

growth and development. The effects of an increased CO<sub>2</sub> level on both terrestrial and aquatic plant and microbial communities are fully reviewed, although the chapters on these subjects are of necessity more speculative than those dealing with photosynthesis, where more pertinent experimental data are available.

This slim volume does not attempt to provide answers but to provoke thought and to establish a basis for the evaluation of the effects of increasing CO<sub>2</sub> on plant communities, and hence on agriculture. Herein is a comprehensive assessment of the known responses of plants to elevated CO<sub>2</sub> levels. The book is a thorough and concise treatise on a subject that is of paramount importance for the future.

CHRISTINE H. FOYER

Department of Botany,  
University of Sheffield,  
Sheffield S10 2TN, England

## Books Received

**The Adjustment and Testing of Telescope Objectives.** H. Dennis Taylor. 5th ed. Hilger, Bristol, 1983 (U.S. distributor, Heyden, Philadelphia). xii, 103 pp., illus. Paper, \$13.50.

**Advances in Cancer Research.** Vol. 40. George Klein and Sidney Weinhouse. Eds. Academic Press, New York, 1983. x, 441 pp. \$54.

**Advances in Chromatography.** Vol. 22. J. Calvin Giddings *et al.*, Eds. Dekker, New York, 1983. xviii, 323 pp., illus. \$49.75.

**Advances in Fuzzy Sets, Possibility Theory, and Applications.** Paul P. Wang, Ed. Plenum, New York, 1983. xii, 421 pp., illus. \$55.

**Advances in Immunology.** Vol. 34. Frank J. Dixon and Henry G. Kunkel, Eds. Academic Press, New York, 1983. xiv, 311 pp., illus. \$39.50.

**Advances in Magnetic Resonance.** Vol. 11. John S. Waugh, Ed. Academic Press, New York, 1983. xiv, 282 pp., illus. \$49.50.

**Advances in Materials Characterization.** David R. Rossington, Robert A. Condrate, and Robert L. Snyder, Eds. Plenum, New York, 1983. xii, 680 pp., illus. \$89.50. Materials Science Research, vol. 15. From a conference, Alfred, N.Y., Aug. 1982.

**Advances in Veterinary Science and Comparative Medicine.** Vol. 27. Charles E. Cornelius and Charles F. Simpson, Eds. Academic Press, New York, 1983. xvi, 519 pp. \$58.

**Aging and Cancer.** F. F. Holmes. Springer-Verlag, New York, 1983. viii, 78 pp., illus. \$23. Recent Results in Cancer Research, 87.

**Agriculture in the Twenty-First Century.** John W. Rosenblum, Ed. Wiley-Interscience, New York, 1983. xxii, 415 pp., illus. \$29.95. From a symposium, Richmond, Va., 1983.

**Air-Sea Exchange of Gases and Particles.** Peter S. Liss and W. George N. Slinn, Eds. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). xiv, 561 pp., illus. \$69.50. NATO ASI Series C, No. 108. From an institute, Durham, N.H., July 1982.

**Allergic Reactions to Drugs.** A. L. de Weck and H. Bundgaard, Eds. Springer-Verlag, New York, 1983. xxxii, 752 pp., illus. \$148. Handbook of Experimental Pharmacology, vol. 63.

**Alternative Energy Sources III.** T. Nejat Veziroglu, Ed. Hemisphere, Washington, D.C., 1983. Nine volumes. clxii, 4150 pp., illus. \$597. From a conference, Miami Beach, Dec. 1980.

**The Amazing Race.** Winning the Technorivalry with Japan. William H. Davidson. Wiley, New York, 1983. xvi, 270 pp. \$17.95.

**Aneuploidy.** D. J. Bond and Ann C. Chandley. Oxford University Press, New York, 1983. x, 198 pp., illus. \$69. Oxford Monographs on Medical Genetics, No. 11.

**Annual Reports in Organic Synthesis—1982.** L. G. Wade, Jr., and Martin J. O'Donnell, Eds. Academic Press, New York, 1983. xiv, 499 pp., illus. Paper, \$29.

**Bifurcation Theory, Mechanics and Physics.** C. P. Bruter, A. Aragnol, and A. Lichnerowicz, Eds. Reidel, Boston, 1983 (distributor, Kluwer Boston,

Hingham, Mass.). xii, 388 pp. \$58. Mathematics and Its Applications. From a colloquium.

**Biochemical Research Techniques.** A Practical Introduction. John M. Wigglesworth, Ed. Wiley-Interscience, New York, 1983. x, 239 pp., illus. \$41.95.

**Biological Response Modifiers in Human Oncology and Immunology.** Thomas Klein *et al.*, Eds. Plenum, New York, 1983. xiv, 320 pp., illus. \$45. Advances in Experimental Medicine and Biology, vol. 166. From a symposium, Tampa, Fla., July 1982.

**Biological Rhythms and Medicine.** Cellular, Metabolic, Physiopathologic, and Pharmacologic Aspects. Alain Reinberg and Michael H. Smolensky, with H. von Mayersbach *et al.* Springer-Verlag, New York, 1983. xiv, 305 pp., illus. \$69.50. Topics in Environmental Physiology and Medicine.

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**Biology of Vitamin E.** Pitman, London, 1983 (U.S. distributor, CIBA Pharmaceutical Co., West Caldwell, N.J.). x, 260 pp., illus. \$35. Ciba Foundation symposium 101. From a symposium, London, March 1983.

**The Birth of Particle Physics.** Laurie M. Brown and Lillian Hoddeson, Eds. Cambridge University Press, New York, 1983. xxii, 412 pp., illus. \$44.50. From a symposium, Batavia, Ill., May 1980.

**Body.** Don Johnson. Beacon, Boston, 1983. x, 239 pp., illus. \$13.95.

**Bone Marrow.** Structure and Function. Mehdi Tavassoli and Joseph Mendel Yoffey. Liss, New York, 1983. xii, 300 pp., illus. \$48.

**The Cartoon Guide to Computer Science.** Larry Gonick. Barnes and Noble (Harper and Row), New York, 1983. vi, 249 pp. Paper, \$5.25.

**The Cartoon Guide to Genetics.** Larry Gonick and Mark Wheelis. Barnes and Noble (Harper and Row), New York, 1983. vi, 215 pp. Paper, \$5.25.

**Catalogue of Chromosome Aberrations in Cancer.** Felix Mitelman. Harold P. Klinger, Ed. Karger, Basel, 1983. 515 pp. Paper, \$79. Reprinted from *Cytogenetics and Cell Genetics*, vol. 36, Nos. 1-2.

**Cell Pathology.** Norman F. Cheville. 2nd ed. Iowa State University Press, Ames, 1983. viii, 681 pp., illus. \$58.50.

**Cell Separation.** Methods and Selected Applications. Vol. 2. Thomas G. Pretlow II and Theresa P. Pretlow, Eds. Academic Press, New York, 1983. xvi, 327 pp., illus. \$39.50.

**Chemical Skills.** Edward I. Peters. 2nd ed. McGraw-Hill, New York, 1983. xvi, 472 pp. Paper, \$16.95.

**Chemistry and World Food Supplies.** The New Frontiers. CHEMRAWN II. L. W. Shemilt, Ed. Pergamon, New York, 1983. xvi, 664 pp., illus. \$135; paper, \$75. From a conference, Manila, Dec. 1982.

**Chemistry of Water Treatment.** Samuel D. Faust and Osman M. Aly. Butterworth, Boston, 1983. xviii, 723 pp., illus. \$49.95. An Ann Arbor Science Book.

**Child Neuropsychology.** An Introduction to Theory, Research, and Clinical Practice. Byron P. Rourke *et al.* Guilford, New York, 1983. x, 389 pp., illus. \$30.

**Chlorinated Dioxins and Dibenzofurans in the Total Environment.** Gangadhar Choudhary, Lawrence H. Keith, and Christoffer Rappe, Eds. Butterworth, Boston, 1983. xvi, 416 pp., illus. \$42.50. From a symposium, Kansas City, Sept. 1982.

**Classics and Moderns.** John Hicks. Harvard University Press, Cambridge, Mass., 1983. xvi, 391 pp. \$32.50. Collected Essays on Economic Theory, vol. 3.

**Controversial Nutrition Policy Issues.** Giorgio R. Solimano and Sally A. Lederman, Eds. Thomas, Springfield, Ill., 1983. xii, 429 pp., \$34.75.

**The Culture of Technology.** Arnold Pacey. MIT Press, Cambridge, Mass., 1983. viii, 210 pp., illus. \$17.50.

**Current Methods in Cellular Neurobiology.** Vol. 4. Model Systems. Jeffery L. Barker and Jeffrey F. McKelvy, Eds. Wiley-Interscience, New York, 1983. xii, 192 pp., illus. \$49.50.

**Current Topics in Membranes and Transport.** Felix Bronner and Arnost Kleinzeller, Eds. Vol. 19. Structure, Mechanism, and Function of the Na/K Pump. Joseph F. Hoffman and Bliss Forbush III, Eds. Academic Press, New York, 1983. xlii, 1043 pp., illus. \$95.

**Cyclophanes I.** Philip M. Keehn and Stuart M. Rosenfeld, Eds. Academic Press, New York, 1983. xii, 358 pp., illus., + index. \$65. Organic Chemistry, vol. 45.

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**Cytogenetics of the Mammalian X Chromosome.** Avery A. Snadberg, Ed. Liss, New York, 1983. Two volumes. Part A, Basic Mechanisms of X Chromo-

some Behavior. xiv, 508 pp., illus. \$98. Part B, X Chromosome Anomalies and Their Clinical Manifestations xiv, 517 pp., illus. \$98. Progress and Topics in Cytogenetics, vol. 3.

**Data for Science and Technology.** Phyllis S. Glaeser, Ed. North-Holland, Amsterdam, 1983 (U.S. distributor, Elsevier, New York). xvi, 350 pp., illus. \$49. From a conference, Jachranka, Poland, Oct. 1982.

**Decision Making in Drug Research.** Franz Gross, Ed. Raven, New York, 1983. xii, 244 pp., illus. \$35. From a symposium.

**Deep Space Telecommunications Systems Engineering.** Joseph H. Yuen, Ed. Plenum, New York, 1983. xx, 603 pp., illus. \$55. Applications of Communications Theory.

**Developing and Regenerating Vertebrate Nervous Systems.** Penelope W. Coates, Roger R. Markwald, and Alexander D. Kenny, Eds. Liss, New York, 1983. xii, 272 pp., illus. \$56. Neurology and Neurobiology, vol. 6. From a symposium, Lubbock, Tex., Sept. 1982.

**Development of Target-Oriented Anticancer Drugs.** Yung-Chi Cheng, Barry Goz, and Mimi Minkoff, Eds. Raven, New York, 1983. xvi, 246 pp., illus. \$39. Progress in Cancer Research and Therapy, vol. 28. From a symposium, Chapel Hill, N.C.

**Development of the Vascular System.** Pitman, London, 1983 (U.S. distributor, CIBA Pharmaceutical Co. West Caldwell, N.J.). x, 254 pp., illus. \$35. Ciba Foundation symposium 100. From a symposium, London, Jan. 1983.

**Developmental Neuropsychiatry.** Michael Rutter, Ed. Guilford, New York, 1983. xvi, 632 pp., illus. \$50.

**DNA for Beginners.** Israel Rosenfield, Edward Ziff, and Borin van Loon. Norton, New York, 1983. 224 pp., illus. Paper, \$6.95.

**Dynamic Aspects of Language Processing.** Focus and Presupposition. J. Engelkamp and H. D. Zimmer. Springer-Verlag, New York, 1983. x, 100 pp., illus. \$23. Springer Series in Language and Communication, vol. 16. Translated from the German.

**Dynamics.** S. Neil Rasband. Wiley-Interscience, New York, 1983. xiv, 272 pp., illus. \$32.95.

**DYNAMO User's Manual.** Alexander L. Pugh, III, with Pilar Amalia Carrasco. 6th ed. MIT Press, Cambridge, Mass., 1983. xx, 290 pp., illus. Paper, \$15.

**Efficient Use of Fertilizers in Agriculture.** Published for the United Nations by Nijhoff, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). vi, 352 pp., illus. \$50. Developments in Plant and Soil Sciences, vol. 10. From a symposium, Geneva, Jan. 1983.

**Einstein and the Poet.** In Search of the Cosmic Man. William Hermanns. Branden, Brookline Village, Mass., 1983. viii, 152 pp., illus. Paper, \$10.

**Electroanalytical Chemistry.** Basil H. Vassos and Galen W. Ewing. Wiley-Interscience, New York, 1983. xiv, 255 pp., illus. \$45.

**Electrostatics 1983.** Sampuran Singh. Institute of Physics, Bristol, 1983 (U.S. distributor, Heyden, Philadelphia). x, 261 pp., illus. \$34. From a conference, Oxford, England, April 1983.

**Electroweak Interactions at High Energies.** R. Kögerter and D. Schildknecht, Eds. World Scientific, Singapore, 1983 (U.S. distributor, Heyden, Philadelphia). xiv, 383 pp., illus. \$44. From a workshop, Hamburg, Sept. 1982.

**The Elements of Complex Analysis.** B. Choudhary. Halsted (Wiley), New York, 1983. xii, 262 pp., illus. \$17.95.

**Encyclopedia of Explosives and Related Items.** PATR 2700. Vol. 10. Seymour M. Kaye, with Henry L. Herman. U.S. Army Armament Research and Development Command, Dover, N.J., 1983 (available as ADA 134347 from the National Technical Information Service, Springfield, Va.). Various pages, illus. \$43.50.

**Encyclopedia of Statistical Sciences.** Vol. 4. Icing the Tails to Limit Theorems. Samuel Kotz, Norman L. Johnson, and Campbell B. Read, Eds. Wiley-Interscience, New York, 1983. xii, 647 pp. \$79.50.

**Endocrinology of Insects.** Roger G. H. Downer and Hans Laufer, Eds. Liss, New York, 1983. xvi, 707 pp., illus. \$146. Invertebrate Endocrinology, vol. 1.

**The Endothelial Cell.** A Pluripotent Control Cell of the Vessel Wall. D. G. S. Thilo-Körner and R. I. Freshney, Eds. Karger, Basel, 1983. x, 206 pp., illus. \$69.50. From a symposium, Paris, July 1982.

**Energy Resources through Photochemistry and Catalysis.** Michael Grätzel, Ed. Academic Press, New York, 1983. xiv, 573 pp., illus. \$59.50.

**Energy Today and Tomorrow.** Living with Uncertainty. Joel Darmstadter, Hans H. Landsberg, and Herbert C. Morton, with Michael J. Coda. Prentice-Hall, Englewood Cliffs, N.J., 1983. xx, 233 pp., illus. \$25.95; paper, \$13.95. A Book from Resources for the Future.

**Excavations at Nichoria in Southwest Greece.** Vol. 3, Dark Age and Byzantine Occupation. William A. (Continued on page 422)

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McDonald, William D. E. Coulson, and John Rosser, Eds. Illustrations by Bryan Carlson *et al.* University of Minnesota Press, Minneapolis, 1983. xxxii, 529 pp. \$49.50.

**The Experience of Motivation.** The Theory of Psychological Reversals. Michael J. Apter. Academic Press, New York, 1982. x, 378 pp., illus. \$31.50.

**The Faba Bean** (*Vicia faba* L.). A Basis for Improvement. P. D. Hebblethwaite, Ed. Butterworths, Boston, 1983. xvi, 573 pp., illus. \$140.

**Facility Siting and Public Opposition.** Michael O'Hare, Lawrence Bacow, and Debra Sanderson. Van Nostrand Reinhold, New York, 1983. xiv, 223 pp. \$28.50.

**Les Femmes et la Psychothérapie.** Une Philosophie Féministe du Traitement. Susan Sturdivant. Mar-daga, Brussels, 1983. 248 pp. Paper, 850 BF. Psychologie et Sciences Humaines, 123. Translated from the English edition (New York, 1980).

**The Fertile Fjord.** Plankton in Puget Sound. Richard M. Strickland. Washington Sea Grant, Seattle, 1983 (distributor, University of Washington Press, Seattle). xviii, 146 pp., illus. Paper, \$8.95. Puget Sound Books.

**Food for Thought.** A Parent's Guide to Food Intolerance. Maureen Minchin. 2nd ed. Alma, Alfredton, Australia, 1983. xiv, 176 pp., illus. Paper, A\$4.95.

**Foundations of Clinical Neuropsychology.** Charles J. Golden and Peter J. Vicente, Eds. Plenum, New York, 1983. xii, 508 pp., illus. \$49.50.

**The XIVth Epilepsy International Symposium.** (London, Aug. 1982.) Maurice Parsonage *et al.*, Eds. Raven, New York, 1983. xiv, 328 pp., illus. \$43. Advances in Epileptology Series.

**4th Nordic Meeting on Nuclear Physics.** (Fuglsø, Denmark, Aug. 1982.) J. Bondorf and G. Hagemann, Eds. Royal Swedish Academy of Sciences, Stockholm, 1983. 226 pp., illus. Paper, \$74. *Physica Scripta*, vol. T5.

**Freud and Modern Psychology.** Vol. 2, The Emotional Basis of Human Behavior. Helen Block Lewis. Plenum, New York, 1983. viii, 237 pp. \$25. Emotions, Personality, and Psychotherapy.

**From Affine to Euclidean Geometry.** An Axiomatic Approach. Wanda Szmielew. Maria Moszyńska, Transl. Ed. Reidel, Boston, and PWN-Polish Scientific Publishers, Warsaw, 1983 (distributor, Kluwer Boston, Hingham, Mass.). xiv, 194 pp., illus. \$34.95. Translated from the Polish edition (Warsaw, 1981).

**From Folk Psychology to Cognitive Science.** The Case Against Belief. Stephen P. Stich. MIT Press, Cambridge, Mass., 1983. xiv, 266 pp. \$22.50. A Bradford Book.

**Fundamental Processes in Energetic Atomic Collisions.** H. O. Lutz, J. S. Briggs, and H. Kleinpoppen, Eds. Plenum, New York, 1983. xii, 675 pp., illus. \$95. NATO Advanced Science Institutes Series B, vol. 103. From an institute, Maratea, Italy, Sept. 1982.

**Fundamentals of Crystal Physics.** Yu. I. Sirotin and M. P. Shaskolskaya. Mir, Moscow, 1982 (U.S. distributor, Imported Publications, Chicago). 656 pp., illus. \$13.95. Translated from the Russian edition (Moscow, 1979), by Valentina Snigirevskaya.

**Fundamentals of Crystal Physics. From Folk Psychology to Cognitive Science.** The Case Against Belief. Stephen P. Stich. MIT Press, Cambridge, Mass., 1983. xiv, 266 pp. \$22.50. A Bradford Book.

**Fundamentals of Data Structures in Pascal.** Ellis Horowitz and Sartaj Sahni. Computer Science Press, Rockville, Md., 1984. xiv, 542 pp., illus. \$26.95. Computer Software Engineering Series.

**Fundamentals of Immunology.** Quentin N. Myrvik and Russell S. Weiser 2nd ed. Lea and Febiger, Philadelphia, 1984. xii, 510 pp., illus. \$24.50.

**Fundamentals of Microelectronics.** I. P. Stepanenko. Mir, Moscow, 1980 (U.S. distributor, Imported Publications, Chicago). 456 pp., illus. \$10.95. Translated from the Russian edition (Moscow, 1980) by P. S. Ivanov.

**Groups of Divisibility.** Jiří Močkoř. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). viii, 184 pp. \$39.50. Mathematics and Its Applications.

**Guide to Managing Industrial Hazardous Waste.** Gary F. Lindgren. Butterworths, Boston, 1983. xviii, 287 pp. \$29.95. An Ann Arbor Science Book.

**A Guide to the Chemical Basis of Drug Design.** Alfred Burger. Wiley-Interscience, New York, 1983. xii, 300 pp., illus. \$45.

**Guide to the Chemical Industry.** Technology, R&D, Marketing, and Employment. William S. Emerson. Wiley-Interscience, New York, 1983. xviii, 330 pp., illus. \$35.

**Handbook of Animal Radio-Tracking.** L. David Mech. University of Minnesota Press, Minneapolis, 1983. xii, 108 pp., illus. \$25; paper, \$9.95.

**Handbook of Elementary Physics.** N. I. Koshkin and M. G. Shirkevich. Mir, Moscow, 1982 (U.S. distributor, Imported Publications, Chicago). 320 pp., illus. \$8.95. Translated from the Russian edition (Moscow, 1980) by G. Leib.

**Handbook of Neurochemistry.** Vol. 5, Metabolic Turnover in the Nervous System. Abel Lajtha, Ed. 2nd ed. Plenum, New York, 1983. xxii, 495 pp., illus. \$69.50.

**Handbook of Tropical Foods.** Harvey T. Chan, Jr., Ed. Dekker, New York, 1983. x, 639 pp., illus. \$75. Food Science, 9.

**Health Issues Related to Metal and Nonmetallic Mining.** William L. Wagner, William N. Rom, and James A. Merchant, Eds. Butterworth, Boston, 1983. xx, 517 pp., illus. \$49.95. An Ann Arbor Science Book. From a conference, Park City, Utah, April 1982.

**Hepatocellular Carcinoma.** Kunio Okuda and Ian Mackay, Eds. International Union Against Cancer, Geneva, 1982 (distributor, Huber, Bern, Switzerland). xii, 204 pp. Paper, \$22. UICC Technical Report Series, vol. 74. From a workshop, Nov. 1982.

**Highland-Lowland Interaction in Mesoamerica.** Interdisciplinary Approaches. Arthur G. Miller, Ed. Dumbarton Oaks Research Library and Collection, Washington, D.C., 1983. viii, 263 pp., illus. \$18. From a conference, Washington, D.C., Oct. 1980.


**Hormonal Proteins and Peptides.** Vol. 11, Gonadotropic Hormones. Choh Hao Li, Ed. Academic Press, New York, 1983. xvi, 188 pp., illus. \$42.

**Hormonally Defined Media.** A Tool in Cell Biology. G. Fischer and R. J. Wieser, Eds. Springer-Verlag, New York, 1983. xiv, 455 pp., illus. \$31. Proceedings in Life Sciences. From a conference, Heidelberg, Oct. 1982.

**Infrared and Millimeter Waves.** Vol. 9, Millimeter Components and Techniques, Part I. Kenneth Button, Ed. Academic Press, New York, 1983. xvi, 346 pp., illus. \$61.

**Inside the Jury.** Reid Hastie, Steven D. Penrod, and Nancy Pennington. Harvard University Press, Cambridge, Mass., 1983. x, 227 pp., illus. \$20.

**Instrument Science and Technology.** Vol. 2. Barry E. Jones, Ed. Hilger, Bristol, 1983 (U.S. distributor, Heyden, Philadelphia). x, 147 pp., illus. Paper, \$14.50. Reprinted from *Journal of Physics E: Scientific Instruments*.



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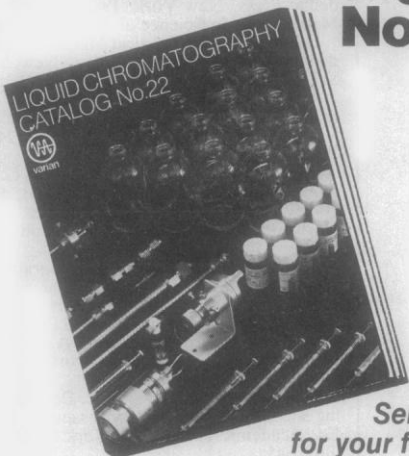
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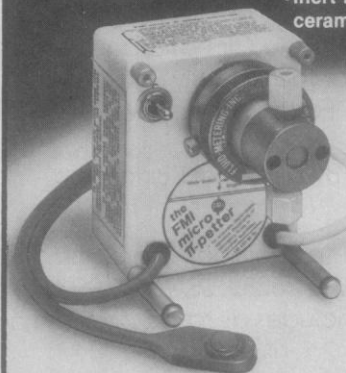
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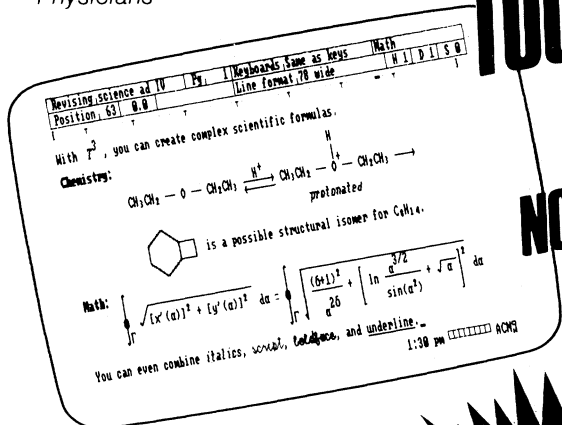
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**The International Law of Pollution.** Protecting the Global Environment in a World of Sovereign States. Allen L. Springer. Quorum (Greenwood), Westport, Conn., 1983. xiv, 218 pp. \$37.50.

**Introduction to Sensitivity and Stability Analysis in Nonlinear Programming.** Anthony V. Fiocco. Academic Press, New York, 1983. xii, 367 pp. \$27.50. Mathematics in Science and Engineering, vol. 165.

**Introduction to Statistical Mechanics and Thermodynamics.** Keith Stowe. Wiley, New York, 1983. xvi, 534 pp., illus. \$32.95.

**An Introduction to the Commodore 64.** Adventures in Programming. Nevin B. Scrimshaw and James Vogel. Birkhäuser, Boston, 1983. x, 124 pp., illus. Paper, \$11.95.

**Introductory Applied Probability.** G. P. Beaumont. Horwood, Chichester, England, and Halsted (Wiley), New York, 1983. 235 pp. \$54.95. Ellis Horwood Series in Mathematics and Its Applications.

**Introductory Dynamical Oceanography.** Stephen Pond and George L. Pickard. 2nd ed. Pergamon, New York, 1983. xx, 329 pp., illus. Paper, \$12.50.

**The J & P Transformer Book.** A Practical Technology of the Power Transformer. A. C. Franklin and D. P. Franklin. 11th ed. Butterworths, Boston, 1983. xii, 815 pp., illus. \$89.95.

**Language Production.** Vol. 2, Development, Writing and Other Language Processes. B. Butterworth, Ed. Academic Press, New York, 1983. x, 309 pp., illus. \$45.

**Laser-Plasma Interactions 2.** R. A. Cairns, Ed. Scottish Universities Summer School in Physics, University of Edinburgh Department of Physics, Edinburgh, 1983. xviii, 302 pp., illus. \$33. From a short course, At. Andrews, Scotland, Aug. 1982.

**Lasers.** Physics, Systems and Techniques. W. J. Firth and R. G. Harrison, Eds. Scottish Universities Summer School in Physics, University of Edinburgh Department of Physics, Edinburgh, 1983. xx, 427 pp., illus. \$36. From an institute, Edinburgh, Aug. 1982.

**Laser Spectroscopy VI.** H. P. Weber and W. Lüthy, Eds. Springer-Verlag, New York, 1983. xviii, 442 pp., illus. \$29. Springer Series in Optical Sciences, 40. From a conference, Interlaken, Switzerland, June 1983.

**Lifting the Curse of Menstruation.** A Feminist Appraisal of the Influence of Menstruation on Women's Lives. Sharon Golub, Ed. Haworth, New York, 1983. xvi, 156 pp., \$19.95. Also published as *Women and Health*, vol. 8, Nos. 2/3.

**Low-Altitude Wind Shear and Its Hazard to Aviation.** Report of the Committee on Low-Altitude Wind Shear and Its Hazard to Aviation. National Academy Press, Washington, D.C., 1983. xii, 112 pp., illus. Paper, \$12.50.

**A Manual of Morphometry in Diagnostic Pathology.** J. P. A. Baak and J. Oort. Springer-Verlag, New York, 1983. xiv, 205 pp., illus. \$42.

**Math and Logic Games.** Franco Agostini. Facts on File, New York, 1983. 181 pp., illus. \$18.95. Translated from the Italian edition (Milan, 1980).

**Mechanics of Hearing.** E. de Boer and M. A. Viergever, Eds. Nijhoff, The Hague, and Delft University Press, Delft, Netherlands, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xii, 217 pp., illus. \$36. From a symposium, Delft, July 1983.

**Metabolism of Nucleotides, Nucleosides and Nucleobases in Microorganisms.** Agnete Munch-Petersen, Ed. Academic Press, New York, 1983. x, 322 pp., illus. \$52.

**Nutritional Adaptation of the Gastrointestinal Tract of the Newborn.** Norman Kretchmer and Alexandre Minkowski, Eds. Nestlé Nutrition, Vevey, and Raven, New York, 1983. xiv, 230 pp., illus. \$29.50. Nestlé Nutrition Workshop Series, vol. 3. From a workshop, Talloires, France, June 1982.

**Nutritional Problems of the Elderly.** J. C. Somogyi and F. Fidanza, Eds. Karger, Basel, 1983. viii, 199 pp., illus. Paper, \$95.25. Bibliotheca Nutritio et Dieta, No. 33. From a symposium, Perugia, May 1982.

**Optical Phase Conjugation.** Robert A. Fisher, Ed. Academic Press, New York, 1983. xvi, 636 pp., illus. \$59.50. Quantum Electronics.

**Originations of Life from Volcanoes and Petroleum.** A Scientific Theory Opposed to Evolution. Donald E. Tyler. Published by the author, 1092 Southwest Second Avenue, Ontario, Oregon, 1983. iv, 128 pp. Paper, \$10.95.

**PSA 1982.** Vol. 2, Symposia. Peter D. Asquith and Thomas Nickles, Eds. Philosophy of Science Association, East Lansing, Mich., 1983. xxiv, 730 pp. \$25.

**Pattern Recognition Approach to Data Interpretation.** Diane D. Wolff and Michael L. Parsons. Plenum, New York, 1983. xiv, 223 pp. \$29.50.

**Photosynthesis Bibliography.** Vol. 11, 1980. Z. Šesták and J. Castský, Eds. Junk, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). iv, 386 pp. Paper, \$79.

**The Physics and Chemistry of Color.** The Fifteen

Causes of Color. Kurt Nassau. Wiley-Interscience, New York, 1983. xxii, 454 pp., illus., + plates. \$43.95. Wiley Series in Pure and Applied Optics.

**The Physics of Amorphous Solids.** Richard Zallen. Wiley-Interscience, New York, 1983. xiv, 304 pp., illus. \$36.95.

**Pineal Research Reviews.** Vol. 1. Russel J. Reiter, Ed. Liss, New York, 1983. xii, 264 pp., illus. \$56.

**Population Biology.** H. I. Freedman and C. Strobeck, Eds. Springer-Verlag, New York, 1983. xviii, 440 pp., illus. Paper, \$24. Lecture Notes in Biomathematics, vol. 52. From a conference, Edmonton, Canada, June 1982.

**Quarks, Mesons and Isobars in Nuclei.** R. Guardiola and A. Polls, Eds. World Scientific, Singapore, 1983 (U.S. distributor, Heyden, Philadelphia). viii, 327 pp., illus. \$41. From a school, Motril, Granada, Spain, Sept. 1982.

**The Real Menstrual Cycle.** Doreen Asso. Wiley, New York, 1983. xvi, 214 pp., illus. \$39.95; paper, \$15.95.

**Research on the Viral Hypothesis of Mental Disorders.** P. V. Morozov, Ed. Karger, Basel, 1983. x, 175 pp., illus. Paper, \$54.50. Advances in Biological Psychiatry, vol. 12. From a symposium, Stockholm, 1981.

**Residential Landscapes.** Graphics, Planning, and Design. Gregory M. Pierceall. Reston (Prentice-Hall), Reston, Va., 1984. xii, 468 pp., illus. \$22.95.

**Residue Reviews.** Residues of Pesticides and Other Contaminants in the Total Environment. Vol. 90. Francis A. Gunther and Jane Davies Gunther, Eds. Springer-Verlag, New York, 1983. x, 128 pp. \$22.

**Rural Economy in the Early Iron Age.** Excavations at Hascherkeller, 1978-1981. Peter S. Wells, with Helmut Becker *et al.* Peabody Museum of Archaeology and Ethnology, Cambridge, Mass., 1983 (distributor, Harvard University Press, Cambridge, Mass.). xvi, 169 pp., illus. Paper, \$20. American School of Prehistoric Research, Peabody Museum, Bulletin no. 36.

**Safety at Work.** John R. Ridley, Ed. Butterworths, Boston, 1983. xx, 707 pp., illus. \$89.95.

**Science in Action.** John Lenihan. Illustrated by John B. Fleming. Institute of Physics, Bristol, 1983 (U.S. distributor, Heyden, Philadelphia). x, 223 pp. Paper, \$8.50. Reprint, 1979 ed.

**Some Perspectives on Fundamental Nuclear and High Energy Research.** A Collection of Papers Dedicated to the Memory of Lorenzo Federici. M. Conversi, R. Santonico, and C. Schaerf, Eds. Hadronic Press, Nonantum, Mass., 1983. pp. 1069-1399, illus. Paper, \$50. Reprinted from *Hadronic Journal*, vol. 6, No. 5.

**Troubled Skies, Troubled Waters.** The Story of Acid Rain. Jon R. Luoma. Viking, New York, 1984. xiv, 178 pp. \$12.95.

**U.S. Medical Students, 1950-2000.** A Companion Factbook for *Physicians in the Making*. Davis G. Johnson. Association of American Medical Colleges, Washington, D.C., 1983. xii, 136 pp. Paper, \$8.

**Ultrasound Annual 1983.** Roger C. Sanders and Michael C. Hill, Eds. Raven, New York, 1983. x, 322 pp., illus. \$39.

**Understanding the Universe.** The Impact of Space Astronomy. Richard M. West, Ed. Reidel, Boston, 1983 (distributor, Kluwer Boston, Hingham, Mass.). xii, 249 pp., illus. \$34.50. From a seminar, Vienna, Aug. 1982.

**University-Industry Research Relationships.** Selected Studies. National Science Foundation, Washington, D.C., 1983 (available from the Superintendent of Documents, Washington, D.C.). viii, 295 pp. Paper, \$7. Stock No. 038-000-00534-1.

**Upgrading Waste for Feeds and Food.** D. A. Ledward, A. J. Taylor, and R. A. Lawrie, Eds. Butterworths, Boston, 1983. x, 321 pp., illus. \$69.95. From a school, Nottingham.

**Vascular Neuroeffector Mechanisms.** John A. Bevan *et al.*, Eds. Raven, New York, 1983. xxviii, 427 pp., illus. \$75. From a symposium, Kyoto, Japan.

**Waiting for the Apocalypse.** Daniel Cohen. Prometheus, Buffalo, N.Y., 1983. 262 pp., illus. Paper, \$9.95. Revision of *How the World Will End* (1973).

**Waste Disposal in the Oceans.** Minimizing Impact, Maximizing Benefits. Dorothy F. Soule and Don Walsh, Eds. Westview, Boulder, Colo., 1983. xvi, 296 pp., illus. Paper, \$25. Westview Replica Editions. From a symposium, April 1982.

**The Winged Gospel.** America's Romance with Aviation, 1900-1950. Joseph J. Corn. Oxford University Press, New York, 1983. xii, 177 pp. + plates. \$17.95.

**Wood and Agricultural Residues.** Research on Use for Feed, Fuels, and Chemicals. Ed J. Soltes, Ed. Academic Press, New York, 1983. xvi, 615 pp., illus. \$57. From a conference, Kansas City, Mo., Sept. 1982.

**Workshop on the Search of Gravitational Waves.** (Bogata, March 1982.) E. Posada and G. Violini, Eds. World Scientific, Singapore, 1983 (U.S. distributor, Heyden, Philadelphia). vi, 238 pp., illus. \$29.

# 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:

18 May issue (mailed 11 May): 27 April  
25 May issue (mailed 18 May): 4 May  
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**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):** \$10.40 per millimeter; \$260 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.

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Blind ad replies should be addressed as follows:

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

## POSITIONS WANTED

**Biochemist, Ph.D.** 1980. Postdoctoral experience; graduate and undergraduate teaching experience. Research background in eukaryotic and prokaryotic electron transport systems and terminal oxidases. Expertise in protein purification, enzymology, spectroscopy, and most modern laboratory equipment. Desires challenging industrial research position. Will relocate. Box 99, SCIENCE. 4/20, 27; 5/4

God doesn't play dice with the universe, why should you? **M.S. in Biochemistry** (1981); five current publications. Grant recipient. Specialties: virology, membrane and protein biochemistry, and biophysics. Innovative, experienced. Contact: B. N. Slosberg, 1400 Tallwood Avenue, Apartment 209, Hollywood, Florida 33021. X

**Clinical Immunologist, Ph.D.** Cellular immunology; immunochemistry; myeloma, immunodeficiency and autoimmune disorder workups; HLA; leukemia markers; FACS methodology; ELISA; serology. Interest: diagnostic immunology laboratory/clinical or applied research/new test development. Available July 1984. Box 105, SCIENCE. X

**Ecologist-Statistician-Programmer.** Life science Ph.D. projected May 1984, math-computer M.S. 1983, botany M.A. 1975, forestry B.S. 1969. Interdisciplinary. Field methods, theory, taxonomy, laboratory skills, SEM, remote sensing, original software, database design. College teaching credential. Presentations. Publication. Highly creative individual. Box 93, SCIENCE. X

**Professor/Anatomy/Biology/Premedical, Health Science Adviser, Ph.D.** Experienced teacher and counselor. Experience includes enviable success in building good relationships with medical schools and graduate schools. Excellent record in medical school placement. Preference for Eastern seaboard states. Residence telephone: 412-728-3323. Box 106, SCIENCE. X

## POSITIONS WANTED

**Biochemist, Plant Pathologist, Ph.D.** Molecular biology of host-pathogen interactions. Experienced in cell culture, plant breeding, hybridoma methodology, immunochemistry, and basic protein biochemistry; 5 years of postdoctoral experience; 17 publications. Box 107, SCIENCE. 4/27; 5/4

**M.D., certified ABIM, Board-eligible Dermatologist** seeks research fellowship starting July 1985 in aspects of cutaneous neoplasia or wound healing. Publications, excellent references. Box 101, SCIENCE. X

**Gross Anatomist**—Excellent teacher, highly experienced, major medical and dental colleges in United States. Versatile, can teach neuroanatomy and histology. D.D.S., M.A., M.S. qualifications with 2 years of residency in anatomic pathology. P.O. Box 1337, Madison Square Station, New York, N.Y. 10159. Telephone: 212-366-3213. X

**Oceanographer, Ph.D.** Extensive experience in measurement, analysis, interpretation of multidisciplinary oceanographic data. Physical/chemical oceanography, marine pollution. Publications. Seeking research/managerial position. P.O. Box 55373, Seattle, Wash. 98155. X

## POSITIONS OPEN

**ASSISTANT PROFESSOR.** Tenure-track position in biopsychology available August 1984. Twelve credit-hour teaching load including introductory psychology, physiological, and other courses in experimental psychology. Ph.D. required. Research and teaching experience preferred. Submit curriculum vitae, reprints, summary of research plans, and the names, addresses, and telephone numbers of three references by 30 May 1984 to: Paul Schnur, Chairperson, Biopsychology Search Committee, Center for Psychology and Mental Health, University of Southern Colorado, Pueblo, Colo. 81001. *Equal Opportunity/Affirmative Action Employer. Minorities and women are especially encouraged to apply.*

**ASSISTANT PROFESSOR OF BIOLOGY.** Two openings for 1-year appointments each, with possible extension. Enthusiasm for undergraduate teaching, a commitment to research, and a Ph.D. are required. Teaching duties will include some combination of biochemistry, cell, invertebrate, developmental, and general biology. Send curriculum vitae, statement of teaching and research interests, and names of three references to: Dr. Kenneth Wittig, Biology Department, Siena College, Loudonville (Albany), N.Y. 12211.

The Department of Physiology at the Southern Illinois University School of Medicine is seeking to fill two tenure-track, state-funded positions, available 1 July 1984, at the **ASSISTANT OR ASSOCIATE PROFESSOR** levels. The applicant should have an earned doctorate, a vigorous research program, a sound publications record, and should be capable of attracting external funding. Preference will be given to candidates whose research interests are at the cellular or molecular level, although candidates working in systemic physiology will be given serious consideration for one of the positions. The candidate would be expected to contribute to the department's teaching commitments in the Medical School and College of Science curricula. The Department of Physiology is on the main campus of Southern Illinois University at Carbondale, a large and diverse state institution of 22,000 students located in a scenic, rural setting. The department has a full-time faculty of 18 with a variety of research interests and facilities. Processing of applications will begin on 30 April 1984. Applicants can forward their curriculum vitae, an outline of their research interests, and the names of three references to: **Office of the Associate Dean, Chairman of Search Committee, c/o Dr. Andrzej Bartke, Department of Physiology, Southern Illinois University School of Medicine, Carbondale, Illinois 62901.** *Southern Illinois University at Carbondale is an Equal Opportunity/Affirmative Action Employer.*

## BIOCHEMIST, RESEARCH

Key Ph.D. scientist in study of thyroid hormone action at cell level. Starting salary: \$30,500 per year. Requisites: experience with mitochondrial oxidative phosphorylation plus measurement of protonmotive force, protein fractionation procedures, photoaffinity labeling, and thyroid physiology. Columbia University appointment possible. Send résumé to: Dr. K. Sterling, VA Hospital, 130 West Kingsbridge Road, Bronx, N.Y. 10468.



## POSITIONS OPEN

**ASSISTANT PROFESSOR, CHEMICALS/PESTICIDES**—Tenure-track position. Duties cover major program responsibilities in cooperative extension (70 percent) and applied research (30 percent) related to the chemicals/pesticides program. Qualifications include a Ph.D. in agricultural toxicology, with strong training in plant/animal protection, for example, entomology, pesticide technology, pesticide regulation, integrated pest management. Send curriculum vitae, post-secondary transcripts, names of three or four referees to: **M. J. Tauber, Chair, Department of Entomology, Cornell University, Ithaca, N.Y. 14853.** Application deadline: 31 July 1984. *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT OR ASSOCIATE PROFESSOR OF PLANT PATHOLOGY.** Texas A&M University, College Station. Available 16 January 1985, this 12-month, tenure-track position involves teaching and research. Qualifications include a Ph.D. in plant pathology, microbiology, or bacteriology with strength in microbial genetics and contemporary microbiology. The incumbent will develop research on prokaryote-caused plant diseases; study the genetic and molecular basis of prokaryotes in causing or preventing disease; and identify and improve prokaryotes as potential biocontrol agents by selection and genetic manipulation. Applicants please send detailed résumé, transcripts, selected reprints, a statement of professional goals, and names of three references by 1 August 1984 to: **Dr. J. Artie Browning, Department of Plant Sciences, Texas A&M University, College Station, Texas 77843.**

*The Texas A&M University System is an Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT OR ASSOCIATE PROFESSOR OF PLANT PATHOLOGY.** Texas A&M University (TAMU), College Station. Available 1 September 1984, this 12-month, tenure-track position involves teaching and research. Qualifications include a Ph.D. in plant pathology or related area with strength in population genetics/biology and epidemiology. The incumbent will guide management of resistance/virulence genes on homo- and heterogeneous populations of small grains and other crops; contribute to contemporary resistance/virulence theory; develop and test host-pathogen population biology and management models; and contribute genetic understanding of microbe-microbe interactions important to biocontrol. Applicants please send detailed résumé, transcripts, selected reprints, a statement of professional goals and interests, and names of three references by 1 June 1984 to: **Dr. J. Artie Browning, Department of Plant Sciences, Texas A&M University, College Station, Texas 77843.**

*The TAMU System is an Affirmative Action/Equal Opportunity Employer.*

Applicants are invited for a tenure-track position as an **ASSISTANT PROFESSOR OF PLANT PATHOLOGY** beginning 1 November 1984. Candidates with experience beyond their Ph.D. will be given preference. Position will involve research (60 percent), extension (30 percent), and instruction (10 percent) in the area of fruit crop pathology. Send statement of research and extension interests, résumé, transcripts of academic records, and names of three references by 2 July 1984 to:

**Dr. Douglas P. Maxwell  
Department of Plant Pathology  
1630 Linden Drive  
University of Wisconsin-Madison  
Madison, Wisc. 53706**

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

**BIOCHEMISTRY—ASSISTANT PROFESSOR**  
One-year position for 1984-1985 in an ACS-approved department. Tenure-track position anticipated in the following year contingent upon a retirement in January 1986. Ph.D. required. Teaching duties are primarily in undergraduate biochemistry and general chemistry. Directing student research in B.S. and M.S. programs is expected. Send résumé, transcripts, three letters of recommendation, and outline of research interests by 14 May to: **Dr. Joseph Crook, Chairman, Department of Chemistry, Western Washington University (WWU), Bellingham, Wash. 98225.** WWU is committed to enhancing the diversity of its faculty. *Women and minorities are encouraged to apply. WWU is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### ASSISTANT PROFESSOR OF ZOOLOGY

Tenure-track. Competitive salary. Position begins September 1984. Areas of specialization desired: physiological ecology, animal behavior, vertebrate, paleontology, or embryology. Ph.D. required. Send letter of application, résumé, and three letters of recommendation to: **Zoology, Search and Screen Committee, c/o Personnel Department, Weber State College (WSC), Ogden, Utah 84408.**

Application deadline: 11 May 1984.

*WSC is an Affirmative Action/Equal Opportunity Employer, M/F.*

A position as **ASSOCIATE RESEARCH SCIENTIST** in the Department of Anesthesiology is available 1 July 1984. We are looking for someone who will commit him/herself to 2 or 3 years as a fellow in a basic or clinical science laboratory. Stipend comparable to research fellowship. Must have New York license. Send curriculum vitae and bibliography to: **Henrick H. Bendixen, M.D., Professor and Chairman, Department of Anesthesiology, College of Physicians and Surgeons, Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Equal Opportunity Employer.*

**Ph.D. IN BIOCHEMICAL SCIENCES.** Applications are invited for a position at faculty or postdoctoral level. Experience with growth factor or hormone binding, tissue culture, and protein or enzyme purification essential. Curriculum vitae and names of three references should be sent to: **Dr. Olga Greengard, THE MOUNT SINAI SCHOOL OF MEDICINE, Room 17-40, One Gustave L. Levy Place, New York, N.Y. 10029.** *An Equal Opportunity Employer.*

### THE CHAIR OF THE DEPARTMENT OF COMPUTER AND INFORMATION SCIENCE

Recommendations and nominations are being invited for the chair of the Department of Computer and Information Science at the University of Pennsylvania. The department has current programs in: computer and cognitive sciences, human-computer interaction, database interfaces, robotics, graphics, artificial intelligence, theory of computation, software engineering, computer architecture, and operating systems.

The faculty is seeking candidates with distinguished research backgrounds interested in leading a significant increase in the size and scope of this department over the next several years.

Recommendations, nominations, and applications, accompanied by a résumé and appropriate supporting material, should be sent to: **Professor D. P. Pope, University of Pennsylvania, Chair of Search Committee, Department of Materials Science and Engineering, LRSM Building, 3231 Walnut Street, Philadelphia, Pa. 19104.** *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

**COLLEGE TEACHER OF MATHEMATICS, COMPUTER SCIENCE, PHYSICS.** Tenure-track appointment in mathematics, computer science, and physics available September 1984. Requirements: Ph.D. preferred; ability to teach some upper level computer science, introductory calculus physics, and some courses in mathematics and statistics. Send résumé to: **Dr. Susan Smith Batell, Dean of Academic Affairs, College of Saint Teresa, Winona, Minnesota 55987.**

*An Equal Opportunity/Affirmative Action Employer*

### UNIVERSITY OF CINCINNATI COLLEGE OF PHARMACY DEANSHIP

Applications and nominations are invited for the position of dean, College of Pharmacy, at the University of Cincinnati. Applicants should have administrative experience in an academic, industrial, governmental, or equivalent health-related organization; an earned professional degree in pharmacy and an earned doctorate (Ph.D., D.Sc., Pharm.D., and so forth) in a health-related discipline; professional experience in an academic environment; and a record of achievement in teaching, research, and service. Candidates should have a minimum of five professional years of experience to include 2 years of major administrative responsibility. The closing date for nominations and/or applications is 1 June 1984. Nominations or applications with résumé should be sent to: **Dr. H. Bruce Bosmann, Chairman, Search Committee for the Dean, College of Pharmacy, University of Cincinnati, M.L. Number 555, Cincinnati, Ohio 45267.** *THE UNIVERSITY OF CINCINNATI is an Equal Opportunity Educator and Employer; and women, minority, or handicapped candidates are encouraged to apply.*

## POSITIONS OPEN

**BIOLOGY:** Full-time position to begin September 1984 in the Biology Department of a Catholic liberal arts college dedicated to promoting the philosophy of Christian humanism. The Ph.D. and full-time college teaching experience are required. Teaching responsibilities will include genetics, developmental biology, physiology, and zoology. Candidate must be committed to quality undergraduate education and possess sufficient background and flexibility to provide elective courses. Possibility of department chair. Salary and rank dependent upon experience and background. Send curriculum vitae, transcripts, and three letters of recommendation by 11 May 1984 to: **Dr. Joseph Colosi, Department of Biology, Allentown College, Center Valley, Pa. 18034.**

**CHEMIST:** Tenure-track position for assistant or associate professor in the Natural Science Department beginning by August 1984. Applicants must have a Ph.D. degree and be committed to undergraduate teaching. Teaching responsibilities will be in general chemistry, organic chemistry, and biochemistry. Occasionally courses in elementary quantitative analysis and introductory chemistry for health professions will also need to be taught. A chemist with a strong health, nutritional, or medical background is encouraged to apply to complement the needs of both a strong Natural Science and Health Science Program. Application deadline: 11 May 1984. Send curriculum vitae and names and telephone numbers of three references to: **Gary McAllister, Provost and Dean, Salem College, Salem, W.Va. 26426.**

Salem College is a small college located in Salem, West Virginia. Stressing value-oriented inquiry together with opportunities to test career-related activities, the College offers a variety of programs leading to associate, baccalaureate, and master's degrees. *Equal Opportunity/Affirmative Action Employer.*

### DEVELOPMENTAL NEUROBIOLOGY

A position is available immediately to join Dr. Marcus Jacobson on a number of different projects including nerve cell lineage, initiation of and control of neurite outgrowth, and cellular interactions and cellular adhesion in the developing nervous system. Send curriculum vitae to: **Dr. Marcus Jacobson, Department of Anatomy, University of Utah School of Medicine, Salt Lake City, Utah 84132.**

**DIRECTOR, CATALINA MARINE SCIENCE CENTER/University of Southern California** through the Institute for Marine and Coastal Studies. Responsibilities include aiding the development of research in neurobiology, marine ecology and physiology, and oceanography; coordinating teaching; and managing the facility. Available fall 1984, with academic affiliation. Preference to applicants active in research. Salary based on experience. Send résumé and names of three references to: **Dr. James N. Kremer, Chairman, Catalina Coordinating Committee, Department of Biological Sciences, University Park, Los Angeles, Calif. 90089-0371.**

**ECOLOGIST.** One-year position to replace faculty on leave, 1984-1985. Teach general ecology first semester, course of choice second semester. Some research support available. Ph.D. expected and interaction with research staff and students. Submit curriculum vitae and names only of three references by 15 May to: **Dr. Lawrence L. Wiseman, Chairman, Department of Biology, The College of William and Mary, Williamsburg, Va. 23185.** *An Equal Opportunity/Affirmative Action Employer. Women and minorities especially encouraged to apply.*

**EM LABORATORY TECHNICIAN:** Position available 1 July 1984 for person experienced in conventional TEM and SEM techniques. Salary: \$13,372. Contact: **Dr. Greta E. Tyson, Head, Electron Microscope Center, Drawer EM, Mississippi State University, Mississippi State, Mississippi 39762.** Telephone: 601-325-2085.

*Mississippi State University is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITIONS** in neuroscience, developmental biology, and cell biology available for training with **J. F. ASH** (cell membranes), **F. D. COLLINS** (neurite growth), **K. A. CRUTCHER** (neuronal plasticity), **M. JACOBSON** (developmental neurobiology), **A. G. LEVENTHAL** (visual system), **R. J. MULLEN** (mammalian neurogenetics), **T. N. PARKS** (auditory system), and **G. C. SCHOENWOLF** (neurulation). Trainees must be U.S. citizens or permanent residents. Send curriculum vitae to: **Postdoctoral Program, Department of Anatomy, University of Utah School of Medicine, Salt Lake City, Utah 84132.**

## MOLECULAR AND CELL BIOLOGY

Postdoctoral research traineeships are offered in a multidisciplinary research institute. (1) Biochemistry: structure and functions of biological membranes; biological regulation mechanisms with emphasis on hormonal action; and receptor functions and cellular messengers; (2) Human Tumor Cell Biology: regulation of normal and neoplastic cell proliferation; and studies on retrovirus transforming genes; (3) Immunology: regulation of antibody formation; macrophage functional heterogeneity and characterization of macrophage receptor functions and structures; (4) Infectious Diseases: bacterial parasite-host interrelationships; interactions between EB virus and host; and transmission and therapy for *Pneumocystis carinii* infection; (5) Pharmacology: mechanism of action of antineoplastic agents; human and animal cancer chemotherapy; drug-induced changes in DNA replication and repair synthesis; genetic, biochemical and physiological approaches to analysis of mechanisms of drug resistance in human cells; and Virology and Molecular Biology: epidemiology and molecular biology of viruses; eukaryotic gene expression and regulation. Applicants must be citizens or permanent residents of the U.S. Please send *curriculum vitae*, names of three references and a brief statement of career objectives to Dr. M. Fishman, Division of Immunology, St. Jude Children's Research Hospital, 332 N. Lauderdale, P.O. Box 318, Memphis, TN 38101 (June 1, 1984, deadline).

## DIRECTOR

### DIVISION OF BIOLOGICAL SCIENCES UNIVERSITY OF MISSOURI—COLUMBIA

The Division of Biological Sciences of the College of Arts and Science invites applications and nominations for the position of Professor and Director. Candidates must have an outstanding research program, a record of scholarly achievement, and commitment to excellence in undergraduate and graduate education.

**STRENGTHS:** This multidisciplinary unit of 35 faculty has strong extramural research programs in cell and molecular biology, genetics, reproductive biology, developmental biology, neurobiology and behavior, plant sciences, and ecology, many of which involve international collaborative arrangements. The Columbia campus, established in 1839, now has 23,000 students in fifteen Colleges including Schools of Medicine, Agriculture, Veterinary Medicine and Engineering. Our faculty are involved in collaborative research with each of these professional schools. Departmental and campus-wide service facilities are diverse and of high quality; instrumentation includes electron microscopy, NMR, HPLC, GC-mass spectrometry, animal research facilities, research greenhouses, a research nuclear reactor, and computer facilities. Columbia also includes numerous federal, state and private life science research centers.

**CHALLENGES:** To build on the momentum of recent program development, and to forge new and productive relationships with other campus units engaged in biological and biotechnological research.

Applications in response to this announcement should be received no later than July 1, 1984 for a preferred fall, 1985 appointment. Requests for information, letters of nomination, or applications including C.V. and names of four or more references should be sent to:

**Dr. Donald Riddle, Search Committee Chair**  
Division of Biological Sciences, Tucker Hall  
University of Missouri  
Columbia, MO 65211

*The University of Missouri is an Affirmative Action/Equal Opportunity Employer. Qualified women and members of minority groups are urged to apply.*

## LIPIDS RESEARCH SCIENTIST

The Upjohn Company, a leader in worldwide research, marketing and production of pharmaceuticals, chemicals and agricultural products, has a scientist opening in its Lipids Research Department. The principal duties of this scientist will be to develop an independent research program exploring new research fields, examining new therapeutic areas and defining basic physiological mechanisms for application to Upjohn therapeutic objectives. The research will be conducted in collaboration with a multidisciplinary group of scientists whose primary interests are understanding the metabolism and role of the products of polyunsaturated fatty acids (especially arachidonic acid) and discovering their physiological mechanisms and manipulating these pathways for therapeutic purposes.

Candidates should have a Ph.D. in a biomedical science, preferably pharmacology or biochemistry, with a strong background in pharmacological measurement techniques, as applied to basic biological medical problems. Must have a demonstrated ability to conduct original and independent research. Good communication skills are required.

Upjohn offers a stimulating research environment, career potential, competitive salary (commensurate with experience) and an outstanding benefits package. Kalamazoo is a mid-sized southwest Michigan community with immediate access to a mix of excellent cultural, education and recreational pursuits.

For confidential consideration, please send a current C.V. and resume, list of publications, names and addresses of references and graduate transcripts (if appropriate) to: Gerald L. Potratz, Department 16026, The Upjohn Company, 7000 Portage Road, Kalamazoo, MI 49001.

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## LEUKAEMIA RESEARCH FUND CENTRE AT THE INSTITUTE OF CANCER RESEARCH

A Leukaemia Research Fund Centre is being established at the Chester Beatty Laboratories of the Institute of Cancer Research in the Fulham Road, London. The Centre (Director: Dr. M. F. Greaves) will have a broad based programme of investigations on the cellular and molecular basis of human leukaemia.

### RESEARCH POSITIONS AVAILABLE FROM MAY, 1984

1. *Gene expression in human, haemopoietic stem cells:* A research fellow is required to investigate the pattern of expression of genes associated with growth and differentiation control (e.g. proto-oncogenes, growth factor receptors) in progenitor and stem cells. The study will involve the analysis of individual cells from in vitro colonies using molecular and monoclonal antibody probes. Experience in haemopoietic colony assays and/or in situ hybridization would be very helpful. (Ref. 300/G/44)
2. *Natural history of human lymphomas:* A research fellow is required to evaluate and develop the hypothesis that neoplasms of mature lymphoid cells may arise as a consequence of defective immuno-regulation. Experience in cellular immunology, cell hybridization and cloning essential. (Ref. 300/G/45)
3. *Oncogenes and cell surface receptors:* A molecular biologist is required for the cloning and characterization of putative human oncogenes or genes coding for cell surface glycoproteins involved in growth and differentiation of haemopoietic cells. Experience in recombinant DNA techniques essential. (Ref. 300/G/46)
4. *Membrane Biochemist:* A three-year postdoctoral research fellowship is available for studies on the biochemistry of membrane associated proteins of normal and malignant haemopoietic cells. Experience in immunochemistry and membrane protein analysis will be required. (Ref. 300/G/ 47)

Salaries for the above posts will be within the United Kingdom MRC non-clinical scientific grades I or II according to age and experience. Fellowships will normally be tenable for 3 years although longer term contracts may be considered in special circumstances.

Applications for any of these posts should be sent in duplicate to the Personnel Officer, Institute of Cancer Research, 34 Sumner Place, London, SW7 3NU, quoting the appropriate reference number.

## RESEARCH ASSOCIATE POSITION

The Cooperative Institute for Research in Environmental Sciences (CIRES) invites applications for an 18-month appointment as a CIRES research associate to work on the mechanical, electrical, and chemical response of the high latitude upper atmosphere to the energy deposited by precipitating energetic charged particles and by Joule heating from electrical current flow. The salary is \$24,000 plus medical expenses for recent Ph.D. graduates with no experience. Salary is negotiable for experienced applicants.

The work would involve analysis of charged particle observations made by the TIROS/NOAA satellites since 1978. Of particular interest would be the conversion of these observations to parameters of direct relevance to the ionosphere and upper atmosphere such as electrical conductivities and the altitude dependent rate of heat input. Work would also be done on the correlation and association between these observations (and derived parameters) and other observations from space and ground. The ultimate objective is to merge these observations with a variety of existing models in order to create more sophisticated and relevant models of atmospheric behavior in response to this energy input.

Applicants should have a Ph.D. degree or its equivalent in magnetospheric and/or auroral physics, ionospheric physics, or atmospheric physics. A strong background in computer processing and manipulation of large data sets would be very useful. The successful applicant will collaborate with scientists at the National Oceanic and Atmospheric Administration's (NOAA) Space Environmental Laboratory in Boulder, Colorado.

Applicants should submit a letter that describes current research interests, a complete résumé and publications list, and three letters of recommendation from professional references to: **Dr. Robert E. Sievers, Director, CIRES, Campus Box 449, University of Colorado, Boulder, Colorado 80309**, before 21 May 1984.

*The University of Colorado is an Affirmative Action/Equal Opportunity Institution and applications from women and minority group members are especially encouraged.*

## RepliGen BIOTECHNOLOGY

Repligen Corporation, a rapidly growing biotechnology company involved in the development of a variety of innovative peptide and protein products by both recombinant DNA and conventional biological techniques, seeks qualified candidates at the BS/MS level with at least 2 years' laboratory experience in the following areas:

**Protein Chemistry:** A minimum of 2 years' experience should include both analytical and preparative protein purification as well as protein characterization.

**Molecular Biology:** A solid background in microbial genetics is required.

**Cell Biology:** Experience in cell culture, immunology and RNA techniques would be useful.

**Recombinant DNA:** Experience in cloning and DNA biochemistry techniques is required.

**Successful candidates will be highly motivated individuals who can take advantage of the outstanding growth opportunities at Repligen. Repligen offers a competitive salary, excellent benefits, and equity participation. Submit resume and references to:**  
**Director of Personnel,**  
**Repligen Corporation,**  
**101 Binney St.,**  
**Cambridge, MA 02142.**

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## POSITIONS OPEN

**DEVELOPMENTAL BIOLOGIST.** A full-time faculty position is available August 1984 in the Department of Biology, St. Mary's University of San Antonio, a private school founded in 1952 and operated by the Catholic order of The Society of Mary. The Biology Department specializes in providing the undergraduate education for students who aspire to enter the health professions. Candidates are required to have a Ph.D., and be qualified to teach courses in developmental biology, anatomy, and general biology. Versatility in teaching is important. Duties include teaching, counseling, and enthusiastic participation in the department's premedical, predoctoral, and preallied-health professional programs. Participation in our cooperative education program, through which our students are provided with career-related work and other experience, is also expected. Faculty rank and salary will be awarded commensurate with experience. *All qualified candidates are welcome; minorities and women are encouraged to apply.* Applicants should submit complete curriculum vitae, transcripts, and the names and addresses of three former supervisors who will provide references to: **Dr. Rosemarie Wahl Synek, Chair, Department of Biology, St. Mary's University, One Camino Santa Maria, San Antonio, Texas 78284.** Application deadline: 4 June 1984.

**DIRECTOR, OBESITY CENTER.** University-affiliated medical center in New York City seeks senior academician in the field of obesity research. Work must include sophisticated research in human and laboratory ingestive behavior. Applicants must be nationally recognized for their productivity and contributions to the field. Requires M.D. or Ph.D., plus credential permitting consideration for tenure appointments at a major university. Good salary and benefits package. Please send résumé to: **Lorraine Hansen, Administrator, Research Activities, Medical Service, ST. LUKE'S—ROOSEVELT HOSPITAL CENTER, 114th Street and Amsterdam Avenue, New York, N.Y. 10025.** An Equal Opportunity Employer.

## ECOSYSTEM ECOLOGIST

University of New Mexico seeks visiting professor or associate professor whose experience and research involves some aspect of ecosystem ecology. Two-year appointment beginning August 1984. Ph.D. required; must have demonstrated excellence in both teaching and research; expected to interact with diverse group of active individuals in related disciplines and participate in ongoing research programs. Teach graduate course on communities and ecosystems plus either undergraduate biometry or graduate physiological ecology course. Graduate student committee participation expected. Letter describing research and teaching interests, current résumé, and three letters of reference (sent separately) by 11 May 1984 to:

**Chairman, Ecosystem Ecologist Search Committee**  
**Biology Department**  
**University of New Mexico**  
**Albuquerque, New Mexico 87131**

*Affirmative Action/Equal Opportunity Employer*

**ONE-YEAR REPLACEMENT** to teach one semester each of an upper division laboratory and introductory course, and to participate in ongoing research of present faculty. A Ph.D. and evidence of teaching ability required. Salary: \$20,000 for 9 months. Send résumé and three letters of recommendation by 25 May to: **Search Committee, Department of Biochemistry, Kansas State University (KSU), Manhattan, Kans. 66506.** KSU is an Affirmative Action/Equal Opportunity Employer.

## FACULTY POSITIONS IN MOLECULAR VIROLOGY

Applications are invited for a senior and a junior tenure-track faculty position in the Department of Microbiology. Candidates should have made significant accomplishments in research and should be prepared to maintain an active, independent research program in molecular virology. Teaching responsibilities are limited and include participation in courses for graduate and professional students. The department provides a stimulating scientific environment, and administers seven NIH institutional fellowship programs that will be available to provide stipend support for predoctoral and postdoctoral students.

Applicants should submit curriculum vitae, a statement of research plans, and arrange for three letters of recommendation to be sent to: **Virology Search Committee, Department of Microbiology, University of Alabama in Birmingham, Birmingham, Alabama 35294.**

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### FACULTY POSITIONS IN MOLECULAR GENETICS

Applications are invited for a senior and a junior tenure-track faculty position in the Department of Microbiology. Candidates should have made significant accomplishments in research and should be prepared to maintain an active, independent research program in molecular genetics. It is anticipated that at least one of the positions will be filled by a person working in the prokaryotic area. Teaching responsibilities are limited, and include participation in courses for graduate and professional students. The department provides a stimulating scientific environment, and administers several NIH institutional fellowship programs that will be available to provide stipend support for predoctoral and postdoctoral students.

Applicants should submit curriculum vitae, a statement of research plans, and the names of three people from whom letters of recommendation can be requested. Applications should be sent to: **Gillian Air, Chairman, Molecular Genetics Search Committee, Department of Microbiology, University of Alabama in Birmingham, Birmingham, Alabama 35294.** An Equal Opportunity/Affirmative Action Employer

### UNIVERSITY OF MINNESOTA, MORRIS

**FACULTY POSITION IN GEOLOGY.** assistant professor level, beginning 17 September 1984. All specialties invited to apply; preference will be given to those able to teach geomorphology, hydrogeology, or quaternary geology. Participation in introductory courses, summer field camp, research, and curriculum development expected. Some college level teaching or closely related experience desired. Ph.D./Ph.D. candidate required. Discipline offers B.A. degrees in geology, earth science education. Salary open and competitive with academic institutions. Send résumé, transcripts, and three letters of reference by 18 May 1984 to: **Dr. James M. Olson, Chairman, Room 217A, Science and Mathematics Division, University of Minnesota, Morris, Minn. 56267.** The University of Minnesota, Morris, is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

The Center for Reproductive Biology Research at Vanderbilt University is seeking candidates for **THREE FACULTY POSITIONS** at the assistant professor level. The appointees will be expected to develop an active and distinctive research program in one of the following areas of investigation: Regulation of gene expression in reproductive tissues, cell biology of the male reproductive tract, molecular biology of fertilization, and neuroendocrinology. Interested persons should send curriculum vitae and the names of three references to: **M.-C. Orgebin-Crist, Ph.D., Director, Center for Reproductive Biology Research, Vanderbilt School of Medicine, Room D-2303 MCN, Nashville, Tennessee 37232.** Vanderbilt is an Equal Opportunity/Affirmative Action Employer.

### INSTRUCTOR/ASSISTANT PROFESSOR

Applicants are sought for a number of one-year or one-semester replacements. Courses to be covered are introductory biology (two semesters), comparative anatomy and physiology, human sexuality, and neurobiology. Interested persons can apply for any combination from one course up to a full year load (four courses). Ph.D. and teaching experience preferred. Apply by 11 May 1984 to: **Leathem Mehaffey, Chairman of Biology, Box 251, Vassar College, Poughkeepsie, New York 12601.** Equal Opportunity/Affirmative Action Employer.

**MARINE FISHERIES BIOLOGIST.** Applications are invited for a 9-month, tenure-track appointment at the assistant professor level for a fisheries biologist; starting date: 1 September 1984 or 1 February 1985. Responsibilities will include teaching courses in marine fisheries and population dynamics to undergraduate and graduate students. Ph.D. required. Salary commensurate with experience. Preference will be given to candidates who can demonstrate potential for developing a strong marine fisheries research program by attraction of external funds, and who have a strong quantitative background. Applicants should send a résumé and a statement of research interests, and arrange to have three letters of reference sent to: **Dr. Michael R. Ross, Chairman/ Search Committee, Department of Forestry and Wildlife Management, Holdsworth Hall, University of Massachusetts, Amherst, Mass. 01003.** Application deadline: 11 May 1984. The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer.



# Research Scientists— Viral Diagnostics

Becton Dickinson's Corporate Research Center, located in Research Triangle Park, North Carolina, has initiated a new research program in viral diagnostics. We are seeking committed and dedicated scientists, willing to assume an important role in this challenging undertaking. These assignments offer excellent opportunity for scientific growth in a well-equipped, creative and stimulating research laboratory environment.

## Virologist

You will have primary responsibility to set up and operate a laboratory to prepare, purify and document viral antigens. Requires a Ph.D. in Virology or Microbiology backed by 3 or more years experience in viral immunology or diagnostic virology, including experience in the production of viruses associated with respiratory illness.

## Protein/Peptide Chemist

You will be responsible for the isolation, purification and characterization of viral reagents. The position involves the use of HPLC and other techniques to purify virus preparations, and requires a sound understanding of general protein isolation and purification methods. Requires a Ph.D. in Biochemistry and 3 or more years experience in protein/peptide chemistry, preferably in the area of viral polypeptides. Prior experience in immunology would be highly desirable.

**Both positions involve bench work with some supervisory duties.**

Becton Dickinson offers excellent salaries, a comprehensive benefit program which includes relocation assistance, and the opportunity to contribute to the dynamic health care field. Qualified candidates are asked to send curriculum vitae, in strict confidence, to: **Mr. F. Richard Wilson, Human Resources Department, Becton Dickinson Research Center, P.O. Box 12016, Research Triangle Park, North Carolina 27709.** An equal opportunity/affirmative action employer.

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# BUREAU OF MINERAL RESOURCES AUSTRALIA MARINE RESEARCH SCIENTISTS

The Division of Marine Geosciences and Petroleum Geology in the Australian Bureau of Mineral Resources invites applications from suitably qualified and experienced people for the following vacancies in Canberra.

The principal research aims of the Marine Division are to define the regional geological framework, petroleum prospectivity, and evolution of the sedimentary basins of Australia's extensive continental shelf and margins; further, to develop new scientific concepts of basin structures and evolution of passive margins and also the active margins of the South Pacific. The main objective is the stimulation of ongoing programs of offshore petroleum exploration. The division is presently in the process of acquiring a research vessel and seismic processing centre.

1) An experienced **MARINE SEDIMENTOLOGIST** with a working knowledge of and experience in seismic stratigraphy and basin analysis is required to take a major role in a team carrying out basin and geological framework studies on the Australian continental margin and elsewhere. He/she will be expected to assist in planning and participate in marine surveys involving seismic data collection and sampling, as well as data processing and interpretation.

Applicants should have a Ph.D. (or equivalent) in marine geology/sedimentology together with demonstrated research ability.

2) A second vacancy exists for a **MARINE SEDIMENTOLOGIST** with a solid background in modern marine processes and analysis of sediments, together with some working knowledge of seismic reflection interpretation. He/she will participate in team research into the sedimentological evolution of the Australian continental margin in such areas as the Queensland Shelf and Plateau, and will be involved in marine surveys involving seabed sampling. Emphasis will be placed on identifying and studying the relationships between modern facies generation, evolution and hydrocarbon play concepts.

Candidates for this post should have a Ph.D. (or equivalent) in marine geology/sedimentology together with demonstrated research ability, including experience and familiarity with marine geological sampling techniques and seismic profiling.

3) The division also requires a **SEDIMENTARY GEOCHEMIST** with a working knowledge of organic geochemistry. The successful candidate will participate as a member of a research team studying the sedimentological and geochemical evolution of sediments on continental margins. Emphasis will be placed on organic diagenesis and porewater interactions in relation to problems involving maturation, migration and entrapment of hydrocarbons. Participation in marine surveys is also expected, as well as some understanding of seismic reflection interpretation. Applicants should have a Ph.D. (or equivalent) in sedimentology together with demonstrated research ability, including laboratory and field techniques.

Persons will be appointed to these positions at the research scientist or senior research scientist level, depending on their qualifications and experience.

**SALARY:** Research scientist (RS), A\$24,344 to A\$30,038.

Senior research scientist (SRS), A\$31,092 to A\$35,806.

**CONDITIONS:** Conditions of service include 4 weeks annual leave plus bonus, cumulative sick leave, long service leave, a comprehensive superannuation scheme, and removal expenses to Canberra. Appointment to the Australian Public Service is currently open to British subjects (by virtue of the Citizenship Act, Australian citizens are British subjects). The government has announced its intention to amend the Public Service Act to require a person being appointed to the Service to be an Australian citizen. Following such amendment, persons who are British subjects but not Australian citizens will generally be ineligible to join the Service as permanent officers. However, a term engagement will be considered for persons not meeting this criterion.

Canberra, the national capital, is located approximately 280 kilometers southwest of Sydney and has excellent educational, recreational, and sporting facilities.

Applicants are requested to specify for which position(s) they are applying.

Applications, including full personal and professional details and the names of at least three referees, should be sent to:

The Director  
Bureau of Mineral Resources  
G.P.O. Box 378  
Canberra, ACT 2601  
AUSTRALIA

Applications close 25 May 1984.

## COMPUTATIONAL PROJECT SPECIALIST

We are a leading Fortune 100 corporation in the northeast, and have an immediate opening for a Computational Project Specialist to carry out molecular modeling and other studies with regard to the design of flavors and other physiologically active agents.

The ideal candidate has a Ph.D. in organic, physical-organic or biophysics with a strong background in computer programming, computer graphics, and molecular modeling. Experience in a QSAR and molecular design necessary. Ability to work both independently and as a member of a multi-disciplinary group essential. Familiarity with VAX 11/750 hardware and MDL software an asset.

We offer excellent growth potential in a professionally stimulating environment, along with an outstanding total compensation plan.

Please send your resume, including salary history, in complete confidence to:

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## Plant Biochemist/Plant Physiologist

The Department of Biological Sciences of General Foods Central Research Department has an opening for a Plant Biochemist. Scientists with research interests in the biosynthesis and metabolism of carbohydrates, the physiology of cereal grains, and the metabolic pathways in cereal grains are particularly invited to apply. Person will function in an interdisciplinary team research environment with other basic researchers in Plant Science with ample opportunity to interact with other departments such as Enzymology, Carbohydrate Chemistry, and Physical Chemistry.

Applicants should have a Ph.D. and up to three years experience in fields relevant to the above research areas. The position offers excellent opportunities for professional recognition and career growth. We offer a competitive compensation and benefits package. Please send applications including curriculum vitae, list of research accomplishments, and names of references to:

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## POSITIONS OPEN

### HEALTH SCIENCES ADVISER

Yeshiva College and Stern College for Women  
Yeshiva University

Faculty member, rank and department open, to advise all pre-health science students; assist in professional school application process; prepare consensus recommendations on behalf of health sciences advisory committee. Previous experience in this area required as well as commitment to undergraduate teaching. Send curriculum vitae and three letters of reference to: **Dean Norman S. Rosenfeld, Yeshiva College, 500 West 185 Street, New York, N.Y. 10033. Equal Opportunity Employer.**

### IMMUNOLOGIST

Position available for experienced immunologist to develop and lead a section in reproductive immunology in the Department of Obstetrics, Gynecology, and Reproductive Science in a major eastern medical school. Major space, hard funding, programmatic support commitment. A candidate with interests in reproductive immunology in humans is favored. Send curriculum vitae in confidence to: **Box 97, SCIENCE. An Equal Opportunity Employer.**

**IMMUNOLOGY POSTDOCTORATE.** Two-year postdoctoral appointment available immediately for Ph.D. at biotechnology company in greater Philadelphia area with opportunity for permanent employment. Minimum requirements include Ph.D. in immunology and experience in hybridoma technology, protein purification, and antibody screening techniques. Send curriculum vitae and three letters of reference to: **G. E. Saridakis, P.O. Box 214, Palmyra, New Jersey 08065.**

**Title: INSTRUCTOR.**

**Salary: \$22,700.**

**Description:** The Department of Obstetrics and Gynecology, University of California, Los Angeles (UCLA), School of Medicine, announces the availability of an academic position in the Division of Women's Health commencing 1 July 1984. This position is for teaching and research in ambulatory gynecology. Participation in several ongoing research projects and teaching will be required. Candidates are required to have the M.D. degree or equivalent, a California medical license, and completion of 4 years of Ob-Gyn residency training. Training and experience in the epidemiology, diagnosis, and treatment of trophoblastic disease and infertility are especially important. In addition, candidates must have published research results and otherwise demonstrated competency to do independent research in part by being primary author on several research papers. Experience in teaching medical and postgraduate students is also required.

**To apply:** Send inquiries and current curriculum vitae to:

**Irvin M. Cushner, M.D.  
Chief**

**Division of Women's Health  
Department of Obstetrics and Gynecology/UCLA  
Los Angeles, Calif. 90024**

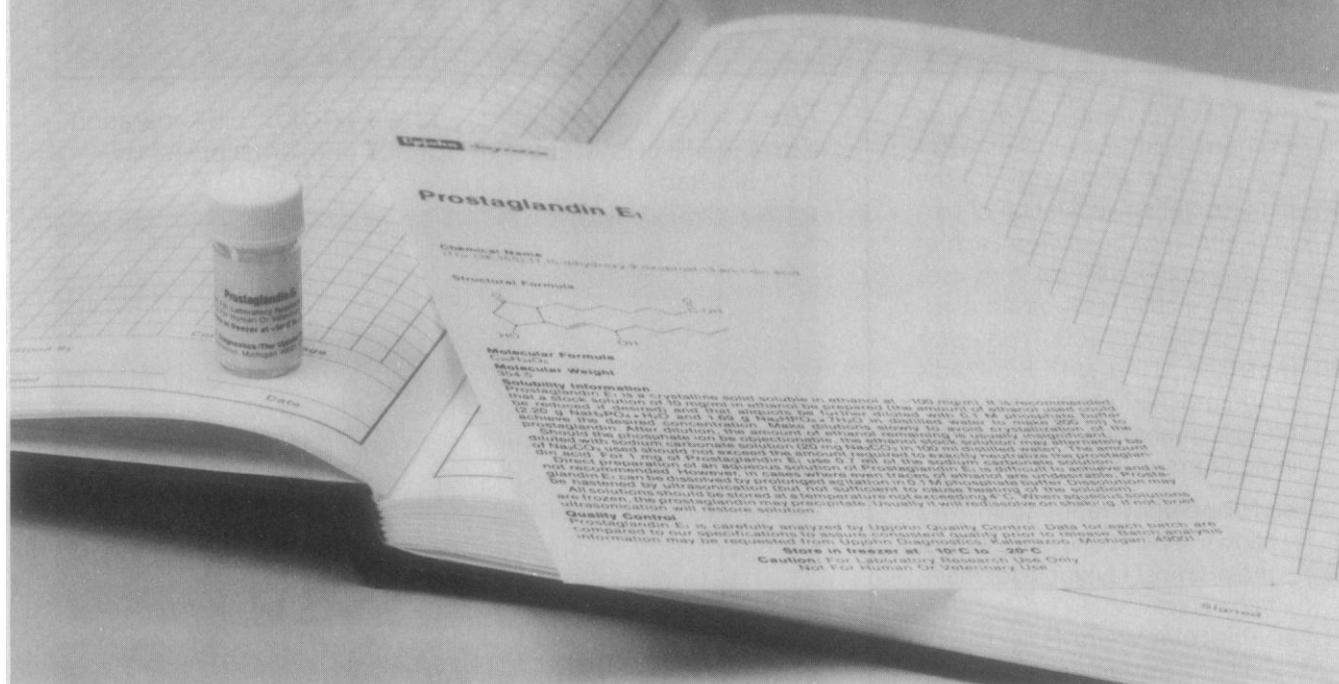
*UCLA is an Equal Opportunity/Affirmative Action Employer.*

**LABORATORY RESEARCH ASSOCIATES** desired with experience in flow cytometry, cell-cell hybridization, and/or immunochemistry. Applicants must participate in research design and present data at national meetings; \$18,000 to \$24,000 per year plus benefits. Send curriculum vitae and three references by 26 May 1984 to: **Dorothy Hudig, Ph.D., Department of Microbiology, University of Nevada School of Medicine, Reno, Nevada 89557-0046. Telephone: 702-784-4430. Affirmative Action/Equal Opportunity Employer.**

### MOLECULAR BIOLOGY

Applications from academic or industrial scientists with postdoctoral experience are invited for an anticipated vacancy in the associate directorship of the Laboratory for Cloning and Gene Transfer. Excellent opportunities to participate in collaborative research projects and grants in new and expanding medical school research environment. Fully equipped laboratory including Applied Biosystems DNA synthesizer, protein sequencer, and peptide synthesizer. Nontenure-stream faculty appointment with hard state funds. Salary commensurate with experience near starting faculty levels. Send curriculum vitae and names of three references to: **Dr. Garret M. Ihler, M.D., Ph.D., Head, Department of Medical Biochemistry, College of Medicine, Texas A&M University, College Station, Texas 77843-1112. Equal Opportunity through Affirmative Action.**

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PGB <sub>1</sub> . . . . .	135	9,11-dideoxy-11 α,9 α-epoxymethane-PGF <sub>2</sub> α . . .	400
PGB <sub>2</sub> . . . . .	135	16,16-dimethyl-PGE <sub>2</sub> . . . . .	200
PGD <sub>2</sub> . . . . .	200	6,15-diketo-13,14-dihydro-PGF <sub>1</sub> α . . . . .	200
PGE <sub>1</sub> . . . . .	135	Thromboxane B <sub>2</sub> . . . . .	400
PGE <sub>2</sub> . . . . .	135	Thromboxane B <sub>2</sub> Antiserum (100 tube vial) . . . . .	40
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PGF <sub>2</sub> α Tromethamine . . . . .	135		
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13,14-diH-15-keto-PGE <sub>2</sub> . . . . .	200		

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(UD83-047) February, 1983

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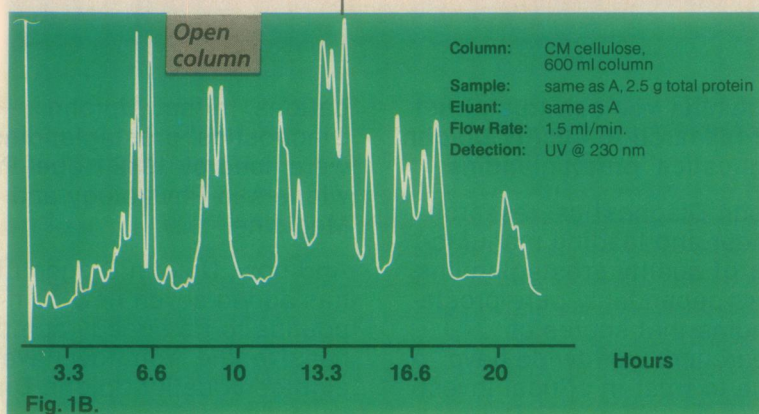
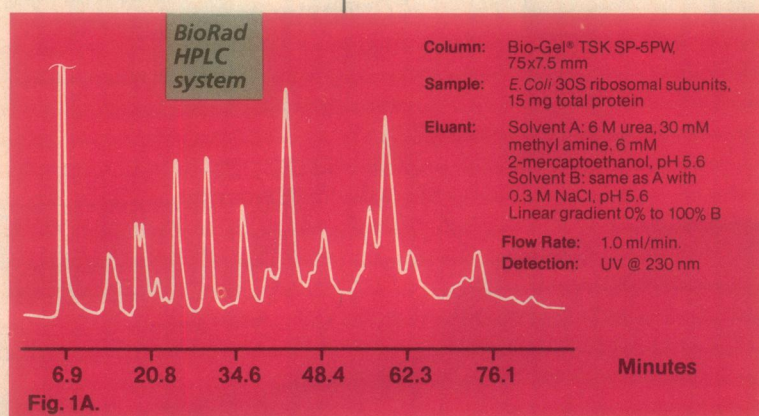
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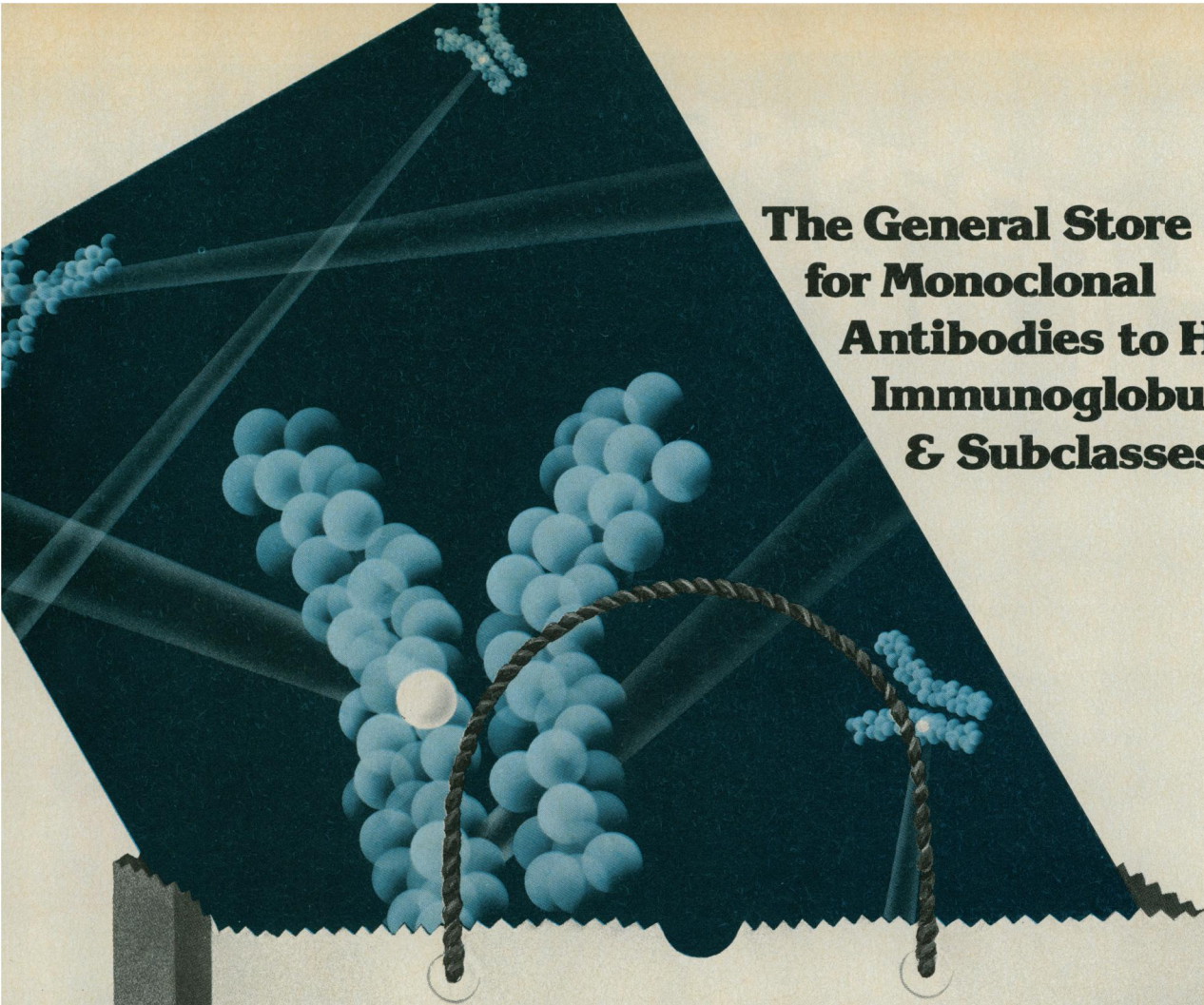
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IgE	63-058	IgG <sub>2b</sub>	5x10 <sup>3</sup>	GE-1
IgG Lppt	63-050	IgG <sub>1</sub>	1x10 <sup>4</sup>	GG-5
IgG Gppt	63-051	IgG <sub>1</sub>	1x10 <sup>4</sup>	GG-4
IgG (Fc)	63-071	IgG <sub>1</sub>	5x10 <sup>3</sup>	GG-7
IgG (Fab)	63-070	IgG <sub>1</sub>	5x10 <sup>3</sup>	GG-6
IgG <sub>1</sub> (Fab)	63-080	IgG <sub>1</sub>	1x10 <sup>3</sup>	SL-16
IgG <sub>1</sub> (Fc)	63-060	IgG <sub>1</sub>	8x10 <sup>2</sup>	SG-11
IgG <sub>2</sub> (Fc)	63-061	IgG <sub>1</sub>	1x10 <sup>4</sup>	GOM-1
IgG <sub>2</sub>	63-081	IgG <sub>1</sub>	1x10 <sup>4</sup>	FH-22
IgG <sub>3</sub>	63-062	IgG	1x10 <sup>2</sup>	SJ-33
IgG <sub>1+3</sub> (Fab)	63-065	IgG <sub>2a</sub>	7x10 <sup>3</sup>	SL-13
IgG <sub>4</sub>	63-063	IgG <sub>1</sub>	1x10 <sup>4</sup>	SK-44
IgG <sub>4</sub>	63-064	IgM	1x10 <sup>3</sup>	SK-40
IgM	63-055	IgG <sub>2b</sub>	1x10 <sup>3</sup>	MB-11
λ-Chains	63-067	IgG <sub>1</sub>	1x10 <sup>4</sup>	LA-84
κ-Chains	63-068	IgG <sub>1</sub>	1x10 <sup>4</sup>	KP-53
<b>Alkaline Phosphatase Conjugates:</b>				
IgG	63-270	IgG <sub>1</sub>	8x10 <sup>2</sup>	GG-5
IgM	63-271	IgG <sub>2b</sub>	8x10 <sup>2</sup>	MB-11

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Every laboratory concerned with measuring the osmolality of various biological fluids can make this measurement with (a) the modern, vapor pressure depression method, or (b) the older freezing point depression method. Which to choose? The modern method because:

**It's more reliable.** The Wescor Vapor Pressure Osmometer (VPO) is an electronic instrument with few moving parts and no mechanical adjustments. It's not subject to mechanical failure and it's easy to maintain.

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**It's the only micro-osmometer.** Sample requirement only 8 microliters without dilutions. Substantially less than any other clinical osmometer.

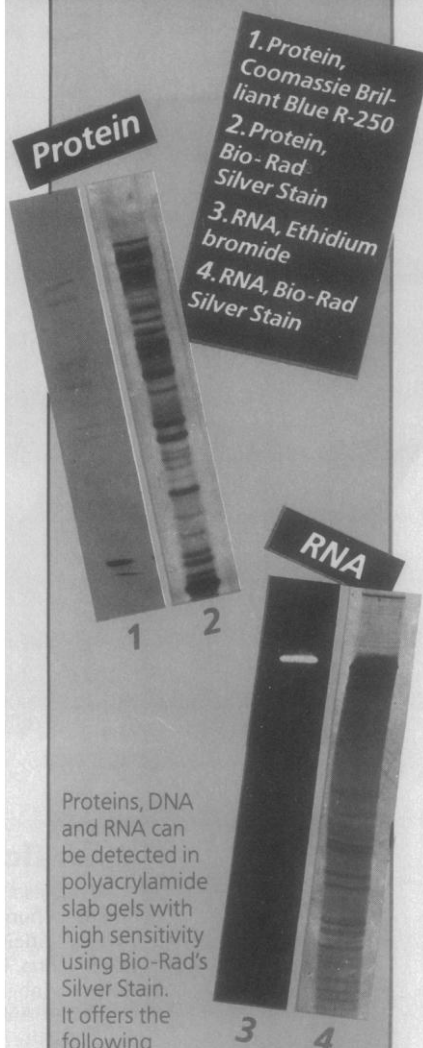
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The Wescor VPO is the only osmometer that provides all of the modern advantages in both clinical and research applications. For full details and application data, contact **Wescor** at 459 South Main Street, Logan, Utah 84321 USA. (801) 752-6011, TWX 910-971-5870, Wescor LOGA.

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3. RNA, Ethidium bromide
4. RNA, Bio-Rad Silver Stain

Proteins, DNA and RNA can be detected in polyacrylamide slab gels with high sensitivity using Bio-Rad's Silver Stain. It offers the following

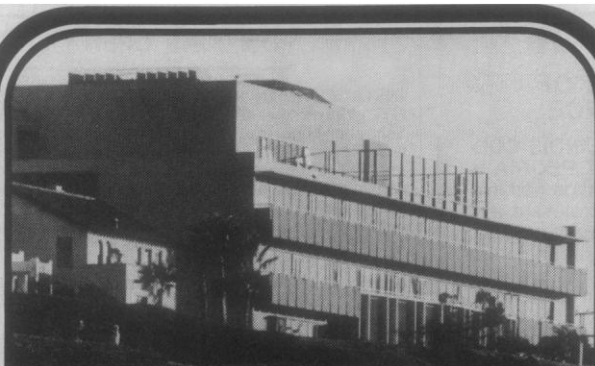
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#### RESEARCH ASSOCIATES/ASSOCIATE SCIENTISTS

##### MOLECULAR CELL BIOLOGY

BS/MS in Molecular and Cellular Biology, Microbiology, or Biochemistry. Experience with recombinant DNA techniques such as cloning, nucleic acid sequencing and nucleic acid hybridization analysis is required. Research experience in molecular cell biology of *plant, viral, yeast, and/or mammalian* systems is desirable.

##### PHYSIOLOGY/PHARMACOLOGY

BS/MS in Physiology/Pharmacology. One position requires research experience with *in vitro* and *in vivo* peptide and protein hormone assays. A second position requires research experience with *in vitro* and *in vivo* cardiovascular experimental techniques.

##### PEPTIDE CHEMISTRY

BS/MS in Organic Chemistry or Biochemistry with experience in modern techniques involved in the synthesis and characterization of natural peptides and peptide analogs.

##### ORGANIC CHEMISTRY

BS/MS in Organic Chemistry with experience in general organic synthesis and structure analysis.

##### NUCLEIC ACID CHEMISTRY/MOLECULAR BIOLOGY

BS/MS in Biochemistry or Organic Chemistry with experience in nucleic acid chemistry and chemical modification of nucleotides. Additional experience in modern molecular biology including nucleic acid hybridization techniques desirable.

##### PROTEIN/CHEMISTRY/SEPARATIONS

BS/MS in Biochemistry with experience in protein chemistry, enzymology and analytical techniques.

We offer a comprehensive benefits package and competitive salaries. For confidential consideration, please submit your curriculum vitae, a statement of research interests and goals and the names of three professional references to: SIBIA, HUMAN RESOURCES OFFICE 4035, 505 COAST BOULEVARD SOUTH, LA JOLLA, CALIFORNIA 92037.

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## GI TRACT/DIGESTIVE RESEARCH SCIENTISTS

**The Upjohn Company**, a leader in the worldwide research, manufacturing and marketing of pharmaceutical, agricultural and chemical products, is building a basic research program that will investigate gastrointestinal tract microbiology and physiology in food producing animals. Three Ph.D. Scientist openings are available.

### Microbiologists

Conduct research to delineate the microflora-related biochemical mechanisms of digestion.

**Microbial Enzymologist/Biochemist (#15705):** Candidates must have a Ph.D. in microbiology, biochemistry, or related field with demonstrated skill in enzyme biochemistry and research experience concerning the biochemical factors involved in complex feed degradation and/or the kinetics of microbial uptake and conversion of nutrients. Familiarity with analytical techniques used to separate, identify and quantitate enzyme systems required. Must be innovative in the application of skills to complex gut ecosystems.

**Microbial Physiologist (#15706):** Candidates must have a Ph.D. in microbiology, biochemistry or related field and have in-depth knowledge of bacterial physiology, cell wall-cell membrane biochemistry and attachment mechanisms. Demonstrated skill and innovativeness in the application of analytical measurement techniques to the areas of uptake processes, attachment/detachment, and cell-to-cell interactions.

For both Microbiology positions, anaerobic microbiological training is preferred.

### Physiologist

Conduct research investigating the digestion of feed in food producing animals.

**Digestive Tract Physiologist (#15707):** Candidates must have a Ph.D. in physiology or related discipline with relevant postdoctoral experience in the gastrointestinal tract. An in-depth knowledge of the physiological events of digestion with emphasis on the absorption and conversion of nutrients by the gut epithelium, as well as metabolism in target organs is also required. Familiarity with mammalian biochemistry and techniques to measure physiological responses of the GI tract required.

For all three positions, applicants should be self starters, willing to work as part of a team, have training in experimental design, and possess strong communication skills. In addition, post-doctoral experience in an area related to GI tract physiology in the above areas is preferred.

Upjohn offers a stimulating research environment, competitive salary, and an outstanding benefits program. Kalamazoo is a mid-sized southwest Michigan community with a fine mix of cultural, educational, and recreational pursuits.

**For confidential consideration, please call toll free Upjohn's Corporate Employment office at 1-800-253-8600 and ask for extension 3-6767. In Michigan call collect 616/323-6767. When calling, please refer to the specific position # of interest to you.**

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#### CELLULAR/MOLECULAR BIOLOGIST

**THE UNIVERSITY OF WISCONSIN—MADISON** invites applications for a tenure-track faculty position in the general area of structural cellular or molecular biology beginning on or after 1 January 1985. The appointment could be made at the professor, associate professor, or assistant professor level, depending on the qualifications of the candidate. The candidate would be expected to carry on an active research program and serve as director of the High Voltage Electron Microscope (HVEM) Laboratory or, in the case of an appointment at the assistant professor level, be prepared to assume the directorship in the future. The HVEM Laboratory is a National Biotechnology Resource providing specialized instrumentation for biomedical structural research including a 1 MeV electron microscope, facilities for electron crystallography, and with plans for the addition of low-voltage scanning electron microscopy and video-enhanced light microscopy. The candidate's research should be directed at a fundamental biological or biomedical problem and might employ, for example, electron crystallography, image analysis of macromolecular complexes or analysis of cell structure. Depending on the background and research area of the candidate, the appointment would be entirely or in part in the Department of Anatomy, Biochemistry, Oncology, Pathology, Zoology, or in the Laboratory of Molecular Biology. Teaching responsibilities would be determined through the appointing department. Applicants should submit, by 1 July 1984, curriculum vitae, statement of research plans, and names of three references to:

**Professor Gary G. Borisy, Chairman**  
Laboratory of Molecular Biology  
1525 Linden Drive  
University of Wisconsin  
Madison, Wisconsin 53706  
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#### HEAD/CHAIR DEPARTMENT OF BASIC SCIENCE

The **UNIVERSITY OF ILLINOIS COLLEGE OF MEDICINE AT PEORIA** is soliciting applications and/or nominations for the position of professor and head/chair of the Department of Basic Science. A pharmacologist or scientist in a related discipline (Ph.D. and/or M.D.) is sought who has an outstanding record of accomplishments in research and teaching with evidence of experience in administration. The multidisciplinary department has seven full-time faculty with responsibility for basic science instruction in undergraduate and graduate medical programs. Faculty are actively engaged in research programs with extramural support. The modern research facilities of approximately 22,000 square feet are superbly equipped.

The salary is highly competitive with the position available 1 September 1984. There are available two or three additional tenure-track appointments at the assistant professor level. A letter of application detailing qualifications should include research plans, curriculum vitae, and names of three or more references. The letter should be received by 1 May 1984 for full consideration. Send materials to: **Jean C. Aldag, Ph.D., University of Illinois College of Medicine at Peoria, Box 1649, Peoria, Illinois 61656.**

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

#### POSITIONS OPEN

**INSTRUCTOR IN RESEARCH OPHTHALMOLOGY.** University of Southern California (USC) School of Medicine, Department of Ophthalmology, is seeking applications for V.M.D. with strong commitment in research to act as veterinary ophthalmic consultant. Will also teach veterinary ophthalmology in academic setting. Funding to be provided from grants the candidate will generate. Send résumé and three letters of reference to: **Stephen J. Ryan, M.D., Chairman, Ophthalmology, USC School of Medicine, Doheny Eye Foundation, 1355 San Pablo Street, Los Angeles, Calif. 90033.** *Affirmative Action/Equal Opportunity Employer.*

**MOLECULAR BIOLOGIST**—Assistant professor, research and teaching. Applicant should have Ph.D. in molecular biology, biochemistry, or related field; background in chemistry. Expertise required in molecular biology of information transfer and genetic engineering techniques. Emphasis on eukaryotic systems preferred. Starting date variable: 1 July to 1 September 1984. Application deadline: 30 June 1984. Send curriculum vitae, names of references, and statement to: **Dr. H. J. Klosterman, Chairman, Biochemistry Department, North Dakota State University, Fargo, N.D. 58105.** *An Equal Opportunity/Affirmative Action Employer.*

#### MOLECULAR BIOLOGIST, CELL BIOLOGISTS, BIOCHEMISTS

The Department of Molecular Biology and Biochemistry, University of California, Irvine, has two positions to be filled at the **assistant professor** (tenure-track) level and **one** at the **associate or full professor** level in the 1984–1985 academic year. Research in the department has a strong emphasis in molecular genetics and (regulation of) gene expression, especially in eukaryotic systems, including a vigorous graduate education program. We are seeking candidates with an effective research program and interests in molecular interactions between cells; molecular signalling between the cell surface and the nucleus; the relationship between chromosome structure and gene expression; protein structure and synthesis; and/or the molecular genetics of eukaryotic systems. Major consideration will be given to those candidates with proven research potential and promise of further independent growth. The successful candidate will be responsible for the development of a research program as well as teaching in the undergraduate and graduate departmental molecular biology courses. Please submit curriculum vitae, recent reprints, a statement of research interests, and names of three references to: **Dr. E. K. Wagner, Chair, Search Committee, Department of Molecular Biology and Biochemistry, University of California, Irvine, Calif. 92717.** *The University of California is an Equal Opportunity/Affirmative Action Employer and Educator, and specifically invites applications from women and minorities.*

**MOLECULAR BIOLOGIST:** The Department of Biology has reopened its search for a tenure-track appointment at the assistant professor level. Candidates must have a Ph.D. and research interests in either the molecular biology of development, eukaryotic molecular genetics, or the molecular biology of eukaryotic nucleic acids. A strong commitment to teaching at the undergraduate level is required. Applicants should submit curriculum vitae, three letters of recommendation, and a statement of teaching and research interests by 15 May 1984 to: **Dr. James W. Smiley, Chairman, Department of Biology, College of Charleston, Charleston, S.C. 29424.** *Affirmative Action/Equal Opportunity Employer.*

#### NEUROENDOCRINOLOGIST DEPARTMENT OF PHYSIOLOGY QUEEN'S UNIVERSITY

A vacancy will exist commencing 1 August 1984 for an established neuroendocrinologist. The applicant should have the Ph.D. and/or the M.D. degree, several years of teaching experience, and a proven research record. The applicant will be expected to lead an active high quality research programme and to participate in undergraduate and graduate teaching. The facilities for research are outstanding and the appointment is a regular one under tenure regulations. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.* Applicants should submit curriculum vitae, a brief statement of their research interests and objectives, selected reprints, and the names of three referees from whom a confidential assessment of research and teaching abilities may be obtained to: **Dr. V. C. Abrahams, Department of Physiology, Queen's University, Kingston, Ontario, Canada K7L 3N6.**

## Senior Research Scientist

Bristol-Myers Industrial Division, a leader in industrial biotechnology and a major international manufacturer of pharmaceutical products, has a challenging genetic research opportunity in its Genetic Engineering Department.

We are seeking a scientist who will provide support to our Genetic Microbiology program. To qualify, you need a PhD in Molecular Biology with strong background in microbial genetics, biochemistry and R-DNA technology. Experience with antibiotic producing microorganisms is desirable. A minimum of 2 years postdoctoral training in R-DNA techniques, especially DNA cloning, and demonstrated expertise through publication in major journals is a must.

We offer a salary fully commensurate with your experience and qualifications, a comprehensive benefits package and a professional environment where high visibility will propel you ahead. For prompt, confidential consideration, forward your resume with salary history and requirement, to: Department Head, Genetic Engineering, Building 58



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**CANADIAN CENTRE FOR TOXICOLOGY  
ASSOCIATE DIRECTOR, EDUCATION**

Applications are invited for the position of **ASSOCIATE DIRECTOR, EDUCATION**, in the Canadian Centre for Toxicology, recently established by the University of Guelph, the University of Toronto, the Government of Canada, the Government of Ontario and Industry. Within 4 to 5 years, the Centre will have a core scientific professional staff of approximately 40, a technical staff of 80, and approximately 40 graduate students divided between the Universities of Guelph and Toronto. Joint interdisciplinary M.Sc. and Ph.D. programs in toxicology have been approved in principle by both universities. The associate director, education, will be responsible to the Deans of Graduate Studies in developing the graduate programs of the Centre. The incumbent reports to the director and will be chairman of the Administrative/Advisory Committee of the joint graduate program in toxicology of the Universities of Guelph and Toronto and will, therefore, co-ordinate all aspects of graduate education in toxicology; including admissions, curriculum, examinations, recruiting and funding in close liaison with the associate director, research. He/she would be responsible for lecture/seminar programs, extension, continuing education, and retraining programs in toxicology in both universities.

An applicant must hold a Ph.D. degree or equivalent in an appropriate discipline and should have a strong record in research and graduate education. An applicant should also present clear evidence of academic leadership and administrative ability, preferably in a multidisciplinary setting. The incumbent must qualify for a graduate faculty appointment in an appropriate academic department and also must qualify for appointment to the graduate faculties of both universities. The appointment will be for an initial period of 5 years, renewable. Full résumé and names of three referees should be sent to: **Dr. Ian Munro, Director, Canadian Centre for Toxicology, University of Guelph, Guelph, Ontario, Canada N1G 2W1.** Applications will be accepted until 15 June 1984. *The appointment is subject to final budgetary approval and, in accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

**CANADIAN CENTRE FOR TOXICOLOGY  
ASSOCIATE DIRECTOR, RESEARCH**

Applications are invited for the position of **ASSOCIATE DIRECTOR, RESEARCH**, in the Canadian Centre for Toxicology, recently established by the University of Guelph, the University of Toronto, the Government of Canada, the Government of Ontario and Industry. Within 4 to 5 years, the Centre will have a core scientific professional staff of approximately 40, a technical staff of 80, and approximately 40 graduate students divided between the Universities of Guelph and Toronto. The Centre has established research programs in the areas of human epidemiology and risk assessment, aquatic and terrestrial systems toxicology, carcinogenesis and genetic toxicology, teratology, reproduction and behavioral toxicology, metabolism and pharmacokinetics, analytical chemistry and pathology. The associate director, research, will be responsible to the director; will be chairman of the Research Advisory Committee, and will coordinate the research programs of the Centre. He/she will be responsible for the hiring of staff, for approving research grants and contracts on behalf of the director, in close liaison with the associate director, education.

An applicant must hold a Ph.D. degree or equivalent in an appropriate discipline and should have an outstanding record in toxicological research. He/she should also present clear evidence of academic leadership and administrative ability, preferably in a multidisciplinary setting. The incumbent must qualify for a faculty appointment in an appropriate academic department. The appointment will be for an initial period of 5 years, renewable. Full résumé and names of three referees should be sent to: **Dr. Ian Munro, Director, Canadian Centre for Toxicology, University of Guelph, Guelph, Ontario, Canada N1G 2W1.** Applications, which will be treated in confidence, will be accepted until 15 June 1984. *The appointment is subject to final budgetary approval and, in accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*



**KING ABDULAZIZ UNIVERSITY  
FACULTY OF METEROLOGY AND ENVIRONMENTAL STUDIES  
JEDDAH, SAUDI ARABIA**

King Abdulaziz University is now accepting applications for faculty positions in the Faculty of Meteorology and Environmental Studies, for the academic year 1984-1985.

**Positions available in:**

- |                                      |                                  |
|--------------------------------------|----------------------------------|
| 1. Air Pollution — Environmental     | 6. Meterology — Dynamics         |
| 2. Water Pollution — Chemical        | 7. Meterology — Synoptics        |
| 3. Noise Pollution                   | 8. Meterology — Weather Analysis |
| 4. Biochemistry — Ecological Studies | 9. Meterology — Clouds Physics   |
| 5. Meterology — Physics              |                                  |

**Ph.D.s required.**

**Salaries will be based on years of experience and degrees.**

**One year contracts renewable upon mutual agreement.**

**Benefits:**

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| 60 days annual vacation | Furniture allowance      |
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| Housing allowance       |                          |

Interested academics are kindly requested to send their letter of applications indicating the position applied for, along with resume (including lists of publication and references), photocopies of their academic degrees and specialized experience certificates:

**Dean**

**Faculty of Meteorology and Environmental Studies  
King Abdulaziz University  
P.O. Box 9034  
Jeddah, Saudi Arabia**

A second copy of the above information should also be sent to:

**King Abdulaziz University Office  
c/o Saudi Arabian Educational Mission  
2425 West Loop South, Suite 654  
Houston, Texas 77027**

## RESEARCH POSITIONS IN NUCLEIC ACID CHEMISTRY

The Ames Division of Miles Laboratories, Inc., is a leader in research and development of medical diagnostic products. We are seeking two scientists to work on the application of nucleic acid hybridization methods to clinical diagnostics.

### Research Scientist

Ph.D. in Chemistry, Biochemistry or Biophysics with at least two years post-graduate experience, or equivalent combination of education and experience. Candidates should have formal training and laboratory experience in the enzymology, chemistry and physical chemistry of nucleic acids. Experience with gene cloning is desirable. An ability to contribute to project planning and problem solving is required. Supervisory skills will be valuable.

### Assistant Research Scientist

M.S. or B.S. degree in Chemistry, Biochemistry or Biophysics, with two years of laboratory experience, or equivalent combination of education and experience. Candidates should have formal training and laboratory experience in nucleic acid chemistry, protein chemistry and enzymology. A desire to conduct laboratory investigations in these areas is important.

Situated ninety miles from Chicago, our Elkhart, Indiana location provides access to leading cultural and multi-university facilities. Close proximity to lower Michigan and the Great Lakes furnishes unique recreational opportunities. Miles offers an excellent starting salary, benefits program and company paid relocation. For confidential consideration, send your resume to:

**Susan Fairbanks  
Personnel Representative  
Department A-122**

**Miles Laboratories, Inc.  
P.O. BOX 70  
Elkhart, Indiana 46515**

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## MOLECULAR BIOLOGIST

Stauffer Chemical Company has an immediate opening in its Molecular Biology Section, located in the San Francisco Bay Area. Candidates should have a Bachelor's or Master's degree in molecular biology (or related area) and a minimum of two years' experience in recombinant DNA techniques, including gene cloning, plasmid constructions, nucleic acid hybridization and DNA sequencing.

Qualified applicants are invited to send a resume containing the names and addresses of three references to: **Ms. K.D. Maclaren, Personnel Dept., Stauffer Chemical Company, 1200 S. 47th St., Richmond, CA 94804.** We are an equal opportunity employer, M/F.



### POSITION ANNOUNCEMENT

**HEAD, SECTION OF ECONOMIC ENTOMOLOGY,** Illinois Natural History Survey and Head, Agricultural Entomology, College of Agriculture University of Illinois.

Must administer the activities of the Section of Economic Entomology, composed of 16 professional scientists, 4 extension specialists, and 36 support personnel conducting research in basic and/or applied areas of insect pest management. The applicant would also coordinate research activities and encourage development and submission of grant proposals and the publications of significant findings by section staff. Opportunities are available for active personal involvement in research programs. The applicant should work with administration in state and federal agencies; with deans and department heads in the University of Illinois; with other section heads in the Illinois Natural History Survey; and with Illinois interest groups.

Applicant must have a Ph.D. with a strong background in entomology. Administrative experience is desirable.

Salary commensurate with training and experience.

Position available 1 September 1984.

Applications will be accepted until 15 June or until a suitable candidate is found. Candidates wishing to apply should send an introductory letter, résumé, and names of three people whom the committee may contact for references to:

**Dr. J. V. Maddox**  
Section of Economic Entomology  
Illinois Natural History Survey  
607 East Peabody Drive  
Champaign, Ill. 61820  
Telephone: 217-333-7090

*The Illinois Natural History Survey and the University of Illinois are Affirmative Action/Equal Opportunity Employers.*

## POSITIONS OPEN

**NEUROCHEMISTRY RESEARCH ASSOCIATE** position available at the Center for Laboratories and Research/Health Research, Inc., to investigate neurochemical correlates of lead exposure in children. Knowledge of biogenic amines and behavior and HPLC analytical techniques preferred. Salary commensurate with experience. Send curriculum vitae and letters of reference to: **Dr. R. Seegal, Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, New York 12201.**

### INSTRUMENTALLY ORIENTED NMR SPECTROSCOPIST

The Biochemistry Department of the University of Wisconsin-Madison is searching for a Ph.D.-level scientist to serve as the instrumentation specialist of its new NMR facility to be directed by Professor John L. Markley. The salary and responsibilities will be competitive and will depend on the experience and qualifications of the applicant. The ideal candidate will have had extensive experience in RF and digital electronics and will have published on the design of NMR instrumentation and the implementation and evaluation of new NMR techniques. This new position, which is supported by university funds, should provide an excellent opportunity for independent and collaborative research at the frontiers of experimental NMR. The instrumentation specialist will have the opportunity of playing a major role in efforts to establish a national resource for biochemical and physiological applications of NMR spectroscopy in the spacious laboratory under construction.

*Women and minority candidates are especially encouraged to apply.* Interested candidates should send a complete résumé and have three letters of recommendation forwarded to: **Professor H. F. DeLuca, Chairman, Department of Biochemistry, University of Wisconsin-Madison, 420 Henry Mall, Madison, Wisc. 53706,** before 15 June 1984. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

Faculty position for **PEDIATRIC GENETICIST** at the University of Illinois College of Medicine in Chicago. The position will involve patient care and teaching, with responsibility for supervision of genetics laboratory activities. Applicants with 5 years or more of experience in human genetics research will receive preferential consideration. Contact: **George R. Honig, M.D., Ph.D., Professor and Head, Department of Pediatrics, University of Illinois at Chicago, 840 South Wood Street, Chicago, Ill. 60612.** *The University of Illinois at Chicago is an Affirmative Action/Equal Opportunity Employer.*

**PHARMACOLOGISTS:** The University of Nevada School of Medicine has a tenure-track position open at the assistant/associate professor level (Ph.D. or M.D.). In addition, it is anticipated that a second position, at the assistant professor level may materialize. Must have a minimum of 2 years of postdoctoral training and demonstrated research experience in autonomic, cardiovascular, or neuropharmacology. Will be expected to develop an independent funded research program. Interested persons should send curriculum vitae and the names and addresses of three references by 31 May 1984 to: **Dr. D. P. Westfall, Professor/Chairman, Department of Pharmacology, University of Nevada School of Medicine, Reno, Nevada 89557.** Late applications will be accepted if no suitable candidate is found in first review of applicants. The positions will remain open until satisfactory candidates are found. *Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL BIOCHEMIST OR IMMUNOLOGIST** to study the mechanism of natural killer lymphocyte-mediated lysis of tumor cells. Funding for 2 to 3 years; available 15 June. An additional position will be available in 1985. Send curriculum vitae with three references to: **Dorothy Hudig, Ph.D., Associate Professor of Microbiology, School of Medicine, University of Nevada, Reno, Nevada 89557-0046.** Telephone: 702-784-4430. *Affirmative Action/Equal Opportunity Employer.*

**A POSTDOCTORAL FELLOWSHIP OR RESEARCH ASSOCIATE** position (depending on experience of applicant) is available for the study of selective networks for pattern classification and associative learning based heuristically on current neurobiological models. Opportunity to participate in development of special-purpose network simulation hardware. Send curriculum vitae and names of two references to: **Dr. G. M. Edelman, Laboratory of Developmental and Molecular Biology, The Rockefeller University, 1230 York Avenue, New York, N.Y. 10021.**

## POSITIONS OPEN

### PLANT SCIENCE

University of Missouri-St. Louis, Department of Biology, anticipates an opening for a **visiting assistant professor in botany** for fall 1984. The appointment is for 1 year and is contingent upon funding. Primary teaching responsibilities will include courses in general botany and an upper level course in either systematics, physiology, and/or physiological ecology. Please send résumé and at least three letters of reference by 18 May to:

**C. R. Granger, Chairperson**  
Department of Biology  
University of Missouri-St. Louis  
8001 Natural Bridge  
St. Louis, Mo. 63121

*An Equal Opportunity/Affirmative Action Employer*

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE** position available immediately to work on the biochemical regulatory functions of steroid hormones in brain, including the biochemical roles of the hormone on neuronal membranes, and the regulation of tryptophan hydroxylase. Ph.D. in a relevant area. Salary: \$16,000 to \$19,000, depending on experience. Send curriculum vitae and three references to: **Dr. Paul Y. Sze, Department of Pharmacology, University of Health Sciences/The Chicago Medical School, North Chicago, Ill. 60064.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** open for the study of breast epithelial cell antigens. Study will use monoclonal and polyclonal antibodies to characterize breast epithelial antigens in circulation, to correlate with histopathology and clinical history, and to investigate biological behavior. May participate in experimental approaches using antibodies in diagnosis and therapy of breast cancer. Requires: completion of doctoral studies in immunology, cell biology, biochemistry, and/or pathology. *Candidates must be U.S. citizens or possess legal right to work in United States.* Send résumés to: **CHILDREN'S HOSPITAL MEDICAL CENTER, Personnel Department, 51st and Grove Streets, Oakland, Calif. 94609.** Interested candidates may telephone: **Dr. Roberto C. Ceriani** for additional information at 415-428-3513. *Equal Opportunity Employer, M/F.*

**POSTDOCTORAL POSITION** available immediately for carrying out basic and applied molecular genetic research with bacteria and yeast. Experience in recombinant DNA, DNA-sequencing, and/or protein purification and characterization, particularly the latter is desired. Stipend is competitive.

Send curriculum vitae, transcripts, description of current research interests and objectives, and three letters of recommendation to: **Dr. N. W. Y. Ho, Molecular Genetics Group, Laboratory of Renewable Resources Engineering, Purdue University, West Lafayette, Ind. 47907.** *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately for up to 3 years to study the molecular biology of coronaviruses including specific aspects of RNA and protein synthesis. Experience in molecular biology desired. Send curriculum vitae with description of research background and names of three references to: **Dr. John J. McGowan, c/o Personnel/Manpower, Uniformed Services University of the Health Sciences, F. Edward Hebert School of Medicine, 4301 Jones Bridge Road, Bethesda, Md. 20814.** Curriculum vitae will not be returned. *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITIONS:** Isolation, physicochemical studies, and cellular bioassay of trace metal complexes and other natural products that exert synergistic activity with insulin and effect glucose metabolism. Isolation and extensive high-field NMR studies of peroxidase hemoproteins. Experience in biochemical isolations, NMR, or bioinorganic chemistry is desirable. Send curriculum vitae and names of two references to: **Harold Goff, Department of Chemistry, University of Iowa, Iowa City, Iowa 52242.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION IN NEUROPHYSIOLOGY.** A postdoctoral associate or associate research scientist position is available 1 July to investigate basic neuronal mechanisms of epilepsy. Experience with microelectrode recording in vivo and in vitro is desirable. Please send curriculum vitae and names of references to: **John S. Ebersole, M.D., Department of Neurology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.**



## DIRECTOR OF RESEARCH IMMUNOLOGIST/MOLECULAR BIOLOGIST

The Otsuka Pharmaceutical Co., Ltd., a major Japanese pharmaceutical corporation, is seeking a distinguished scientist to serve as Director of Research for its new Maryland research facility. The duties of this position shall include the development and administration of research programs, assembly of a multidisciplinary research staff, and participation in research activities. The successful candidate will have over five years of post-doctoral research experience in the field of immunology or molecular biology and an outstanding publication record. Group leadership experience is a pre-requisite. Industrial experience is desirable but not required. Special consideration shall be given to individuals who combine the above qualifications with an M.D. degree.

Otsuka Maryland Research Laboratories will be located in a suburb of Washington, D.C., and will begin operations in March of 1985. The facility will engage in the discovery/evaluation of immune response modifiers (cytokines) of therapeutic value and the development of biotechnological production methods. The scientific staff of the facility shall number 25 - 30 individuals divided into molecular biology, immunology and cell biology groups. P-3 level fermentation facilities shall also be available.

The position offers salary and benefits fully commensurate with experience and qualifications as well as an exceptional opportunity for professional achievement.

Applications should include C.V., publication record, and at least three references. Applications will be accepted through May 15, 1985 and should be sent to:



Otsuka Pharmaceutical Co., Ltd.  
P.O. Box 8927  
Rockville, MD 20856  
Attention: Recruitment

*"Otsuka, people creating new products for better health worldwide"*

An Equal Opportunity Employer



## SENIOR SCIENTISTS AND TECHNICAL STAFF

### Hybridoma Production, Molecular Biology, Protein Chemistry

Immunogene Inc., a highly innovative research and development company, develops and produces research and diagnostic reagents in the area of cancer diagnosis and treatment and reproductive biology.

Immunogene Inc. seeks senior scientists and technicians in the areas of hybridoma production, recombinant DNA technology, and protein chemistry to staff a new facility located in Charlottesville, Va.

Successful senior candidates should have Ph.D. degrees in the areas of biochemistry, molecular biology, immunology, or related fields. Candidates must have two or more years of postdoctoral experience and publications which document this expertise.

Technical staff should have a bachelor or masters degree in a biological science and hands-on experience in one of the above areas.

Immunogene Inc. offers salary commensurate with qualifications and experience and a liberal benefits package.

For prompt consideration please forward complete resume to Personnel Director at:

## IMMUNOGENE Inc.

P.O. Box 6271 Charlottesville, VA 22906

## POSITIONS IN RESEARCH AND DEVELOPMENT

The US Army Chemical Research and Development Center, Aberdeen Proving Ground, MD 21010, is seeking several physical scientists, chemists, physicists, mechanical or electronic engineers to work on exploratory, advanced, and engineering development; manufacturing technology; and industrial engineering of NBC reconnaissance/remote detection systems, and chemical/biological/toxin defense materiel. These interdisciplinary positions require a background in chemistry, engineering, or other physical sciences such as biophysics, materials science, surface chemistry, etc. Experience is desirable in the development and/or commercial fabrication of immunoassays applied to kit or automated configurations, biologically active membranes, biomicrosensors and transducers, or stabilization techniques for biomaterials. These positions require a high degree of creativity for planning and execution of studies leading to the application of biotechnology to problems of field detection and identification of chemical and biological agents and toxins.

All qualified applicants will receive consideration for position vacancies without regard to age, race, color, religion, sex, national origin, lawful political or other affiliations, marital status, membership or nonmembership in an employee organization, or for any handicap which does not interfere with accomplishment of position requirements. Salary range \$30,402-\$39,519 per annum. Inquiries are to be directed to **Commander, US Army Aberdeen Proving Ground, ATTN: STEAP-CP-R/Mrs. Mioduski, Aberdeen Proving Ground, MD 21005. Telephone 301-278-4254/5247.**

## CHAIR IN BOTANY (TAXONOMY OF HIGHER PLANTS, DENDROLOGY AND PLANT GEOGRAPHY)

Salary is on the scale 32, Nkr. 207 735 p.a. gross, of which Nkr. 3 649 p.a. are paid in pension contributions.

This chair could, for periods of 5 years, be combined with the subsidiary position as director of the foundation "Det norske arboret" ("The Norwegian Arboretum").

The chair will be appointed on the understanding that any changes in scientific duties, pension or retiring age made by law or by the King with the agreement of Parliament are to be accepted without compensation.

Applicants should submit 5 copies of scientific work—published or unpublished—which they wish to be considered for the appointment as well as 6 copies of a list of all scientific contributions with information on where they were published. Scientific contributions are to be submitted, in numbered order and in 5 groups, to the science faculty of the University of Bergen within one month of the closing date for applications. Scientific manuscripts in preparation may be submitted within 3 months of the closing date for applications provided notice of intent is given on submitting the other publications. Applicants are otherwise referred to the current rules for the procedure to be followed in the appointment of professorships and readerships.

A résumé of the vacant chair can be obtained on request from: **Sekretariatet for Det matematisk-naturvitenskapelige fakultet, postboks 25, 5014 Universitetet i Bergen, NORWAY.**

By decision of the collegium applications from women are especially encouraged.

Applications, which must include a complete curriculum vitae, should be addressed to the King and be sent together with relevant certificates and one copy of a list of publications to **Det matematisk-naturvitenskapelige fakultet, postboks 25, 5014 Universitetet i Bergen within May 18, 1984.**

## Supervisor Herbicide Group

Stauffer Chemical Company has an immediate opening for Supervisor of the Herbicide Group in the Laboratory Evaluation Section at Stauffer's Mountain View Research Center in Mountain View, California.

The position entails supervising the activities of a research staff of professional and support personnel, and responsibility for planning, directing and coordinating laboratory/greenhouse screening programs in herbicides.

Applicant should have a MS or PhD in Agronomy, Plant Physiology or Weed Science and several years of applicable supervisory experience. Salary is commensurate with experience.

Send resume and letter of application to: Placement Officer, Stauffer Chemical Company, P.O. Box 760, Mountain View, CA 94042. We are an equal opportunity employer, m/f/h.



## SMITHSONIAN TROPICAL RESEARCH INSTITUTE DEPUTY DIRECTOR

Applications are invited for this position, which falls vacant due to the appointment of Dr. Michael H. Robinson as Director of the National Zoo. The Smithsonian Tropical Research Institute (STRI) is a bureau of the Smithsonian Institution of Washington, D.C. devoted to basic research in tropical ecology, animal behaviour and evolution. These activities are conducted principally in the Republic of Panama with comparative studies encouraged throughout the New and Old World Tropics. The STRI also supports programs in graduate education and conservation.

The incumbent will need to demonstrate a commitment to the support of innovative basic research, as well as to the administrative management of STRI with approximately 200 employees and more than 1000 visiting scientists and students annually.

Candidates should possess a Ph.D. degree with a research background in an area of STRI research interest. A knowledge of Spanish and an ability to communicate effectively to both scientists and government managers will be helpful.

Salary between \$43,000.00-\$59,000.00 plus allowances. Inquiries including a C.V. and a description of your interest in STRI should be sent to:

**Dr. Ira Rubino, Director**  
Smithsonian Tropical Research Institute  
APO Miami 34002

Appointment will be made without regard to sex, citizenship, race, religion or other factors irrelevant to execution of the job.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available 1 July 1984 for ongoing research on pathways of ion transport and steroid hormone action in human fibroblasts. Project related to areas of cell growth control, muscular dystrophy, and cytotoxic brain edema. Contact: ASBC Meetings, St. Louis, 3 to 7 June 1984, or send resumé and three letters of recommendation to: Dr. Eric Gruenstein, Department of Biological Chemistry, University of Cincinnati College of Medicine, Cincinnati, Ohio 45267-0522. An Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately to work on genetic control of natural resistance to *Salmonella typhimurium* infection in mice. Expertise in immunology, pathogenic bacteriology, or immunogenetics preferred. Submit curriculum vitae and names of three references to: Dr. Alison O'Brien, Department of Microbiology, c/o Personnel/Manpower Division, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814. Curriculum vitae will not be returned. Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION IN NEUROPHYSIOLOGY

Available 1 July to study physiological and morphological characteristics of intersegmental and local interneurons in the lobster nerve cord. Experience with intracellular recording, current injection, and dye filling techniques is desirable. Send curriculum vitae with names of three references to: Dr. C. H. Page, Bureau of Biological Research, Rutgers University, Piscataway, N.J. 08854.

**POSTDOCTORAL POSITION:** Biochemistry and crystallization of fibrous proteins, including fibrinogen/fibrin, muscle and cell surface proteins, in collaboration with structural group. Experience in protein biochemistry essential. Send resumé and references to: Dr. Carolyn Cohen, Rosenstiel Basic Medical Sciences Research Center, Brandeis University, Waltham, Mass. 02254. An Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** for a geneticist as curator of the *Caenorhabditis Genetics Center*. A full-time position to conduct genetic research and manage the Center, which is responsible for acquisition, banking, and distribution of *C. elegans* strains, annual updating and distribution of the genetic map, coordination of genetic nomenclature, and maintenance and distribution of a bibliography of research publications. A computer system provides access to the data collected. Some knowledge of computers and database management is desirable; previous experience with nematodes is not necessary. The position involves interaction with numerous research laboratories, participation in national meetings, and supervision of an experienced technician. Application deadline: 1 July 1984. Apply to: Dr. Donald L. Riddle, Division of Biological Sciences, 110 Tucker Hall, University of Missouri, Columbia, Missouri 65211.

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

**POSTDOCTORAL POSITION**, available summer 1984, to study the mechanisms underlying cellular interactions during mammalian fertilization and early development using biochemical, genetic, and serological techniques. Ph.D. in cell/developmental biology or biochemistry required. Send curriculum vitae and names of references to: Dr. Barry D. Shur, Department of Biochemistry and Molecular Biology, Box 117, University of Texas M.D. Anderson Hospital and Tumor Institute, Houston, Texas 77030.

**POSTDOCTORAL RESEARCH ASSOCIATE** to investigate aging and control of cell proliferation in human cells. Experience in molecular genetics or biochemistry is desirable. The position is available immediately and is funded by an NIH grant for up to 4 years. Send curriculum vitae and names of three references to: Dr. Gretchen H. Stein, Department of Molecular, Cellular and Developmental Biology, Campus Box 347, University of Colorado, Boulder, Colo. 80309; telephone: 303-492-5229. The University of Colorado, Boulder, is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL OR RESEARCH ASSOCIATE POSITION(S)** in plant molecular genetics. Applicants with background in molecular biology/biochemistry and experience with recombinant DNA techniques and protein biosynthesis preferred. Applications should be sent to: Dr. A. A. Szalay, Boyce Thompson Institute for Plant Research, Cornell University, Tower Road, Ithaca, New York 14853. An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### POSTDOCTORAL/RESEARCH ASSOCIATE

Position available in September to study the role of heat shock proteins in the thermal tolerance of cold blooded vertebrates. Background in protein biochemistry with interest in physiological ecology desirable. Some experience with gel electrophoresis of proteins required. Send curriculum vitae to: Dr. Douglas P. Easton, Department of Biology, State University College at Buffalo, 1300 Elmwood Avenue, Buffalo, N.Y. 14222. An Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE—MOLECULAR BIOLOGY.** A position is available for a recent Ph.D. in cell biology, chemistry, or a related field to join a project involving the cloning of parasite antigens. The candidate should have a strong background in recombinant DNA technology, experience with the construction of cDNA and genomic libraries, and expression of cloned genes. Interested applicants should submit curriculum vitae and a summary of research experience to: Dr. Ray Gamble, U.S. Department of Agriculture, ARS, Animal Parasitology Institute, Room 2, Building 1040, BARC-East, Beltsville, Maryland 20705.

**POSTDOCTORAL RESEARCH ASSOCIATE** position for thermochemical and spectroscopic studies of acid-base properties of fossil fuels. Applicant must have Ph.D. in chemistry and strong physical-organic chemical background and at least 3 years of experience in reaction calorimetry. Full competence in the use of Setaram C-80, Microscal, FT-IR, FT-NMR, HPLC, and knowledge of coal chemistry is expected. Salary: \$18,000 to \$20,000 per year, depending on experience. Complete curriculum vitae, copies of publications, and three letters of reference are required with application to be submitted to: Edward M. Arnett, Department of Chemistry, Duke University, Durham, N.C. 27706, by 11 May. Affirmative Action/Equal Opportunity Employer.

### POSTDOCTORAL RESEARCH ASSOCIATE

Position available immediately for person with background in immunology/cell biology to study interaction of investigational drugs with human neutrophils and monocytes. Desirable skills include cell separation and PMN function assays, or cellular research experience readily expandable to such studies. Competitive salary for level of training and experience. Inquiries: Dr. Donald C. Blair, Department of Medicine, State University of New York—Upstate Medical Center, 750 East Adams Street, Syracuse, N.Y. 13210. An Equal Opportunity Employer.

### POSTDOCTORAL SCIENTIST: NEUROBIOLOGY

One or two openings will become available this spring (1984) for a well-trained Ph.D. or M.D. with a background in neurosciences. Areas of investigation include interactions between nerve and skeletal muscle acetylcholine receptor turnover, nerve-muscle junction formation, regulation of cellular metabolic properties. Techniques used include: neurophysiology, neuropharmacology, cell culture, receptor metabolism, and neuroimmunology.

Please reply to: Dr. Daniel B. Drachman, Department of Neurology, Johns Hopkins University, School of Medicine, 600 North Wolfe Street, 5-119 Meyer Building, Baltimore, Maryland 21205.

**RESEARCH ASSOCIATES** (two), cell biology/biochemistry. Fundamental studies of intracellular peptide processing, glycosylation, transport, and secretion. Desirable areas of expertise include cell culture, protein and glycosaminoglycan characterization, immunological techniques. Immediate openings; 1- to 3-year appointments. Competitive salary. Dr. David V. Cohn, Department of Oral Biology, Health Sciences Center, University of Louisville, Louisville, Ky. 40292. Telephone: 502-588-6928.

**SPEECH PROCESSING SCIENTIST.** The Biosciences Laboratory at 3M has an opening for a speech processing scientist. We are looking for a person with training and experience in digital signal processing with specific emphasis in speech analysis, synthesis, and processing. The position requires a Ph.D. or equivalent degree in an appropriate field such as electrical engineering, bioengineering, or computer science.

The speech processing scientist will be a member of an interdisciplinary communications research group working in hearing health. Interested individuals are invited to submit a current resumé and letter of application to: James P. Egan, Staffing and Employee Resources, 3M Center, Building 224-1W-02, St. Paul, Minn. 55144.

*An Equal Opportunity Employer*

## BIOCHEMIST

Leading pharmaceutical company located in Radnor, Pa. has an opening for a Biochemist in the Metabolic Disorders Section of their Experimental Therapeutics Division.

The successful candidate will have a Ph.D. in Biochemistry or a related field and a minimum of two years post-doctoral experience.

This position involves the development of potential hypoglycemic agents. The applicant must possess a thorough knowledge of the control of glucose and lipid metabolism. Experience with euglycemic clamp technique and tracer techniques to determine rates of glucose appearance and utilization is required.

Qualified applicants should forward resume including salary history to Personnel Manager, REFER TO JOB #18.

**Wyeth Laboratories, Inc.**



P.O. BOX 8299  
Philadelphia, PA 19101

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Equal Opportunity Employer, M/F/H

## Molecular Geneticists

**Genex** is seeking both senior and junior level scientists with strong research backgrounds in the following areas:

- Molecular genetics of *E. coli* and *B. subtilis*
- Recombinant DNA methodology
- Expression of heterologous proteins in *E. coli* or *B. subtilis*
- Molecular biology of plasmids
- Secretion of proteins by microorganisms

Applications are invited from senior investigators; candidates with recent post-doctoral training; and candidates trained at B.S. and M.S. levels. A curriculum vitae describing your scientific background, publications, and three professional references should be submitted prior to May 30, 1984 to:

**Genex Corporation**

Department EJ • 6110 Executive Blvd.  
Rockville, Maryland 20852

## RESEARCH HEAD

### Drug Delivery Systems Research

The Upjohn Company, a worldwide leader in pharmaceutical research, is seeking applicants for the position of Research Head of the newly formed Drug Delivery Systems Research unit within the Pharmaceutical Research and Development division.

The successful candidate will lead an expanding interdisciplinary team of professionals dedicated to the elucidation of innovative drug delivery systems. The Unit will interact with other scientists responsible for development of specific human and veterinary products. Responsibilities will include the development of strategies for the discovery of future drug delivery systems, and the management of associated research activities. The successful candidate will be responsible for developing an effective program in drug delivery basic research and will assume responsibility for the evaluation, implementation, and development of collaborative research programs with academic institutions and other appropriate sources.

In addition to a Ph.D. in the biological, chemical, or pharmaceutical sciences, applicants must possess an outstanding publication record and have a minimum of three years' research management experience. Good leadership and communication skills, and the ability to relate to people at various levels, are essential.

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

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational, and recreational pursuits, including numerous lakes and a four-season climate.

For confidential consideration, please call from outside Michigan toll-free 1-800-253-8600, ext. 3-6767, or inside Michigan collect (616) 323-6767 to request an employment application be sent to you immediately. Please refer to Ad Number 15819-J when calling.

**Upjohn**

**A Century of Caring**

An Equal Opportunity Employer M/F

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH ASSOCIATE POSITIONS** available immediately for cell/developmental biologists for studies on chemotaxis of myoblasts in the developing limb and cell-substrate interactions during migration of sea urchin primary mesenchyme cells. Write to: **Dr. Michael Solorsh, Department of Zoology, University of Iowa, Iowa City, Iowa 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL RESEARCH ASSOCIATE** positions available in areas of (i) membrane biochemistry: post-translational protein modification; regulation and sequence of processing events, and (ii) neurochemistry: Schwann cell regulation of myelination; hormonal modulation of Schwann cell-axon interactions. Send curriculum vitae and names of three references to: **Dr. Joseph F. Poduslo, Membrane Biochemistry Laboratory, Peripheral Nerve Center, Neurology and Biochemistry, Mayo Clinic, Rochester, Minn. 55905.** *An Equal Opportunity/Affirmative Action Institution.*

### Scripps Clinic and Research Foundation

**TWO POSTDOCTORAL RESEARCH POSITIONS** are available for 2 years starting 1 July 1984 in an established Hepatitis B virus research laboratory. A molecular biologist position requiring Ph.D. or M.D. and experience in basic recombinant DNA techniques, DNA mediated gene transfer, and cell culture will investigate the state and expression of the Hepatitis B viral genome in human and animal systems. An immunologist position requiring Ph.D. and experience in T cell cloning techniques will investigate cellular aspects of the immune response to HBV antigens.

Please submit curriculum vitae, references, and a statement of research interests to: **Dr. F. V. Chisari, C-202, Scripps Clinic and Research Foundation, 10666 North Torrey Pines Road, La Jolla, Calif. 92037.**

**RESEARCH SCIENTIST (Ph.D.)**—Calgene, Inc., has an opening for a research scientist to join a group led by Dr. Robert Goodman (vice president, R & D) working on the molecular biology of plant viruses. Ideal for a recent Ph.D. graduate in molecular biology who wishes to move into or continue work in plant molecular biology. Offers possibilities for advancement in a leading plant biotechnology company. Further information from and applications (including résumé and names of three referees) to: **Dr. Robert Goodman, Position 752, Calgene, Inc., 1920 Fifth Street, Davis, Calif. 95616.**

**TISSUE CULTURE SCIENTIST.** Leading paper manufacturer is seeking a research scientist to conduct advanced studies in micropropagation of forest trees including tissue culture and its application in genetics and regeneration. The purpose of this position is to incorporate current and future tissue culture/micropropagation techniques into research and operational programs. Must possess a background in plant physiology and/or biochemistry with emphasis on micropropagation of plants. Ph.D. in plant sciences with a degree in forest-related sciences desired. M.S. level with excellent academic record and a minimum of 4 years of related work experience will be considered. Send résumé with a copy of all transcripts no later than 15 June 1984 to: **T. C. Bush, Westvaco Corporation, Box 1950, Summerville, S.C. 29484.**

*Equal Opportunity Employer, M/F*

**TOXICOLOGY.** Assistant/associate professor appointment in toxicology available 1 July 1984. Ph.D. in toxicology or pharmacology required. Position involves participation in teaching as well as an active research program. Send curriculum vitae and three references to: **Dr. R. Craig Schnell, Chairman, Pharmacodynamics and Toxicology, College of Pharmacy, University of Nebraska Medical Center, Omaha, Nebraska 68105.** *An Equal Opportunity/Affirmative Action Employer.*

**VERTEBRATE BEHAVIORIST.** Assistant professor to teach ethology, animal communication, or related courses and to conduct research on wildlife behavior supporting ecology and management. Twelve-month appointment. Selection will not be made prior to 15 June 1984. Résumé and three reference letters should be sent to: **Wallace G. Klusmann, Head, Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, Texas 77843-2258.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

**VERTEBRATE ZOOLOGIST/WILDLIFE ECOLOGIST:** And other courses in ecology, evolution, or general biology. Develop independent research program. Tenure-track position at assistant or associate professor level available September 1984. Send curriculum vitae, professional goals, three letters of reference, and supporting materials to: **M. G. Butler, Zoology Department, North Dakota State University, Fargo, N.D. 58105.** *An Equal Opportunity Institution.* Deadline: 11 May 1984.

## GRADUATE STUDY

### Graduate Study in Cell Biology Neuroscience, Developmental Biology, And Immunology

Louisiana State University Medical Center in Shreveport offers graduate programs leading to either the master of science or doctor of philosophy degree in the Department of Anatomy. Annual stipends of \$7200 with waiver of tuition fees are available to qualified students. For application forms and additional information, contact: **Dr. John A. Beal, Coordinator of Graduate Studies, Department of Anatomy, Louisiana State University School of Medicine, Shreveport, Louisiana 71130.** *Equal Opportunity Employer.*

## COURSES

**ARGININE VASOPRESSIN (AVP) CONFERENCE, ASPEN, COLORADO—19 to 25 August 1984.** Vascular effects of AVP, cellular action of AVP, competitive antagonists of AVP action, osmoregulation of thirst and AVP, neural control of AVP release, and role of AVP in pathological states. Information: **Robert W. Schrier, M.D., Department of Medicine, University of Colorado Health Sciences Center, 4200 East 9 Avenue, Denver, Colo. 80262.** Telephone: 303-394-7765.

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIPS:** Two positions available: (i) to study polyamine-DNA interactions using physical-chemical techniques and computer modeling, and (ii) to study the effects of intracellular polyamine depletion on cellular growth and on the cytotoxicity of a variety of anticancer modalities using techniques such as colony forming efficiency, sister chromatid exchange, alkaline elution, centrifugal elutriation, and flow cytometry. Either position may combine both activities if interest and abilities permit. Send curriculum vitae and names of three references to: **Dr. Laurence J. Marton, Room L-518, University of California, San Francisco, Calif. 94143.** *The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

### POSTDOCTORAL FELLOWSHIP COMPARATIVE RESPIRATORY PHYSIOLOGY

A position is available for a biochemically oriented comparative physiologist to participate in studies on respiratory adaptation in fishes emphasizing erythrocyte function and regulation of erythropoiesis. Analytical background essential. Stipend commensurate with experience within NSERC guidelines (C\$18,000 to C\$22,000) for minimum 2-year appointment. Applications should include résumé, publications, and three references. **Dr. A. H. Houston, Department of Biological Sciences, Brock University, St. Catharines, Ontario, Canada L2S 3A1.**

**PREDOCTORAL AND POSTDOCTORAL FELLOWSHIPS** are available in experimental pathology. Research involves cellular/molecular mechanisms of tumour lysis by isolated human natural killer (NK) cells and interaction of NK cells with tumour-infiltrating macrophages in malignant lymphoma. Send résumé to: **Dr. D. Banerjee, Department of Pathology, University of Western Ontario, London, Ontario, Canada N6A 5C1.**

**Friedrich Miescher-Institut, Basel.** Postdoctoral Research Fellowship. Applications are invited for a postdoctoral fellowship to work on molecular aspects of hormone action. Current projects under investigation involve the use of molecular biological techniques to study hormone-mediated protein phosphorylation and cellular differentiation. Please send curriculum vitae and names of two referees to: **Dr. Brian A. Hemmings, Friedrich Miescher-Institut, P.O. Box 2543, CH-4002 Basel, Switzerland.**

## FELLOWSHIPS

**POSTDOCTORAL RESEARCH FELLOWSHIPS for plant molecular biology at the Friedrich Miescher-Institut, Basel.** Investigators experienced in microbiological and gene cloning techniques, and interested to participate in studies of genetic transformation and gene regulation in higher plant cells, are invited to submit their curriculum vitae and names of two referees to: **Drs. B. Hohn and I. Potrykus, Friedrich Miescher-Institut, P.O. Box 2543, CH-4002 Basel, Switzerland.**

### HEWLETT FELLOWSHIP PROGRAM IN SCIENCE AND TECHNOLOGY POLICY

A new resident fellow's program at Princeton University's Center for Energy and Environmental Studies (CEES) is intended for postdoctoral, policy significant technical research in some field under active study at the Center: hazardous wastes, technological aspects of energy conservation, nuclear energy and nuclear weapons policy, or low-energy global futures. Applications will be reviewed on 15 May 1984 and on 1 October 1984. Annual stipends up to \$24,000; term of residence, 6 to 24 months; sabbatical visitors are specifically encouraged. Send curriculum vitae, outline of research interests, samples or abstracts of recent work, and names of five references to: **Harold A. Feiveson, CEES, H102 Engineering Quad, Princeton University, Princeton, N.J. 08544.** *Princeton University is an Affirmative Action/Equal Opportunity Employer.*

**RESEARCH FELLOWSHIP** sponsored by the National Cancer Institute is now available for a 2-year period to investigate the application of multinuclear magnetic resonance spectroscopy to answer oncological, metabolic, and physiological questions on a cellular and organ level in isolated tissues, in experimental animals, and in humans. In addition to a human proton imaging instrument at Brigham and Women's Hospital, available equipment includes high-field analytical instruments and a 30-cm 1.8 T instrument for large organ and animal spectroscopy and imaging.

Candidates should demonstrate appropriate background in cellular and tissue studies or in NMR spectroscopy, and indicate how this multidisciplinary training experience will foster their career goals in a letter of application. Preference will be given to candidate quality more than to specific areas of expertise. U.S. citizenship or permanent visa required. Interested persons should send curriculum vitae and names of two references to: **Martin J. Kushmerick, M.D., Ph.D., Head of Metabolic Research, Division of Nuclear Magnetic Resonance, Department of Radiology, Harvard Medical School, 25 Shattuck Street C2-547, Boston, Mass. 02115.** *Harvard Medical School is an Equal Opportunity/Affirmative Action Employer.*

## TRAINING PROGRAMS

**TRAINING PROGRAM:** Environmental Impact on Lung Structure and Function. Applications are invited for pre- and postdoctoral NIH traineeships dealing with environmental effects on lung at the molecular and cellular levels and on the lung as an organ of immunological defense. Interdepartmental basic science program in the School of Medicine at State University of New York (SUNY), Stony Brook, and biology or experimental medicine at Brookhaven National Laboratory. Predoctoral studies begin August 1984 and lead to Ph.D. in basic medical sciences. Postdoctoral positions for M.D.'s or Ph.D.'s available immediately and also on 1 July 1984. Stipends and benefits according to NIH and university guidelines. Postdoctorals should respond with curriculum vitae, three letters of reference, and major research interest to: **Aaron Janoff, Ph.D., Program Director, Department of Pathology, SUNY, Stony Brook, Stony Brook, N.Y. 11794.** Predoctoral applicants contact: **C. McDevitt, Ph.D.,** at the same address for forms and information. *SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer.* AK Number 74-84.

**PRE- AND POSTDOCTORAL TRAINING PROGRAM IN TOXICOLOGY:** The graduate program in toxicology at the University of Mississippi Medical Center offers pre- and postdoctoral training in these areas of toxicology: pulmonary, liver, CNS, neuromuscular and synaptic transmission, endocrine, and cardiovascular system. Requires U.S. citizenship or permanent residence visa in the United States. Candidates should write: **Program Director, Toxicology Training Program, Department of Pharmacology and Toxicology, the University of Mississippi Medical Center, Jackson, Miss. 39216-4505.** *Equal Opportunity Employer, M/F/H/V.*

# MARINE GEOLOGIST/GEOPHYSICIST

The Office of Naval Research is seeking a highly qualified marine geologist or geophysicist to serve as a Scientific Officer to plan and manage a program of basic and applied contract research in marine geology and geophysics with emphasis in one of these two fields. The sponsored research is conducted principally at universities, government and industrial laboratories by leading scientists in the field. This is a Civil Service position located in Arlington, Virginia at the GM-13 (\$36,152-\$46,997) or GM-14 (\$42,722-\$55,538) level, depending on individual qualifications.

Under the direction of the Geology and Geophysics Program Manager, the incumbent is responsible for analysis of research proposals, recommending appropriate action, following progress of funded

contracts in thorough technical detail, determining when contracts and programs should be terminated, insuring timely and effective dissemination of research results to other Naval elements having a need for those results and insuring that the program content meets anticipated Navy needs. Incumbent will be required to describe and justify his/her programs both in writing and orally within the organization and to responsible bodies in the Navy and DoD.

Areas of research responsibility may include but are not limited to research, development and applications of modern geophysical techniques including, for example, single and multi-channel seismic methods; acoustic bottom interaction and subbottom propagation; crustal structure; marine gravity and geodesy; and sediment dynamics.

Applicants must have completed all requirements for a Ph.D. degree or equivalent in marine geology, geophysics or a related physical science or acquired a minimum of three years of progressively responsible professional experience. At least one year of experience, comparable in difficulty and responsibility to the next lower level in the Federal Service, is required. Demonstrated research experience in a marine environment is preferred. Equivalent combinations of professional experience and graduate education may be acceptable.

Interested persons should submit a resume or Standard Form 171, Personal Qualifications Statement (available at Federal Job Information Centers or from the address below), to:

## OFFICE OF NAVAL RESEARCH

Civilian Personnel Division, Code 791SC

ATTN: Announcement #84-07 (S) • 800 North Quincy Street, Arlington, VA 22217

Applications will be accepted through 1 June 1984 and must be received by that date. For further information and supplemental forms, please call (202) 696-4705.

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# NATIONAL CANCER INSTITUTE DIVISION OF EXTRAMURAL ACTIVITIES DEPUTY DIRECTOR

The National Cancer Institute (NCI) seeks candidates for the position of Deputy Director of the Division of Extramural Activities (DEA). The responsibilities of this division are important to the successful operation of all other program divisions within the NCI. DEA conducts the scientific and budget review of cancer center grants, program project grants, cooperative agreements and contracts. In addition, DEA is responsible for coordinating and monitoring the guidelines, announcement and review of NCI extramural program initiatives (RPAs and RAs) as well as the internal guidelines for referral and review of applications. Other major responsibilities of DEA include the operation of the NCI Cooperative Minority Biomedical Program, and the maintenance and improvement of the major information base on the science supported by the Institute. It is responsible for the operation and support of the National Cancer Advisory Board and its subcommittees and for the committee management functions of committees advisory to the Director, NCI. The deputy will actively participate in all aspects of the management of the division which has a staff of approximately 100 people and a budget of \$10 million.

The candidate is expected to have a degree in a biomedical discipline, an M.D., or equivalent training and management level experience in biomedical research. Experience in clinical and/or basic research areas related to cancer as well as

substantial experience in scientific program planning, development and administration is desired.

This is a Civil Service position in the Senior Executive Service (SES) with a salary range of \$58,938 to \$66,000 and the annual potential of a performance bonus. M.D.s may be eligible for a Physician Comparability Allowance up to \$10,000 per year. An individual who is not presently in the SES will be required to serve a one year probationary period. Alternately, candidates may be eligible for an appointment in the Commissioned Corps of the U.S. Public Health Service.

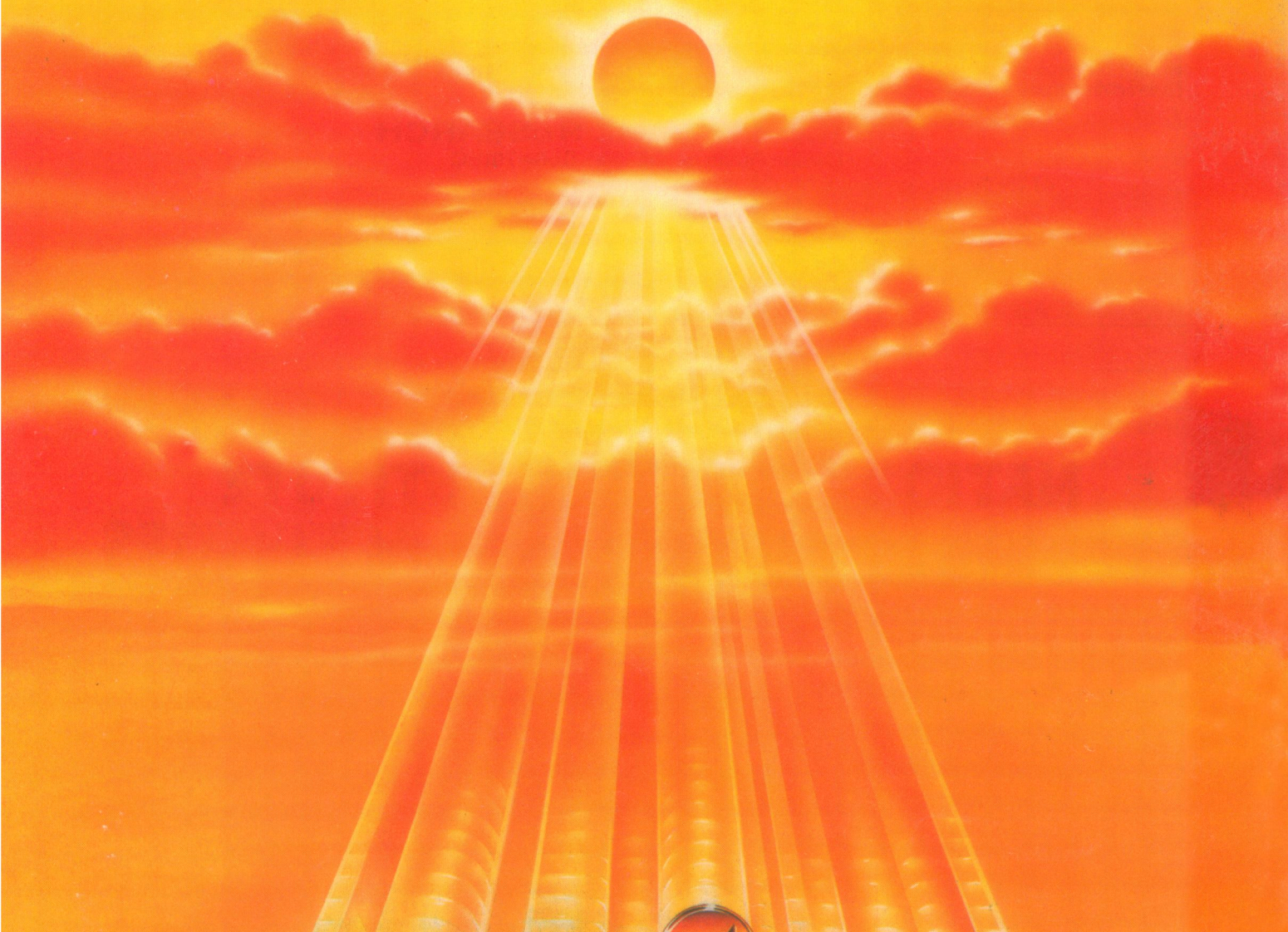
Applications should include a U.S. Government Personal Qualifications Statement, Form SF-171, complete curriculum vitae and bibliography. All qualified candidates will receive consideration without regard to race, color, sex, age, national origin, lawful political affiliation, marital status, union membership, or any nondisqualifying physical or mental handicap. Please send the application to Ms. Paula Hayes, National Cancer Institute, Building 31, Room 3A08, Bethesda, Maryland 20205, postmarked no later than June 1, 1984. A copy of the position requirements and other information about this announcement may be obtained by calling Ms. Hayes at (301) 496-6503

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