Theory and Practice of Advanced Flywheel Systems. G. Genta. Butterworths, Boston, 1985. xii, 362 pp., illus. \$84.95.

**The Lactoperoxidase System.** Chemistry and Biological Significance. Kenneth M. Pruitt and Jorma O. Tenovuo, Eds. Dekker, New York, 1985. 257 pp., illus. \$66. Immunology Series, 27.

**Lipid Metabolism and Its Pathology.** M. J. Halpern, Ed. Plenum, New York, 1985. x, 246 pp., illus. \$49.50. From a colloquium, Lisbon, Dec. 1980.

**Mammalian Cell Genetics.** Martin L. Hooper. Wiley-Interscience, New York, 1985. xvi, 175 pp. \$49.95. Cell Biology, vol. 4.

**Managing Forested Lands for Wildlife.** Robert L. Hoover and Dale L. Wills, Eds. Colorado Division of Wildlife, Denver, 1984. viii, 459 pp., illus. Paper.

**The Marijuana Question and Science's Search for an Answer.** Helen C. Jones and Paul W. Lovinger. Dodd, Mead, New York, 1985. xiv, 537 pp., illus. \$24.95.

**Marine Birds.** Their Feeding Ecology and Commercial Fisheries Relationships. David N. Nettleship, Gerald A. Sanger, and Paul F. Springer, Eds. Canadian Wildlife Service Department of the Environment, Ottawa, 1984. viii, 220 pp., illus. Paper. From a symposium, Seattle, Jan. 1982.

**Mathematics in Biology and Medicine.** V. Capasso, E. Grosso, and S. L. Paveri-Fontana, Eds. Springer-Verlag, New York, 1985. xviii, 524 pp., illus. Paper, \$36. Lecture Notes in Biomathematics, vol. 57. From a conference, Bari, Italy, July 1983.

**The Mathematics of Sonya Kovalevskaya.** Roger Cooke. Springer-Verlag, New York, 1985. xiv, 235 pp., \$29.80.

**Nutritional Biochemistry and Metabolism.** With Clinical Applications. Maria C. Linder, Ed. Elsevier, New York, 1985. xvi, 436 pp., illus. \$55.

**Offshore and Coastal Modelling.** P. G. Dyke, A. O. Moscardini, and E. H. Robson, Eds. Springer-Verlag, New York, 1985. x, 399 pp., illus. Paper, \$32.80. Lecture Notes on Coastal and Estuarine Studies, vol. 12. From a conference, Tyne and Wear, U.K., May 1984.

**On Civilized Stars.** The Search for Intelligent Life in Outer Space. Joseph F. Baugher. Prentice-Hall, Englewood Cliffs, N.J., 1985. xii, 260 pp., illus. \$21.95; paper, \$9.95. Frontiers of Science.

**Optics and Lasers.** Including Fibers and Integrated Optics. Matt Young. 2nd ed. Springer-Verlag, New York, 1984. xx, 269 pp., illus. Paper, \$24. Springer Series in Optical Sciences, vol. 5.

**Optimum Signal Processing.** An Introduction. Sophocles J. Orfanidis. Macmillan, New York, and Collier Macmillan, London, 1985. xiv, 349 pp., illus. \$31.95.

**Organ Transplantation in Diabetes.** Reinout van Schilfgaarde, Guido G. Persijn, and David E. R. Sutherland, Eds. Grune and Stratton, Orlando, Fla., 1984. xvi, 309 pp., illus. \$54.50. Reprinted from *Transplantation Proceedings*, vol. 16, No. 3. From a symposium, The Hague, Sept. 1983.

**Organic Reactions.** Vol. 33. Andrew S. Kende, Ed. Wiley, New York, 1985. xx, 347 pp., illus. \$45.

**Out of Asia.** Peopling the Americas and the Pacific. Robert Kirk and Emöke Szathmari, Eds. Journal of Pacific History, Canberra, Australia, 1985 (distributor, CAPA, McMaster University Department of Anthropology, Hamilton, Ontario, Canada). xiv, 226 pp., illus. Paper, \$18.50. From a congress, Vancouver, B.C., Aug. 1983.

**Pacific Coast.** Bayard H. McConnaughey and Evelyn McConnaughey. Knopf, New York, 1985. 633 pp., Paper, \$14.95. The Audubon Society Nature Guides.

**The Palynology of Archaeological Sites.** Geoffrey W. Dimbleby. Academic Press, Orlando, Fla., 1985. xiv, 176 pp., illus. \$45. Studies in Archaeological Science.

**Partial Differential Equations.** New Methods for Their Treatment and Solution. Richard Bellman and George Adomian. Reidel, Boston, 1985 (distributor, Kluwer, Hingham, Mass.). xviii, 290 pp., illus. \$49. Mathematics and Its Applications.

**Quantum Fluctuations.** Edward Nelson. Princeton University Press, Princeton, N.J., 1985. viii, 146 pp., \$32; paper, \$12.95. Princeton Series in Physics.

**Quantum, Space and Time—The Quest Continues.** Studies and Essays in Honour of Louis de Broglie, Paul Dirac and Eugene Wigner. Asim O. Barut, Alwyn van der Merwe, and Jean-Pierre Vigié, Eds. Cambridge University Press, New York, 1984. viii, 662 pp., illus. Paper, \$49.50. Cambridge Monographs on Physics. Reprinted from *Foundations of Physics*, 1982-1983.

**Quark Matter '84.** K. Kajantie, Ed. Springer-Verlag, New York, 1985. vi, 305 pp., illus. Paper, \$20.50. Lecture Notes in Physics, vol. 221. From a conference, Helsinki, June 1984.

**The Recursion Method and Its Applications.** D. G. Pettifor and D. L. Weaire, Eds. Springer-Verlag, New York, 1985. viii, 179 pp., illus. \$29. Springer Series in Solid-State Sciences, 58. From a conference, London, Sept. 1984.

**Regular and Chaotic Motions in Dynamic Systems.** G. Velo and A. S. Wightman, Eds. Plenum, New York, 1985. viii, 310 pp., illus. \$52.50. NATO ASI Series B, vol. 118. From a school, Erice, Sicily, Italy, July 1983.

**The Restoration of Rivers and Streams.** Theories and Experience. James A. Gore, Ed. Butterworths, Boston, 1985. xii, 280 pp., illus. \$39.95. An Ann Arbor Science Book.

**Revolution in Science.** I. Bernard Cohen. Belknap (Harvard University Press), Cambridge, Mass., 1985. xx, 711 pp., illus. \$25.

**The Sachtortte Algorithm.** And Other Antidotes to Computer Anxiety. John Shore. Viking, New York, 1985. xvi, 270 pp., illus. \$16.95.

**Science and the Human Image.** Thomas M. Dunn, Ed. Michigan Quarterly Review, Ann Arbor, 1985. xviii pp. + pp. 155-371, illus. Paper, \$6. *Michigan Quarterly Review*, vol. 24, No. 2.

**Sedimentary and Evolutionary Cycles.** Ulf Bayer and Adolf Seilacher, Eds. Springer-Verlag, New York, 1985. vi, 465 pp., illus. Paper, \$29.50. Lecture Notes in Earth Sciences, vol. 1. From a symposium, Tübingen, Germany, Sept. 1983.

**Semantic Mechanisms of Humor.** Victor Raskin. Reidel, Boston, 1984 (distributor, Kluwer, Hingham, Mass.) xx, 284 pp., illus. \$44. Synthese Language Library, vol. 24.

**Serotonin and the Cardiovascular System.** Paul M. Vanhoutte, Ed. Raven, New York, 1985. xvi, 288 pp., illus. \$29.50.

**Sobotta/Hammersen Histology.** Color Atlas of Microscopic Anatomy. Frithjof Hammersen. 3rd ed. Urban & Schwarzenberg, Baltimore, 1985. xii, 260 pp. \$29. Translated from the German edition (Munich, 1985).

**Social Controls and the Medical Profession.** Judith P. Swazey and Stephen R. Scher, Eds. Oelgeschlager, Gunn and Hain, Boston, 1985. vi, 268 pp. \$27.50.

**Social Evolution.** Robert Trivers. Benjamin/Cummings, Menlo Park, Calif., 1985. xviii, 462 pp., illus. Paper, \$19.95.

**Theory of Neutron Scattering from Condensed Matter.** Stephen W. Lovesay. Clarendon (Oxford University Press), New York, 1984. 2 vols. Vol. 1, Nuclear Scattering. xviii, 329 pp., illus. \$59. Vol. 2, Polarization Effects and Magnetic Scattering. xvi, 344 pp., illus. \$59. International Series of Monographs on Physics.

**Thymic Factor Therapy.** N. A. Byrom and J. R. Hobbs, Eds. Raven, New York, 1984. xvi, 441 pp., illus. \$45. Sero Symposia Publications from Raven Press, vol. 16. From a symposium, London, April 1983.

**Timberline.** Mountain and Arctic Forest Frontiers. Stephen F. Arno. Art by Ramona P. Hammerly. The Mountaineers, Seattle, 1984. 304 pp. Paper, \$9.95.

**Time Frames.** The Rethinking of Darwinian Evolution and the Theory of Punctuated Equilibria. Niles Eldredge. Simon and Schuster, New York, 1985. 240 pp. \$16.95.

**Toward a More Natural Science.** Biology and Human Affairs. Leon R. Kass. Free Press (Macmillan), New York, 1985. xiv, 370 pp., illus. \$23.50.

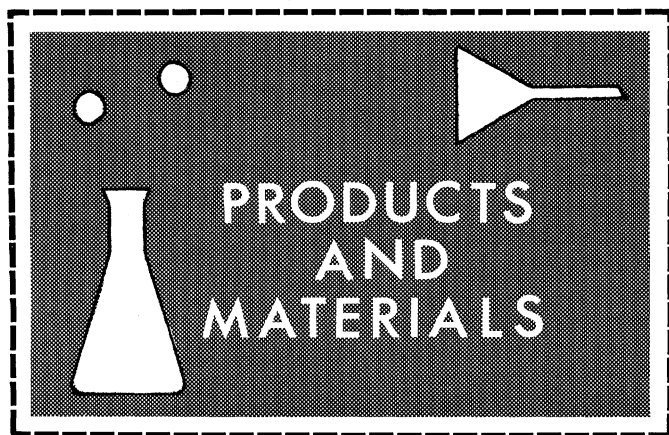
**Toward the Prevention of Alcohol Problems.** Government, Business, and Community Action. Dean R. Gerstein, Ed. National Academy Press, Washington, D.C., 1984. xiv, 174 pp. Paper, \$14.95. From a conference, Washington, D.C., May 1983.

**Toxicity Testing.** New Approaches and Applications in Human Risk Assessment. A. P. Li *et al.*, Eds. Raven, New York, 1985. x, 280 pp., illus. \$42.50. From a conference, St. Louis, Sept. 1985.

**Transfer Processes in Cohesive Sediment Systems.** W. R. Parker and D. J. J. Kinsman, Eds. Plenum, New York, 1984. viii, 239 pp., illus. \$39.50. From a colloquium, Windermere, Cumbria, U.K., Sept. 1981.

**Vision in Man and Machine.** Martin D. Levine. McGraw-Hill, New York, 1985. xviii, 576 pp., illus. \$55.95. McGraw-Hill Series in Electrical Engineering.

**VLSI Electronics.** Microstructure Science. Vol. 9. Norman G. Einspruch, Ed. Academic Press, Orlando, Fla., 1985. xii, 477 pp., illus. \$72.



### Spectrophotometer

UltraSpec II is a single-beam, ultraviolet-visible spectrophotometer. Its wavelength range is from 200 to 900 nm; it utilizes deuterium and tungsten-halogen lamps. Eight keypads are used to control all selection parameters and to provide easy operation. Automatic calibration (at switch-on), change of wavelength, and automatic zeroing are microprocessor-controlled. A six-position cell holder is included for use with standard, semimicro, and micro cells. An RS232 port provides computer capability and software is available for wavelength scanning and reaction rate measurement. The unit automatically subtracts baseline of reference buffer, too. LKB Instruments. Circle 562.

### Enzyme for Glycoprotein Research

N-Glycanase (peptide N-glycosidase F) cleaves all asparagine-linked glycan chains from glycoproteins to yield a carbohydrate-free polypeptide and oligosaccharides with the reducing ends of their chitobiose cores intact. This enzyme preparation is free of proteases and other endo- or exoglycosidase activity. The purity and specificity for complex, hybrid oligosaccharides and for oligosaccharides with high mannose content render N-glycanase suitable for studies of sugar and polypeptide portions of glycoproteins. The enzyme may also be used to compare molecular weights of deglycosylated glycoproteins and cloned proteins. Genzyme. Circle 555.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (on pages 318A and 410E) and placing it in a mailbox. Postage is free.

—RICHARD G. SOMMER

### HPLC System

The Series 3000 is a modular high-pressure liquid chromatography system. It comprises the constaMetric 3000 solvent delivery system and the spectroMonitor 3000 variable wavelength detector and includes a Rheodyne 7125 injection valve, a 15-cm C-18 column, and plumbing kit. The constaMetric 3000 provides pulseless flow at rates from 0.10 to 9.99 ml/min at pressures up to 6000 pounds per square inch. The spectroMonitor 3000 has a wavelength range from 190 to 700 nm. Vertical design minimizes the amount of bench space required. LDC/Milton Roy. Circle 566.

### Cell Separation Tubes

LeucoPREP eliminates the need for Ficoll-Hypaque preparations used to prepare peripheral blood mononuclear suspensions for immunofluorescence staining and analysis. User pipettes 3  $\mu$ l of anticoagulated whole blood into a LeucoPREP tube and centrifuges the tube at room temperature for 10 minutes. LeucoPREP was four times faster than Ficoll-Hypaque leukocyte separation with no significant difference in yield or purity in a recent test. LeucoPREP tubes may be autoclaved. Becton Dickinson Immunocytometry Systems. Circle 565.

### Detector for Monoclonal Antibodies

The Histo-Scan Monoclonal Detector kit uses the avidin-biotin complex method to detect mouse or rat monoclonal antibodies. Tissue-associated antigens are easy to use with these kits because the antibodies they produce are readily detected. The kits are supplied with enough materials and reagents to detect monoclonal antibodies in up to 150 tissue sections. The kit includes hematoxylin counterstaining reagent, concentrated

chromogen reagents, and pertinent blocking solutions to minimize nonspecific staining. The reagents are provided ready-to-use in dropper bottles (shelf life 1 year at 4°C) with full instructions. Biomeda. Circle 563.

### Multichannel Recorder

Model MC6850 is a vertical recorder with a direct-current servomechanism. Pen speed is 1600 mm/sec and acceleration is 3g. Unit control is located on the front panel. Rack mount brackets are available. The user may choose from among many plug-in preamplifiers from direct-current voltage to logarithmic compression. The MC6850 also features remote control of functions such as paper feed. An event-marker signal is available. The unit accommodates Z-fold and roll paper. Western Graphtec. Circle 560.

### Literature

*Biotechnology Research* features DNA transilluminators, photodocumentation systems and accessories, DNA-sequencing systems, and a useful appendix on photodocumentation technique. Fotodyne. Circle 569.

*Chemicals for Biotechnology Research* offers lectins, hormones, antisera, enzymes, monoclonal antibodies, DNA/RNA modifiers, and much more. Chemicon International. Circle 570.

*Analytical Spectroscopy* lists accessories and supplies for infrared-Fourier transform, ultraviolet-visible, and other techniques. Foxboro. Circle 571.

*Ion Chromatography* is devoted to a line of separatory columns including two models for separation of acidic and basic peptides with efficiencies as high as 100,000 plates per meter. Interaction Chemicals. Circle 573.

*Underwater Research Apparatus* describes submersible electrical, optical, and analytical instrumentation for marine applications. Giannini Petro-Marine. Circle 574.

*Microscope: Basics and Beyond* describes techniques, illumination, principles of operation, numerical aperture and resolution, depth of field, working distance and much more. Copies available at \$5 each (\$2.50 per copy for educational institutions). Olympus, Precision Instrument Division. Circle 575.

*Optics and Components* catalogs standard components, hardware, subassemblies, and custom-designed materials. Janos Technology. Circle 576.

# IBM PC OWNERS\*

A DIGITIZER WITH INTEGRATED MEASUREMENT AND GRAPHICS FOR ONLY \$495

A versatile digitizing pen; accurate, reliable and rugged.

**A Scientific Measurement System.**

Linear • perimeter • area • X, Y coordinates • angles • statistics: standard deviations, correlations, regression lines, transforms.

**A Pocket Drafting System.** Multiple CAD-like aids: auto lines, boxes, ellipses, multi-point curve fitting, enlarge, shrink, invert • color lift-off • symbol libraries • many type fonts.

**Quick Lecture-Slides.** Bar-graphs, line graphs • with auto-edit • sizing • conversion • labeling • coloring • programmed for Polaroid Palette.

**Display and Printout** on dot matrix or color printers • choice of size, shape.

The **Digital Paintbrush System** from Jandel Scientific carries a 15-day money-back guarantee. Call toll-free 1-800-874-1888 or in California 415-331-3022.

**Jandel Scientific**

2656 Bridgeway, Sausalito, CA 94965.

\*Apple version \$299.

Circle No. 88 on Readers' Service Card

## SCIENCE

### Posters

The following posters of *Science* covers are available:

30 March 1979, Tropical flowering tree;

23 February 1983, Landsat photo of Detroit, Michigan;

29 July 1983, Cheetah;

2 December 1983, Snowshoe hare;

23 December 1983, Cathedral window/DNA molecule.

Combination of space covers in scroll format: 1 June 1979, 23 November 1979, 10 April 1981.

Price is \$5 each (prepaid).

Write to AAAS, Department POST, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005.

## Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Any deadline in ad must be at least 2 weeks after date of issue in which ad appears. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

### LINE CLASSIFIED ADVERTISING DEADLINES:

16 August issue (mailed 9 August): 26 July  
23 August issue (mailed 16 August): 2 August  
30 August issue (mailed 23 August): 9 August  
6 September issue (mailed 30 August): 16 August

**POSITIONS WANTED:** 40¢ per word, plus \$4 for use of box number, per week. \$10 minimum, per week. Prepayment required. This rate is available only to individuals seeking jobs.

**LINE DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$11.40 per millimeter; \$285 minimum, per week (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing address required for all other advertising.

Send copy for all **Positions Wanted** ads and **Line Display** ads less than 1/6 page in size (125 millimeters) to:

SCIENCE, Room 107  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005  
Telephone: 202-467-4456

Send copy for **Fractional Display** ads, 1/6 page and larger, and all **Marketplace** ads to:

Scherago Associates, Inc.  
1515 Broadway  
New York, N.Y. 10036  
Telephone: 212-730-1050

Blind ad replies should be addressed as follows:

Box (give number)  
SCIENCE  
1515 Massachusetts Avenue, NW  
Washington, D.C. 20005

Effective 1 August 1985, the address for SCIENCE classified advertising will be:

SCIENCE Classified Advertising  
9th Floor  
1333 H Street, NW  
Washington, D.C. 20005

### POSITIONS WANTED

**Ph.D.—Physiology.** Five years of postdoctoral experience in electrophysiology and pharmacology of peripheral nervous system. Broad background in psychology and physical sciences. Investigating administrative and/or marketing positions as "liaison" between private industry and laboratory scientists. Desires position in Midwest or Northeast. Box 155, SCIENCE. 7/26; 8/2

**Physiology Professor, D.V.M., Ph.D.** Adaptive changes to stress: endocrine-hematological; cardiovascular-renal-body fluid system; bone-calcium. Publications. Seeking research/teaching position. Available August 1985. Box 156, SCIENCE. 7/26; 8/2

### POSITIONS OPEN

**ASSISTANT SCIENTIST** position available immediately to direct Hybridoma Laboratory. Ph.D. in immunology required. Applicants should have experience in monoclonal antibody production and be familiar with research on the visual protein rhodopsin. Curriculum vitae, indicating research experience and names of three references, should be submitted to: Robert W. Jackson, Associate Dean, School of Medicine, Wheeler Hall, Southern Illinois University, Carbondale, Ill. 62901. Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action Employer.

### POSITIONS OPEN

#### AQUATIC BIOLOGY—PLANT CELL AND MOLECULAR BIOLOGY

The DEPARTMENT OF BIOLOGY, MCGILL UNIVERSITY, invites applications for two tenure-track positions at the assistant professor level, effective 1 September 1986, subject to budgetary approval. One position will be in the area of AQUATIC ECOLOGY and the other in PLANT CELL AND MOLECULAR BIOLOGY. The department has considerable research strength in these areas and has recently established a Limnology Research Centre and a Centre for Plant Molecular Biology to foster their strength. Applications are invited from all, although, in accordance with Canadian immigration regulations, applications from Canadian citizens and landed immigrants will be considered first.

Send curriculum vitae, statement of research interests, representative reprints, and three letters of reference to: Dr. Barid Mukherjee, Chairman, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1. Deadline: 30 November 1985.

**ASSISTANT OR ASSOCIATE PROFESSOR.** The Biology Department invites applications for a tenure-track faculty position at either the assistant or associate professor level starting February 1986. The appointee is expected to develop a strong independent research program in either IMMUNOLOGY or MOLECULAR GENETICS and contribute to teaching at the undergraduate and graduate level. Applicants must have a Ph.D., and postdoctoral experience is desirable. Submit letter of application, curriculum vitae, an outline of research plans, and have three letters of recommendation sent by 9 August 1985 (or until a suitable candidate can be identified) to: Dr. Kathryn Wilson, Department of Biology, Indiana University—Purdue University at Indianapolis, P.O. Box 647, Indianapolis, Indiana 46223. An Equal Opportunity/Affirmative Action Employer.

**ASSISTANT OR ASSOCIATE PROFESSOR** level, tenure-track position, available immediately at the University of Kentucky College of Medicine, Department of Anatomy. Candidate must have an active research program in neurobiology, preferably neuroendocrinology or reproduction, a good publication and funding record, at least 3 years of postdoctoral training, and a suitable background to participate in team teaching of anatomy courses. Department has strong research program in neurosciences and reproductive neuroendocrinology and good facilities including an E/M suite. Send curriculum vitae with detailed description of research goals and names of four referees to: Dr. M. B. Nikitovitch-Winer, Chairman, Department of Anatomy, University of Kentucky Medical Center, Lexington, Ky. 40536-00849. Deadline: 15 September 1985. Equal Opportunity/Affirmative Action Employer.

**ROCKEFELLER UNIVERSITY.** The Laboratory of Electronics invites applications for a regular appointment as an ASSISTANT PROFESSOR OF BIOMEDICAL ENGINEERING. Duties include supervision of a group of engineers and computer scientists in the further development of a multiprocessor based Laboratory Computer System, its application to neurophysiological research as well as other instrumentation projects involving analog and digital design. Publication record and potential ability to secure grants are important job requirements. Send application to: Dr. Robert L. Schoenfeld, Head, Laboratory of Electronics, Rockefeller University, 1230 York Avenue, New York, N.Y. 10021. An Equal Opportunity Employer.

**ASSISTANT SCIENTIST** position available to provide theory support which will improve the understanding of data from the Phaedrus Tandem Mirror Experiment. The position requires: (i) investigating the effects associated with wave propagation near the ion cyclotron frequency in open plasma systems, (ii) provide modeling and scaling of stability mechanisms in such plasma systems, (iii) establish the relevance of Phaedrus experimental data to the world-wide fusion program, and (iv) publish results in professional journals. The candidate must possess a Ph.D. in theoretical physics, 1 year of postdoctoral research in theoretical physics; 3 years of research experience associated with the following areas: (i) plasma theory, (ii) tandem mirror theory, (iii) ion and neutral beam theory, and (iv) analytic and computer modeling of experimental phenomena associated with the above. Forty hours per week minimum; \$37,100 per year. Apply by 1 September to: Eileen Breitweizer, Job Service, 206 North Broom Street, Madison, Wisconsin 53703. Equal Opportunity Employer. Employer-paid ad.

## POSITIONS OPEN

### ASSISTANT OR ASSOCIATE PROFESSORSHIP IN CARDIOVASCULAR PHARMACOLOGY

The Stritch School of Medicine, Loyola University of Chicago, is seeking to fill a tenure-track position with a cardiovascular pharmacologist. The successful candidate will have a Ph.D. and/or M.D. degree, postdoctoral experience, and a capability to develop a productive, independent basic or clinical cardiovascular pharmacology research program.

The Stritch School of Medicine is located in a near-west suburb of Chicago, and has established programs in cardiovascular physiology, cardiac electrophysiology, hematopharmacology, neuropharmacology, and cardiology.

Candidates should send their curriculum vitae, three letters of recommendation, representative reprints, and a synopsis of their current and future research interests to:

**Dr. S. A. Lorens**  
Department of Pharmacology  
Loyola University Medical Center  
2160 South First Avenue  
Maywood, Illinois 60153  
Telephone: 312-531-3261

The deadline for applications is 1 October 1985.

*Loyola University is an Equal Opportunity Employer.*

### ASSISTANT/ASSOCIATE PROFESSOR OF PHYSIOLOGY

Applications are invited for a faculty position in the Department of Physiological Sciences. Requirements include a Ph.D. in physiology or closely related area. Candidates must demonstrate outstanding teaching ability and commitment. We offer faculty rank and salary commensurate with professional experience and achievements. The position is available 1 October 1985.

Duties include the design and teaching of a comprehensive course in medical physiology, including laboratory, to first-year medical students. In addition, the faculty member will participate in department student-related activities and designated committee assignments. Limited funds are available to assist in personal research interests.

Qualified candidates may submit a letter of application, curriculum vitae, and supporting material, including the names of three references, by 30 August 1985, to: **Harold J. Stronach, Director of Human Resources, Dr. William M. Scholl College of Podiatric Medicine, 1001 North Dearborn Street, Chicago, Ill. 60610.**

### ASSOCIATE RESEARCH SCIENTIST IN PHARMACOLOGY

The Department of Pharmacology is seeking an associate research scientist with an M.D. or Ph.D. degree to participate in studies of developmental electrophysiology and pharmacology and of the mechanisms for cardiac arrhythmias. The successful candidate will be required to have expertise in the use of microelectrode techniques, including the performance of studies using patch clamp and voltage clamp methodology.

Interested persons should send curriculum vitae and the names of three references to:

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

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

### FRESHMAN BIOLOGY LABORATORY COORDINATOR

Applications are invited for a nonfaculty, but attractive, position with full university benefits package and competitive salary in a 17-member department at a state university with 21,000 students, beginning September 1985. Ph.D. in biological sciences required. Strong background in plant biochemistry preferred. Postdoctoral experience preferred also. Duties: (i) supervision of graduate assistants involved in freshman biology laboratory and the responsibility for the success of laboratory, and (ii) establishment of an active research program. Submit curriculum vitae (with a summary of teaching experience, publications, and current and proposed research) and have three letters of recommendation sent to: **Dr. Woon H. Jyung, Chairman, Department of Biology, University of Toledo, Toledo, Ohio 43606.** *Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**ASSISTANT PROFESSOR POSITIONS, DEPARTMENT OF PHYSIOLOGY, Duke University Medical Center**—Tenure-track appointment (two) will be available to candidates with Ph.D. and/or M.D. who have postdoctoral experience and are strongly committed to a research program in the areas of molecular physiology and cellular biophysics. Preference will be given to candidates with interest in fundamental biological and regulatory processes as well as in the analysis of complex integrated systems. Please send curriculum vitae, statement of research plans, and the names of references to: **Physiology Search Committee, Duke University Medical Center, Box 3709-A, Durham, North Carolina 27710.**

*Duke University is an Equal Opportunity/Affirmative Action Employer*

**McLEAN HOSPITAL**, a Harvard Medical School teaching hospital, seeks **BASIC SCIENTISTS** for a vacancy in the Ralph Lowell Laboratories of the Mailman Research Center. Applicants must have a record of research accomplishments and be capable of carrying on an independent, externally funded research program as well as participating in collaborative projects. Successful candidate will be proposed for joint appointments at McLean Hospital and Harvard Medical School at the assistant/associate professor level in an appropriate discipline. They should preferably have an interest in applying an immunochemical or molecular biological background to research on basic problems in neuroscience. Please submit letter of application, curriculum vitae, brief statement of research interests, current funding, and names of at least three references to: **Dr. George Hauser, Interim Director, Ralph Lowell Laboratories, McLean Hospital, 115 Mill Street, Belmont, Mass. 02178.** *An Equal Opportunity Employer.*

**The Section of Orthopedic Surgery, Department of Surgery, Yale University School of Medicine**, is seeking a candidate with experience and track record in **CELL BIOLOGY, HISTOLOGY AND METABOLISM OF BONE** to fill a tenure-track position at the **assistant or associate professor** level. A dual degree (M.D. or D.D.S., and Ph.D.), a minimum of 2 years of postdoctoral and/or faculty experience in bone cell biology, teaching and proven ability to be independently funded are required. Send curriculum vitae with cover letter and a minimum of three references to: **Dr. Gary Friedlaender, Head, Section of Orthopedic Surgery, Yale University School of Medicine, P.O. Box 3333, New Haven, Conn. 06510.** *Yale is an Equal Opportunity Employer.* Deadline for applications: 15 August 1985.

**The Section of Orthopaedic Surgery, Department of Surgery, Yale University School of Medicine**, is seeking a **CELLULAR IMMUNOLOGIST** with experience in cytokines and their effects on bone cells and bone metabolism to fill a tenure-track position at the **assistant professor** level. A Ph.D. and a minimum of 2 years of postdoctoral experience in cellular immunology with previous work and good knowledge of bone biology are required. Send curriculum vitae with cover letter and references to: **Gary E. Friedlaender, M.D., Professor and Chief, Section of Orthopaedic Surgery, Yale University School of Medicine, P.O. Box 3333, New Haven, Conn. 06510.** *Yale is an Equal Opportunity Employer.* Deadline for applications: 15 August 1985.

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

Applications and nominations for the position of dean of the College of Medicine at the University of Arkansas for Medical Sciences (UAMS) are requested. The College enrolls approximately 540 M.D. students, 400 housestaff, and 100 graduate students. Educational programs include participation in six Area Health Education Centers and an active continuing education program statewide. Clinical service programs are conducted at the University Hospital, Arkansas Children's Hospital, two VA Hospitals, and numerous affiliated community hospitals. The dean reports to the chancellor and is responsible for all programs in the College of Medicine. Applicants should have prior administrative experience. To apply, submit curriculum vitae by 1 September 1985 to:

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

*UAMS is an Affirmative Action Employer.*

## SENIOR SCIENTIST IMMUNOLOGY

Unigene Laboratories, Inc., a multidisciplinary biotechnology research corporation, is seeking a Ph.D.-level scientist with a strong immunology background, as demonstrated by relevant publications.

The successful candidate will possess extensive experience in antibody/antigen purification and non-radiometric immunoassay formulation and development. Familiarity with the principles and procedures of hybridoma technology is preferred.

Unigene is a sharply-focused, financially secure institution utilizing Molecular Biology, Immunology, Protein Chemistry and Organic Chemistry to conduct state-of-the-art research in the field of human health care. Our ultra-modern research facility is located in Fairfield, New Jersey. The company offers an excellent salary and comprehensive benefits package, including equity participation, along with the opportunity to work in a stimulating research environment which fosters continuing professional development.

For a challenging and rewarding opportunity to participate in the rapidly expanding health care field with a young and aggressive company, please send a CV, three references and a list of publications in confidence to:

**Dr. John L. Sternick**  
Unigene Laboratories  
110 Little Falls Road  
Fairfield, New Jersey 07006

**unigene**



## FACULTY POSITIONS IN BIOCHEMICAL GENETICS

The Departments of Biochemistry and Medical Genetics, School of Medicine, Oregon Health Sciences University (OHSU), invite applications for two tenure-track faculty positions at the assistant or associate professor level. We are particularly interested in candidates who are working in the following general areas:

- 1) Protein structure and function
- 2) Eukaryotic molecular genetics; somatic cell genetics.

Applicants should have a doctoral degree with at least 3 years of postdoctoral experience, and each is expected to carry out an independent active research program. Teaching responsibilities include participation in courses in biochemistry, genetics, and developmental biology for medical students and Ph.D. candidates. Compensation will depend on professional experience and will conform with institutional standards.

Potential for collaboration exists with other departments of the University in a growing research environment that includes the Oregon Regional Primate Research Center, the Portland Shriners Hospital Research Unit, and a new Institute for Advanced Biomedical Research. Co-chairman of the search committee are Richard T. Jones, Chair, Department of Biochemistry, and Robert D. Koler, Chair, Department of Medical Genetics. Applicants should send curriculum vitae, bibliography, reprints of representative papers, a summary of career goals and research plans, and names of three references to:

Biochemical Genetics Search Committee  
School of Medicine, L224  
Oregon Health Sciences University  
3181 Southwest Sam Jackson Park Road  
Portland, Oregon 97201

All applications received by 15 September 1985 will be considered. *Women and minority candidates are especially invited to apply. OHSU is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

The Department of Physiology, University of Manitoba, invites applications from investigators in the field of **CARDIOVASCULAR PHYSIOLOGY** to be appointed at the level of assistant professor. The successful candidates will be expected to compete for local and national scholarship awards and develop their independent research programs. Applicants with backgrounds in membrane transport, electrophysiology, molecular biology, or hemodynamics are encouraged to submit their curriculum vitae, an outline of their research interests, as well as to arrange for three letters of reference to be sent to: **Dr. Henry G. Friesen, Professor and Head, Department of Physiology, Faculty of Medicine, University of Manitoba, Winnipeg, Manitoba, Canada R3E 0W3.** Deadline for application is 2 September 1985. *University of Manitoba is an Equal Opportunity/Affirmative Action Employer, but in accordance with Canadian Immigration, priority will be given to Canadian citizens and permanent residents of Canada.*

**CELL or MICROBIOLOGIST/GENETICIST.** Tenure-track position, assistant or associate professor, to begin January or September 1986. Academic salary: \$22,000 to \$28,000, depending on experience. Candidates should be prepared to develop undergraduate courses in cell biology and/or microbiology, graduate courses in the area of his/her expertise, and to initiate a strong research program. Preference will be given to individuals studying prokaryotic or yeast molecular genetics, using recombinant DNA techniques. Applicants should provide curriculum vitae, undergraduate and graduate transcripts, a list of courses the applicant is prepared to teach, a statement of future research plans, and three letters of reference. Applications and supporting materials (non-returnable) should be sent to: **Chairman, Search Committee, Department of Biological Sciences, The George Washington University, Washington, D.C. 20052.**

Complete applications must be received by 15 October 1985. *The George Washington University is an Equal Opportunity/Affirmative Action Employer.*

## CHAIRMAN DEPARTMENT OF PHYSIOLOGY

The University of Nevada, School of Medicine, announces the availability of the chair of the Department of Physiology. Basic science departments are located on the campus of the University of Nevada, Reno. The Department of Physiology focuses on excitable cell physiology with a long track record of successful research activity. Applicants must hold the M.D. or Ph.D. or equivalent degree and have research activities and expertise compatible with this research area. The School of Medicine seeks applicants who have a proven record in obtaining extramural funding and who have a strong commitment to teaching medical students and graduate students. All applicants are requested to send curriculum vitae, letter of application, and list of five references to: **David P. Westfall, Ph.D., Physiology Search Committee Chairman, Department of Pharmacology, University of Nevada School of Medicine, Reno, Nev. 89557.** The first round deadline for this advertisement is 1 September 1985; however, the position will remain open until filled.

The position of **DIRECTOR** of the Lowell Observatory, Flagstaff, Arizona, will be open on 1 July 1986. Applications should be sent by 31 October 1985 to: **Professor Michael C. J. Putnam, Sole Trustee, Lowell Observatory, Department of Classics, Brown University, Providence, R.I. 02912.** They should include curriculum vitae and the names of at least three people who can serve as references. *Lowell Observatory is an Equal Opportunity/Affirmative Action Employer.*

The Department of Surgery of the University of Illinois College of Medicine at Chicago is seeking applicants for **DIRECTOR OF UROLOGIC RESEARCH.** The position is tenure-track at the assistant-associate professor level and is available 1 September 1985. A Ph.D. in immunology with a specialty in tumor immunology and/or immunology of infectious disorders is required. Candidates should have demonstrated ability to conduct independent investigation and to develop funded research programs. Applicants should submit curriculum vitae, a brief statement of research interests, and the names and addresses of three references to: **Jackson E. Fowler Jr., M.D., Department of Surgery, Division of Urology, University of Illinois College of Medicine, Box 6998, Chicago, Ill. 60680.** *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**CHAIRPERSON**, Department of Pathology. Applications are invited for the position of professor and chairperson, Department of Pathology, Medical College of Pennsylvania. Candidate should have an M.D. or Ph.D. and a commitment to excellence in medical education and to the development of significant research programs. Administrative experience is desired. Applications, including curriculum vitae, should be sent to: **Andre D. Lascari, M.D., Chairman, Pathology Search Committee, Department of Pediatrics, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129.** *Equal Opportunity Employer, M/F.*

## CHAIRMAN DEPARTMENT OF MICROBIOLOGY UNIVERSITY OF ALABAMA AT BIRMINGHAM

The University of Alabama at Birmingham invites applications and nominations for the position of professor and chairman of its Department of Microbiology. The candidate should have a strong commitment to academic excellence, and national recognition for scholarly accomplishments. Please submit curriculum vitae and other pertinent information to:

**Dr. J. D. Neill  
Department of Physiology and Biophysics  
University of Alabama at Birmingham  
University Station  
Birmingham, Ala. 35294**

*An Equal Opportunity/Affirmative Action Employer*

## CHAIR OF THERAPEUTIC RADIOLOGY

Applications are being accepted for the position of chairperson of the newly established academic Department of Therapeutic Radiology at the University of Pittsburgh School of Medicine. This position requires an established investigator (M.D., M.D.-Ph.D., or Ph.D.) of national reputation with a strong commitment to medical and graduate student teaching as well as an appreciation of clinical therapeutic radiology. Adequate space and funding for the recruitment of new faculty members is available. Inquiries will be held in strict confidence.

Submit curriculum vitae and bibliography to:

**David Gur, Sc.D., Chairman  
Professor of Radiology and Radiation Health  
Department of Radiology  
University of Pittsburgh  
School of Medicine  
Pittsburgh, Pa. 15261**

Closing date: 15 October 1985. *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer.*

## CURATOR OF VERTEBRATE COLLECTIONS/ RESEARCH SPECIALIST

Full-time professional staff position, stability-track, 50 percent research. Fiscal appointment beginning between January and July 1986. Salary commensurate with training and experience.

Requirements: Ph.D.; strong vertebrate systematic background, experience in systematic collections and computer data management.

Responsibilities include: curate and manage collections of fish, amphibians and reptiles, birds and mammals; computerize catalogs; supervise staff; and develop external funding and maintain strong research program in vertebrate biology.

For information or to apply, send curriculum vitae, letter expressing experience and goals, and names and addresses of three references by 10 August 1985 to: **Curator Search, Department of Zoology, Arizona State University, Tempe, Ariz. 85287.** *An Equal Opportunity/Affirmative Action Employer.*

## DEAN College of Medicine University of Oklahoma

Applications are invited for the position of dean, College of Medicine. The college is located in Oklahoma City, with a clinical campus in Tulsa, and is one of seven University of Oklahoma Colleges in the Health Sciences Center. Applicants with demonstrated administrative skills and strong broad academic background should submit curriculum vitae before 30 September 1985 to:

**Dean's Search Committee  
Office of the Provost  
University of Oklahoma  
P.O. Box 26901  
Oklahoma City, Okla. 73190**

*An Equal Opportunity/Affirmative Action Employer*

## SEARCH REOPENED HEAD OF DEPARTMENT OF VETERINARY SCIENCE AND DIRECTOR OF THE IDAHO FACULTY OF WOI

The University of Idaho is the land-grant institution and principal graduate education and research university in the state. The Department of Veterinary Science is a part of the College of Agriculture and has responsibilities in teaching, research, and extension. Idaho participates in the Washington, Oregon, Idaho Regional Program in Veterinary Medical Education (WOI). **Applications and nominations are sought for head of the Department of Veterinary Science and director of the Idaho Faculty of WOI.** This challenging position is open to an outstanding individual who: (i) holds the D.V.M. degree (with additional Ph.D. or specialty Board-certification preferred), (ii) has shown distinction in instruction and research at the university level, (iii) has potential for administrative excellence, (iv) has an understanding of the importance of service and extension aspects of veterinary medicine to the state, and (v) shows the ability to interact effectively with faculty and local, state, and national leaders in veterinary medical and biomedical science. The candidate should be eligible for appointment as professor. The position carries the concurrent appointment of associate dean for WOI at Washington State University (located 8 miles distant in Pullman, Washington) and membership on the Dean's Cabinet. Modern research facilities are located on campus and at the Caine Veterinary Teaching Center located near Caldwell, Idaho. Support is available to enable the administrator to maintain active instructional/research programs as appropriate.

The deadline for nominations and applications is 1 September 1985 or until a suitable candidate is identified. The position is available as soon as a suitable candidate is selected. Applications should include a letter of interest, complete résumé, and names, addresses, and telephone numbers of at least three references. Send to: **Dr. Wayne E. Magee, Chairman, Search Committee, Head of Veterinary Science, Department of Bacteriology and Biochemistry, Life Sciences, Room 1, University of Idaho, Moscow, Idaho 83842.**

# RESEARCH SCIENTISTS

The Biotechnology Division of Amoco Corporation at the Amoco Research Center is expanding its dynamic staff devoted to nucleic acid probe diagnostics. The recent impact of their significant advances in DNA probe detection systems has created the need for additional Research Scientists.

To explore the future development and commercial use of genetic diagnostics, we seek candidates who possess a PhD and have had related postdoctoral experience OR 2-5 years productive research in this area. Ideal applicant background should include recent achievements in test sample preparation, DNA and mobilization, or nucleic acid hybridizations. We are also actively seeking Technical Assistants with relevant research experience.

Your benefits will come in the form of a challenging professional environment and long range growth potential. Because we are located in Naperville, Illinois, just 30 miles outside Chicago, a choice of urban, suburban or rural living is available to you. Salary is commensurate with experience and we offer a comprehensive benefits package. Please forward your resume in confidence to:

**Professional Recruiting Coordinator**

**AMOCO RESEARCH CENTER**

**P.O. Box 400 • Naperville, IL 60566**

An Equal Opportunity Employer M/F/H



# RESEARCH SCIENTISTS

Battelle conducts a broad-spectrum research program supported by grants and contracts in the plant-related sciences impacting on agricultural, pharmaceutical, and industrial technologies. Applications are invited for the following positions at the Battelle-Kettering Laboratory located in Yellow Springs, Ohio.

**PLANT CELL & TISSUE CULTURIST** — Will head the laboratory's program in this area, interacting strongly with staff from other disciplines to solve problems relating to crop/tree improvement and biosynthesis of high value, plant-derived chemicals.

**PLANT MOLECULAR BIOLOGIST** — Will join a multidisciplinary team involved in devising biological strategies to enhance yield, symbiotic benefits and tolerance to pests, diseases and soil stresses for economically important plants.

**MICROBIAL MOLECULAR BIOLOGIST** — Will interact with chemists, biochemists and microbiologists on aspects of plant-microbe interactions relating to enhanced plant productivity.

**MICROBIOLOGIST** — Will participate in the laboratory's collaborative program on symbiosis and biocontrol aimed at enhancing yield of crop plants via rhizosphere microorganisms. Specific interest in soil microbiology or plant pathology is most desirable.

Specific scope and level of each position will depend on the qualifications and experience of the successful candidate. Applicants are expected to have a PhD, post-doctoral experience and a strong commitment to working in a collaborative research environment. All positions require excellent oral and written communication skills.

Battelle offers competitive salaries, excellent benefits and opportunities for professional growth. Qualified applicants should submit curriculum vitae and the names and addresses of at least three references to: **Dr. Jake Halliday, Director, Battelle-Kettering Laboratory, 150 E. South College Street, Yellow Springs, Ohio 45387.**



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

## SENIOR SCIENTIST PROTEIN CHEMISTRY

We are seeking a highly motivated scientist to join our protein chemistry group. The successful candidate will have a Ph.D. in biological chemistry or biochemistry, with 0-2 years post-doctoral experience and a strong background in bioseparation techniques. Experience in protein characterization, including amino acid analysis, sequence analysis, enzymology and protein structure/function relationships is also highly desirable.

For a challenging and rewarding opportunity to participate in the rapidly expanding health care field with a young and aggressive company, please send a CV and three references to:

**Personnel Department  
Unigene Laboratories  
110 Little Falls Road  
Fairfield, New Jersey 07006**



## Ph.D. BIOCHEMIST

As an internationally recognized leader in the medical care products and services industry, Travenol Laboratories is making major advances in the research and development of diagnostic and therapeutic products. A senior research associate position is now available at our R&D facility in an attractive community in the far northwest suburbs of Chicago.

This position will conduct, evaluate and participate in research involving a variety of immunochemical techniques. Specific involvement includes protein antigens, antibody reactions, immunoassays, and monoclonal antibodies. Qualified candidates will have a Ph.D. in the Chemical or Biological Sciences, with expertise in biochemistry, immunochemistry or immunology. A biotechnology background, including experience in tissue culture, monoclonals and recombinant techniques is preferred.

In addition to strong research support, Travenol can provide relocation assistance and an excellent salary and benefits package including profit sharing and employee stock purchase plan. For confidential consideration, please send your resume with salary history to:



**Staffing/Manpower Planning  
Dept. EN  
Travenol Laboratories, Inc.  
P.O. Box 490  
Round Lake, IL 60073**

Equal Opportunity Employer

## BIOMEDICAL ENGINEER/ LIFE SUPPORT PHYSIOLOGIST

For the professional whose background attests to skill at integrating physiology and bio-engineering, you'll find outstanding challenges at McDonnell Douglas Astronautics Company.

Here at our St. Louis, Missouri headquarters we're seeking an individual to support aviation-oriented project activities. You will apply your knowledge and skills toward providing specific aircrew and groundcrew data for use in a broad scope of design projects. Particular environmental/physical factors requiring your involvement are acceleration forces, acoustics, vibration, physical anthropometry and physiological workload.

This position requires an MS or PhD, proven skills at integration of bio-engineering and physiology, and a desire to apply those skills in an exciting aviation environment. As a division of a major corporation, McDonnell Douglas Astronautics Company offers you a highly competitive income and benefits program as well as a satisfying lifestyle in St. Louis, a city of cosmopolitan interests and affordable costs. For confidential consideration, please direct your resume to:

**Manager, Professional Staffing  
MCDONNELL DOUGLAS CORPORATION  
P.O. Box 516 • Dept. 62-R283  
St. Louis, MO 63166**

**MCDONNELL DOUGLAS**



An Equal Opportunity Employer  
U.S. Citizenship Required

## POSITIONS OPEN

### DIRECTOR BERMUDA BIOLOGICAL STATION (BBS)

Applications are invited for the position of director of the Bermuda Biological Station for Research Inc.

The director is the chief executive officer of the Station, with responsibility for all day-to-day operations, planning, and overall enhancement of scientific programs. The director should have a Ph.D. in marine science and experience in administration and research funding. Responsibilities include financial management, development and public relations, recruiting and evaluation of senior staff, and maintenance of facilities. Salary is negotiable.

The Station is an independent, U.S., not-for-profit marine laboratory with facilities for resident and visiting scientists and students. There are research and teaching laboratories, a small research fleet, workshops, an excellent library, a staff of 35, and accommodations for up to 140.

Send applications to: **W. R. Wright, BBS President, Box 54, Woods Hole, Mass. 02543.**

The Department of Pediatrics at the University of Oklahoma Health Sciences Center in Oklahoma City is recruiting a **DIVISION CHIEF** at the professorial level for its five-member Division of Hematology/Oncology. Applicant is expected to assume administrative responsibilities of the unit, promote faculty development, teach students and residents, and develop an active research program. Excellent opportunities with protected time for research are guaranteed. Research interest in molecular biology, genetics, tumor immunology, clinical pharmacology, cell biology, or bone marrow transplantation is preferred. The division is also deeply involved in clinical research with the Pediatric Oncology Group. Send résumé to: **Owen M. Rennett, M.D., Department of Pediatrics, Oklahoma Children's Memorial Hospital, P.O. Box 26901, Oklahoma City, Oklahoma 73190.**

**NATIONAL CENTER FOR ELECTRON MICROSCOPY—LAWRENCE BERKELEY LABORATORY. ELECTRON MICROSCOPIST** to perform research on the 1-MeV Atomic Resolution Microscope. Duties include atomic resolution imaging, interpretation of images and diffraction patterns, computer simulation of images, specimen selection and preparation of results for publication. Works closely with a wide variety of researchers including short-term visitors to the Center. Requires practical experience in high resolution transmission electron microscopy and phase contrast image interpretation. Ph.D. in physical science, strong background in crystallography, demonstrated ability to interact with numerous researchers in different disciplines and recent experience with high-voltage electron microscopes are preferred. This is a renewable 1-year term appointment. Send résumé and three letters of recommendation to: **Job Number A/3166, Lawrence Berkeley Laboratory, One Cyclotron Road, Employment Office 90-1012, Berkeley, Calif. 94720. An Equal Opportunity Employer, M/F/H.**

### FACULTY POSITION—VIROLOGY

The Department of Microbiology and Molecular Genetics of Harvard Medical School invites applications for an assistant professor position in a research-oriented group at the New England Regional Primate Research Center. A strongly-motivated, innovative individual is sought to complement existing programs in the study of HTLV-III/LAV-related viruses of primates [see *Science* 228, 1201 (1985)]. Postdoctoral experience and a strong foundation in the study of retroviruses is desired. Please send curriculum vitae, including publications and names of three references, to: **Dr. Ronald C. Desrosiers, New England Regional Primate Research Center, Harvard Medical School, 1 Pine Hill Drive, Southboro, Mass. 01772. Harvard Medical School is an Equal Opportunity Employer.**

### MOLECULAR CARDIOLOGIST

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

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



## THE UNIVERSITY OF ALBERTA

INVITES APPLICATIONS FOR THE

### CANADIAN PACIFIC - ALBERTA AGRICULTURE CHAIR IN PLANT BIOTECHNOLOGY

The University of Alberta is seeking an established scientist to occupy the Canadian Pacific - Alberta Agriculture Chair in Plant Biotechnology. The occupant of the chair will be expected to carry out research related to the improvement of agriculture in Western Canada, to provide leadership within the area of plant biotechnology in the Faculties of Agriculture and Forestry, and Science, and to communicate actively with the agricultural sectors of industry and government. Candidates presently located outside the scientific university community will be given serious consideration, although scientific credentials will be of paramount importance.

The successful candidate will be a member of the Department of Plant Science, in the Faculty of Agriculture and Forestry. The Faculty of Agriculture and Forestry has ninety academic members housed in a modern, well-equipped research complex. In addition, within the Faculty of Science, members of the Departments of Botany, Genetics, and Microbiology are currently involved in basic and applied plant research. The University of Alberta (approximately 25,000 students) is located in the capital city of Alberta. Please send curriculum vitae, names and addresses of at least three referees, and an outline of research interests, including reprints of relevant publications, to:

**Dr. Mary Spencer**  
Department of Plant Science  
Faculty of Agriculture and Forestry  
University of Alberta  
Edmonton, Alberta T6G 2P5  
Canada

Closing date for receipt of applications is August 31, 1985. Salary will be by negotiation. Appointment will commence on January 1, 1986, or as soon as possible thereafter.

The University of Alberta is an equal opportunity employer but, priority will be given to Canadian citizens and permanent residents of Canada.

## IMMUNOLOGIST

### Group Leader

We have an exciting position for a Group Leader in an expanding program of product development in microbiology.

Applicants should have a PhD in Immunology or expertise in immunochemistry with 2 or more years of industry experience. An expertise in immunochemical and biochemical methods of protein isolation, purification and characterization is highly preferred. This person will conduct research on recovery and analysis of immunoglobulins in areas of interest to Land O'Lakes.

We are Land O'Lakes, a leader in the food marketing and processing industry. As one of the 50 largest foods processing companies, we have been producing sales of \$2.3 billion annually and expanding our product line.

Our corporate research facilities are located in a northern suburb of the Twin Cities. We offer attractive salaries, excellent benefits and exceptional opportunities for personal and professional growth. If you seek an exciting, growth-oriented future, please send your resume with salary requirements to: **M. Novak, LAND O'LAKES, INC., P.O. Box 116, Minneapolis, MN 55440.**

Equal Opportunity Employer

## Land O'Lakes, Inc.

Nous sommes un important groupe pharmaceutique international et en expansion.

Pour faire face à l'extension de ses objectifs, notre R. & D., située à Braine l'Alleud près de Bruxelles, recherche 3 collaborateurs ou collaboratrices de haut niveau:

**UN(E) BIOCHIMISTE (senior)**

**UN(E) PHARMACOLOGUE (généraliste)**

**UN(E) NEURO-PHARMACOLOGUE (physiologie et comportement)**



Ils sont appelés à animer et diriger une ou plusieurs équipes de recherche et d'évaluation de produits nouveaux ainsi que des projets de recherche impliquant des contacts multidisciplinaires internes et externes.

Les candidats recherchés doivent être porteurs d'un diplôme de Doctorat en Sciences ou équivalent; une expérience confirmée de plusieurs années dans la spécialisation indiquée est requise.

La connaissance courante du français et de l'anglais est requise.

**Les candidatures, accompagnées de C.V.,  
sont à adresser à:  
UCB S.A. - Direction du Personnel/Développement  
326 Avenue Louise-Bte 7 - B-1050 BRUXELLES**

## Neurochemist

SEARLE RESEARCH AND DEVELOPMENT has an opening for a NEUROCHEMIST to work as part of a CNS team effort to develop neurotropic drugs. The responsibilities of this position will be to direct neurochemical efforts to develop an insight into the mechanism of drug action on specific brain areas. Current areas of research interest include analgesia and memory/cognition. The successful candidate should have an extensive background in neurochemistry and/or molecular neurobiology; experience in neurophysiology will also be a plus. The candidate must have well integrated interpersonal and scientific skills. The minimum requirement is a PhD with two years of post-doctoral experience, however preference will be given to those scientists with more extensive experience.

Searle R&D offers excellent compensation, benefits, and a challenging work environment. To apply in strict confidence, please submit resume to:

B. Gardner/#7EX-9  
Searle Research and Development  
Division of G.D. Searle & Co.  
4901 Searle Parkway  
Skokie, IL 60077

An Equal Opportunity Employer M/F/H

# SEARLE

## MYCOGEN

Mycogen Corporation is a rapidly growing agricultural biotechnology firm specializing in the production of microbial herbicides and insecticides. We presently have openings for persons with the following skills.

**Microbiologist/Chemist**—MS/PhD. Will head research program on fixation of microbial cells, including study of factors affecting stability of cell walls and proteins of fixed cells. *Job FG-1*

**Microbial Physiologist**—PhD, 1-2 yr experience. Will study development/physiology of microorganisms in submerged culture. Experience with fungi especially desirable. Requires working knowledge of HPLC, GC and strong biochemical background. *Job KN-1*

**Developmental Process Engineer**—BS Chem E, 2 year industrial experience. Will assist in development, optimization and scale-up of microbial production processes. Unit operations include biomass recovery, drying, formulation, liquid and solid substrate fermentation. *Job AB-1*

Mycogen offers competitive salaries and benefits and an exceptional working environment. Application can be made by sending a resume complete with references and salary history to:



Personnel Department  
Mycogen Corporation  
5451 Oberlin Drive  
San Diego, CA 92121

## POSITIONS OPEN

### FACULTY POSITION EUKARYOTIC MOLECULAR GENETICIST

The Department of Biology at Portland State University (PSU) invites applications for a new tenure-track assistant professorship. Candidates for this position should have an established and ongoing research program in the area of eukaryotic molecular genetics. We are seeking someone investigating gene regulation in animal cells or viruses. At least 3 years of postdoctoral research and teaching experience are required.

The individual will be expected to establish an active funded research program, direct graduate student research, and participate in undergraduate and graduate teaching. Salary is negotiable and commensurate with experience. Starting date for the position will be no later than 16 September 1986. Candidates should submit, by 1 October 1985, a letter describing research interests and professional goals, curriculum vitae and three letters of reference to: **Dr. Robert Millette, Department of Biology, Portland State University, P.O. Box 751, Portland, Oregon 97207.**

*PSU is an Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITION** available, tenure-track, in molecular genetics, with a special interest in membranes. Applicants should have research background in recombinant DNA technology (preferably also in somatic cell genetics) and working knowledge of membrane proteins. M.D. and/or Ph.D. in appropriate field required. Successful candidate will hold tenure-track appointment (assistant or associate professor, depending upon qualifications) in Department of Physiology and Molecular Biophysics at Baylor College of Medicine. Joint appointments in relevant academic departments also possible. Laboratory space and basic equipment provided and initial laboratory support available. Successful candidate will devote majority of his/her effort to establishing and maintaining an independent research program related to the main interests of the department. The department is building a strong program in membrane biophysics with expertise in electrophysiology, membrane biochemistry, reconstitution, and modelling. Send curriculum vitae, a brief description of past and present research experience, and names of three or more references to: **Dr. A. M. Brown, Incoming Chairman, Physiology and Molecular Biophysics Department, Baylor College of Medicine, One Baylor Plaza, Houston, Texas 77030.**

*An Equal Opportunity/Affirmative Action Employer*

### MOLECULAR AND CELL BIOLOGY/ BIOCHEMISTRY/BIPHYSICS Postdoctoral Opportunities

Broad range of membrane research projects: (i) nature of lipid-protein interaction in membranes; membrane dynamics; (ii) membrane reconstitution; (iii) enzyme and protein chemistry; (iv) cloning and site specific mutagenesis of membrane proteins; and (v) muscle physiology—Ca<sup>2+</sup> release mechanism in excitation-contraction coupling.

Send curriculum vitae bibliography, three letters of recommendation, and short statement regarding career goals, interest, and experience to: **Professor S. Fleischer, Department of Molecular Biology, Vanderbilt University, Nashville, Tenn. 37235.**

*An Equal Opportunity/Affirmative Action Employer*

**NEUROANATOMY-NEUROPATHOLOGY POST-DOCTORAL RESEARCH POSITION, HARVARD MEDICAL SCHOOL.** Research on the brains of humans and other primates, including connections of limbic and association areas, receptor autoradiography, and organization of transmitter-specific pathways. Also experimental neuropathology of Alzheimer's disease and other dementias. NIH pay scales. Send curriculum vitae and references to: **M. Mesulam, M.D., or E. Mufson, Ph.D., Neurology Unit, Beth Israel Hospital, 330 Brookline Avenue, Boston, Mass. 02215.**

**NEUROSCIENCE RESEARCH POSITIONS** available for postdoctoral scientist interested in adult and/or child psychopathology at a Research Psychiatric Institute affiliated with New York University, Department of Psychiatry. Tenure-track and academic appointment available for individual with established competence. Generous benefits; New York State position in Rockland suburb of New York City. Send curriculum vitae to: **Search Committee, NATHAN S. KLINE INSTITUTE FOR PSYCHIATRIC RESEARCH, Orangeburg, N.Y. 10962.**

*An Equal Opportunity Employer, M/F.*

## POSITIONS OPEN

### MALACOLOGIST

The Museum of Zoology and the Division of Biological Sciences of the University of Michigan are requesting authorization for a joint tenure-track position of assistant curator of mollusks and assistant professor of biological sciences, to begin as early as 1 July 1986. While our request is pending, we invite applications from qualified individuals. The appointee must have the Ph.D. degree prior to beginning duties, demonstrated commitments to research on systematics and evolutionary biology of mollusks and to biological instruction, and qualifications to serve as a curator of a large malacological research collection. Applications are particularly sought from qualified individuals working in molecular systematics, ecological genetics, behavior, or developmental biology within a systematic context. Three letters of recommendation, curriculum vitae, and copies of publications should be sent prior to 30 September 1985 to: **Chairman, Search Committee, Museum of Zoology, The University of Michigan, Ann Arbor, Mich. 48109.** *The University is a nondiscriminatory, Affirmative Action Employer.*

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

### MOLECULAR BIOLOGIST

Tenure-track position at the assistant professor level for a molecular biologist. Applicant must have at least 2 years of postdoctoral experience and demonstrated accomplishment in eukaryote gene expression studies. Expertise in recombinant DNA technology essential. Ph.D. or M.D. Send curriculum vitae, a statement of research interest, and the names and addresses of three references to: **Dr. Ralph Weichselbaum, Professor and Chairman, Department of Radiation Oncology, Biological Sciences Division, The University of Chicago, Box 440, 5841 South Maryland Avenue, Chicago, Ill. 60637.** *An Affirmative Action/Equal Opportunity Employer.*

The University of Maryland Cancer Center invites applications for two senior level, tenure-track positions in **MOLECULAR BIOLOGY/MOLECULAR VIROLOGY.** One position will be filled by a molecular oncologist/molecular geneticist interested in clinical collaborations, the other by a virologist. Candidates with a doctoral degree plus 6 to 10 years of professional experience, national reputation in research, demonstrated effectiveness in obtaining extramural grant support and in teaching will be considered at the associate professor or professor level. Candidates will be expected to carry out an independent research program, interact with Cancer Center members, and assume light teaching responsibilities. Please send curriculum vitae, a brief description of present research and future plans, and names and addresses of three references to: **Dr. Joseph R. Testa, Section of Cancer Genetics, University of Maryland Cancer Center, Room 9-031 BRB, 655 West Baltimore Street, Baltimore Md. 21201.** The last day for receipt of applications is 15 August 1985. *The University of Maryland is an Equal Opportunity Employer.*

**NEUROTOXICOLOGY FACULTY,** multidisciplinary laboratory. Minimum: 2 years of postdoctoral experience in behavioral and/or neurobiological studies of cognition, inhalant abuse, diurnal rhythms. Send résumé, three references, reprints, and statement of research interests to: **Dr. Hugh Evans, Institute of Environmental Medicine, New York University Medical Center, Longmeadow Road, Tuxedo, N.Y. 10987.**

## THE MAX-PLANCK-GESELLSCHAFT

*invites applications for the position of a*

### RESEARCH GROUP LEADER

from promising young scientists who have achieved a degree of international recognition in their field, preferably in

**Cell Biology, Developmental Biology,  
or Neurobiology.**

The successful applicant will be expected to conduct a vigorous, original and independent research programme at the

**Friedrich-Miescher Laboratory  
in Tübingen.**

The position is for 5 years, carries a salary of 65–70,000 DM p.a. (C3 scale of the Bundes-Besoldungsgesetz) and is roughly equivalent to an Assistant Professorship (US) or University Lecturer (UK). There is no teaching commitment.

The group will have modern laboratory facilities, operating expenses, and funding for scientific and technical co-workers.

Applications, including a tabular curriculum vitae, list of publications, and a description of major scientific achievements and future research plans, should be submitted until end of September 1985 to:

**Max-Planck-Gesellschaft  
zur Förderung der Wissenschaften e.V.  
- Generalverwaltung -  
Postfach 647  
D-8000 München 1.**

EXXON PRODUCTION RESEARCH

# EXXON

## PETROLEUM GEOCHEMISTS

(PhD in Geology,  
Geochemistry, or Chemistry)

Exxon Production Research Company (EPR), located in Houston, Texas, needs experienced **Petroleum Geochemists** to work on petroleum exploration-related research projects concerned with oil-oil and oil-source correlation, maturation techniques, generation and migration of oil and gas, and modeling of geochemical processes.

The geochemists will work closely with EPR research geologists who are applying the most recent exploration concepts in stratigraphy, basin assessment, and structural geology.

Exxon Production Research Company offers an outstanding employee benefit program and excellent opportunities for advancement. Salaries commensurate with education and/or experience. U.S. citizenship or Permanent Resident visa is required. Please send resume (and copies of transcripts if available) to:

**EXXON PRODUCTION  
RESEARCH COMPANY  
Recruitment & Employment  
P.O. Box 2189  
Department 200  
Houston, Texas 77252-2189  
An Equal Opportunity Employer M/F**

BECTON DICKINSON is a rapidly growing biotechnology company and a leader in the development of monoclonal antibodies and sophisticated computer based cell sorters used in medical and biological research.

### Postdoctoral Position

Available immediately in immunology or molecular biology to study the expression and structure of human leukocyte differentiation antigens, particularly as related to the function of cytotoxic T cells and NK cells. Research involves monoclonal antibody production, flow cytometry, in vitro biological assays, and gene probe analysis.

Send curriculum vitae and references to: **Dr. Lewis Lanier, Becton Dickinson Immunocytometry Systems, 2375 Garcia Avenue, Mountain View, CA 94043.** An Equal Opportunity Employer.

**Come Grow With Us!**

*Caring for people is our business*

## BECTON DICKINSON

## OFFICE OF INTERNATIONAL AFFAIRS

### OFFICE OF THE DIRECTOR

### NATIONAL CANCER INSTITUTE

### PUBLIC HEALTH SERVICE

### DEPARTMENT OF HEALTH AND HUMAN SERVICES

## ASSOCIATE DIRECTOR FOR INTERNATIONAL AFFAIRS

The National Cancer Institute (NCI) interacts with scientists throughout the world to promote the advancement of cancer research, treatment and prevention. These activities result in bilateral agreements with other countries for cooperative research, the collection and dissemination of scientific knowledge worldwide, and the increased use of computer technology to improve these information transfers. The Office of International Affairs (OIA) is responsible for the planning, coordination, and management of these efforts within the NCI. OIA has an annual operating budget of approximately \$9 million.

This is a Civil Service position in the Senior Executive Service (SES) with a salary range from \$61,296 to \$68,700 per annum. Candidates may be eligible for Physicians' Comparability Allowance up to \$10,000 per year. (Alternately, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.) The individual selected, if not presently in SES, must serve a one year probationary period.

Candidates must meet established mandatory professional/technical and managerial/executive requirements. Candidates will be further evaluated on the extent they exceed the minimum requirements and on additional factors including scientific reputation/peer recognition, training and education, and honors and awards. A copy of the requirements may be obtained by contacting **Ms. Valerie Barbour, Personnel Management Branch, NCI, (301) 496-6864.**

Applications (Personal Qualifications Statement SF-171) are to be sent to the above individual at: **The National Cancer Institute, Building 31, Room 3A-23, 9000 Rockville Pike, Bethesda, Maryland 20205.** A current curriculum vitae and bibliography must accompany all applications. Applications from women and minority group members are especially solicited.

*The National Institutes of Health is an  
EQUAL OPPORTUNITY EMPLOYER.*

## UNIVERSITY PROFESSOR OF MARINE SCIENCES

Southeastern Massachusetts University (SMU) invites applications and nominations for the position of **university professor of marine sciences**, to be appointed on or about 1 July 1986. This individual will be responsible for developing and directing an interdisciplinary program in marine science that will be the centerpiece of the Commonwealth of Massachusetts, Center of Excellence in Marine Science. The university is committed to major expansion of basic and applied marine research, particularly pertaining to the coastal zone.

The successful candidate must hold an earned doctorate in marine-related science or engineering, have an international reputation in his/her research field, have a proven record in the development and execution of grant-supported research projects, and qualify for a tenured (full) professorship in the discipline of choice. She/he must demonstrate the capacity to work closely with other academic and research institutions, government officials, and the private sector. The salary will be competitive.

Southeastern Massachusetts University is a state-supported institution with an enrollment of 5,500. Its commitment to marine science is a natural consequence of its proximity to a variety of marine environments and to the nationally preeminent fishing and marine electronics industries in the southeastern New England region. The University is currently planning for a new Coastal Zone Resources Laboratory, scheduled to come on-line as early as 1990.

Applications, including current résumé and the names, addresses, and telephone numbers of three references, should be sent by 1 October 1985, to: Search Committee, University Professor of Marine Science, Office of Academic Affairs, Southeastern Massachusetts University, North Dartmouth, Mass. 02747. All applications will be acknowledged and held confidential up to the time of final screening for interviews.

SMU is an Affirmative Action/Equal Opportunity Employer and encourages the applications of minority and female scientists.

# SCIENCE

## Posters

The following posters of *Science* covers are available:

30 March 1979, Tropical flowering tree;

23 February 1983, Landsat photo of Detroit, Michigan;

29 July 1983, Cheetah;

2 December 1983, Snowshoe hare;

23 December 1983, Cathedral window/DNA molecule.

Combination of space covers in scroll format: 1 June 1979, 23 November 1979, 10 April 1981.

Price is \$5 each (prepaid).

Write to AAAS, Department POST, 1515 Massachusetts Avenue, NW, Washington, D.C. 20005.

## POSITIONS OPEN

**THE DEPARTMENT OF PATHOLOGY** at the University of Pittsburgh School of Medicine wishes to recruit for **SEVERAL POSITIONS** in the Department of Pathology. These positions will entail research and teaching to medical students and to graduate students. There are ample clinical opportunities for research programs needing them. The level of academic appointment will be commensurate with the candidate's qualifications. Reply with curriculum vitae to: **Thomas J. Gill, III, M.D., University of Pittsburgh School of Medicine, Department of Pathology, Room 716 Scaife Hall, Pittsburgh, Pa. 15261. An Equal Opportunity/Affirmative Action Employer.**

## PHYSICAL BIOCHEMISTS/MEMBRANE AND CELL BIOLOGISTS

The Thrombosis/Hematology Research Program of the Oklahoma Medical Research Foundation is seeking highly qualified M.D.'s and Ph.D.'s to participate in research related to the interactions of the serum complement, coagulation and fibrinolytic systems on membrane surfaces. Prior training and experience in protein chemistry, membrane biology, and/or the application of physical methods (for example, in vivo fluorescence spectroscopy) to cell biology desired. Suitable candidates will be expected to conduct full-time laboratory research in close interaction with the Thrombosis/Hematology Research Program. Funded positions available at all levels (postdoctoral and more senior positions) depending on experience. Mail curriculum vitae and description of research interests to: **Peter J. Sims, M.D., Ph.D., Associate Member, Oklahoma Medical Research Foundation, 825 Northeast 13 Street, Oklahoma City, Oklahoma 73104. An Equal Opportunity/Affirmative Action Employer.**

**PLANT TISSUE CULTURE.** The Marie Selby Botanical Gardens invites applications for the position of director of the Eric Young Micropropagation Centre. Applicants must have a Ph.D. with broad training in botany or horticulture. The new director will be expected to develop a high quality, funded program of research on tissue culture, preferably of tropical plants, in addition to managing the daily activities of the Centre. Applicants should send curriculum vitae, names of three references, and a summary of research interests by 15 August to: **Dr. W. John Kress, Director of Research, Marie Selby Botanical Gardens, 811 South Palm Avenue, Sarasota, Fla. 33577.**

**POSTDOCTORAL IN BIOLOGIC APPLICATION OF ESR.** A 2-year position will become available immediately involving the continuing development of an electron spin resonance spectrometer for in vivo measurements, with application to radiation biology. Expertise in radiofrequency and/or spin resonance physics or chemistry is preferred. Please send curriculum vitae, publication list, and references to: **Professor Howard J. Halpern, Department of Radiation Oncology, Pritzker School of Medicine, University of Chicago, Box 440, 5841 South Maryland Avenue, Chicago, Ill. 60637.**

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITION** in human genetics. Two positions available immediately: one in molecular genetics and one in oncocytogenetics. Send curriculum vitae to: **E. Shapira, M.D., Ph.D., Human Genetics Program, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, La. 70112. Telephone: 504-588-5229. An Equal Opportunity/Affirmative Action Employer.**

## POSTDOCTORAL FELLOW

There is an immediate vacancy for a postdoctoral fellow in the Division of Basic Medical Sciences in the Faculty of Medicine. The stipend will follow MRC guidelines and is funded for up to 2 years.

The successful applicant will study, using a variety of techniques, the role of properties and nature of calcium channels in vascular smooth muscle and the liver.

Candidates with an appropriate pharmacological background are invited to apply.

Send curriculum vitae and the names of three referees to:

**Professor C. R. Triggle**  
Associate Dean, Basic Medical Sciences  
Faculty of Medicine  
Memorial University of Newfoundland  
St. John's, Newfoundland, Canada, A1B 3V6  
Telephone: 709-737-6897

## POSITIONS OPEN

**POSTDOCTORAL FELLOWS** in cell biology, with interest in biochemistry. The Department of Dermatology at New York University invites applications from potential postdoctoral fellows to join an active, productive department with interests in multiple aspects of the biochemistry, molecular and cell biology and pathology of keratin, the major intermediate filament protein in epithelial cells. The specific current openings involve ongoing studies of the pathways and significance of the post-translational modifications of keratin and keratin gene cloning. Ph.D. and appropriate experience are required. Send curriculum vitae to: **Dr. Irwin M. Freedberg, Chairman, Department of Dermatology, New York University, 550 First Avenue, New York, N.Y. 10016.**

## POSTDOCTORAL FELLOW IN ROBOTICS/CONTROL THEORY

Position available to work on mathematical analysis and computer implementation of methods for computerized control of robotic hands. Requires strong background in nonlinear control theory, differential geometry, numerical methods, and computer experience. Expertise with Data General computer systems, Megatek graphics, and/or Automatix robot systems required. Candidate must have Ph.D. in computer science, electrical engineering, or applied mathematics. Salary is \$22,000 per annum. Send résumé to: **Division of Employment Security, Hurley Building, Government Center, Boston, Mass. 02114, and refer to Case Number 5707.**

**POSTDOCTORAL POSITIONS** available immediately to study electrophysiology and pharmacology of cardiac arrhythmias. Experience with electrophysiological techniques is essential. Send curriculum vitae and references to: **Dr. Charles Antzelevitch, Masonic Medical Research Laboratory, 2150 Bleeker Street, Utica, N.Y. 13504.**

**POSTDOCTORAL POSITION** available immediately to study the control of prokaryotic DNA replication using the ColEI plasmid and derivatives as model systems. The approach involves analysis of both RNA-RNA and protein-RNA interactions. A background in recombinant DNA technology and/or *Escherichia coli* genetics is advantageous. Send curriculum vitae and names of references to: **Dr. Barry Polisky, Program in Molecular Biology, Department of Biology, Indiana University, Bloomington, Ind. 47405.**

**TWO POSTDOCTORAL POSITIONS.** Acidophilic sulfur bacteria are important in bioleaching and biodesulfurization (*Scientific American*, August 1982, page 44). The postdoctorates will participate in ongoing research on molecular biology and physiology or sulfur oxidation and acidophilism, the two crucial attributes in these processes. Training in molecular cloning is required. Salary \$16,500 per year and benefits. Send curriculum vitae and two references to: **Dr. A. Matin, Department of Microbiology, Sherman-Fairchild Science Building, Stanford University, Stanford, Calif. 94305.**

**POSTDOCTORAL POSITION**, available after 1 August, to study the biochemistry of the *Escherichia coli* lexA protein [PNAS 81, 1375 (1984)], using a combination of genetic recombinant DNA and biochemical techniques. Background in at least one of these areas strongly desirable. Send curriculum vitae and names of at least two references to: **Dr. John W. Little, Department of Biochemistry, Biosciences West Building, University of Arizona, Tucson, Ariz. 85721. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available immediately at the Northwestern University Medical School, Chicago, to study molecular mechanisms underlying the xenobiotic-induced peroxisome proliferation in liver. Experience or interest in protein purification, receptor technology, and molecular biology is desired. Address curriculum vitae and letters of reference to: **Janardan K. Reddy, M.D., Department of Pathology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Illinois 60611. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE** position available to study the structure, biosynthesis, and function of glycoproteins in mammalian cells or in protozoan parasites. Starting date and salary are negotiable. Applicants with a strong background in biochemistry preferred. Send curriculum vitae and names of three references to: **Dr. Sam Turco, Department of Biochemistry, University of Kentucky College of Medicine, Lexington, Ky. 40536. An Equal Opportunity Employer.**

## MARKET RESEARCH

Amersham Corporation, a leading supplier of molecular biology products to the research community, has an immediate expansion opening in our fast-paced Marketing Department for an ASSISTANT MANAGER, MARKET RESEARCH.

As part of our market research team you will participate in the design, implementation and analysis of market research projects dealing with molecular biology markets. Responsibilities will include the organization of product testing programs, the design and analysis of marketing research questionnaires and interviews, and product justifications based on cost/benefit ratios. 50% travel is anticipated. The ideal candidate will possess a PhD Molecular Biology or Biochemistry with 1-3 years laboratory research experience including radioisotope usage. A broad background in various applications of molecular biology products is essential to establish rapid credibility with the research community.

Located in an attractive suburb of Chicago, we are offering a highly professional work environment, an excellent starting salary, and attractive benefits package, including dental insurance, savings/profit sharing, and an employee exercise center. Please send your resume including your salary requirements in confidence to:

CAROL L. BERNACCHI  
EMPLOYMENT MANAGER

### AMERSHAM CORPORATION

2636 S. Clearbrook Drive  
Arlington Heights, ILL 60005

An Equal Opportunity Employer M/F

**Amersham**

## ASSOCIATE SCIENTIST

### Atherosclerosis Research

The Atherosclerosis Section within our Department of Pharmacology has an immediate opening for an associate scientist to support new drug discovery efforts.

The successful candidate will have the equivalent of an M.S. in a scientific discipline and experience in the isolation of serum lipoproteins and the purification/quantification of serum apolipoproteins. Specifically, knowledge of sequential and gradient ultracentrifugation, molecular sieve and affinity chromatography, electroimmunoassay, SDS-PAGE, transfer electrophoresis, immuno-diffusion and related techniques is desirable.

We offer excellent compensation and benefits at our modern laboratories adjacent to the University of Michigan campus. Interested, qualified candidates should forward resume and salary requirements to: **Ms. D. Love, Human Resources Supervisor, WARNER-LAMBERT/PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, Michigan 48105, An Equal Opportunity Employer M/F/H.**

**WARNER  
LAMBERT**

## Metabolism/ Pharmacokinetics Study Director

Stauffer Chemical Company has a challenging opportunity for an experienced scientist in the Metabolism Laboratory at its Environmental Health Center in Farmington, CT. You will direct metabolism/pharmacokinetic studies and work as part of a team of chemists and biochemists to separate and identify metabolites in biological systems.

To qualify, you should possess a Ph.D. or equivalent in biochemistry, chemistry, or a related field and laboratory experience in conducting metabolism/pharmacokinetic studies in animals, and should be experienced in modern biochemical and analytical procedures including TLC, GLC, HPLC and radioisotope handling.

Stauffer offers on-going growth opportunities, excellent salary and an attractive package of company-paid benefits. The Stauffer Environmental Health Center is adjacent to the University of Connecticut Health Center, and is located in one of the state's most attractive, semi-rural towns. To apply, please send your resume, a brief description

of your experience, and salary requirements in complete confidence to: Mrs. P. Frutchey, **STAUFFER CHEMICAL COMPANY, 400 Farmington Avenue, Farmington, CT 06032.** We are an Equal Opportunity Employer M/F.

**Stauffer**  
CHEMICALS

### VICE PRESIDENT FOR RESEARCH UNIVERSITY OF NEW MEXICO

Nominations and applications are invited for the position of vice president for research at The University of New Mexico.

The University of New Mexico is the largest of the state's publicly supported institutions of higher education, with an annual operating budget in excess of \$350 million and an additional \$60 million dedicated to research and public service. As a comprehensive institution, the university has an undergraduate enrollment of approximately 24,000 students and a graduate student body of nearly 4,000. The university offers a broad range of academic and professional programs leading to associate's, bachelor's, master's, and doctoral degrees through 11 colleges and schools.

The vice president for research reports to the president of the university and participates with the president and other senior administrative officers in policy development and general management of the university.

**Responsibilities:** The vice president for research will be the chief administrative officer responsible for development and implementation of policies, procedures, and practices to enhance and facilitate research and scholarly creative activity of the university faculty, staff, and students. The vice president for research will administer the Office of Research and other designated and university-wide research institutes and centers. The successful candidate will represent the University of New Mexico to external funding agencies and promote cooperative research agreements with government agencies [including the complex of federally-funded laboratories in New Mexico], other universities, private sector institutions, and foundations. A more detailed description of the position is available from the search committee.

**Qualifications:** The candidates should have the terminal degree or equivalent experience in their discipline. Nominees/applicants should have a distinguished record of accomplishment in the organization and management of research either in the public or private sectors and/or the university context.

**Salary:** Negotiable.

**Applications:** Expected starting date is the last quarter of 1985. Letter of application, résumé, including the names, addresses, and telephone numbers of references, must be postmarked by 10 September 1985. Nominations and inquiries for additional information should be directed to:

**Dr. Joel Jones, Chairperson  
Search Committee for Vice President for Research  
The University of New Mexico  
Scholes Hall, Room 160  
Albuquerque, New Mexico 87131**

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



## POSITIONS OPEN

**POSTDOCTORAL POSITION AVAILABLE—MOLECULAR, IMMUNOLOGIC, AND BIOLOGIC STUDY OF AIDS.** Experience in cell culture and clinical virology and molecular approaches to the disease helpful. Send curriculum vitae to: Jay Levy, Cancer Research Institute, 1282-M, University of California, San Francisco, Calif. 94143.

### POSTDOCTORAL POSITION

Postdoctoral research position available in neurochemistry/neuropharmacology, 1 August 1985, to study underlying biochemical mechanisms responsible for neuronal cell death caused by exogenous agents including amino acid-like excitotoxins, as well as the dopaminergic neurotoxin, MPTP. Send curriculum vitae, statement of research interests, career goals, and names of three references to either: William J. Nicklas, Ph.D., or Richard E. Heikkila, Ph.D., Department of Neurology, University of Medicine and Dentistry of New Jersey—Rutgers Medical School, P.O. Box 101, Piscataway, N.J. 08854. An Equal Opportunity/Affirmative Action Employer, M/F/H/V.

**POSTDOCTORAL POSITION, GENE TRANSFER** to study control of gene expression and differentiation by DNA-mediated gene transfer to mammalian cells. One goal is to study the action of cellular oncogenes in controlling differentiation. Other projects are aimed at identifying regulatory sequences in globin and histone genes. Experience with cell culture or molecular biology is desirable. Send résumé and letters of reference to: Dr. Arthur I. Skoltschi, Department of Cell Biology, Albert Einstein College of Medicine, Bronx, N.Y. 10461.

**POSTDOCTORAL POSITION** in the Molecular Genetics and Microbiology Department (MGM) at the University of Massachusetts Medical School available 1 September 1985 for molecular and/or cellular biology studies of regulation of immunoglobulin heavy chain switching in cultured 1.29 lymphoma cells, or for studies on the effect of mutated immunoglobulin light chain genes in human B cells. Send curriculum vitae and names of three references to: Dr. Janet Stavnezer, Section 6108, Sloan-Kettering Institute, 1275 York Avenue, New York, N.Y. 10021, until 1 August. After 1 August send correspondence to: Dr. Janet Stavnezer, MGM, University of Massachusetts Medical School, Worcester, Mass. 01605.

### POSTDOCTORAL RESEARCH IN MOLECULAR PARASITOLOGY

Research associate position available immediately for a molecular biologist (any area) to join an active research group composed of members of the Division of Geographic Medicine and the Department of Molecular Biology and Microbiology. Current research is focused on the molecular biology of gene expression in *Shistosoma mansoni* and the cloning and characterization of protective antigens. We seek an individual who can play a major role in this project, as well as pursue independent research into some aspect of the molecular biology of the parasite. The position is supported by a long-term award. Demonstrated competence in recombinant DNA techniques is required.

Send curriculum vitae and names of three references to: Dr. Fritz M. Rottman, Department of Molecular Biology and Microbiology, Case Western Reserve University, School of Medicine, 2119 Abington Road, Cleveland, Ohio 44106.

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITION** available immediately, to employ receptor purification and polyclonal/monoclonal antibody technologies to the study of opiate receptors in brain and neurotumors. Background in membrane biochemistry and/or immunology is desirable. Please send curriculum vitae and two references to: Dr. Ian S. Zagon, Department of Anatomy, The M.S. Hershey Medical Center of Pennsylvania State University, Hershey, Pa. 17033.

**POSTDOCTORAL RESEARCH ASSOCIATE.** Two positions are immediately available to study the transmembrane signaling mechanisms triggered by PGE<sub>2</sub> receptor or Fc receptors. Applicants with Ph.D. or M.D. must possess research experience in molecular or cellular immunology, membrane biochemistry, and/or gene cloning. Salary range is \$17,000 to \$20,000. Please send curriculum vitae and three letters of reference to: Dr. Tsuneo Suzuki, Department of Microbiology, University of Kansas Medical Center, Rainbow Boulevard at 39th Street, Kansas City, Kansas 66103. An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH POSITION** available in 1985. Ph.D. in biochemistry to participate in an ongoing project concerning advanced glycosylation end products on proteins and their role in aging. This position offers a competitive salary and is renewable after 1 year. Qualified individuals should be knowledgeable in biochemical procedures, including radioimmunoassay and tissue culture. Submit your curriculum vitae and three references to: Anthony Cerami, Ph.D., Laboratory of Medical Biochemistry, The Rockefeller University, 1230 York Avenue, New York, N.Y. 10021.

**POSTDOCTORAL RESEARCH POSITION** available immediately for NSF-funded project on cellular mechanisms of swimming in *Aplysia*. Emphasis on identification of central neurons involved in pattern generation and analysis of the role of serotonin. Prior experience with behavioral, electrophysiological, morphological, and/or pharmacological techniques is required. Send curriculum vitae and names of three references to: H. M. Pinsker, Marine Biomedical Institute, University of Texas Medical Branch, 200 University Building, Galveston, Texas 77550. Equal Opportunity/Affirmative Action Employer.

### The University of Texas at Austin Department of Zoology PROFESSOR AND CHAIRMAN

The Department of Zoology of the University of Texas at Austin invites applications or nominations for a departmental chairmanship to be occupied in September 1986. The Department of Zoology is multi-disciplinary in scope and includes research interests ranging from molecular biology to evolutionary ecology. Specific research interest of the applicant is not of great concern, but an appreciation for the breadth and integration of such diverse biological disciplines and a strong personal research program are deemed important. Some administrative experience is preferred.

Applicants should send curriculum vitae, a letter elaborating upon research and administrative goals, and the names and addresses of four references to: Dr. F. H. Bronson, Department of Zoology, University of Texas, Austin, Texas 78712. The deadline for applications is 1 November 1985.

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

### PROFESSORSHIP

Professor of molecular biophysics and biochemistry. Field: genomic structure and rearrangement. Appointee will teach undergraduate courses, participate in graduate and medical training, and carry on research. Salary is negotiable. Please send curriculum vitae and three references to: William H. Kohnsberg, Ph.D., Chairman, Department of Molecular Biophysics and Biochemistry, Yale University School of Medicine, Room C-113 SHM, P.O. Box 3333, 333 Cedar Street, New Haven, Conn. 06510.

Yale is an Affirmative Action/Equal Opportunity Employer.

**RESEARCH ASSOCIATE POSITION.** Position available at the research associate level to work on the purification of lymphokines which regulate a B lymphocyte growth and differentiation. Applicants should possess a Ph.D. in a relevant field and have two or more years of postdoctoral experience. Familiarity with tissue culture methodology and commensurate with experience. Send résumé and three letters of reference to: Dr. Peter Isakson, Box 448, Department of Pharmacology, University of Virginia Medical School, Charlottesville, Virginia 22908. An Affirmative Action/Equal Opportunity Employer.

**RESEARCH ASSOCIATE.** Ph.D. in biological science to help design and do experiments in area of molecular genetics with emphasis on the physiology, genetics, and development of microorganisms. Studies include gene organization, reorganization, and expression in *Tetrahymena*. Applicants must be familiar with RNA and DNA purification, recombinant DNA techniques, DNA sequencing, and in situ hybridization using RNA probes. Forty hours per week; \$15,996 per year. Résumé to: Dr. M. Gorovsky, Department of Biology, University of Rochester, Rochester, N.Y. 14627. Equal Opportunity Employer.

## POSITIONS OPEN

### DRUG DESIGN INSTITUTE UNIVERSITY OF PITTSBURGH RESEARCH ASSISTANT PROFESSOR

The Institute wishes to hire a Ph.D. with 3 to 5 years of postdoctoral or equivalent experience, in molecular graphics. Experience should include the use of a VAX computer, PS300 Evans Sutherland hardware, programming skills, and familiarity with various software, including real time docking. Ability to work with a super computer would also be helpful. Salary ranges from \$22,000 to \$30,000, depending on qualifications. Please send complete curriculum vitae and names of three references to: Dr. Donald J. Abraham, Director, Drug Design Institute, 737 Salk Hall, University of Pittsburgh, Pittsburgh, Pa. 15261. The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.

**RESEARCH ASSOCIATE** position available immediately to do research on the role of polyuronides in the morphogenetic development of *Mucor*. Postdoctoral experience preferred in the area of polysaccharide biochemistry or fungal cell wall biosynthesis. Position for a minimum of 2 years. Salary: \$18,000 per year. Send curriculum vitae and three letters of recommendation by 15 August 1985 to: Dr. Vicente D. Villa, Southwestern University, Georgetown, Texas 78626. Southwestern University is an Equal Opportunity/Affirmative Action Employer.

**RESEARCH ASSOCIATE** to participate in a molecular biological characterization of the human MHC. This is a 2-year position in the Department of Laboratory Medicine and Pathology and the Institute of Human Genetics. Qualifications include a Ph.D., including at least 2 years of experience using molecular biological methods. The applicant will also be expected to develop his/her own research program. Salary: \$22,000 to \$26,000. Send résumé by 9 August 1985 to: Dr. H. T. Orr, University of Minnesota, Box 198 Mayo, Minneapolis, Minn. 55455.

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

### RESEARCH ASSOCIATE POSITION

The University of Kentucky, College of Medicine, has a research associate position available within the Department of Medical Microbiology and Immunology for an individual interested in the characterization of genes on human chromosome 21. The person employed in this position will conduct experiments and gather data in the field of molecular biology, grow a variety of human lymphoid, fibroblast, and neuroblastoma lines in cell culture. Requirements for this position are a Ph.D. and 1 year of postdoctoral experience in the field of molecular biology, cellular RNA studies, and purification of DNA-free RNA from cultured cells. Salary is \$18,000 per year. Position available immediately. Send curriculum vitae and list of three references to: Kentucky Job Order Number 735579, c/o T. Moore, Department of Employment Services, 300 South Upper, Lexington, Kentucky 40503.

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

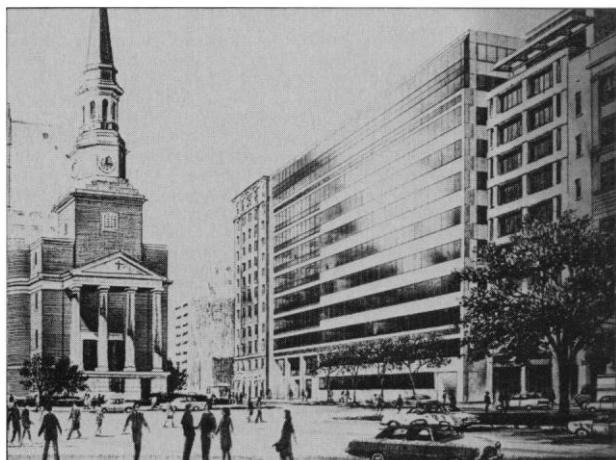
### RESEARCH POSITION

#### Project Associate/Assistant Scientist

Project associate/assistant scientist position open for candidates with a Ph.D. in immunology. Major areas of research include heart and limb transplantation. Expertise in the biology of endothelium, dendritic cells, and lymphocytes preferable. Salary commensurate with experience. Apply to: Venkat Rao, M.D., Department of Surgery, Clinical Science Center, 600 Highland Avenue, Madison, Wis. 53792. The University of Wisconsin is an Affirmative Action/Equal Opportunity Employer.

A full-time and permanent **TEACHING AND RESEARCH POSITION** is available in a research facility in an academic setting. The job involves teaching at undergraduate and graduate levels and conducting research in the following areas: biology, ecology and taxonomy of actinomycetes, strain improvement, scale-up fermentation, and developing guidelines aimed at preventing public health hazards associated with biotechnology. Salary: \$24,000 per year to start. Requires Ph.D. in microbiology and 3 years of experience in microbiology, stressing pathogenic microbiology. Send résumé to: 7310 Woodward Avenue, Room 415, Detroit, Michigan 48202. Employer-paid ad. Refer to: Number 27685.

**American  
Association  
for the Advancement of  
Science**



New Headquarters, Effective August 1, 1985

**New Address**

1333 H Street N.W.  
Washington, D.C. 20005  
202-326-6400

Genetic Systems is a leader in the field of biotechnology. We currently have immediate openings in the Clinical Research and Medical Affairs group and in Reagent Development. Join our staff of dedicated professionals on the leading edge of diagnostic products research and development.

**Medical Affairs Supervisor**

Position entails designing, monitoring, interpreting results of clinical studies in support of product lines; provides statistical support and consultation; supervises database management software design and implementation.

Qualified applicant will possess solid background in biostatistics; experience in biomedical or social science research design; programming and software applications experience. Minimum 2 years experience required. Advanced degree in biomedical or social sciences, or equivalent experience also essential.

**Program Manager -Development**

Requires Ph.D. in immunobiology, microbiology or biochemistry and a minimum four years commercial product development experience. Experience in HLA, tissue-typing and cell surface antigens is essential.

Must have solid people and organizational skills as well as proven technical ability in handling analysis and preparation of special or difficult reagents.

Genetic Systems offers competitive salaries and excellent benefits. Please send your curriculum vitae in confidence to:  
**Karen L. Hedine, Personnel Manager.**



**Genetic Systems**

3005 First Avenue, Seattle WA 98121-1035  
Equal Opportunity Employer.

# SCIENCE

## SCIENCE Offers "The Four-Day Close"

We now offer our recruitment advertisers the convenience formerly found only in daily newspapers. We call it **"The Four-Day Close."** Instead of reserving space a month or more in advance, you now have until just four days before the issue is mailed to its 160,000-plus subscribers.

Film (right-reading, emulsion face down) or art, 1/4 or 1/2 page size only, and insertion order must reach: **SCIENCE, Room 107, 1515 Massachusetts Avenue, N.W., Washington, D.C. 20005**, by 3 p.m. Mondays (except for legal holidays when material must reach Washington by 3 p.m. Fridays). Because space is limited, the four-day close page will be reserved on a first-come, first-served basis.

For reservations call: 202-467-4456.

Cost: 1/4 page—\$1552.50

1/2 page—\$2679.50

Now you don't have to wait for the professional you need **as soon as possible**. Nor must you advertise in a Sunday paper that pans a lot of sand, but not much gold. Scientific employers know that SCIENCE ads fill the job better. Now they fill it faster, too.

We call it **"The Four-Day Close."**

You can call it **"Instant Recruitment."**

## POSITIONS OPEN

### RESEARCH ASSOCIATE OR POSTDOCTORAL POSITIONS

Three positions available immediately for persons with training in molecular biology and nucleic acid biochemistry to work on the development of infectious vaccinia virus recombinant vaccines for viral diseases of cattle and to work on the expression of cloned cDNAs in prokaryotic and eukaryotic systems. Salary: \$17,000 to \$25,000, depending on qualifications. Positions are funded for at least 2 years.

Send curriculum vitae and three letters of reference to: **T. Yilma, Department of Veterinary Microbiology and Pathology, Washington State University, Pullman, Wash. 99164-7040; telephone: 509-335-6042. Washington State University is an Affirmative Action/Equal Opportunity Employer. Women and candidates from minority groups are encouraged to identify themselves as such.**

### RESEARCH POSITION IN EXPERIMENTAL EPILEPTOLOGY

An immediate opportunity for a research position is available in experimental epileptology. We are searching for highly qualified individuals able to establish a productive, independent research program. Candidates must have a doctoral degree, postdoctoral experience, and publications in experimental epileptology. Close interaction and collaboration with the clinical research activities of the Section of Epilepsy and Clinical Neurophysiology and with the basic research activities of the Section of Neurobiology will be encouraged.

Applicants are requested to send curriculum vitae and the names of three references to:

**Hans Luders, M.D., Ph.D.**  
Head, Section of Epilepsy and  
Clinical Neurophysiology  
Cleveland Clinic Foundation  
9500 Euclid Avenue  
Cleveland, Ohio 44106

**SENIOR RESEARCH SCIENTIST.** Ph.D. in engineering physics. Two years of research background in laminar and turbulent diffusion flames under both zero gravity and high rotational accelerations. To develop advanced numerical models and conduct experiments. Chatsworth, California firm; 40 hours per week, \$40,000 per year. Send ad and résumé to: **Job Number 4611, P.O. Box 865, Sacramento, Calif. 95804, no later than 12 August 1985.**

Applications are invited for **SENIOR SCIENTIST/RESEARCH ASSOCIATE** positions in our recombinant DNA department, division of eukaryotic molecular biology. The successful applicant will be involved in the development of a mammalian host cell vector system for the expression of recombinant DNA-derived proteins. Applicants must possess a Ph.D. or equivalent, and 2 years of research experience in DNA vector construction and recombinant DNA techniques. Send curriculum vitae, brief statement of research interests (optional), and names of three professional references to:

**Revlon Health Care/Meloy Laboratories, Inc.**  
Attention: Personnel  
6715 Electronic Drive  
Springfield, Va. 22151

The Michigan Department of Natural Resources is seeking applicants for a **TOXIC SUBSTANCE SPECIALIST** position. Applicants must have as a minimum a B.S. in biology, chemistry, toxicology, or a closely related field, and 4 years of professional experience in toxic chemical control activities in a state or federal regulatory agency. At least 1 year of the experience should be above the journeyman level. This experience must have been at a level where considerable independent judgment was exercised in program responsibilities, assigning and reviewing work assignments, determining priorities, and training employees. *The State of Michigan is an Equal Opportunity Employer, and minority and female candidates are encouraged to apply.* If you meet the above qualifications, send curriculum vitae or résumé with a precise description of work history that demonstrates fulfillment of the experience requirements to:

**Gary K. Hurlburt**  
Toxic Chemical Evaluation Section  
Michigan Department of Natural Resources  
P.O. Box 30028  
Lansing, Michigan 48938

This should be received by us no later than 10 August 1985.

## POSITIONS OPEN

**RESEARCH SCIENTIST. PHYSICAL/ANALYTICAL CHEMISTRY.** The Northern Regional Research Center, U.S. Department of Agriculture (USDA), is seeking an accomplished research scientist for a position in agricultural physical/analytical chemistry in the Oilseed Crops Laboratory. The successful candidate will have 5 to 10 years of post-Ph.D. research experience and a substantial publication record. Evidence of scientific creativity is a prerequisite. The individual will be doing research in the area of supercritical fluids. Present work involves use of supercritical carbon dioxide for the extraction of lipids from soybeans, corn germ, and other lipid-bearing products of agriculture. Development of future research goals and coordination of theoretical and applied research efforts are expected to impact current technology for extraction of lipids and other valuable components and derivatives of agricultural commodities. Experience with high pressure equipment and systems is required.

The position is GS-13 (\$37,599). Send résumé to: **Midwest Area Personnel Office, ARS-USDA, 1815 North University Street, Peoria, Ill. 61604. The USDA is an Equal Opportunity/Affirmative Action Employer.**

## AWARDS

### ARE YOU INTERESTED IN WORKING IN SPACE BIOLOGY?

NASA is offering several **RESEARCH ASSOCIATE AWARDS** for scientists to work in laboratories capable of providing scientific advice and facilities relevant to **SPACE BIOLOGY**. The awards vary from \$16,000 to \$20,000, based on experience. They are planned for a 12-month period, with the possibility of renewal. Proposals are due 1 April for 1 July funding and 1 October for 1 January funding. Eligible are postdoctoral U.S. citizens. For information or application forms, contact: **Dr. X. J. Musacchia, Graduate Programs and Research, University of Louisville, Louisville, Kentucky 40292, or Dr. Thora W. Halstead, Space Biology Research Associates' Program, Life Sciences Division, NASA Headquarters, Washington, D.C. 20546.** Specify which award date you are applying for.

## FELLOWSHIPS

### NSERC—UNIVERSITY RESEARCH FELLOW

The Department of Biology invites applications from Canadian citizens and landed immigrants who wish to be sponsored for NSERC University Research Fellowships (URF's). Applicants from the areas of molecular biology and ecology will be given preference, although applicants specializing in human genetics and neurobiology are also strongly encouraged to apply. URF's are awarded for 5 years, carry a salary at the assistant professor level, and include financial support for research. Send curriculum vitae, representative reprints, and three letters of reference to: **Dr. Barid Mukherjee, Chairman, Department of Biology, McGill University, 1205 Avenue Docteur Penfield, Montreal, Quebec, Canada H3A 1B1. Deadline: 13 September 1985.**

**POSTDOCTORAL FELLOWSHIP** available 1 September 1985 for NIH-funded studies of helminth parasite antigens in blood of infected humans. Work involves laboratory work in St. Louis, with short periods abroad for specimen collection and technology transfer. Ph.D./M.D. with strong biochemical/immunochemical background. Parasitology experience preferred but not essential. Please send curriculum vitae and three references to: **Gary Weil, M.D., Jewish Hospital at Washington University Medical Center, 216 South Kingshighway, St. Louis, Mo. 63110.**

### POSTDOCTORAL FELLOWSHIP IN PAIN RESEARCH

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

## FELLOWSHIPS

### FELLOWSHIPS

#### Research Training in the Immunobiology and Cell Biology of Cancer

Pre- and postdoctoral fellowships, supported by a National Cancer Institute Training Grant, are currently available. The training program, established more than 10 years ago, operates within the Departments of Pathology, Biochemistry and Molecular Biology, and Comparative and Experimental Pathology. Comprehensive research training is available in the following areas:

Antigenic properties of metastatic tumor cell variants [Kimura, Klein]; molecular mechanisms of platelet activation by tumor cells [Kao]; plasma membrane dynamics [Roberts]; complement function and tumor cell killing [Esser]; transport of cell-specific toxins [Donovan]; lymphocyte-mediated tumor cell killing [Smith]; pathogenesis of herpes viruses [Hutt-Fletcher]; Human B cell neoplasia [Braylan]; retroviruses and cell differentiation [Moscovici]; functional subclasses of lymphoid and non-lymphoid cells [Peck]; molecular genetics of immune responsiveness in mice [Wakeland]; macrophage activation for tumor-cell killing [Russell]; monocyte function in tumor growth regulation [Normann]; and interferon and interleukin production and function [Johnson].

Research experiences are enriched by advanced graduate courses and seminars within the programs of the J. Hillis Miller Health Center.

Send curriculum vitae with letter of inquiry to:

**Paul A. Klein, Ph.D.**  
NCI Training Grant Coordinator  
Department of Pathology  
College of Medicine  
University of Florida  
Gainesville, Florida 32610

#### National Institute of Child Health and Human Development Intramural Research Program Laboratory of Developmental Neurobiology (LDN) STAFF FELLOWSHIP (TWO POSITIONS)

We are seeking dynamic scientists with training in recombinant DNA techniques to study regulation of gene expression in the nervous system.

Salary ranges—Physicians: \$20,688 to \$47,758 per annum; other doctorates: \$17,000 to \$41,388 per annum.

Position information and qualification requirements may be obtained by contacting:

**Dr. Bruce K. Schrier**  
Section on Neurobiology, LDN  
Building 36, Room 2A21  
9000 Rockville Pike  
Bethesda, Maryland 20205  
Telephone: 301-496-1463

*An Equal Opportunity Employer*

**POSTDOCTORAL FELLOWSHIP** available in Department of Pharmacology, University of Pennsylvania, to work on affinity labeling and active site analyses of steroid hormone transforming enzymes. Applicants should be recent Ph.D. graduates with experience in either organic chemistry or protein biochemistry. Send résumé and three references to: **Dr. Trevor M. Penning, Department of Pharmacology, University of Pennsylvania Medical School/G3, Philadelphia, Pa. 19104. The University of Pennsylvania is an Equal Opportunity Employer.**

## MARKETPLACE

### NEWAT '85

NEWAT data base now available on 5 1/4" floppy disks for IBM PC's and look-alikes. More than 1200 amino acid sequences with literature citations. Six-disk kit includes programs for entering data, searching and aligning. \$250. Limited supply. **Telephone: 619-453-2467 or NEWAT, P.O. Box 12822, La Jolla, Calif. 92037.**

**SALE!** **OSO<sub>4</sub> 99.9+%**  
**Crystalline or 4% Aqueous**  
**MCORP** · Box 285 · Boston, MA 02167  
1-800-446-4462 then 211111 (toll phone req.)  
617-965-6340

Circle No. 146 on Readers' Service Card

## DEPUTY DIRECTOR, GENERAL SCIENCES

### Salary Open

**Duties:** Reporting to the Laboratory Director, the Deputy Director of General Sciences provides overall direction for Laboratory divisions in high energy physics, nuclear physics, accelerator physics, and fusion research. Major responsibilities include management oversight of these divisions, coordination of interdivisional programs and activities, establishment and implementation of goals consistent with the Laboratory's mission, interaction with policy and advisory committees to ensure the highest quality of scientific achievement, and management liaison with the University of California, the U.S. Department of Energy, and other external agencies.

**Requirements:** A distinguished record of scientific achievement and proven leadership in managing interdisciplinary programs in fields such as high energy physics, nuclear physics, accelerator physics, or fusion research. Proven success in interacting with academic institutions, scientific laboratories, private industry, and the federal government (especially the U.S. Department of Energy). Must have a Ph.D. in the physical sciences or equivalent experience. Requires strong management skills in areas of decision-making, problem-solving, interpersonal communications, staffing, funding, and facilities planning and utilization. "Position is subject to the financial disclosure requirements of the California Political Reform Act of 1974."

Please submit two copies of resume including salary history and names and addresses of references to: Chairman, Search Committee, Lawrence Berkeley Laboratory, Employment Office, One Cyclotron Road, Building 90, Room 1012, Berkeley, CA 94720. Refer to Job #B/3425. Resumes must be received in the Employment Office by September 1, 1985, 5:00 p.m. An Equal Opportunity Employer M/F/H.



LAWRENCE  
BERKELEY  
LABORATORY

## TOXICOLOGIST

Battelle, Pacific Northwest Laboratories at Richland, Washington is seeking scientists for a large multidisciplinary research team conducting carcinogenesis/toxicology bioassay studies. The position offers an opportunity to become an independent investigator as well as a unique opportunity for interaction with a diverse group of biological, bioengineering, and physical scientists.

### Required Qualifications

- PhD or equivalent in toxicology
- Diplomate of American Board of Toxicology
- A minimum of 5 years experience in research using rodents
- Relevant publications in the field of toxicology

### Desirable Qualifications

- Experience in inhalation toxicology
- Experience in respiratory function testing and/or pharmacokinetics
- Experience in industrial hygiene and safety
- Experience in conducting studies under GLP regulations
- Experience in conducting studies for the National Toxicology Program

U.S. citizenship required.

Please submit curriculum vitae, references, and salary requirements to: **Loren P. Henderson, Manager-Employment, Battelle-Northwest, P.O. Box 999, Richland, WA 99352.**

An Equal Opportunity Employer M/F



**Battelle**

Pacific Northwest Laboratories

## AGRACETUS BIOTECHNOLOGY

# Scientist — Molecular Biology

The Agracetus plant genetic engineering group has a vacancy for a scientist with experience in eukaryotic molecular biology. Applicants should have demonstrated competence in one or more aspects of recombinant technology including construction of genomic libraries, cDNA cloning, or expression of foreign genes in eukaryotic cells. The scientist chosen for this position will join a growing interdisciplinary research team working toward the genetic improvement of major crops.

Agracetus has evolved from Cetus Madison Corporation as a joint venture initiated by W.R. Grace & Co. and Cetus Corporation. The partnership combines the research strengths and technology of Cetus with the business experience and success of the Grace Agrichemicals Group.

Agracetus is an industry leader in applying the techniques of biotechnology to agriculture. The location of the research complex near the University of Wisconsin in Madison, provides an ideal setting for both career and lifestyle enhancement.

We offer a competitive salary, a comprehensive benefits package, and advancement opportunity.

Send a detailed curriculum vitae, a list of publications, and three letters of recommendation directly to **Dr. Winston J. Brill, Agracetus, 8520 University Green, Middleton, WI 53562.** We are an equal opportunity employer.

**Agracetus**



## **NAPCO'S FAMILY OF GLASSWARE WASHERS.**

### **FOR PUSH-BUTTON CLEAN-UP. IN ANY SIZE.**

How much laboratory glassware do you go through every day? Whether a lot or a little, NAPCO has a glassware washer to clean up the mess. We have one, two, four and six-basket models. Even an undercounter unit if you're tight on space.

A patented moving jet-spray system thoroughly cleans even mixed loads of glassware. High-pressure, pulsed spraying from top and bottom penetrates the smallest pipette. And the largest beaker.

To minimize cross-contamination, there are three separate plumbing systems for the pre-wash, detergent wash, and deionized rinse cycles. A recirculating wash reservoir economizes on detergent and heating costs by recycling already-heated wash solutions.

You can program cycle length and water temperature via a microprocessor-based, push-button panel. Or control them manually.

The NAPCO glassware washer series. Cleaning up the smallest clinics. And the largest research laboratories. With push-button convenience. From NAPCO. The dependable source for working laboratory technology.

Call or write for more information.



**NATIONAL APPLIANCE COMPANY**  
10855 S.W. Greenburg Road  
Portland, OR 97223-0002  
Toll-free phone: 800-547-2555  
Phone: 503-639-3161

Circle No. 111 on Readers' Service Card

