

and discussions focusing on taxonomic diversification in the Phanerozoic by Hoffman and on mass extinction by Stephen M. Stigler. The volume, which stems from the Field Museum's Eighth Spring Systematics Symposium, is dedicated to the memory of Thomas J. M. Schopf.—K.L.

**Ontogeny and Systematics.** C. J. HUMPHRIES, Ed. Columbia University Press, New York, 1988. xvi, 236 pp., illus. \$40. Based on a symposium, Brighton, U.K., July 1985.

This volume, which sets out to "explore the principles [of developmental biology and phylogenetic systematics] in an effort to combine them," contains seven essays, five of which were originally presented at the Third International Congress of Systematic and Evolutionary Biology. In the opening essay, V. Louise Roth considers the concept of homology. In the second, P. Weston examines the use of parsimony and direct and indirect techniques for establishing character phylogenies as expounded by G. Nelson. Arnold Kluge then describes and discusses "some recent advances in methodology that may lead to a synthesis of ontogenetic patterns," focusing on "the major advantages and disadvantages of treating species as life cycles." The relationship between systematics and ontogeny is discussed with respect to pollen and spores by Stephen Blackmore and Peter R. Crane and with respect to bryophytes by Brent D. Mishler. Henri M. André, with reference to arthropods, expounds the concept of "stase" and provides an introduction to ideas propounded by W. Garstang and F. Grandjean that "should have altered our whole outlook on evolutionary biology." An essay on epigenetics by Søren Løvtrup concludes the volume. An introduction by Humphries and an index are also included.—K.L.

## Books Received

**Applications of Polymers.** Raymond B. Seymour and Herman F. Mark, Eds. Plenum, New York, 1988. viii, 156 pp., illus. \$49.50. From a symposium, Denver, CO, April 1987.

**Applied Multivariate Analysis.** Ira H. Bernstein. Springer-Verlag, New York, 1988. xx, 508 pp., illus. \$49.

**Art in Organic Synthesis.** Nitya Anand, Jasjit S. Bindra, and Subramania Ranganathan. 2nd ed. Wiley-Interscience, New York, 1988. xx, 427 pp., illus. \$39.95.

**Asa Fitch and the Emergence of American Entomology.** With an Entomological Bibliography and a Catalog of Taxonomic Names and Type Specimens. Jeffrey K. Barnes. State Education Department, University of the State of New York, Albany, New York, 1988. viii, 120 pp., illus. Paper, \$12.50. New York State Museum Bulletin, no. 461.

**Conservation in Africa.** People, Policies and Practice. David Anderson and Richard Grove, Eds. Cambridge University Press, New York, 1988. x, 355 pp., illus. \$54.50. Based on a workshop, Cambridge, U.K., April 1985.

**Cool Stars, Stellar Systems, and the Sun.** J. L. Linsky and R. E. Stencel, Eds. Springer-Verlag, New York, 1987. xiv, 537 pp., illus. \$55.80. Lecture Notes in Physics, vol. 291. From a workshop, Boulder, CO, July 1987.

**Counterexamples in Probability.** Jordan M. Stoyanov. Wiley, New York, 1988. xxiv, 314 pp. \$81.95. Wiley Series in Probability and Mathematical Statistics.

**The Developing Person Through the Life Span.** Kathleen Stassen Berger. 2nd ed. Worth, New York, 1988. xxiv, 622 pp., illus., + indexes and appendixes. \$33.95.

**The Development of Scientific Thinking Skills.** Deanna Kuhn et al. Academic Press, San Diego, CA, 1988. xii, 249 pp. \$29.95. Developmental Psychology Series.

**Disease Prevention/Health Promotion.** The Facts. Office of Disease Prevention and Health Promotion, U.S. Public Health Service. Bull Publishing, Palo Alto, CA, 1987. viii, 341 pp., illus. Paper, \$22.95.

**Evaporite Basins.** Tadeusz M. Peryt, Ed. Springer-Verlag, New York, 1987. vi, 188 pp., illus. Paper, \$29.50. Lecture Notes in Earth Sciences, vol. 13.

**The Evolutionary Dynamics of Complex Systems.** A Study in Biosocial Complexity. C. Dyke. Oxford University Press, New York, 1988. xii, 161 pp. \$35. Monographs on the History and Philosophy of Biology.

**The Expanding Universe.** Arthur Eddington. Cambridge University Press, New York, 1988. xxiv, 128 pp. Paper, \$12.95. Cambridge Science Classics. Reprint, 1933 ed.

**Experimental Techniques in High-Pressure Research.** W. F. Sherman and A. A. Stadtmüller. Wiley, New York, 1988. x, 471 pp., illus. \$126.

**The Facts on File Dictionary of Astronomy.** Valerie Illingworth. 2nd ed. viii, 437 pp., illus. \$24.95; paper, \$12.95.

**Genetic Engineering for Almost Everybody.** William Bains. Penguin, New York, 1988. x, 214 pp. Paper, \$6.95.

**Integral Transforms in Geophysics.** Michael S. Zhdanov. Springer-Verlag, New York, 1988. xxiv, 367 pp., illus. \$140. Translated from the Russian edition (Moscow, 1984).

**Intermediate Physics for Medicine and Biology.** Russell K. Hobbie. 2nd ed. Wiley, New York, 1988. xvi, 623 pp., illus. \$54.60.

**The Internal Constitution of the Stars.** Arthur S. Eddington. Cambridge University Press, New York, 1988. xiv, 407 pp. Paper, \$19.95. Cambridge Science Classics Series. Reprint, 1962 ed.

**Interpolation of Operators.** Colin Bennett and Robert Sharpley. Academic Press, Orlando, FL, 1988. xiv, 469 pp. \$69.95. Pure and Applied Mathematics, vol. 129.

**The Invention of Memory.** A New View of the Brain. Israel Rosenfeld. Basic Books, New York, 1988. x, 229 pp., illus. \$18.95.

**Laboratory Experiments in Economics.** Six Points of View. Alvin E. Roth, Ed. Cambridge University Press, New York, 1987. x, 219 pp., illus. \$29.95.

**Laser Remote Chemical Analysis.** Raymond M. Measures, Ed. Wiley-Interscience, New York, 1988. xiv, 546 pp., illus. \$75. Chemical Analysis, vol. 94.

**Law and Semiotics.** Vol. 1. Roberta Kevelson, Ed. Plenum, New York, 1987. viii, 354 pp. \$65. From a conference, University Park, PA, April 1987.

**Learning from Good and Bad Data.** Philip D. Laird. Kluwer, Norwell, MA, 1988. xviii, 211 pp. \$45. Kluwer International Series in Engineering and Computer Sciences.

**Mental Models as Representations of Discourse and Text.** Alan Garnham. Horwood, Chichester, U.K. and Halsted (Wiley), New York, 1988. 205 pp. \$64.95. Ellis Horwood Series in Cognitive Science.

**Metals in Coastal Environments of Latin America.** U. Seeliger, L. D. de Lacerda, and S. R. Patchineelam, Eds. Springer-Verlag, New York, 1988. xvi, 297 pp., illus. \$54. From a symposium, Rio de Janeiro, Brazil, Aug. 1986.

**Meteor Showers.** A Descriptive Catalog. Gary W. Kronk. Enslow, Hillside, NJ 07205. xxiv, 291 pp. Paper, \$24.50. Enslow Astronomy Series.

**Modeling in Urban and Regional Economics.** Alex Anas. Harwood, New York, 1987. viii, 133 pp. Paper, \$36. Fundamentals of Pure and Applied Economics, vol. 26.

**Modelling of Structure and Properties of Molecules.** Z. B. Maksic, Ed. Horwood, Chichester, U.K., and Halsted (Wiley), New York, 1987. viii, 360 pp., illus. \$67.95. From a symposium, Zagreb, Yugoslavia, May 1986.

**New Interventions of Children and Youth.** Action-Research Approaches. Robert N. Rapoport. Cambridge University Press, New York, 1987. viii, 275 pp. \$39.50.

**Nicotine Replacement.** A Critical Evaluation. Ovide F. Pomerleau and Cynthia S. Pomerleau. Liss, New York, 1988. xiv, 317 pp., illus. \$58. Progress in Clinical and Biological Research, vol. 261. Based on a conference, Bethesda, MD, Jan. 1987.

**Nitrogen Fixation by Legumes in Mediterranean Agriculture.** D. P. Beck and L. A. Materon, Eds. Nijhoff, Dordrecht, 1988 (U.S. distributor, Kluwer, Norwell, MA). xvi, 379 pp., illus. \$125. Developments in Plant and Soil Sciences, vol. 32. From a workshop, Aleppo, Syria, April 1986.

**The Nonlinear Theory of Elastic Shells.** One Spatial Dimension. A Libai and J. G. Simmonds. Academic Press, San Diego, CA, 1988. xvi, 412 pp., illus. \$49.50.

**Nonnegative Matrices.** Henryk Minc. Wiley-Interscience, New York, 1988. xiv, 206 pp. \$39.95.

**Numerical Modeling in Science and Engineering.** Myron B. Allen III, Ismael Herrera, and George F. Pinder. Wiley-Interscience, New York, 1988. xii, 418 pp., illus. \$39.95.

**Numerical Radiative Transfer.** Wolfgang Kalkofen, Ed. Cambridge University Press, New York, 1988. vi, 373 pp., illus. \$49.50.

**Okavango.** Jewel of the Kalahari. Karen Ross. Macmillan, New York, 1988. 256 pp., illus. \$24.95.

**Online Retrieval.** Analysis and Strategy. Peter J. Vigil. Wiley, New York, 1988. xiv, 242 pp., illus. \$34.95.

**Optics.** K. D. Möller. University Science, Mill Valley, CA, 1988. xii, 644 pp., illus. \$48.

**Organic and Inorganic Low-Dimensional Crystalline Materials.** Pierre Delhaes and Marc Drillon, Eds. Plenum, New York, 1987. xiv, 482 pp., illus. \$95. NATO Advanced Science Institutes Series B, vol. 168. From a workshop, Minorca, Spain, May 1987.

**Plant Strategies and the Dynamics and Structure of Plant Communities.** David Tilman. Princeton University Press, Princeton, NJ, 1988. xii, 360 pp., illus. \$45; paper, \$15.95. Monographs in Population Biology, vol. 26.

**Polycrystalline Silicon for Integrated Circuit Applications.** Ted Kamins. Kluwer, Norwell, MA, 1988. xiv, 290 pp., illus. \$55. Kluwer International Series in Engineering and Computer Science.

**Polymer Surface Dynamics.** J. D. Andrade, Ed. Plenum, New York, 1988. viii, 182 pp., illus. \$49.50. From a symposium, Denver, CO, June 1986.

**Power Sonic and Ultrasonic Transducers Design.** B. Hamonic and J. N. Decarpigny, Eds. Springer-Verlag, New York, 1988. x, 249 pp., illus. \$59.40. From a workshop, Lille, France, May 1987.

**Predicting Recidivism Using Survival Models.** Peter Schmidt and Ann Dryden White. Springer-Verlag, New York, 1988. xii, 174 pp., illus. \$39. Research in Criminology.

**Prehistoric Stone Technology of Northern Black Mesa, Arizona.** William J. Parry and Andrew L. Christenson. Center for Archaeological Investigations, Southern Illinois University, Carbondale, 1987. xx, 312 pp., illus. Paper, \$23.50. Occasional Paper no. 12.

**The Presence of the Past.** Morphic Resonance and the Habits of Nature. Rupert Sheldrake. Times Books, New York, 1988. xxii, 391 pp., illus. \$19.95.

**Prison Crowding.** A Psychological Perspective. Paul B. Paulus, with Verne C. Cox and Garvin McCain. Springer-Verlag, New York, 1988. x, 115 pp., illus. \$43. Research in Criminology.

**Probabilistic Methods in Mathematical Physics.** Kiyosi Itô and Nobuyuki Ikeda, Eds. Academic Press, San Diego, CA, 1988. viii, 441 pp. \$59.50. From a symposium, Katata and Kyoto, Japan, June 1985.

**The Problems of Physics.** A. J. Leggett. Oxford University Press, New York, 1987. xii, 192 pp., illus. \$17.95; paper, \$10.95. An OPU Book.

**Professional Judgment.** A Reader in Clinical Decision Making. Jack Dowie and Arthur Elstein, Eds. Cambridge University Press, New York, 1988. xvi, 565 pp., illus. \$59.50; paper, \$19.95.

**The Protolobar Structure of the Human Kidney.** Its Biologic and Clinical Significance. Gabor Inke. Liss, New York, 1988. xiv, 788 pp., illus. \$275.

**Relatives at Risk for Mental Disorder.** David L. Dunner, Elliot S. Gershon, and James E. Barrett, Eds. Raven, New York, 1988. xii, 324 pp., illus. \$79. American Psychopathological Association Series.

**Reliability Assessment of Large Electric Power Systems.** Roy Billinton and Ronald N. Allan. Kluwer, Norwell, MA, 1988. xii, 296 pp., illus. \$52.50. Kluwer

(Continued on page 995)

## Products & Materials

### Immunohistochemical Staining Kits

The HistoMark immunohistochemical staining kits are designed for alkaline phosphatase or horseradish peroxidase reporter systems. A highly chromogenic dye localizes enzyme activity, and the nuclear counterstain contrasts strongly. The kits for horseradish peroxidase systems have either orange or black dye with green counterstain, and the kits for alkaline phosphatase systems have either red dye with blue counterstain or blue dye with red counterstain. Each kit contains chromogen solution, activator solution, buffered substrate solution, counterstain, blocking solution (for horseradish peroxidase systems), and instructions. Reagents are sufficient to stain about 1000 slides. Kirkegaard & Perry Laboratories. Circle 465.

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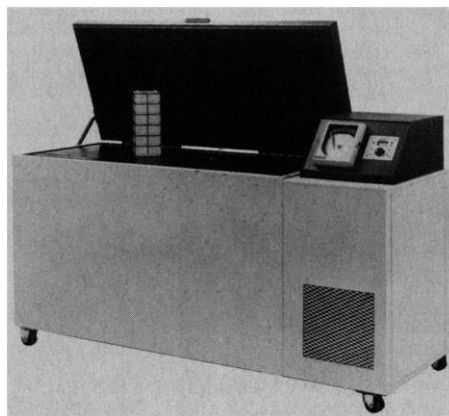
INJECT is a software program that acquires and analyzes chromatographic data. The program can acquire and display information from two detectors simultaneously and can automatically or interactively analyze retention time, peak height, width, and skew. The program can fit polynomial curves and output report files in ASCII. The user can choose between a mouse-based and

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a keyboard-based interface. INJECT operates on IBM XT, AT, PS/2 model 30, and compatible computers with at least two drives (floppy or hard) and an available long slot. Interactive Microware. Circle 475.

### Quick-Freeze Freezers

Rush Qualitemp chest freezers can chill a material to the freezer's temperature in less than 4 hours. Adding new materials does not affect the temperature of materials already in the freezer. The freezers have solid-state temperature controls. The alarm system has adjustable high and low set points and both an audible and a visual alarm. The



compressor operates only when needed, cycling on and off to maintain temperature. Insulation is provided by 11-cm-thick poured-in-place polyurethane foam. The Rush Qualitemp freezers are available in six cascade models and six single-stage models. Temperatures for the cascade models can vary between  $-60^{\circ}$  and  $-90^{\circ}\text{C}$ , and temperatures for the single-stage models can vary between  $-10^{\circ}$  and  $-45^{\circ}\text{C}$ . The smallest freezer has a  $0.21\text{-m}^3$  capacity, and the largest, a  $0.87\text{-m}^3$  capacity. Hotpack. Circle 468.

### Multivariate Analysis Software

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fy unknowns. Because automatic checks for outliers are performed during both calibration and prediction, samples that are qualitatively different from those in the training set can be detected, thus improving the reliability of analyses. UNSCRAMBLER operates on the IBM XT, AT, and compatible computers with a hard disk, a math coprocessor, and a graphics card. Guided Wave. Circle 467.

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### Literature

The 1988 *Products and Protocols Catalog* lists more than 550 products for molecular biologists, including cDNA and genomic libraries, nylon transfer blots, synthetic oligonucleotide probes, cloning and expression vectors, competent cells, and biotin-avidin reagents. Clontech Laboratories. Circle 477.

*Classical LC, Electrophoresis: Catalog 24* features liquid chromatography systems and instruments, electrophoresis power supplies, a gel scanner, fractionators for centrifuged density gradients, and peristaltic and reciprocating pumps. Isco. Circle 478.

*1988-1989 Immunological and Biological Reagents* is a catalog of 1800 reagents, including conjugated and unconjugated monoclonal and polyclonal antibodies specific for human, rat, and mouse proteins. Bioproducts for Science. Circle 479.

*Ion Chromatography Notes* is an 8-page newsletter that discusses new products and applications in ion chromatography. Waters Chromatography Division, Millipore. Circle 480.

*Catalogue 88* describes 500 chemicals for research related to biologically active carbohydrates. BioCarb Chemicals (Sweden). Circle 489.

*Syringe Filters* describes 25- and 4-mm syringe filters with membranes of cellulose acetate, nylon, or Teflon polytetrafluoroethylene, Nalge, a Subsidiary of Sybron. Circle 463.

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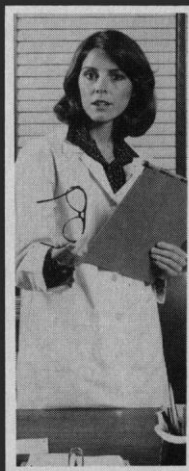
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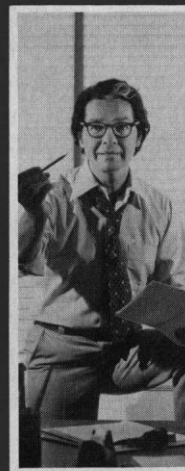
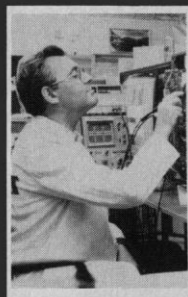
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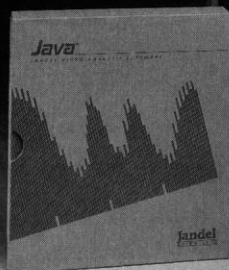
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(Continued from page 991)

International Series in Engineering and Computer Science.

**Research in Arctic Life and Earth Sciences.** Present Knowledge and Future Perspectives. Mats Sonesson, Ed. Munksgaard, Copenhagen, 1987. 112 pp., illus. Paper, DKK 160. Ecological Bulletins, vol. 38. From a symposium, Abisko, Sweden, Sept. 1985.

**Research Instrumentation for the 21st Century.** Gary R. Beecher, Ed. Nijhoff, Dordrecht, 1988 (U.S. distributor, Kluwer, Norwell, MA). xiv, 455 pp., illus. \$122. Beltsville Symposia in Agricultural Research, vol. 11. Based on a symposium, Beltsville, MD, May 1986.

**Rhythmic Phenomena in Plants.** Beatrice M. Sweeney. 2nd ed. Academic Press, San Diego, CA, 1987. xiv, 172 pp., illus. \$32.95.

**The Role of Fine-Scale Magnetic Fields on the Structure of the Solar Atmosphere.** E.-H. Schröter, M. Vázquez, and A. A. Wyller, Eds. Cambridge University Press, New York, 1988. xii, 379 pp., illus. \$59.50. From a workshop, Tenerife, Spain, Oct. 1986.

**Self-Organization and Associative Memory.** Teuvo Kohonen. 2nd ed. Springer-Verlag, New York, 1988. xvi, 312 pp., illus. \$39.50. Springer Series in Information Sciences, vol. 8.

**Seventy-Five Years in Ecology.** The British Ecological Society. John Sheail. Blackwell Scientific, Palo Alto, CA, 1987. xiv, 301 pp. + plates. \$65.95; paper, \$28. British Ecological Society Special Publication.

**Solitons, Introduction and Applications.** M. Lakshmanan, Ed. Springer-Verlag, New York, 1988. x, 367 pp., illus. \$59.50. Springer Series in Nonlinear Dynamics. From a school, Tiruchirappalli, India, Jan. 1987.

**The Sources of Innovation.** Eric von Hippel. Oxford University Press, New York, 1988. xii, 218 pp. \$27.

**Starbursts and Galaxy Evolution.** Trinh Xuan Thuan, T. Montmerle, and J. Tran Thanh Van, Eds. Editions Frontières, Gif sur Yvette, France, 1988. xii, 607 pp., illus. \$63. From a meeting, Les Arcs, France, March 1987.

**Statistical Estimation in Large Parameter Spaces.** A. W. van der Vaart. Centrum voor Wiskunde en Informatica, Amsterdam, 1988. x, 205 pp. Dfl 31.60. CWI Tract 44.

**Structure and Expression.** 3 vols. Vol. 1, From Proteins to Ribosomes. M. H. Sarma and R. H. Sarma, Eds. xii, 288 pp., illus. Vol. 2, DNA and Its Drug Complexes. M. H. Sarma and R. H. Sarma, Eds. x, 342 pp., illus. Vol. 3, DNA Bending and Curvature. W. K. Olson et al., Eds. xii, 280 pp., illus. Each vol., \$90. Adenine Press, Schenectady, NY, 1988. From a conference, Albany, NY, June 1987.

**The Structure of Surfaces II.** J. F. van der Veen and M. A. Van Hove, Eds. Springer-Verlag, New York, 1987. xvi, 626 pp., illus. \$65. Springer Series in Surface Sciences, vol. 11. From a conference, Amsterdam, The Netherlands, June 1987.

**Supermassive Black Holes.** Minas Kafatos, Ed. Cambridge University Press, New York, 1988. xvi, 382 pp., illus. \$54.50. From a workshop, Fairfax, VA, Oct. 1986.

**Techniques Biochimiques d'Analyse des Antigènes de Membrane.** D. Charron. Société Française d'Immunologie and Editions INSERM, Paris, 1987. 99 pp., illus. FF 130. Techniques en Immunologie.

**Techniques Immunoenzymatiques.** Thérèse Ternynck and Stratis Avrameas. Société Française d'Immunologie and Editions INSERM, Paris, 1987. 102 pp. Paper, FF 130. Techniques en Immunologie.

**Technology and the Transformation of White-Collar Work.** Robert E. Kraut, Ed. Erlbaum, Hillsdale, NJ, 1987. xii, 281 pp., illus. \$32.50. From a conference, June 1984.

**The Temperate Forest Ecosystem.** Yang Hanxi et al., Eds. Institute of Terrestrial Ecology, Grange over Sands, U.K., 1987. 189 pp., illus. Paper, \$15.00. ITE Symposium no. 20. From a symposium, Antu, China, July 1986.

**Theories of the Earth and Universe.** A History of Dogma in the Earth Sciences. S. Warren Carey. Stanford University Press, Stanford, CA, 1988. xviii, 413 pp., illus. \$45.

**Theory and Observational Limits in Cosmology.** W. R. Stoeger, Ed. Vatican Observatory, Vatican City, 1987. 574 pp., illus. Paper, \$84. From a conference, Vatican City, July 1985.

**Time-Dependent Effects in Disordered Materials.** Roger Pynn and Tormod Riste, Eds. Plenum, New York, 1987. xiv, 504 pp., illus. \$95. NATO Advanced Science Institutes Series B, vol. 167. From an institute, Geilo, Norway, March-April 1987.

# 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. **SCIENCE** reserves the right, in its discretion, to decline to publish advertisements submitted to it.

**LINE CLASSIFIED ADVERTISING DEADLINES:** Thursday, 10 a.m., 2 weeks prior to issue date (mailed on issue date). For deadlines for display advertising, please contact Scherago Associates.

**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 CLASSIFIED (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth):** \$38.00 per line; \$380 minimum, per week (minimum charge covers one inch on a single column; one inch equals 10 lines of 52 characters and spaces per line). No charge for use of box number. No agency commission for ads less than 4 inches. No cash discount. Prepayment required for all foreign ads. Purchase orders and/or cover letter including billing address required for all other advertising.

**To ESTIMATE ad cost:** Structure ad copy on a separate page, on lines of 52 characters and spaces. Include any desired heading. Each line of heading, and/or extra line spaces, and all partial lines (including centered reply information) are counted as full lines. Ad titles located within the text are printed in boldface caps and are only 32 characters per line. In ESTIMATING the cost, multiply total lines  $\times$  \$38.00 = approximate cost of ad. (This is an approximate cost ONLY. Allow for variation between estimated lines and actual typeset lines and the resulting final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.)

**CANCELLATION POLICY:** NOTE: Ad cancellations made after Thursday, TWO weeks prior to issue date incur a 10% production charge. Final deadline for cancellations is 12 p.m. Tuesday, ONE week prior to issue date. Cancellations must be in writing.

Send copy for all **Positions Wanted** ads and **Line Classified** ads less than 1/6 page in size (39 lines) to:

**SCIENCE Classified Advertising**  
1333 H Street, NW, Room 940  
Washington, DC 20005  
Telephone: 202-326-6555

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

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

Blind ad replies should be addressed as follows:

**Box (give number)**  
**SCIENCE**  
1333 H Street, NW  
Washington, DC 20005

## POSITIONS WANTED

**Biochemist, Ph.D. (1980).** Experience in protein and carbohydrate biochemistry. Seeking postdoctoral position. Available immediately. Box 135, **SCIENCE**.

**Law/Science.** Solid international background. Experience in research, medicine, radiation, administration and litigation. Seeking science/medical policy review position with congressional committee, government or private sector. An Equal Opportunity Employee. Box 136, **SCIENCE**.

**Molecular Modeler, Ph.D.** Versatile experience in small molecule design, structure and conformation of biopolymers, QSAR, molecular mechanics, receptor modeler; extensive publication record; seeks position in pharmaceutical or biotech industry. Box 134, **SCIENCE**.

## POSITIONS WANTED

**Physiologist/Neuroscientist, Ph.D.** with proven publication record. Research relating to cerebral blood flow and energy metabolism, using current methods and techniques. Seeking a research or research/teaching position in the southeast. Box 131, **SCIENCE**.

**Translation from Japanese** publications, patents, and technical reports. P.O.B. 211063, Columbus, OH 43221.

**Translations and Abstracts from Japanese, Russian and German** in medical sciences, biotechnology, pharmacuetics, and organic chemistry. Experienced, freelance, Ph.D. scientist. P.O.B. 7511, Alexandria, VA 22307.

## POSITIONS OPEN

**ACADEMIC POSITION—RESEARCH ASSOCIATE (i)** To conduct advanced research on the molecular genetics of signal transduction, using knowledge of *Dictyostelium*. Research involves molecular cloning and characterization of biochemical pathways; (ii) To instruct postdoctoral fellows; (iii) To participate in and sometimes lead research meetings; and (iv) To help draft grant proposals. Minimum requirements: Ph.D. in biochemistry or biology; 3 years of postdoctoral experience in the above research. Monday to Friday, 40 hours per week. \$40,000 per year. Send résumé to: **Department of Biological Sciences, Hunter College, CUNY, 695 Park Avenue, New York, NY 10021. Attention: Dr. Robert P. Dottin.**

The New Mexico Solar Energy Institute at New Mexico State University has a position available for a Specialist III, **AQUACULTURE PROJECT MANAGER** to be located at the Roswell Test Facility, Roswell, New Mexico.

Applicants should have a Ph.D. or equivalent in field related to biomass production or aquaculture, agricultural background desired. Proven ability to build and lead an interdisciplinary program. At least 3 years of experience with aquatic biomass systems in addition to a broad range of successful research experience. The applicant should have a strong interest in applications of New Mexico's saline groundwater resources for the development of commercially viable products. The applicant must demonstrate excellence in research and have the capability to manage interdisciplinary projects with various academic colleges, departments, and industry.

The successful applicant will be expected to develop and carry out a program for the utilization of saline water derived biomass, define projects, identify funding sources, and write proposals to acquire additional funds for projects. Application (including résumé and three references) should be sent to: **Dr. Rudi Schoenmackers, Director, New Mexico Solar Energy Institute, Box 30001, Department 3 SOL, New Mexico State University, Las Cruces, NM 88003-0001.** Deadline for application is 9 September 1988. *New Mexico State University is an Equal Employment Opportunity/Affirmative Action Employer.*

## ASSISTANT PROFESSOR IN PLANT HOST-PATHOGEN INTERACTIONS REOPENED

A 12-month tenure-track position in plant pathology at the rank of assistant professor. Individual will be expected to establish a strong research program utilizing molecular approaches to the study of plant host-pathogen interactions. Teaching will include developing a graduate course in plant host-pathogen interactions to be taught in alternate years and contributing to other departmental courses. Ph.D. degree and postdoctoral experience are required. Applicants should submit curriculum vitae, statement of research interests, transcripts of all academic records, list of publications, reprints of representative publications, and three letters of recommendation to: **Dr. Stella M. Coakley, Chairperson, Department of Botany and Plant Pathology, Oregon State University, Cordley Hall 2082, Corvallis, OR 97331-2902.** Closing date: 30 November 1988. Position available 1 July 1989. *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973. OSU has a policy of being responsive to the needs of dual-career couples.*



## POSITIONS OPEN

**ASSISTANT BIOCHEMIST**—Ph.D. in crystallography. One year of postdoctoral training. Postdoctoral training should include hands-on experience in working on membrane-bound protein single crystals and x-ray data acquisition at synchrotrons. Will perform x-ray crystallography on protein membrane-bound single crystals, including data acquisition, data analysis, structure analysis, and the work with x-ray area detectors and perform work at synchrotrons with high-resolution x-ray diffraction. Salary: \$3100 per month; 40 hours per week; 8:30 a.m. to 5:00 p.m. Send résumé to: **Illinois Department of Employment Security, 401 South State Street—3 South, Chicago, IL 60605. Attention: Joan Haight, Reference #8522-H. An Employer paid ad.**

**ASSISTANT PHYSICIST**—Ph.D. in physics. One year of postdoctoral training and 2 to 3 years experience as a researcher in physics. Research experience should include: circular accelerator physics and technology, electromagnetic theory, computing techniques, and mainframe computing. All of the above evidenced by publications in refereed journals. Under minimal supervision, the following duties will be performed: (i) Design accelerator or storage ring lattices for various types of high energy accelerators. (ii) Analyze the beam behavior in a storage ring, and make recommendations regarding possible improvement of the beam. (iii) Calculate the coupling impedance of beam to its surroundings. (iv) Calculate the performance limits of a storage ring using the coupling impedances. (v) Develop the particle tracking codes to simulate the performance of the storage ring. Salary: \$2600 per month; 40 hours per week; 8:30 a.m. to 5:00 p.m. Send résumé to: **Illinois Department of Employment Security, 401 South State Street—3 South, Chicago, IL 60605. Attention: Joan Haight, Reference #8416-H. An employer paid ad.**

**ASSISTANT PHYSICIST**—Ph.D. in physics; 1 to 2 years of postdoctoral training. Education and training should include: Circular accelerator physics and technology, electromagnetic theory, computing technique, and mainframe computing. Under minimum supervision, the following duties will be performed: (i) Design accelerator or storage ring lattices for various types of high energy accelerators. (ii) Analyze the beam behavior in a storage ring, and make recommendations regarding possible improvement of the beam. (iii) Calculate the coupling impedance of beam to its surroundings. (iv) Calculate the performance limits of a storage ring using the coupling impedances. (v) Analyze vibrational modes of storage ring-support structure-ground system. Salary: \$2960 per month; 40 hours per week; 8:30 a.m. to 5:00 p.m. Send résumé to: **Illinois Department of Employment Security, 401 South State Street—3 South, Chicago, IL 60605. Attention: Joan Haight, Reference #8415-H. An employer paid ad.**

**ASSISTANT PROFESSOR** (anticipated opening). A person with experience in mechanistic biochemistry, physical organic chemistry, and/or oxidative biology is desired to act as the day-to-day director of the research group of **Dr. William Pryor**, who serves as Director of the Biodynamics Institute at a new center for the study of nutrition and aging built with a \$125-million gift to Louisiana State University (LSU). The research group totals from 15 to 25 personnel with ranks up to graduate students and postdoctoral fellows. The position is paid from State funds, not grant funds; it is not initially, but it could become, a tenure-track position split between the Biodynamics Institute and either the Chemistry or the Biochemistry Departments of LSU. Interested persons should submit a complete curriculum vitae and have at least three references write directly to: **Dr. William A. Pryor, Biodynamics Institute, 711 Choppin, Louisiana State University, Baton Rouge, LA 70803. Deadline: Until a suitable candidate is found. LSU is an Equal Employment Opportunity Employer.**

**ASSISTANT OR ASSOCIATE PROFESSOR OF PATHOLOGY** position available at The George Washington University Medical Center, Washington, D.C. Full-time faculty position available for individual with training and expertise in experimental pathology (desirable areas are cancer, heart or AIDS) and capable of maintaining research program and support. Candidate should be M.D. with Board certification or eligibility. Send résumé to: **Dr. H. Sidransky, Chairman, Department of Pathology, The George Washington University Medical Center, 2300 I Street, NW, Washington, D.C. 20037. An Equal Opportunity Employer.**

## POSITIONS OPEN

**ASSISTANT PROFESSOR** (Tenure-leading): The Eppley Institute for Research in Cancer, a designated NCI Laboratory Cancer Research Center, University of Nebraska Medical Center is seeking an individual to establish an independent research program applying modern organic and/or bioorganic approaches to basic problems related to cancer. The successful candidate will hold a joint appointment in an appropriate basic science department and will be expected to contribute to furthering graduate education on the UNMC campus. The Eppley Institute is a multi-disciplinary institution with 21 faculty whose research interests include analytical and organic chemistry, xenobiotic metabolism, DNA damage and repair, virology, oncogenes, molecular biology, cell differentiation, gene regulation, genetics, biochemical nutrition, and pathology. Candidates should have a Ph.D. in chemistry, and several years of postdoctoral training. Send complete résumé, statement of future research plans and three letters of reference to: **Professor Edward Bresnick, Eppley Institute, UNMC, Omaha, NE 68105. Please refer to position #8-6100. Affirmative Action/Equal Opportunity Employer.**

### ASSISTANT/ASSOCIATE PROFESSOR DEPARTMENT OF PHYSIOLOGY

Applications are invited for a tenure-track position in the Department of Physiology of the Ohio State University College of Medicine. Individuals with a promising or established investigative program using a cellular/molecular approach to excitability, contractility, or membrane transport are encouraged to apply. Candidates should have a Ph.D., M.D., or equivalent degree, and a minimum of 2 years of postdoctoral experience. The Department has 21 full-time faculty with varied research interests including multidisciplinary interactions in the neurosciences, digestive diseases, and muscle physiology. Send curriculum vitae, a brief description of research interests, the names of four referees and a record of grant funding to: **Bruce A. Biagi, Ph.D., Chairperson, Search Committee, Department of Physiology, 4197 Graves Hall, 333 West 10 Avenue, Columbus, OH 43210. Applications should be received by 19 September 1988. The Ohio State University is an Equal Opportunity/Affirmative Action Employer.**

### ASSISTANT/ASSOCIATE SCIENTIST GUTHRIE RESEARCH INSTITUTE

Applications are invited for the position of assistant or associate scientist at the Guthrie Research Institute, the basic research component of the Guthrie Clinic/Medical Center complex located in Sayre, Pennsylvania. The Institute is directed toward the study of basic immunology, with an emphasis on cancer-related immunology. Existing research programs involve cellular and biochemical aspects of cell-mediated cytotoxic responses to tumors; macrophage immunobiology, including the production of immunomodulatory and differentiation-active cytokines; and the molecular biology of lymphoid surface antigens and cytokines. Sufficient start-up funds are available for a developing scientist, and abundant opportunities exist within the Medical Center for basic-clinical collaborations.

The Guthrie Research Institute is a free-standing, not-for-profit basic research institute attractively located in scenic northeastern Pennsylvania. Affordable housing is complemented by abundant nearby recreational and cultural facilities.

Interested candidates should submit their curriculum vitae, with three references and statement of interests to: **Robert E. Hall, M.D., Ph.D., Scientific Director, Guthrie Research Institute, Guthrie Medical Center, Sayre, PA 18840.**

**ASSOCIATE DEAN FOR RESEARCH**—University of South Florida (USF) College of Medicine seeks a M.D./Ph.D. in medical discipline with record of funded research, experience in administration, graduate/medical student education to head college's research efforts. Must be eligible for appointment at professorial level. Telephone or written inquiries should be sent to: **J. M. Judisch, M.D., USF College of Medicine, 12901 Bruce B. Downs Boulevard #37, Tampa, FL 33612. Applications must be postmarked no later than 15 September 1988. Equal Employment Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**ASSISTANT PROFESSOR.** The Department of Anatomy and Cellular Biology at Harvard Medical School invites applications for a junior position with a start date in summer or fall of 1989. Applicants should have an active research program in the general area of reproductive biology, using cell and/or molecular biological techniques. They should be willing to teach in a new course for medical students called *The Body*. This 8-week (120-hour) course treats both microscopic and gross anatomy briefly and is the only required teaching commitment. Send curriculum vitae, bibliography, and three or four references by 1 November 1988 to: **Dr. Elizabeth D. Hay, Chairperson, Department of Anatomy and Cellular Biology, Harvard Medical School, 25 Shattuck Street, Boston, MA 02115. Harvard University is an Equal Opportunity/Affirmative Action Employer.**

### BIOCHEMIST

The Department of Malaria is seeking a Ph.D. level individual with expertise in biochemistry to continue a program to identify and characterize antigens specifically associated with the liver stage of the malarial parasite. Experience with monoclonal antibodies and protein purification is essential. Knowledge of molecular biology is required as the applicant will be expected to collaborate within the Department on the cloning and expression of such antigens. Position is available now for an initial 1 year with favorable prospects for continuation. The Department offers a competitive salary commensurate with experience and full benefits. Please send curriculum vitae and two letters of reference to:

**Dr. Michael R. Hollingdale  
Biomedical Research Institute  
12111 Parklawn Drive  
Rockville, MD 20852**

*Affirmative Action/Equal Opportunity Employer.*

**CHAIR, DEPARTMENT OF PATHOBIOLOGY,** School of Veterinary Medicine, The University of Pennsylvania. The University is seeking a highly qualified individual to provide leadership for the Department of Pathobiology. This department includes twenty-one full-time faculty and encompasses the teaching, research and service activities of the Laboratories of Avian Medicine, Microbiology, Parasitology, and Pathology in the School of Veterinary Medicine. Candidates should have experience in administration, a commitment to excellence in teaching, and a strong research program in molecular biology. A degree in veterinary medicine is desirable, but not essential.

Nominations and applications should be sent to: **Dr. Alan M. Kelly, School of Veterinary Medicine, University of Pennsylvania, 3800 Spruce Street, Philadelphia, PA 19104-6051.**

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

### CHIEF OF STAFF

The Ann Arbor, Michigan, Veterans Administration Medical Center in conjunction with the University of Michigan is actively seeking physician applicants for the position of Chief of Staff. Essential credentials include a proven record as a clinician, academician, and researcher with administrative experience in an affiliated environment.

Professional background must be sufficient to qualify for senior academic appointment at the University of Michigan Medical School. Qualified applicants should send curriculum vitae to:

**Dr. Roland G. Hiss  
Chairperson, Search Committee  
University of Michigan Medical School  
61205 Towsley Center  
Ann Arbor, MI 48109-0201**

*The Ann Arbor, Michigan VA Medical Center is an Equal Opportunity Employer.*

**CYTOGENETICIST:** Division of Medical Genetics, Department of Preventive Medicine seeks M.D. or Ph.D., eligible or certified American Board of Medical Genetics for tenure-track faculty position supervising research/clinical laboratory and teaching. Send curriculum vitae to: **Hans-Georg Otto Bock, M.D., Ph.D., Department of Preventive Medicine, University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216-4505. Equal Opportunity Employer, M/F/H/V.**

## POSITIONS OPEN

### BIOTECHNOLOGY SCIENTIST

Ciba Corning Diagnostics, a leader in the development, manufacture and marketing of clinical diagnostics products, has an immediate opening for an individual to help develop a new electrophoresis product line. Position requires a Bachelor's degree and 2 to 5 years of hands-on experience with nucleic acid separation and analysis in a molecular biology setting. Located in the beautiful San Francisco Bay area, we offer an excellent salary and benefits package. Send résumé to: **Personnel, Ciba Corning Diagnostics Corporation, 490 San Antonio Road, Palo Alto, CA 94306.** *Equal Opportunity Employer.*

**DIRECTOR, BOSTON UNIVERSITY CANCER CENTER.** Applications and nominations are invited for senior scientist/clinical investigator to direct major medical center program. Director will have senior faculty rank and report directly to Dean. Candidates may hold M.D. or Ph.D.; must have established reputation in clinical oncology or basic research.

Send nominations and curricula vitae to: **Norman G. Levinsky, M.D., Boston University Medical Center, 88 East Newton Street, Boston, MA 02118.** *Boston University is an Equal Opportunity/Affirmative Action Employer.*

**DIRECTOR, DIVISION OF VECTOR-BORNE VIRAL DISEASES.** The Centers for Disease Control is seeking a Director for the Division of Vector-Borne Viral Diseases of the Center for Infectious Diseases located in Ft. Collins, Colorado, with a field station in San Juan, Puerto Rico. The Director is responsible for arthropod-borne viral and bacterial disease detection, prevention, and control. Directs World Health Organization Collaborating Centers for Arbovirus and Plague Reference and Research. The programs are international in scope and provide opportunities for leadership in medical epidemiology, surveillance, laboratory research, and epidemic investigations. The Director serves as a principal resource for the Public Health Service for all public health aspects of vector-borne bacterial and viral diseases including Lyme disease, yellow fever plague, and dengue. Provides consultation on the clinical and laboratory diagnosis of vector-borne diseases to local, State and international health authorities. Qualifications preferred include a doctoral degree (M.D., Ph.D., or equivalent), broad knowledge of the total Federal program related to prevention and control of vector-borne diseases, and the ability to provide administrative and scientific leadership for a multidisciplinary program, employing 75 professional, technical, and administrative personnel. Salary ranges up to \$73,400 per annum, (M.D. may be entitled to an extra \$8,000 to \$20,000 allowance) depending on qualifications and personnel system. Further information about the position can be obtained from: **Dr. John Feeley, Chairman, VBVD Division Director Search Committee, Center for Infectious Diseases, Building 1, Room 5035, Centers for Disease Control, Atlanta, GA 30333.** Interested candidates may send in confidence their curriculum vitae and names of three professional references by 30 October 1988 to: **Lynn A. Agin, Personnel Management Office, 1-1066, Centers for Disease Control, 1600 Clifton Road, NE, Atlanta, GA 30333.** *CDC is an Equal Opportunity Employer and provides a smoke-free work environment.*

The Centers for Disease Control, Center for Environmental Health and Injury Control, Atlanta, Georgia, is recruiting an **EPIDEMIOLOGIST** to conduct analyses of cancer risk related to military service in Vietnam. Assists a senior epidemiologist in monitoring ongoing field (data collection) activities. Applicants must have a Ph.D. in epidemiology; or a degree in medicine (M.D. or equivalent) with a masters degree in epidemiology; or, a degree in medicine (M.D. or equivalent) with advanced training in epidemiology. Three to 5 years of experience in analytic epidemiology is desirable. Salary range from \$39,500 to \$42,135, depending on qualifications and experience.

Interested persons should send curriculum vitae to: **Ms. Jenny P. Garner, Building 1, Room 1050, Centers for Disease Control, 1600 Clifton Road, NE, Atlanta, GA 30333** within 30 days of this publication.

*CDC is an Equal Employment Employer, and provides a smoke-free work environment.*

## Postdoctoral Research Staff Member

Lawrence Livermore National Laboratory, a premier research and development facility, is seeking a Postdoctoral Research Staff Member in the area of human mutagenesis. The individual will participate in an exciting multi-disciplinary effort measuring germinal mutations in humans.

This position requires a recent PhD or equivalent in molecular biology, cell biology, biophysics, biochemistry or related fields. Candidate should have experience in gene expression or mutagenesis. Experience with cell-separation methods, flow cytometry, image analyses, antibodies, or molecular techniques for DNA/RNA analyses desirable.

We offer a highly competitive salary and benefits package. Questions may be directed to **Dr. Andrew J. Wyrobek, (415) 422-6296**, or send curriculum vitae to: **Earl G. Morrell, Personnel Operations Division, Lawrence Livermore National Laboratory, P.O. Box 808, L-725, Dept. KSC8J802B, Livermore, CA 94550.** U.S. citizenship required. An equal opportunity employer.

University of California

 **Lawrence Livermore National Laboratory**

## Associate Senior Investigator, Cell Biology

A health care company that markets prescription and proprietary products for human and animal health care has an opening for an Associate Senior Investigator, Cell Biology, in its Department of Cell Biology, at its research and development facility in King of Prussia, Pennsylvania.

The principle duties of the position include: (i) planning and designing experiments for the purpose of isolating, characterizing and maintaining new cell lines, especially colon epithelial cells; (ii) developing bioassay techniques for the quantitation of cell proliferation through digital image analysis; (iii) purifying biological mediators especially epithelial growth factors using both small and large-scale chromatographic techniques including high performance liquid chromatography and gel electrophoresis; (iv) establishing systems to mimic human disease states in animals, especially metastatic colon cancer; (v) supervising the performance by laboratory personnel of various tasks in connection with planned experiments and performing non-routine, specialized procedures in such experiments; (vi) investigating, adopting, developing and implementing new scientific methods and techniques to improve and enhance ongoing experiments; (vii) coordinating, evaluating and drawing conclusions from experimental data, and (viii) recommending curtailment or expansion of current projects and initiation of new projects.

The minimum requirements for the position are a Ph.D. degree in Biochemistry and four (4) years experience in (i) single cell cloning of epithelial cells, (ii) isolating and characterizing colon epithelial cells in tissue culture; (iii) designing and creating animal models of metastatic colon cancer and (iv) purification of epithelial growth factors using liquid chromatography and digital image analysis.

Salary of \$50,000 with liberal employee benefits. Qualified applicants should submit resume or curriculum vitae to Philadelphia Job Bank, 444 North 3rd Street, Philadelphia, PA 19123 and refer to Order Number 4192979. An Equal Opportunity Employer, M/F/H/V.

## Tenure Track Staff Positions at the Biological Response Modifiers Program, NCI

The Clinical Research Branch, Biological Response Modifiers Program, Division of Cancer Treatment, the National Cancer Institute, National Institutes of Health, Public Health Service, is accepting applications for two staff positions. Positions are available to physicians who are either Board eligible or Board certified in medical oncology.

The incumbent will be responsible for primary patient care and the design and conduct of clinical trials utilizing biological response modifiers. Emphasis is also placed on continuity of patient care, principles of patient management, and correlation of clinical response with changes in immunologic parameters.

Staff Fellows are eligible for benefits including health insurance, life insurance options, vacation, and sick leave. In addition, travel expenses for the Fellow to his duty station are available.

For further information and application procedures, please contact:



Ronald G. Steis, M.D.  
Medical Pavilion  
Frederick Memorial Hospital  
335 Park Avenue  
Frederick, Maryland 21701  
(301) 698-5929

An NIH Associate Training Program  
NIH is an Equal Opportunity Employer

## University of Illinois at Urbana-Champaign DEAN

### COLLEGE OF LIBERAL ARTS AND SCIENCES

#### Notice of Position Available

The University of Illinois at Urbana-Champaign invites nominations and applications for the position of Dean of the College of Liberal Arts and Sciences.

The Dean is the chief executive officer of the College and is responsible to the Vice Chancellor for Academic Affairs and to the Chancellor for its administration. As the agent of the College faculty, the Dean implements College educational policy. The College comprises 2 schools, 29 departments, 15 programs, centers and specialized units, and 2 museums. The College's 716 faculty members instruct 12,500 undergraduate students and 2,300 graduate students.

Qualifications include demonstrated scholarly achievement, administrative, budgetary, and fund-raising skills, demonstrated commitment to affirmative action, academic leadership, and commitment to the role of interdisciplinary studies and to the values of liberal education.

Salary open. Position available August 21, 1989.

To assure full consideration, nominations and applications should be submitted by October 15, 1988 to:

Professor Jeremiah D. Sullivan, Chair  
Search Committee for the Dean of the  
College of Liberal Arts and Sciences  
University of Illinois at Urbana-Champaign  
Swanlund Administration Building  
601 East John Street  
Champaign, Illinois 61820

Attention: Dr. Jane W. Loeb (217/333-4523)

THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN  
IS AN AFFIRMATIVE ACTION-EQUAL OPPORTUNITY EMPLOYER.

## Postdoctoral Fellow Openings

The Monsanto Company Biological Sciences Department located in suburban St. Louis, is seeking to fill the following postdoctoral positions.

### Molecular Biology

This position involves the identification of gene products specifically regulated by somatotropin. To qualify, you must have a Ph.D. and a strong background in molecular biology, biochemistry or cell biology.

### Molecular Biology/Neurobiology

This position involves recombinant DNA techniques to dissect the signal transduction mechanism mediated by nerve growth factor and its receptor. To qualify, you must have a Ph.D. and experience in molecular biology and biochemistry. Familiarity with neuroscience and tissue culture techniques would be desirable.

### Biochemistry

This position involves the design of experiments utilizing molecular techniques, including site-directed mutagenesis, to address the role of carbohydrate/protein interactions in governing immunogenicity and to study the role of these interactions in determining carbohydrate structure. To qualify, you must have a Ph.D. and expertise in molecular cloning and site-directed mutagenesis as demonstrated by publications in reputable scientific journals. Tissue culture skills are desirable.

### Molecular Genetics

This position will pursue biochemical and molecular genetics studies of lymphoid malignancies and autoimmunity. Research projects will involve techniques of cell culture, gene isolation, nucleic acid analysis, and immunochemistry. To qualify, you must have Ph.D. with background in Molecular Genetics.

### Molecular Biology

Candidates will be considered for research in four areas: prokaryotic regulatory elements, prokaryotic protein secretion, protein engineering and gene expression in Gram-negative bacteria other than *E. coli*. The position requires a Ph.D. in Genetics, Molecular Biology or Biochemistry.

These are excellent opportunities to apply your skills to new discoveries and challenges. Please send curriculum vitae and names of three references to: Monsanto Company, 700 Chesterfield Village Parkway, Department BB5B-PD, St. Louis, MO 63198. Equal Opportunity Employer M/F/H/V.

# Monsanto

Meet organisations who are  
seeking scientific staff

## Employment Exchange at British Laboratory Week October 13-15, Olympia, London

- Rapid, confidential contact with many leading firms and institutions.
- Positions available for wide variety of scientific and technical specialties.
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- Posting of positions available. Interview booths.
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- No charge to candidates.

Take advantage of this unique employment opportunity. Plan now to attend British Laboratory Week. For advance, confidential screening and forwarding of your CV, send a copy to:

Edward C. Keller, Recruitment Director  
c/o Scherago Associates, Inc., Science Magazine  
15 Smithay Meadows  
Christow Exeter  
Devon EX6 7LU England



SCIENCE The Global Weekly of Research



# KUWAIT INSTITUTE FOR SCIENTIFIC RESEARCH

Kuwait Institute for Scientific Research (KISR) is a nonprofit organization with a staff of more than one thousand employees engaged in applied research in the fields of environmental and earth sciences; food resources; engineering; petroleum, petrochemicals and materials and techno-economics.

KISR has the following vacancies:

## BIOENGINEER

• **Major Duties:**

- Conducts scale up and optimization studies for various industrial fermentation systems at pilot plant level.
- Develops process control and model for biological systems utilizing computerized fermenters.
- Initiates and develops contract research proposals related to scale up studies of biomass production, biosurfactant production and biological wastewater treatment systems.

• **Qualifications:**

Applicants should have a Ph.D. in Biochemical Engineering with minimum 5–7 years of experience in pilot scale continuous fermentation systems.

## MOLECULAR GENETICIST

• **Major Duties:**

- Develops basic recombinant DNA technology.
- Develops specific DNA probes for detection of infectious and genetic diseases.
- Conducts DNA uptakes by plant cells for crop (specially date palm) improvement.

• **Qualifications:**

Applicants should have a Ph.D. degree in Molecular Genetics or related field with at least 3 years of postdoctoral research experience in recombinant DNA technology.

## GROUNDWATER HYDROLOGIST

• **Major Duties:**

- Conducts research in groundwater hydrology in arid environments. Particular emphasis is on artificial groundwater recharge, drainage, assessment of groundwater reserves and groundwater contamination.
- Trains staff in groundwater hydrology.

• **Qualifications:**

Applicants should have a Ph.D. or M.Sc. degree in geology or civil engineering and a minimum of 10 years of related experience.

## GEOMORPHOLOGIST

• **Major Duties:**

- Assesses desert geomorphological features related to desertification and sand encroachment in the desert areas.
- Designs and implements field studies for the identification and characterization of the various types of desert surface sediments.
- Calculates rate of sediment transport.

• **Qualifications:**

Applicants should have B.Sc. or M.Sc. in applied geomorphology or surface geology with at least 5 years of practical experience in the desert research in general and sand movement in particular. Applicants should also have experience in the application of control measures for mobile sand.

## CIVIL ENGINEER (COASTAL ENGINEER)

• **Major Duties:**

- Carries out research in the areas of coastal hydrodynamics and coastal sediment.
- Participates in physical model studies.
- Applies numerical modelling to water engineering in general.

• **Qualifications:**

Applicants should have a B.Sc. and M.Sc. degree in civil engineering and 3 years of relevant experience in the area of water engineering in general and coastal engineering in particular.

KISR offers attractive tax free salaries commensurate with qualifications and experience and generous benefits that include gratuity, free furnished air-conditioned accommodation, school tuition fees for children, contribution to a savings plan, six weeks annual paid vacation, air tickets, free medical care and life insurance.

Interested applicants are requested to send their Curriculum Vitae with supporting information not later than one month from the date of this publication, to:

**Director General**  
**Kuwait Institute for Scientific Research**  
**P.O. Box 24885 Safat**  
**13109 Safat—KUWAIT.**

## POSITIONS OPEN

**DIRECTOR, DATA PROCESSING AND SYSTEMS DEVELOPMENT BIOSIS**, the world's largest publisher/database producer of bibliographic information in the life sciences, is seeking a senior executive (V.P. level) to head its division for Data Processing and Systems Development. This division is the company's technical support function, including technical development, implementation, projects research and administration, and computer operations. The successful candidate will hold an advanced degree(s) in computer or information science, will have had at least 5 years of experience in the information industry including research and development, and administration.

BIOSIS is a not-for-profit, non-degree granting educational institution, in its 61st year. *It is an Equal Opportunity Employer.* Salary is competitive and commensurate with qualifications. Fully paid insurance benefits and a generous pension plan are included.

Candidates should submit their résumé with salary requirement to:

**BIOSIS**  
2100 Arch Street  
Philadelphia, PA 19103  
Attention: Box D—Personnel Department  
*Affirmative Action/Equal Opportunity Employer*

## FACULTY POSITION IN MOLECULAR BIOLOGY

The Department of Pathology of Tulane University School of Medicine in New Orleans invites applications for a faculty position at the assistant professor level to strengthen its program in molecular biology. Successful candidates, Ph.D. or M.D. will conduct molecular studies of hepatitis B virus or hepatocellular carcinoma, develop or expand an independent research program and participate in teaching. Facilities in the newly renovated molecular pathology unit are excellent. Start-up funds and technical help will be provided. Submit curriculum vitae, representative reprints, and names of three references to: **Michael A. Gerber, M.D., Professor and Chairman, Department of Pathology, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.** Salary and rank will be commensurate with qualifications and experience. *Tulane University is an Equal Opportunity Employer/Affirmative Action Employer.*

## HYDROLOGIST UNIVERSITY OF COLORADO AT BOULDER DEPARTMENT OF GEOLOGICAL SCIENCES AND COOPERATIVE INSTITUTE FOR RESEARCH IN ENVIRONMENTAL SCIENCES

Tenure-track position, rank open, Department of Geological Sciences/Cooperative Institute for Research in Environmental Sciences (CIRES) beginning after 1 January 1989 to pursue research within the Center for the Study of Earth from Space (CSES) in the field of hydrology in the context of the global water cycle. Preference will be given to candidates at the assistant professor level, but candidates at all levels will be considered.

The applicant should have a research background in hydrology, with experience and knowledge in the processes of precipitation, evaporation, evapotranspiration, and runoff as well as other factors that control the hydrologic cycle.

The applicant should have current or potential interest in the application of new techniques, including remote sensing, to regional or global scale questions with emphasis on problems associated with global change, and must have an ability to attract research funding.

Teaching responsibilities will be in the Department of Geological Sciences and will include an undergraduate course in geohydrology.

Submit a letter of application, résumé, statement of research and teaching interests, and four letters sent by referees by 30 November 1988 to: **Chair, Hydrologist Search Committee, Geological Sciences, Campus Box 250, University of Colorado, Boulder, CO 80309-0250.**

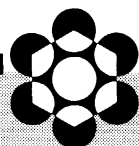
*The University of Colorado at Boulder has a strong institutional commitment to the principle of diversity in all areas. In that spirit, we are particularly interested in receiving applications from a broad spectrum of people, including women, members of ethnic minorities and disabled individuals.*

# Organic Chemist

## RESEARCH ASSOCIATE

Molecular Therapeutics, Inc., affiliated with BAYER AG of West Germany, an internationally recognized leader in the research and development of innovative pharmaceuticals, has a challenging opportunity for an Organic Chemist with experience in stereoselective synthesis. This position requires a BS in Chemistry with at least 3 years of experience, or an MS with at least 1 year of experience, including skills in modern separation and purification techniques. Experience with NMR spectroscopy is preferred. We offer a competitive salary and excellent benefits including a comprehensive benefits program. Interested candidates should submit a curriculum vitae or resume with compensation requirements in confidence to: **Chemistry Research, Molecular Therapeutics, Inc., 400 Morgan Lane, West Haven, CT 06516.**

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



**Molecular  
Therapeutics Inc.**

# Research Associates

## Diagnostic/Therapeutic Biopharmaceutical Products

CYTOGEN is dedicated to basic research and product development in oncology and cardiovascular disease. Our goal is to determine the full medical potential of unique monoclonal antibody linking technologies and drug delivery systems. We have an opportunity for two MS level Research Associates who will be involved in the research and development of analytical methods for bioprocess intermediates, antibody conjugates and formulated products.

## Bioanalytical Chemist

The qualified professional will be knowledgeable in protein characterization and analysis by chromatographic and spectroscopic methods. Background in NMR (2D techniques), fluorescence, UV-VIS or circular dichroism spectroscopy is desired. Experience in protein HPLC, SDS-PAGE and IEF would be a significant asset.

## Radiochemist/Radiopharmacist

Individual will be responsible for optimizing the chelation of various radioisotopes to monoclonal antibodies. Method development experience in ITLC and HPLC preferred.

The above positions require well-developed oral and written communication skills along with 1-2 years experience.

At CYTOGEN, you'll receive a competitive salary and benefits package. We will be relocating to Ewing, New Jersey in the fall. For confidential consideration, please submit resume with salary history and requirements to: **Recruiting Supervisor, Cytogen Corp., 600 College Road East, Princeton, New Jersey 08540.** An equal opportunity employer m/f.

# CYTOGEN

CORPORATION

Innovative Technology Targeted to Medical Needs

## FACULTY POSITIONS IN MICROBIOLOGY

The Department of Biology at Texas A&M University is augmenting its research effort in Microbiology and invites applications for four tenure-track faculty positions. Candidates should be using bacterial, viral or lower eukaryotic systems to study fundamental biological problems at the genetic, cellular or molecular level. Essential qualifications include a strong record of research accomplishment, the ability to develop a vigorous, independent research program, and a commitment to the training of undergraduate and graduate students. The Department has excellent research facilities and will provide competitive salaries and startup funds. Please send curriculum vitae, a statement of research interests, and the names, addresses and phone numbers of at least three references by October 1, 1988, to:

Dr. B. G. Foster  
Department of Biology  
Texas A&M University  
College Station, TX 77843

*Texas A&M University is an Affirmative Action/Equal Opportunity Employer. Minority candidates are especially encouraged to apply.*

## SENIOR IMMUNOLOGIST

Wyeth-Ayerst Laboratories is a world leader in research and development in the pharmaceutical industry. We currently have a unique opportunity for an Immunologist (PhD) with experience in viral systems to join a multi-disciplinary team engaged in the development of recombinant human viral vaccines at its Biotechnology and Microbiology Division in Radnor, PA.

The ideal candidate will have 2-3 years post-doctoral experience which should include expertise in tissue culture, virus propagation, and viral serology. Experience in hybridoma techniques is desirable.

We offer a highly competitive salary, extensive benefits and a state-of-the-art environment in a convenient suburban location. Qualified candidates are invited to submit CV or resume with salary requirements in confidence to: **WYETH-AYERST**



**LABORATORIES, INC., Recruitment Manager, Position #298, P.O. Box 8299, Philadelphia, PA 19101.**  
Equal Opportunity Employer,  
M/F/H/V responses encouraged.

## Research Scientist

COBE Laboratories, Inc., is a leading worldwide medical specialties company that designs, develops, manufactures and markets products for use in cardiovascular surgery, critical care monitoring, apheresis, blood banking and hemodialysis.

Our corporate Research and Development department is seeking a Research Scientist who will be a team member with broad involvement on a project directed toward treating blood or plasma extracorporeally, on-line, with goals of depleting or modifying blood components. This person will conduct research and have product development responsibilities.

The successful candidate will possess a Ph.D. in basic sciences and have multi-disciplinary experience. We prefer, but do not require, a Synthetic Organic Chemistry or Biochemistry background along with a fundamental understanding of Biology.

COBE offers an exciting opportunity for career growth and a fine compensation and benefits package. Please submit resume to:

**COBE**  
LABORATORIES, INC.  
Dept. 1130-1160/RS  
1185 Oak Street  
Lakewood, CO 80215

Equal Opportunity Employer M/F/H/V

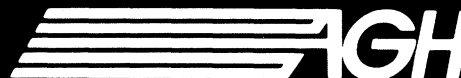
## RESEARCH SCIENTIST PHARMACOLOGY AND IMMUNOLOGY

Allegheny Singer Research Institute has immediate positions available for 2 qualified Scientists to work as members of a multi-institutional team to develop a new concept in cancer chemotherapy utilizing new analogues antineoplastic drugs and a catalytic antibody technology. Both positions require a Ph.D., post-doctoral experience preferred.

**PHARMACOLOGIST**—Research experience in pharmacology and pharmacokinetics of the methotrexate or nucleoside antineoplastic analogues is required. Preference will be given to candidates with additional experience in organic chemistry and/or metabolism of research compounds and enzymatic analysis.

**IMMUNOLOGIST**—Position requires a strong background in hybridoma technology and/or immunotherapeutic approaches in a clinical or experimental setting.

Allegheny Singer Research Institute is affiliated with a large tertiary care hospital and a medical school. Excellent benefits and a salary range from \$25,000 to \$32,500, depending on relevant experience. Please forward resume in confidence to: Dr. Josef F. Novak, Orthopedic Research Laboratory, **ALLEGHENY SINGER RESEARCH INSTITUTE**, 320 E. North Avenue, Pittsburgh, PA 15212. An Equal Opportunity Employer.



**ALLEGHENY GENERAL HOSPITAL**

## POSITIONS OPEN

### U.S. DEPARTMENT OF ENERGY (DOE) GENERAL ENGINEER/PHYSICIST

The DOE's Superconducting Super Collider Division (SSC) is seeking a general engineer (GS-801-15) or a physicist (GS-1310-15) with a high degree of knowledge of engineering design, construction and operation concepts for superconducting magnets. Responsibilities include managing the SSC magnet program; development and implementation of policies, plans and procedures for DOE oversight of SSC precision-field superconducting magnets and cryogenic systems; organizing/chairing on-site reviews of magnet development; construction and installation, including schedule and cost considerations; programmatic issues associated with design and construction of magnets; and budgetary activities. Contacts are with industry, universities, national/international laboratories, Congressional and White House staffs, and the public. *U.S. citizenship required.* Salary range for GS-15 is \$54,907 to \$71,377. Duty station: Germantown, Maryland. Send SF-171, application for federal employment, or direct inquiries to: **Mary A. Smith, Office of Personnel Operations, GTN, MA-205.4, U.S. Department of Energy, Washington, DC 20545; Telephone: 301-353-5591.** Applications will be accepted through 15 October 1988.

*The Department of Energy is an Equal Opportunity Employer.*

### HEAD, DEPARTMENT OF BIOLOGY

Virginia Polytechnic Institute (VPI) and State University (SU), a land grant institution, invites applications for the position of Department Head in Biology to begin 1 July 1989. The candidate must have a strong record of research achievement in any area of biology and is expected to provide the administrative leadership to foster research as well as quality teaching at all levels. This diverse department has 43 faculty, 850 undergraduate majors, and 80 graduate students. It offers the B.S. in biology and the M.S. and Ph.D. in: cellular and molecular biology, ecology, genetics, microbiology and immunology, physiology, and systematics and evolution. Submit application, curriculum vitae, and the names, addresses, and telephone numbers of four references by 15 November 1988 to: **Dr. Allan A. Yousten, Biology Department, VPI and SU, Blacksburg, VA 24061.** We are an Equal Opportunity/Affirmative Action Employer.

**MOLECULAR BIOLOGISTS:** The State University of New York College of Environmental Science and Forestry seeks applications for two tenure-track positions as part of a major college-wide thrust in biotechnology in forestry. The successful candidates must have research interests in such areas as plant growth and development, plant-microbe or plant-insect interactions, bioconversion of lignocellulose, or molecular chemical ecology. One position, which can be filled at the associate or assistant professor level, must have demonstrated expertise in higher plant recombinant-DNA techniques. The area of expertise for the second position, which will be filled at the assistant professor level, may be with higher plants, insects or microorganisms. Candidates will be expected to develop strong research programs, and teach courses in molecular biology and recombinant techniques. Minimal qualifications include a Ph.D. and postdoctoral experience. Salaries commensurate with qualifications and experience. The positions are available 1 January 1989. Submit current curriculum vitae and statements of research accomplishments, future interests and teaching experience. These plus official transcripts and three letters of reference should arrive by 15 October 1988. Send to: **Dr. Frederick A. Valentine, Faculty of Environmental and Forest Biology, SUNY-CESF, Syracuse, NY 13210. Telephone: 315-470-6790.**

*SUNY-CESF Is An Affirmative Action/Equal Opportunity Employer.*

### MOLECULAR ENDOCRINOLOGIST

Instructor, Research track, to conduct research on the genetic basis of growth disorders. Ph.D. degree and familiarity with techniques of Southern blotting, polymerase chain reaction of DNA sequences and DNA sequencing required.

Send applications with curriculum vitae to: **Dr. John S. Parks, Director, Division of Pediatric Endocrinology, Emory University School of Medicine, 2040 Ridgewood Drive NE, Atlanta, GA 30322.** Deadline 27 September 1988. *Equal Opportunity Employer/M/F.*

## POSITIONS OPEN

The Division of Mycotic Diseases, Centers for Disease Control, Atlanta, Georgia, invites applications for a position as **MEDICAL EPIDEMIOLOGIST.** Responsibilities will include conducting surveillance on the incidence and prevalence of mycotic diseases, outbreak investigations, and evaluation of the sensitivity and specificity of rapid diagnostic tests for mycotic infections and assessment of their role in the control of mycotic diseases in high risk persons with an emphasis on nosocomial mycotic infections. Desired qualifications in addition to epidemiologic training include: Residency in Internal Medicine, specialty training in infectious diseases, a masters degree in public health and experience in outbreak investigations and in the design and analysis of prospective epidemiologic studies. Salary range is from approximately \$51,347 to \$52,903, depending on experience. Submit curriculum vitae and names of three references to: **Louise Griggs, Personnel Management Office, Centers for Disease Control, Atlanta, GA 30333;** for technical questions, contact: **Dr. William R. Jarvis, Acting Chief, Epidemiology Branch, Hospital Infectious Program Centers for Disease Control, Atlanta, GA 30333. Telephone number 404-639-3406.** CDC is an Equal Opportunity Employer. Applications must be received within 3 weeks of publication date.

Positions available for individuals interested in **NEUROPHYSIOLOGICAL AND NEUROANATOMICAL STUDIES** of the gustatory system. Areas of investigation include: sensory-motor integration of gustatory signals and oral behaviors, receptive field organization of gustatory neurons, gustatory-somatosensory interactions, neuroanatomical microcircuitry of brainstem taste pathways. Opportunities exist to collaborate with one, or a combination of three investigators. Experience in neurophysiology or neuroanatomy preferred, experience in immunohistochemical staining procedures or intracellular recording techniques welcome. Stipend commensurate with NIH levels of support. Send curriculum vitae and statement of research interests to: **Drs. J. Travers, S. Travers, or M. Whitehead, Department of Oral Biology, College of Dentistry, The Ohio State University, Columbus, OH 43210.** *Equal Opportunity/Affirmative Action Employer.*

### ORAL BIOLOGIST

The Department of Oral Biology and the Dental Research Institute of the University of Minnesota invite applications for a tenure-track faculty position to pursue independent research and collaboration with department and DRI investigators. Applicants with established programs which complement faculty interests in the role of saliva in microbial ecology are encouraged to apply. Candidates should have or be prepared to obtain extramural funding. Candidate must have a D.D.S. degree with 5 years of research experience or a Ph.D. and postdoctoral experience. Excellent laboratory facilities and start-up funds are available. Applicants should submit curriculum vitae, a statement of professional goals, and the names of three references by 30 September 1988 to: **Dr. Charles F. Schachtele, Chairperson, Oral Biologist Search Committee, School of Dentistry, 18-228 Moos Tower, University of Minnesota, Minneapolis, MN 55455.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

Faculty position available immediately for a **PHYSIOLOGIST** with D.V.M. degree. Ph.D. degree and postdoctoral experience preferred. The successful candidate must demonstrate proficiency in teaching at the D.V.M. and graduate levels. Expertise in respiratory or gastrointestinal physiology is preferred, but applicants from all disciplines will be considered. The candidate will be expected to develop an independent, extramurally supported research program. Applicants should forward curriculum vitae, three references, and a statement of career goals to: **Chairman, Physiology Search Committee, Department of Veterinary Physiology and Pharmacology, School of Veterinary Medicine, Purdue University, West Lafayette, IN 47907.** Application deadline: 15 September 1988 or until the position is filled. *Purdue University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### U.S. DEPARTMENT OF ENERGY (DOE) PHYSICIST

The DOE's Superconducting Super Collider Division (SSC) is seeking a physicist (GS-1310-15) with a high degree of knowledge of design, development, fabrication, use, and operation of high energy physics detectors. Responsibilities include managing SSC detector program; developing strategies to assure availability of appropriate detectors for SSC needs; organizing/chairing on-site reviews of detector programs and facilities; liaison with SSC program advisory committee; and SSC budgetary activities. Contacts are with industry, universities, national/international laboratories, Congressional and White House staffs, and the public. *U.S. citizenship required.* Salary range for GS-15 is from \$54,907 to \$71,377. Duty station: Germantown, Maryland. Send SF-171, application for federal employment, or direct inquiries to: **Mary A. Smith, Office of Personnel Operations, GTN, MA-205.4, U.S. Department of Energy, Washington, DC 20545; Telephone: 301-353-5591.** Applications will be accepted through 15 October 1988.

*The Department of Energy is an Equal Opportunity Employer.*

### PHYSIOLOGIST OR PHARMACOLOGIST:

Tenure-track position available with responsibility for teaching cardiopulmonary physiology and pathology and general physiology and/or pharmacology and coordinating clinical practicums in cardiopulmonary technology. Minimum qualifications include Ph.D. in physiology or pharmacology or related field, some postdoctoral training preferred, and must be able to develop independent research program. Applicants should submit curriculum vitae and the names and addresses of three references to: **William Wojciechowski, Chair, Department of Respiratory Care, University of South Alabama-Springhill, Mobile, AL 36688.** *Equal Employment Opportunity/Affirmative Action Employer.* Application deadline is 15 September 1988 or until filled.

### POSTDOCTORAL ASSOCIATE NEUROBIOLOGY BIOLOGY DEPARTMENT GEORGIA STATE UNIVERSITY

Postdoctoral research associate position is available to study neural mechanisms of behavioral choice in crayfish. Electrophysiological, pharmacological and behavioral approaches will be used. Please send curriculum vitae and three letters of reference to: **Dr. Donald H. Edwards, Department of Biology, Georgia State University, University Plaza, Atlanta, GA 30303.** *Georgia State University is a unit of the University System of Georgia and is an Equal Opportunity/Affirmative Action Employer.*

### POSTDOCTORAL FELLOW

A position exists for a postdoctoral fellow interested in studying the roles of interferons, interleukins and TNF in resistance to bacterial and malignant diseases. Applicants should have basic knowledge of immunobiology and a background in molecular biology.

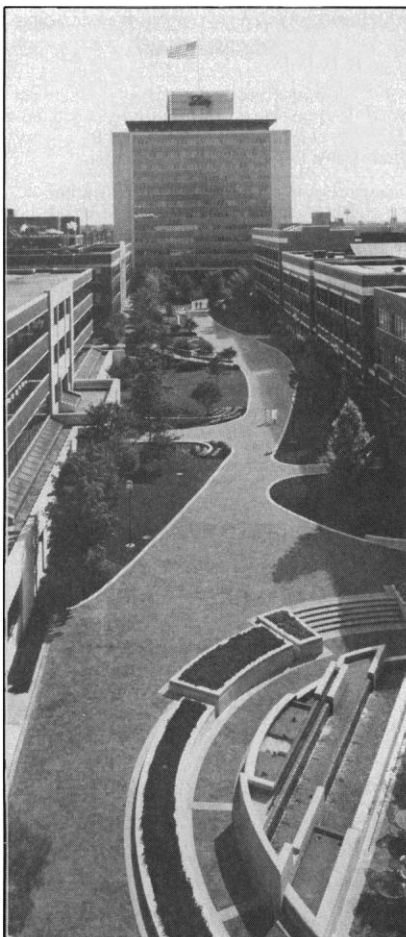
The Trudeau Institute is a private, not-for-profit, basic medical research institution located on the shore of lower Saranac Lake and 10 miles from Lake Placid, New York. Subsidized institute housing is available.

Send curriculum vitae and names of three references to:

**Dr. Edward A. Havell  
Trudeau Institute, Inc.  
P.O. Box 59  
Saranac Lake, NY 12983**

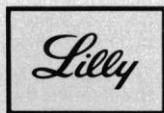
**POSTDOCTORAL POSITION** now available for collaborative studies of growth factor synthesis and function in hormone responsive and unresponsive prostate cancer cells. Molecular studies of hormonal regulation of gene expression and biochemical studies of growth factor function will be pursued with **Dr. Sydney A. Shain.** Candidates must have strong background and laboratory experience in cell biology and/or molecular biology. Appointments are for 1-year periods up to 3 years. Send curriculum vitae and the names and telephone numbers of three references to: **Personnel Director (847), Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, TX 78284.** *Equal Opportunity Employer M/F.*





## BS/MS SCIENTIST

### Molecular Biology Research



Equal Opportunity Employer

For more than a century, scientists at ELI LILLY AND COMPANY have developed innovative, high quality pharmaceutical products. In 1988, Lilly is investing over \$500 million in research-and-development programs. More than 3,000 scientists at the company's Lilly Research Laboratories and Biochemical Development Divisions are pursuing creative research programs that involve many important health care needs.

To further build its research capabilities, Lilly is seeking a self-motivated, innovative scientist for the Molecular Biology Research Division. The ideal candidate will have the following qualifications:

- Bachelor's or Master's degree in molecular biology, genetics, or a related discipline.
- Experience in bacterial genetics and/or molecular biology.
- Excellent organizational and communication skills.

Eli Lilly and Company is committed to scientific excellence. Lilly provides a stimulating professional atmosphere with many opportunities for collaborative, multidisciplinary research. The company offers attractive compensation packages.

For prompt consideration, please forward your *curriculum vitae* to:

Robert L. Nist  
Science Recruitment (AS5)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285

## Molecular Biology— Neurobiology

**POSTDOCTORAL POSITION (Ph.D.):** We are seeking a highly motivated Ph.D. level individual to participate in the molecular biological efforts of our Alzheimer's Disease program. This project interfaces the efforts of laboratories throughout our biotechnology program with those in our CNS Diseases Research Unit. Some aspects of this work include genetic analyses, cDNA/gene cloning, expression of recombinants in a variety of cellular and transgenic systems, studies of post-translational modifications and metabolism of expressed proteins, in situ hybridization and immunohistochemical analyses. Interactions with experts in all these areas are available, providing strong opportunities for career growth and expansion of skills. The duration of this position will be two years. Research publications and presentations at meetings will be enthusiastically encouraged. (position no. 5564-GA)

**RESEARCH ASSOCIATE (BS/MS):** We are offering an exciting career opportunity for an independent individual committed to excellence in basic research to join our Alzheimer's Disease program. A description of the work in which you will be involved appears in the accompanying ad for the Postdoctoral position. Applicants must be BS or MS level graduates and should have two or more years of recent, full-time laboratory experience with some combination of molecular biological techniques, protein analyses by Western blotting and immunoprecipitations, mammalian cell

culture and transfections. We are committed to your scientific development and your participation and recognition in scientific publications. Attendance and presentations at scientific meetings will be encouraged. This is a position with long-term career potential and growth opportunity in a rapidly moving, competitive and important field of research. (position no. 5565-GA)

We are located in a mid-sized community in southwestern Michigan, midway between Chicago and Detroit. The region is surrounded by rolling hills, numerous lakes and woodlands and provides immediate access to abundant cultural and recreational pursuits, ranging from concerts and live theatre to a full range of summer and winter sports. Educational opportunities are available at several local universities and community colleges. Upjohn offers an excellent package of salary and benefits in a community with a reasonable cost of living. If you are interested in a challenging position and you have the necessary experience, please send your CV/resume to: M. William Rex, The Upjohn Company, Corporate Employment, Kalamazoo, MI 49001. Please refer to the desired position number in your correspondence. An Equal Opportunity Employer M/F.

**Our Commitment to Scientific  
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**Upjohn**

## POSITIONS OPEN

**POSTDOCTORAL NEUROPHARMACOLOGY RESEARCH FELLOW.** Position available immediately in Los Angeles. Work involves studies of CNS receptors and synaptic function in rodents. Experience with enzyme assays and receptor binding required; experience with protein chemistry, molecular biology, or behavior helpful. Send curriculum vitae, names and telephone numbers of three references to: **Dr. S. Robert Snodgrass, Neurology, Childrens Hospital of Los Angeles, P.O. Box 54700, Los Angeles, CA 90054.** *Minority applications encouraged.*

**POSTDOCTORAL POSITION** for research on problems of *Drosophila* molecular genetics: effects and control of retroviral elements; transcription termination; gene-dosage compensation; homologous transformation. Excellent references required. Please send names and addresses of three references and curriculum vitae to: **Dr. Matthew Meselson, Department of Biochemistry and Molecular Biology, Harvard University, 7 Divinity Avenue, Cambridge, MA 02138.** *Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available to study regulation and mechanism of action of choline acetyltransferase and its relationship to Alzheimer's disease. A recent Ph.D. in biochemistry, biology, or related fields preferred. Stipend commensurate with experience. Send curriculum vitae and names of references to: **Dr. Louis Herish, Biochemistry Department, Southwestern Graduate School, 5323 Harry Hines Boulevard, Dallas, TX, 75235.** *An Equal Opportunity University.*

**POSTDOCTORAL POSITION,** University of Montana, in collaboration with ChromatoChem, Inc., to develop affinity HPLC reagents. Position combines expertise in bio- and organic chemistry with immunology and biopolymer crosslinking chemistry to produce research/industrial products. Salary \$18,500+ depending on qualifications. Send curriculum vitae, statement of research interests, and three letters of reference to: **Ralph C. Judd, Search/Division of Biological Sciences HS 104A, University of Montana, Missoula, MT 59812** by 15 September 1988. *Affirmative Action/Equal Opportunity Employer.*

**PENN STATE, DEPARTMENT OF CHEMICAL ENGINEERING, POSTDOCTORAL POSITION** available on 1 September 1988, for research on flow effects on vascular and bone cells. Project involves the study of signal transduction mechanism of shear flow. Ph.D. in biochemistry, cell biology, or physiology preferred. Send curriculum vitae with names of references to: **Dr. John A. Frangos, Department of Chemical Engineering, The Pennsylvania State University, University Park, PA 16802.** *An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.*

**POSTDOCTORAL POSITION.** Available immediately. Biochemistry and molecular biology of bacterial heme proteins and respiratory coupled transport. Genetic engineering techniques. Send curriculum vitae and references to: **Dr. Dale Webster, Department of Biology, Illinois Institute of Technology, Chicago, IL 60616.**

**POSTDOCTORAL POSITION** available immediately to join ongoing project examining the molecular biology, cell biology, pathogenesis of the eukaryotic AIDS pathogen, *Pneumocystis carinii*. Successful applicant will have experience in molecular genetics, cell culture or microbial pathogenesis. Position is NIH funded for minimum of 2 years. Send curriculum vitae, three letters, and a statement of research interests to: **Dr. Gregory Buck, Box 678 MCV Station, Virginia Commonwealth University, Richmond, VA 23298.**

**POSTDOCTORAL POSITION:** Join research team studying tissue culture of conifer trees. Will lead investigations of nutrient metabolism correlations with morphogenic responses in specific *in vitro* and *in situ* test systems, using autoanalyzer, radioactive probes, HPLC and other biochemical techniques. Experience with biochemical assay and interpretation of fluxes in general metabolic pools desired. Salary is \$20,000 or higher, depending on qualifications, plus benefits. Send résumé and names of three references by 15 September 1988 to: **Dr. Ralph Mott, Department of Botany, Box 7612, North Carolina State University, Raleigh, NC 27695-7612.**

## RESEARCH SCIENTIST DRUG DELIVERY

Committed  
To Scientific  
Excellence



The Sterling Research Group, the worldwide pharmaceutical research and development organization of Sterling Drug, announces an opening for a Research Scientist in the Drug Delivery Department at its Great Valley, PA facility, near Philadelphia.

The Drug Delivery Department is conducting research directed towards understanding and modulating the factors that influence oral availability of drugs. We have an immediate need for a highly-qualified individual to join the *in vivo* modeling group.

The successful candidate will: Design and conduct experiments to determine the mechanisms responsible for the transport, digestion and metabolism of peptides and other drugs in the GI tract; develop, validate and implement new analytical methods for the determination of the drugs and their metabolites in complex biological matrices, using modern analytical techniques; and design and conduct experiments to evaluate systems for site-specific drug delivery and their application to oral delivery of peptides.

Candidates should possess a B.S. degree with a minimum of 3-5 years of experience or an M.S. degree with 1-3 years of experience in analytical or pharmaceutical chemistry, or the equivalent. Experience in drug metabolism and disposition, and in the use of radiolabeled materials is desirable. Experience in conducting *in vivo* studies as well as strong communication skills are essential.

We offer competitive salaries and a full range of benefits, together with outstanding opportunities for personal growth. For confidential consideration, interested candidates should send their resume with salary history/requirements and the names of three references to:

Employee Relations  
Department PDDD

### STERLING RESEARCH GROUP

A Division of Sterling Drug Inc.  
9 Great Valley Parkway  
Great Valley, PA 19355  
Equal Opportunity Employer, M/F/H/V

## CORNELL UNIVERSITY DIRECTOR, CENTER FOR THEORY AND SIMULATION IN SCIENCE AND ENGINEERING

Cornell University seeks qualified individuals for the above position, which will be filled not later than July 1, 1989.

### The Theory Center

- Sponsors interdisciplinary research and graduate instruction in computational science and engineering.
- Provides infrastructure for interdisciplinary collaborations on computational issues.
- Contains the CNSF (Cornell National Supercomputer Facility), one of the five NSF sponsored supercomputer centers which is IBM-based, with current focus on coarse-grained parallelism and user-friendly interface. Its present configuration is especially suitable to those with memory intensive applications.
- Contains the ACF (Advanced Computational Facility) for experimentation on prototype highly parallel machines.

### The Director

Must be an outstanding scientist of international stature and have broad research and administrative experience in computational science.

Will be appointed professor in an appropriate Cornell department and expected to maintain his or her research program in computational science.

The Theory Center provides a national focus on the interface of science and engineering research with computational science. The Director is expected to have the personal qualities required to act as a national spokesperson for computational science.

For consideration please send your resume and a letter highlighting your qualifications to: Joseph Ballantyne, Vice President for Research and Advanced Studies, CORNELL UNIVERSITY, 312 Day Hall, Ithaca, NY 14853-2801.

Respond on or before September 30, 1988

CORNELL  
THEORY  
CENTER



Affirmative Action/Equal Opportunity Employer

**Plan Now  
To Attend!**

# **SECOND ANNUAL NORTH AMERICAN CYSTIC FIBROSIS CONFERENCE**

September 28–October 1, 1988  
Orlando, Florida

A multidisciplinary conference for researchers,  
physicians, and allied health care professionals on the latest  
advances in CF research and care.

Presented by the  
Cystic Fibrosis Foundation

Conference Chairmen:  
Raymond A. Frizzell, Ph.D.  
Beryl J. Rosenstein, M.D.

## **P**LENARY SESSIONS

### **The Search for the Basic Defect**

**Michael Welsh, M.D.**  
University of Iowa

### **Immunological Approaches to Lung Disease**

**Melvin Berger, M.D., Ph.D.**  
Case Western Reserve University

### **Pathophysiology: Bridge from the Lab to the Bedside**

**Thomas Boat, M.D.**  
University of North Carolina at Chapel Hill

## **S**YMPOSIA

### **Cardiopulmonary Management**

**R. Tepper**—Infant Pulmonary Function Testing,  
**J. Michael**—Oxygen Therapy, **G. Larson**—Airway  
Inflammation/Reactivity, **F. Cerny**—Exercise.

### **Psychosocial Issues**

**M. Bluebond-Langner**—Brothers and Sisters, Illness and  
Death, **R. Stern**—Use of Unprescribed Psychoactive Drugs,  
**K. Bartholomew**—Education Interventions.

### **The Search for the Gene**

**F. Collins**—Strategies for Identifying the Gene,  
**R. Williamson**—Chromosome Mediated Gene Transfer,  
**L. Tsui**—Search for the CF Gene.

### **Heart/Lung Transplantation in CF Patients**

Moderator: **L. Taussig**. Panelists—**J. Baldwin**, **J. Cooper**,  
**S. Fiel**, **M. Hodson**, **H. Michalisko**, **B. Reitz**, **D. Schidlow**.

### **Clinical Genetics**

**A. Beaudet**—Prenatal Diagnosis, **F. Gilbert**—Carrier  
Testing, **M. Kaback**—Psychosocial Issues.

### **Controversies in CF Care**

**E. Mischler & F. Accurso**—Newborn Screening, **M. Marks**  
& **H. Stutman**—Prophylactic Antibiotics, **A. Coates &**  
**D. Holsclaw**—Postural Drainage and Chest Physical Therapy.

## **Identifying and Characterizing Ion Channels**

**O. Al-Awqati**—The Chloride Channel, **D. Benos**—The  
Sodium Channel, **I. Levitan**—Ion Channel Regulation by  
Phosphorylation.

## **Biology of Pseudomonas and Host Mechanisms**

**C. Cox**—Iron Deposition, **J. Ogle**—Molecular Epidemiology,  
**M. Vasil**—Phospholipase C of *Pseudomonas*.

## **Nutrition Assessment**

**P. Durie**—Pancreatic Function Testing, **D. Mueller**—Nutrition  
Assessment Techniques, **C. Roy**—Nutrition Intervention.

## **Adult Care**

**S. Fiel**—Manifestations of CF in Adult Patients, **J. Palmer**—  
Reproductive Issues, **G. d'Alonzo**—Advances in the  
Management of Respiratory Failure.

## **Infection in CF**

**L. Bryan**—Antibiotics, **J. McBride**—Management of Viral  
Infections, **J. Sadoff**—Immunoprophylaxis.

## **Regulatory Mechanisms**

**J. Tallman**—Molecular Mechanisms of GABA-Gated Chloride  
Channels, **L. Jones**—Phospholamban and Calcium Transport  
Regulation, **H. de Jonge**—Application of Regulatory Principles.

## **C**ONTRIBUTED PAPERS AND CONFERENCE PUBLICATION

More than 175 abstracts will be presented in poster form.  
Proceedings will be published as a supplement to *Pediatric  
Pulmonology*. The conference will also include 23 workshops,  
as well as roundtables in 49 separate subject areas.

**CME credits and CEU's for the conference are pending.**

**REGISTRATION FEE:** \$125 (U.S.)

**PRE-REGISTRATION DEADLINE:** August 30, 1988

For more information, contact the

 **Cystic  
Fibrosis  
Foundation**

6931 Arlington Road  
Bethesda, MD 20814  
(301) 951-4422

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately to study the level of genetic integration between a marine mussel and its methanotrophic symbionts. Experience with CoT techniques. In vitro translation, 2-D gel electrophoresis, and purification of cellular organelles or symbionts is desirable. Apply by 1 September 1988. Open until filled. Send curriculum vitae and names of three references to: **Dr. Charles Fisher, Marine Science Institute, University of California, Santa Barbara, Santa Barbara, CA 93106.** *Equal Employment Opportunity/Affirmative Action. IRCA Employer.*

## POSTDOCTORAL POSITION CELL BIOLOGY

To study the molecular and biochemical basis for protein transport between ER and Golgi compartments in mammalian cells and in yeast using novel cell-free assays [see Beckers *et al.*, *Cell* 50, 523 (1987)]. Send curriculum vitae and three letters of reference to: **Dr. William E. Balch, Department of Molecular Biology, Research Institute of the Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, CA 92037.**

## POSTDOCTORAL POSITION IN BIOCHEMISTRY OF PLANT-INSECT INTERACTION

A USDA-sponsored postdoctoral position for studies on the role of anti-oxidant enzymes in defending insects against pro-oxidant allelochemicals. Primary and secondary anti-oxidant enzymes will be measured and characterized in a phytophagous insect model. A Ph.D. in an appropriate molecular or biological science. Candidates must have a demonstrated record of research experience and production including publications in areas relevant to position. Application deadline: 1 September 1988. Salary commensurate with experience. Complete curriculum vitae and arrange for three letters of recommendation to: **Dr. Ronald S. Pardini, Department of Biochemistry, University of Nevada Reno, Reno, NV 89557.** *Equal Opportunity/Affirmative Action Employer. The University employs only U.S. citizens and aliens lawfully authorized to work in the U.S.*

## POSITIONS OPEN

## POSTDOCTORAL POSITION CELL BIOLOGY

To study the mechanisms of clathrin-coated pit formation, membrane protein sorting and vesicular transport during receptor-mediated endocytosis through the use of functional assays which faithfully reproduce these membrane sorting and traffic events in vitro. Send curriculum vitae and three letters of reference to: **Dr. Sandra Schmid, Department of Molecular Biology, Research Institute of the Scripps Clinic, 10666 North Torrey Pines Road, La Jolla, CA 92037.**

A **POSTDOCTORAL POSITION IN BIO-CHEMICAL TOXICOLOGY** is available immediately to examine the significance of  $Ca^{2+}$  regulation changes during liver injury by alkylating drugs. Experience in  $Ca^{2+}$ -mediated cellular functions or catabolism of macromolecules is desirable, but not required. Salary \$18,000 to \$23,000. Send curriculum vitae with complete information on three references to: **Dr. George B. Cocoran, Pharmacology and Toxicology, College of Pharmacy, University of New Mexico, Albuquerque, NM 87131.**

## POSTDOCTORAL POSITIONS IN MOLECULAR AND CELLULAR IMMUNOLOGY

Two postdoctoral positions are available immediately to investigate the immune regulation of human B cell proliferation. Experience in recombinant DNA techniques is preferable, but not essential. The laboratory is focused on studies of the molecular cloning and expression of human B cell growth factor genes [*Science*, 235, 1489-1492, (1987)], characterization of BCGF receptors and immunoregulation of EBV induced B cell immortalization. Salary and rank are commensurate with experience. Send curriculum vitae and letters of recommendation to: **Surendra Sharma, Associate Professor, Department of Pathology and Laboratory Medicine, Roger Williams Hospital-Brown University, 825 Chalkstone Avenue, Providence, RI 02908.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available in the Department of Physiology to study electrophysiology and transport in renal tubules, atrial natriuretic factor, ion channels in patch clamp and lipid bilayer experiments. Applicants should have Ph.D. or M.D. degree. Send curriculum vitae and names of three references to: **Dr. Erich E. Windhager, Professor and Chairman, Department of Physiology, Cornell University Medical College, 1300 York Avenue, New York, NY 10021.** *Equal Employment Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available for work in cardiopulmonary physiological and biochemical research using newborn lambs as models for Sudden Infant Death Syndrome, and other pediatric respiratory disorders. Studies include control of respiration, carotid body functions, hemodynamics, lung fluid balance, lung mechanics, etc. Experience in related areas preferred. Please send application to: **Dr. H. W. Sundell, Department of Pediatrics, Vanderbilt School of Medicine, Nashville, TN 37232.**

## POSTDOCTORAL POSITIONS BIOCHEMISTRY, BIOPHYSICAL CHEMISTRY, CELLULAR AND MOLECULAR BIOLOGY OF ATHEROSCLEROSIS UNIVERSITY OF ALABAMA AT BIRMINGHAM

NIH supported postdoctoral positions are immediately available for multidisciplinary training in atherosclerosis research. Applicants must be citizens or permanent residents of the United States and preferably have less than 2 years of previous postdoctoral training. Candidates need not have experience in this field of research but must be prepared to vigorously pursue their chosen project.

Send for further information or apply with curriculum vitae and three letters of recommendation to: **Dr. John R. Baker, Department of Biochemistry, University of Alabama, Birmingham, AL 35294.** *UAB is an Affirmative Action/Equal Opportunity Employer.*



## National University Hospital Singapore

Excellence: Our Mission, A Commitment

*Share our mission in providing personalised quality patient care with state-of-the-art medical technology. National University Hospital is a 700-bedded multi-specialty teaching hospital that offers you a career - not a job - a commitment to achieve excellence in patient care, medical education and research.*

We invite applications for the position of:

## POSTDOCTORAL FELLOW

Haematology Division  
Dept of Laboratory Medicine

The position provides an opportunity for a person possessing training in cytogenetics, genetics and/or DNA studies to be involved in the further development of a genetic service for the hospital.

Applicants should have:

- PhD in a field related to genetics and experience in cytogenetics
- Experience in DNA analysis will be an advantage

Terms and Conditions of Service:

- Two-year contract
- Salary will commensurate with qualification and experience

Please write in giving details of your academic qualifications and results, work experience, testimonials, telephone number to:

Director of Personnel  
NATIONAL UNIVERSITY HOSPITAL (S) PTE LTD  
5 Lower Kent Ridge Road, Singapore 0511

## EniChem Americas Inc.

has a postdoctoral position available in its Plant Molecular Biology Group at their Research Center near Princeton, N.J. EniChem Americas Inc is the American affiliate of EniChem—the chemical arm of ENI (Ente Nazionale Idrocarburi).

This vacancy presents a unique opportunity to join a group of highly motivated scientists developing programs on crop improvement through biotechnology. We are particularly interested in candidates with expertise in molecular biology to work in the area of gene expression in plants and/or plant transformation.

Successful candidates will enjoy the benefits of joining a new research team in a well-equipped, custom designed facility supported by a major European corporation.

Please send Curriculum vitae, statement of research interests and names of three references to:

**Personnel Coordinator  
Dr. D.A. Pierce  
Group Leader Molecular Genetics**

## EniChem Americas Inc.

2000 Princeton Park Corporate Center  
Monmouth Junction, N.J. 08852

*Equal opportunity employer m/f*





## POSITION AVAILABLE IMMUNOLOGIST

The International Laboratory for Research on Animal Diseases (ILRAD), is an internationally funded, major institution with the mandate of developing improved methods to control two important diseases of livestock, trypanosomiasis and theileriosis. The multidisciplinary research program includes biochemistry, molecular biology, immunology, cell biology, pathology, parasitology, electron microscopy and entomology with appropriate supporting units. Applications are invited for the position of:

### IMMUNOLOGIST — POSITION REF: PD/88/6

A post-doctoral position is available in a research group studying the immunology of trypanosomiasis in resistant and susceptible breeds of cattle. The successful candidate will investigate the role of macrophages in the resistance of trypanotolerant livestock to trypanosome infections. Applicants will have a first degree in biology or veterinary science and a doctorate in immunology relating to the induction and control of immune responses. Experience in the immunology of infectious diseases and the role of phagocytic cells in induction of protective immune responses will be advantageous.

This is an International staff position and salary will be paid in US dollars. Initial salary will be determined by qualifications and experience. Scientific staff are expected to contribute to the training program. Moving, housing, commutation and education allowances are paid and there are medical and retirement benefits. Applicants should include current curriculum vitae and names and addresses of three referees. Applications, citing the position reference number, should be sent by September 30th, 1988 to:

**The Chief Personnel Officer  
ILRAD  
P.O. Box 30709  
NAIROBI  
Kenya**

## University of Illinois at Urbana-Champaign

### DEAN

### COLLEGE OF AGRICULTURE

#### Notice of Position Available

The University of Illinois at Urbana-Champaign invites nominations and applications for Dean of the College of Agriculture.

The Dean is the chief executive officer of the College, responsible to the Vice Chancellor for Academic Affairs and to the Chancellor for its administration, and is the agent of the College faculty for the execution of College policy. The College functions through its four principal administrative units, each under an associate dean and director: Cooperative Extension Service, Agricultural Experiment Station, Resident Instruction, and International Agriculture. The programs of these units are conducted within nine departments and a School of Human Resources and Family Studies, comprising the several disciplines of agriculture and home economics. The College has about 1,000 professional and professional staff members.

Qualifications sought include an earned doctoral degree; academic experience in agriculture, home economics, or a related field; scholarly achievement; administrative experience; demonstrated commitment to affirmative action; and ability to lead the College in its academic responsibility as part of a nationally and internationally recognized land-grant University. The Dean provides leadership in the College's service to a major agricultural and industrial state, works closely with Campus and University Administration, and interacts with leaders at local, state, and national levels. Candidates should appreciate the broadening boundaries of agriculture. The Dean is expected to be a constructive advocate for the College and its faculty.

Salary open. Date of appointment is negotiable.

To assure full consideration, nominations and applications (including vita and three letters of reference) should be postmarked by November 1, 1988, and sent to:

**Dr. Robert L. Metcalf, Chair  
Search Committee for the Dean  
of the College of Agriculture  
University of Illinois at Urbana-Champaign  
Swanlund Administration Building  
601 East John Street  
Champaign, Illinois 61820**

Attention: Roger E. Martin (217/333-4523)

THE UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN  
IS AN AFFIRMATIVE ACTION-EQUAL OPPORTUNITY EMPLOYER.

# Cell Culture Development

Schering-Plough, a \$2.7 billion pharmaceutical industry leader, is making today's most vital and remarkable advancements in cell culture development. We currently seek two PhDs to lend their vision to our dynamic research team and serve as catalysts for tomorrow's breakthroughs.

## Manager, Microbiological and Cell Culture Development

You will direct and motivate this highly-visible team of scientists, including several PhDs. Your leadership qualities will ensure the progress of several important programs leading to improved processes and strains for the production of various microbial and cell culture based products.

To qualify, your background should include a PhD in a microbiological discipline, preferably with expertise in molecular biology, microbial physiology and cellular physiology. You should also have at least two years' postdoctoral experience and five years' research experience in an industrial setting. Thorough knowledge of microbial and cellular biochemistry and genetics, and microbial cloning and gene expression techniques essential.

## Group Leader, Microbiological and Cell Culture Development

Reporting to the Manager, you will head a separate group of scientists responsible for research leading to the optimization of the expression of foreign genes in procaryotic and eucaryotic cell hosts. Your ability to create and implement independent projects in collaboration with scientists both inside and outside the company will be critical to ongoing studies. In addition, you will assist in the design, execution and analysis of research to support products currently under development.

Requirements include a PhD in physiology, cell biology, microbiology or molecular biology. You must also have at least 2 years' post-doctoral training, and 2-5 years of research experience in an industrial setting. Additional rDNA and cell biology experience preferred.

At Schering-Plough, you'll receive all the support and recognition you need to pursue your best ideas. In addition to outstanding resources and an exciting research environment, we offer an attractive salary and benefits package. For immediate, confidential consideration, forward your resume and salary history to: Mr. M. Urdanick, Schering-Plough Corporation, 1011 Morris Avenue, Union, NJ 07083. We are an equal opportunity employer.



**Schering-Plough**

## RESEARCH ASSOCIATE MOLECULAR BIOLOGY

**Amgen**, an industry leader in advanced biotechnology, develops products for a wide variety of applications. Recent progress has created an opportunity for a Research Associate in our Specialty Chemicals Group.

Qualified applicants should have a BS or MS in Molecular Biology, Biochemistry or a related discipline and 1-2 years' experience in Prokaryotic Molecular Biology or Molecular Genetics. Experience in microbial physiology and biochemistry is desirable. Some background in analytical instrumentation would be helpful.

**Amgen** offers a stimulating and challenging research environment as well as an attractive location one hour northwest of Los Angeles. **Amgen** also offers an excellent compensation and benefits package. Qualified applicants should send a resume and a list of 3 references, in confidence, to:

Recruitment, Dept. #331

**AMGEN**

1900 Oak Terrace Lane

Thousand Oaks

CA 91320

Equal Opportunity Employer



## UNIVERSITY OF OXFORD UNIVERSITY LECTURERSHIP IN SYSTEMS NEUROSCIENCE

**In association with  
St. Hilda's or Keble College**

Applications are invited for the above post tenable from 1 October 1989. Candidates should have carried out research in some aspect of systems neuroscience. Stipend according to age on the scale £9,865 to £20,615. The successful candidate may be offered a tutorial fellowship at St. Hilda's College, the statutes of which provide that all fellows shall be women, or if a man be appointed, a senior research fellowship and tutorship at Keble College. Further details may be obtained from Professor Colin Blakemore, University Laboratory of Physiology, Parks Road, Oxford, ENGLAND OX1 3PT, to whom applications (nine typed copies, or one from overseas applicants) with a full curriculum vitae and summary of research interests should be sent by 30 September 1988, together with the names of three referees who have agreed to send their opinions without further request by the same date. The University is an equal opportunities employer.

## IN VIVO BIOCHEMIST / PHARMACOLOGIST

Merck Sharp & Dohme Research Laboratories, world renowned for conducting excellent basic research and discovering new therapeutic pharmaceutical drug compounds, is currently seeking an in vivo biochemist/pharmacologist for our Research Imaging Department.

Responsibilities for this position will involve in vivo and in vitro experiments designed to obtain quantitative information on the biodistribution of gamma and positron emitting radiotracers and analysis of this data to obtain information on such parameters as receptor concentration, receptor occupancy, transport across the blood; brain; barrier, etc. In addition, duties will include directing the modeling/quantification aspects of internal and external projects using SPECT/PET and autoradiography.

A Ph.D. in Biochemistry, Pharmacology or the equivalent, and five years experience in radiotracer design and evaluation, in vitro and in vivo receptor binding studies, autoradiography, and SPECT or PET imaging, is required. Please send resume to:

**Michele D. Peterson (W42-2)**

**Merck Sharp & Dohme  
Research Laboratories**

**West Point, PA 19486**

EEO/AA/VH/EMPLOYER



**Merck & Co., Inc.**

## Make New Discoveries at Monsanto

The Monsanto Biological Sciences Department, located in suburban St. Louis, is committed to quality research leading to new biotechnology related products for agriculture, animal nutrition and human health care. We have openings in the following areas for outstanding research scientists.

### Protein Biochemistry

This position will involve the discovery and development of novel product candidates in human health care and animal nutrition. To qualify, you must be experienced in recombinant protein purification, characterization and interpretation of structure/function relationships. You must also have several years of postdoctoral experience, supervisory skills and an established publication record.

### Molecular Biologist

The position involves collaboration with an established group devoted to bacterial gene expression and protein design. To qualify, you must have a Ph.D. in Genetics, Molecular Biology or Biochemistry or equivalent with relevant postdoctoral or industrial experience. Previous work in protein secretion and/or protein design is preferred.

### Organic/Bio-organic Chemist

This position encompasses elements of organic, physical organic and bio-organic chemistry. You will work with other chemists and biologists to translate biological activities derived from molecular/cell biology into structural information that can be used to design drug candidates. Initial work will focus on the design of peptide-mimetic molecules based on peptide activity. To qualify, you must have a Ph.D. with postdoctoral experience and knowledge of biology and biochemistry.

Please send curriculum vitae and names of three references to: **Monsanto Company, 700 Chesterfield Village Parkway, Department BB5B-PP, St. Louis, MO 63198.** Equal Opportunity Employer M/F/H/V.

# Monsanto

# RESEARCH SCIENTISTS

## Central Nervous System Research

For more than a century, scientists at ELI LILLY AND COMPANY have developed innovative, high quality pharmaceutical products. In 1988, Lilly is investing over \$500 million in research-and-development programs. More than 3,000 scientists at the company's Lilly Research Laboratories and Biochemical Development Divisions are pursuing creative research programs that involve many important health care needs.

To further build its research capabilities, Lilly is seeking self-motivated scientists to plan, organize, and manage programs directed toward understanding the biochemical basis of CNS disease and the development of novel therapeutic agents.

### CNS Electrophysiologist

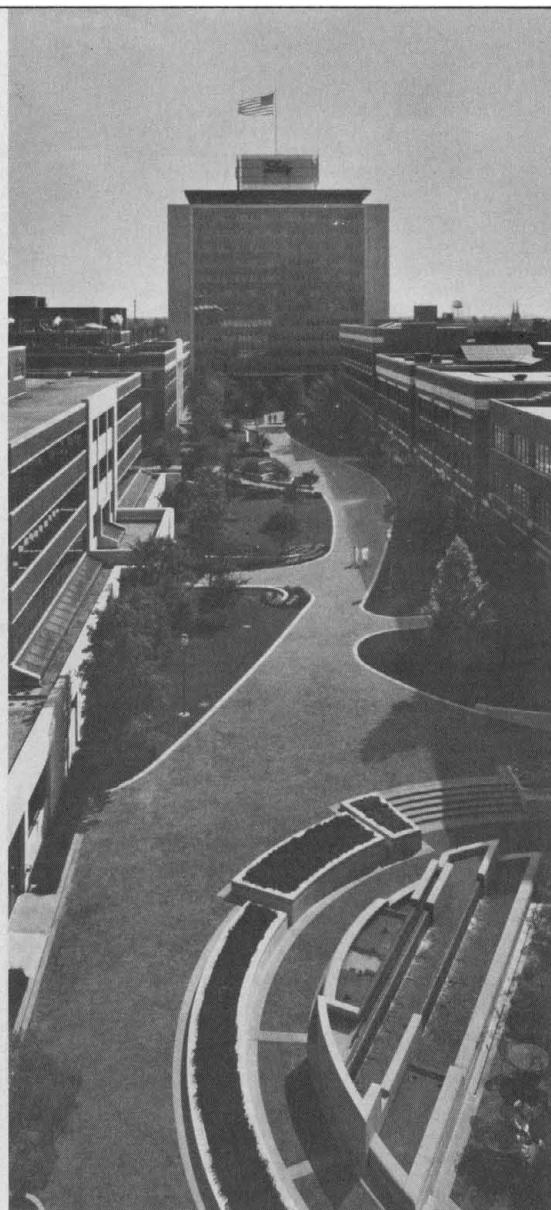
- Doctoral-level electrophysiologist who can advance our understanding of the basic mechanisms by which neurotransmitters, neuropeptides, and drug candidates exert their effects at the cellular, tissue and whole animal level.
- Should be proficient in single-unit recording, iontophoresis, and patch clamp techniques. Postdoctoral experience is preferable.
- The investigator's program should enhance our fundamental approach to the study of the disease process as well as provide insight into the mechanisms by which therapeutic agents produce their effects.

### CNS Molecular Pharmacologist

- Doctoral-level scientist, with a background in biochemistry or pharmacology, and experience in receptor theory and radio-ligand binding to receptors.
- An understanding of cellular and tissue organization and neuro-anatomy is essential.
- Experience in autoradiographic techniques and second-messenger coupling systems is desirable. Postdoctoral experience is preferable.

In addition, these scientists must have the leadership capabilities needed—technical, communication, interpersonal, and organizational skills—to build a research program. Entry level and salary will be based upon each candidate's experience.

Eli Lilly and Company is committed to scientific excellence. Lilly provides a stimulating professional atmosphere with many opportunities for collaborative, multidisciplinary research. The company offers an attractive total compensation program.



For prompt consideration, please forward your *curriculum vitae* to:

**John W. Crooks, Manager  
Ph.D. Recruitment (CNS)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285**



Equal Opportunity Employer

## POSITIONS OPEN

**POSTDOCTORAL POSITION IN PEPTIDE CHEMISTRY** now available. Will design and do synthesis, purification and characterization of synthetic peptides for immunochemical studies related to HIV vaccine development. Work will be coordinated by **Dr. Patrick Kanda**. Requires experience in peptide or protein purification and characterization with Ph.D. in biochemistry or related area. Annual salary ranges from \$20,500 to \$23,920, dependent upon experience. Please mail curriculum vitae with names and telephone numbers of three references to: **Personnel Director (868), Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, TX 78284. Equal Opportunity Employer M/F.**

**POSTDOCTORAL RESEARCH ASSOCIATE OR SENIOR POSTDOCTORAL RESEARCH ASSOCIATE.** To carry out research in the general area of free radical chemistry/biology as it relates to human nutrition. Specific areas of interest include lipid peroxidation and antioxidants, oxidative stress induced by environmental toxins, and the detection of free radicals/free radical damage in vivo. A strong background in mechanistic biochemistry or chemistry is required. Experience with handling small animals (e.g., preparation of mitochondria or hepatocytes) or with cell cultures is highly desirable. This position will be in the Pennington Biomedical Research Center, a major new facility in the Louisiana State University system with the mission of improving human health through basic research in the nutrition field. Please send a complete curriculum vitae and have at least three letters of reference sent directly to either: **Dr. Daniel F. Church or Dr. William A. Pryor, Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808. LSU is an Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE OR SENIOR POSTDOCTORAL RESEARCH ASSOCIATE.** To study effects of various pharmacological agents and nutritional factors on intimal hyperplasia and arachidonic acid metabolism by endothelial and smooth muscle cells. Extensive experience in cell culture (endothelial and other cell types) and Ph.D. in biological sciences are required. This position will be in the Pennington Biomedical Research Center, a major new facility in the Louisiana State University system with the mission of improving human health through basic research in the nutrition field. Please send curriculum vitae and three letters of reference directly to: **Dr. Dan Hwang or Dr. William A. Pryor, Pennington Biomedical Research Center, 6400 Perkins Road, Baton Rouge, LA 70808. LSU is an Affirmative Action Employer.**

### POSTDOCTORAL RESEARCH FELLOW

Position available immediately in one of the following areas: degradation of pesticides, volatility/solubility of the aromatic components of gasoline in water, and fates of gasoline from leaking underground storage tanks. The Harold Spencer Schwenk Postdoctoral Fellowship is a joint project of the Connecticut Department of Health Services and the Institute of Water Resources of the University of Connecticut. Initial funding is for 1 year. The candidate will have access to facilities, equipment, and assistance from both agencies. Please send résumé and names and addresses of three references by 1 October 1988 to: **Director, Institute of Water Resources, U-18, The University of Connecticut, Storrs, CT 06268. UCONN is an Equal Opportunity/Affirmative Action Employer. (Search #9A4).**

### RESEARCH ASSOCIATE

The Lighthouse Vision Research Laboratory seeks an individual to conduct studies of computer graphic representations of visual space and visual psychophysics. Applicants should have a strong background in computer graphics and be knowledgeable in "C" and Unix. Understanding of, and/or background in image processing, optics and human vision are also helpful. The successful candidate will probably, but not necessarily, have a Ph.D. in computer science, experimental psychology, or a related discipline. Send curriculum vitae and names and addresses of (or letters from) three references to: **Aries Ardit, Ph.D., Director of Vision Research, 111 East 59th Street, New York, NY 10022.**

## POSITIONS OPEN

### PROFESSOR AND HEAD DEPARTMENT OF LABORATORY MEDICINE AND PATHOLOGY UNIVERSITY OF MINNESOTA MEDICAL SCHOOL MINNEAPOLIS, MINNESOTA

The University of Minnesota Medical School is seeking outstanding candidates for the position of Professor and Head of the Department of Laboratory Medicine and Pathology. The successful candidate will have a medical degree (M.D. or equivalent), strong record of federally funded research in modern aspects of pathology and/or laboratory medicine, extensive experience in academic teaching and service roles, and demonstrated leadership abilities. The candidate should have administrative experiences necessary to direct a large, multifaceted department, including a pathobiology graduate (Ph.D. degree) program. The Medical School has placed a high priority on this position and will maintain this Department as one of the top departments in this discipline. Applications and nominations, to be received no later than 1 October 1988, (including names and addresses of three referees) should be sent to:

**Dr. Alfred F. Michael  
Chair, Search Committee for  
Head of Laboratory Medicine and Pathology  
University of Minnesota Medical School  
Box 391 UMHC  
516 Delaware Street SE  
Minneapolis, MN 55455**

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

### PROTEIN CHEMIST

The Department of Biological Sciences at Stanford University is seeking a person with a Ph.D. or equivalent experience in protein chemistry to establish and operate a molecular biology service laboratory with primary responsibility for peptide sequencing and synthesis and a supervisory role for nucleic acid synthesis and sequencing. The person will be responsible for operation of the facility, supervision of technical assistants, periodic updating of equipment and techniques, and for providing instruction to faculty and students. Applicants should provide curriculum vitae and the names of three references to: **Professor Richard Scheller, Department of Biological Sciences, Stanford University, Stanford, CA 94305-5020. Stanford University is an Equal Opportunity Employer and encourages applications from minorities and women.**

### RESEARCH ASSISTANT GENE TARGETING

The Jackson Laboratory, a center for research in mammalian genetics located on the coast of Maine, has an immediate opening for a research assistant to conduct gene targeting experiments in cultured murine stem cells. This position offers an opportunity for active and original participation in a basic research program aimed at understanding the role of specific oncogenes in development, as well as providing mouse models of inherited human disorders for biomedical research. Duties will include establishment and maintenance of embryonic stem cell cultures, gene transfer experiments, nucleic acid extraction, blot analysis and plasmid manipulations. Applicants should send curriculum vitae and the names of three references to: **Harold Wheeler, Employment Manager, The Jackson Laboratory, 600 Main Street, Bar Harbor, ME 04609. Telephone: 207-288-3371. Affirmative Action/Equal Opportunity Employer/M/F.**

**RESEARCH ASSISTANT PROFESSOR** or research associate, Ph.D. or M.D. with experience in cell physiology or biophysics to investigate hormonal regulation of intracellular electrolyte activity and membrane transport using intracellular double-barrel microelectrode measurements of ion activity (also pH) and membrane properties in epithelial cells. Experience with digital data collection, electrophysiological methods and cell culture desirable but not required. Salary (\$28,000 to \$34,000) and position (up to 5 years) depending on experience. Send application to: **Dr. Thomas Biber, Department of Physiology, Medical College of Virginia Box 551, Virginia Commonwealth University, Richmond, VA, 23298. Minorities and women encouraged to apply. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

### COMMONWEALTH OF PENNSYLVANIA SENIOR MANAGEMENT POSITION PUBLIC HEALTH TOXICOLOGIST Salary Range: \$37,000 to \$49,000

The Department of Environmental Resources is seeking a highly motivated professional individual to serve as Director of the Department's Toxicology Team. The individual will be responsible for developing policies and procedures for conducting and implementing a department-wide toxicological risk management and assessment program and providing oversight and guidance to ensure consistency in the application and management of toxics and toxics-related issues within the Department. This position is located in Harrisburg. Requirements: Two years of professional experience in the field of toxicology, which includes 1 year of consultative or administrative experience in a toxicological program and a doctorate degree in toxicology, with background in public health and general environmental health. Send résumé with copy of this ad to: **The Department of Environmental Resources, Bureau of Personnel (PHT), Room 717, Executive House, P.O. Box 2357, Harrisburg, PA 17120. For further information, call Patricia Robbins at 717-783-6143.**

### ASSOCIATE IN RESEARCH DEPARTMENT OF SURGERY

Division of Thoracic Surgery at the Brigham and Women's Hospital has an opening for a research associate to study electrophysiology of gastrointestinal smooth muscle. Applicant should have experience with in-vivo experimentation and chronic animal preparations and basic electrophysiologic techniques. Experience with techniques of blood flow measurement welcome.

Candidates should have a Ph.D. in a related field and capacity for interdisciplinary research and growth. Please send résumé, letter of interest and names of references to: **David J. Sugarbaker, M.D., Chief, Department of Thoracic Surgery, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.**

### RESEARCH OPPORTUNITIES IN BIOTECHNOLOGY

Department of Biotechnology Research at Pioneer Hi-Bred International, Inc. is seeking applicants for our ongoing program of crop improvement. Pioneer offers competitive salaries, excellent facilities and a highly cooperative research environment. Successful candidates will be expected to interact extensively with ongoing programs in transformation, regeneration and gene isolation programs.

**MOLECULAR BIOLOGIST/ENTOMOLOGIST.** The successful candidate will investigate the application of molecular biology and plant genetic engineering to insect problems in crops. This will entail the evaluation of existing insect resistant genes and identification of novel approaches to insect control. A Ph.D. or equivalent in molecular biology or related field is required. Familiarity with entomology is desirable.

**POSTDOCTORAL GENE EXPRESSION.** This is a 2-year appointment to study gene expression in plants including regulation of transcription and translation as it relates to recombinant DNA construction. A Ph.D. in life sciences or equivalent is required and experience in enzymology and RNA purification and detection preferred.

**RESEARCH ASSOCIATE (THREE POSITIONS).** The successful applicant will assist in various aspects of projects involved in the application of transformation systems. Expertise in tasks such as electroporation, protoplast isolation, protein characterization, enzyme assays, and cell culture techniques are desirable. The applicant should have a minimum of a 4-year degree or equivalent in biological sciences. Additional research experience is preferred.

*Pioneer Hi-Bred International is an Equal Opportunity/Affirmative Action Employer. Send résumé and indicate for which job you are applying with at least three references to:*

**Lisa Wilson  
Pioneer Hi-Bred International, Inc.  
7300 N.W. 62nd Avenue, P.O. Box 38  
Johnston, IA 50131**



When it comes to innovation in product and health care services, Abbott Laboratories provides what the marketplace demands. For over 100 years, we've grown with aggressive and well-funded research in diverse medical areas. Our Pharmaceutical Division is one such area where discoveries are constantly being made. We now invite qualified professionals to help discover novel pharmaceuticals for the treatment of inflammatory and allergic diseases.

### **Ph.D. BIOCHEMIST**

The selected candidate will be involved in working with the staff to develop new methods and in vitro assays in the area of lipid mediator research. Ph.D. in Biochemistry with 0-3 years post doctoral experience required, along with true interest in pharmaceutical development. Some experience in lipid biochemistry or receptor pharmacology is a plus.

### **BIOLOGICAL RESEARCH ASSISTANT**

As part of our team of researchers, you'll need a BS/MS in biology, chemistry or related discipline, with a minimum of 2 or more years of relevant laboratory experience. Previous experience conducting in vivo animal studies is essential.

Located in an attractive suburban setting 30 miles north of Chicago, we offer exceptional compensation and generous benefits. For consideration, please send resume with salary history to: **Patricia Handy, Corporate Placement, Dept. SCI 8/19, Abbott Laboratories, Abbott Park, IL 60064.** Abbott is an affirmative action employer.

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This is an exceptional opportunity to be President of The New York Blood Center, a leading, non-profit organization which collects and supplies blood to hospitals in the New York/New Jersey metropolitan area. The Blood Center also operates its own plasma fractionation facility and, through its research arm, The Lindsley F. Kimball Research Institute, conducts important research in transfusion medicine. The Blood Center has an annual budget of \$120 million, of which 10 percent is dedicated to research. The overall staff is approximately 1,200.

The individual we are seeking will preferably be an M.D. with a specialty in blood or a blood-related discipline (e.g., epidemiology, public health); a Ph.D. will, under special circumstances, be considered. The individual will probably be Chairman of a major department or division (or Dean) at a top university or related academic institution, or the Head of a blood/bank center that is strong scientifically. The President should be a mature individual who is a planner and a builder, not a steady state manager. The successful candidate should not only have medical/scientific and managerial capabilities, but the vision and instinctive leadership traits to take the Blood Center into the 21st Century.

The position offers an outstanding salary and benefits package, commensurate with experience and achievements.

We invite your reply in strict confidence. Inquiries should be addressed to Ms. Doris Chase, Staff Officer, The New York Blood Center, 310 East 67th Street, New York, New York 10021, or contact: Stephen H. Israel at (212) 687-1834.



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## POSITIONS OPEN

**RESEARCH ASSISTANT/ASSOCIATE** position in the Gastroenterology Division, Department of Medicine, Beth Israel Hospital and Harvard Medical School. Opportunity for biochemical pharmacologist to perform research in the area of gastrointestinal smooth muscle contraction-relaxation and the role of neuropeptides. The candidate should be familiar with the basic techniques in biochemistry and must have an M.S. or Ph.D. degree. The level of appointment will be commensurate with the candidate's experience. Send curriculum vitae to: **Dr. Satish Rattan, Gastroenterology Division, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215.** *We are an Equal Opportunity/Affirmative Action Employer.*

### RESEARCH ASSOCIATE IN IMMUNOLOGY

Position for a Ph.D./M.D. is available to study the cellular and molecular mechanisms of immune regulation, with emphasis on receptor (idiotype)-mediated regulation. The laboratory is a part of an Immunology Program Project established by the NIH to study the senescence of immune responses. Annual salary range \$23,000 to \$25,000.

Contact: **Dr. Jan Cerny, Professor, Route J-19, Department of Microbiology, The University of Texas Medical Branch, Galveston, TX 77550.**

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### RESEARCH SCIENTIST THE HOSPITAL FOR SICK CHILDREN RESEARCH INSTITUTE TORONTO, CANADA

A staff position is available in the area of cellular or molecular biology broadly relevant to Cystic Fibrosis. The position provides the opportunity to interact with members of an active established CF research group. However, the appointee will establish independent grant funded research projects. New laboratory space and some start-up assistance are available. The primary criteria for appointment will be excellence in the applicant's field of research. The HSC Research Institute is affiliated with the University of Toronto and appropriate academic cross-appointments will be considered. Please submit application and three letters of reference to: **Dr. Jack Riordan, Director, Cystic Fibrosis Research Development Program, The Hospital for Sick Children, 555 University Avenue, Toronto, Canada M5G 1X8.**

### RESEARCH TECHNICIAN III

Responsibilities: Develop and calibrate computer model of effects of **nitrogen deposition on the biogeochemistry of forest ecosystems.** Minimum qualifications: Bachelor's degree in related field (master's degree preferred) or associate's degree in related field and 2 years of related experience or high school graduation including courses in physics, mathematics, or other technical field and at least 4 years of technical experience; knowledge of biological processes affecting nutrient cycling and interactions of biological and chemical processes in soils; modeling experience; ability to program in FORTRAN. Salary: \$17,880 to \$27,680; normally not to exceed \$20,010. This is a 2-year grant-funded position. Send résumé (non-citizens must include current visa status) by 2 September 1988 to: **John D. Aber, Institute for the Study of Earth, Oceans and Space, University of New Hampshire, Durham, NH 03824.** *UNH is an Affirmative Action/Equal Employment Opportunity Employer.*

**SENIOR RESEARCH ASSOCIATE**, position available immediately. The successful candidate should have a Ph.D. and at least 2 years of postdoctoral experience in the molecular biology of membrane proteins of bacteria. Experience in cloning and sequencing; high G:C oligonucleotide, monoclonal antibody and membrane isolation techniques; and model membrane studies of porins are essential. *In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. Equal opportunities will be given to male and female applicants.* Please submit applications in writing with résumé and three letters of recommendation to: **Dr. R. E. W. Hancock, Department of Microbiology, University of British Columbia, Canada or telephone 604-228-2682 for an interview.** Deadline for submission of résumé is 15 October 1988. Salary is \$32,000 per year grant funded.

## CELL BIOLOGIST/ BIOPHYSICIST

The Life Sciences Division at the Los Alamos National Laboratory (LANL) invites applications for the position of Staff Member and Senior Investigator in the National Flow Cytometry Resource. The Resource is a national "user" facility internationally recognized as a center of excellence for the development and innovative application of flow cytometric technology. The individual will be responsible for identification and pursuit of activities at the forefront of cell biology, molecular biology and immunology; and for the conceptualization of new flow cytometric and data analysis capabilities. Combined with the technical aspects, the Senior Investigator will be responsible for administrative aspects of collaborative projects, coordination of projects with other groups in the Division, and proposals for new and continued funding.

The successful candidate must have a PhD or equivalent in one of the biological sciences or physics with a strong biology background. Experience required for the position is a strong interdisciplinary background, demonstrated in-depth knowledge of flow cytometry and related applications, a successful record of obtaining funding, and demonstrated ability to communicate well while leading a multidisciplinary research group.

The National Flow Cytometry Resource is jointly sponsored by the Division of Research Resources of NIH and the Office of Health and Environmental Research of DOE. Los Alamos National Laboratory provides excellent compensation and benefits. To apply, submit detailed resume to: Richard Garcia (MS P280), Personnel Services Division 80314-BK, Los Alamos National Laboratory, Los Alamos, NM 87545.

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This position offers the individual an exciting opportunity to participate with members of the Oxford Glycobiology Unit, an internationally recognised centre for carbohydrate research, in a programme of research that encompasses a wide range of biochemical topics. Qualifications must include a Doctorate in Biochemistry (or related field). Applicants should ideally have added experience with microbiological and fermentation techniques and should preferably have British nationality.

**A competitive salary will be paid and company benefits include pension fund, private medical insurance, and 24 days annual leave. Relocation assistance will be provided, if necessary.**

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## RESEARCH SUPERVISOR

Ricerca, Inc., is currently seeking qualified individuals to add to its technical staff. An immediate opening exists in our biological evaluations area for a supervisor. This position, which requires a Ph.D. degree in a discipline related to Agricultural Biosciences, is responsible for directing all biological evaluations projects except those in the plant disease control and biocontrol areas. The successful candidate will have excellent oral and written communication skills and a broad background in the evaluation of agricultural chemicals.

Ricerca, Inc. is a research and development company which provides broad-based technical services to its clients on a contract basis. Our facilities are located in Concord Township, an attractive Cleveland, Ohio suburb. We offer competitive salaries and an excellent Employee Benefits Program.

Interested individuals should forward résumés to the Human Resources Department

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## STAFF SCIENTIST BIOSTATISTICIAN

ALZA, a manufacturer of innovative drug delivery systems, currently requires a staff research scientist for its clinical research group. This position requires a doctoral in biostatistics. The successful candidate will be expected to design experiments and carry out the analysis of clinical research within the framework of our clinical research program. To this end, experience in both theoretical and applied statistics is essential. The ability to adapt new techniques in the statistical theory of clinical data analysis is also required. In order to perform the job responsibilities, the candidate must be experienced with advanced statistical computation in the mini computer and personal computer environments. Excellent communication skills, speaking, listening, reading and writing are required. The salary range for this position will be \$46,000 to \$49,000, depending on background and experience. Résumés must be attended by three written references. Responses must be postmarked no later than 19 September 1988 to be considered. If offered employment, you must show you have the legal right to work in the U.S. For immediate consideration, please send your résumé to: **ALZA Employment Department, #B, 950 Page Mill Road, P.O. Box 10950, Palo Alto, CA 94303-0802. We are an Equal Opportunity Employer.**

ALZA

## POSITIONS OPEN

**SENIOR ASSOCIATE** position available immediately at the ILSI Risk Science Institute for a Ph.D. with 0 to 3 years experience in the biological sciences and an interest in risk assessment. The Risk Science Institute is a public, non-profit research foundation whose primary goal is to improve risk assessment by strengthening the scientific principles on which assessments are based. This is accomplished via collaborative relationships with universities, private foundations, government agencies and industry. Applicant will work with scientists from diverse disciplines and will be responsible for evaluating and analyzing technical data, drafting and editing technical manuscripts and coordinating and staffing technical working groups. Send curriculum vitae to: **Dr. Carol J. Henry, Executive Director, ILSI Risk Science Institute, 1126 Sixteenth Street, NW, Washington, D.C. 20036.**

The Centers for Disease Control, Center for Environmental Health and Injury Control, Atlanta, Georgia, is recruiting a **SENIOR EPIDEMIOLOGIST** to conduct analysis of Cancer risk related to military service in Vietnam. Monitors ongoing field (data collection) activities. Applicants must have a Ph.D. in epidemiology; or a degree in medicine (M.D. or equivalent) with extensive demonstrated experience in analytic epidemiology. A minimum of 5 years of experience in design and analysis of case control studies as evidenced by publications in peer-reviewed journals is desirable. Salary range from \$39,500 to \$46,679, depending on qualifications and experience.

Interested persons should send curriculum vitae to: **Ms. Jenny P. Garner, Building 1, Room 1050, Centers for Disease Control, 1600 Clifton Road, NE., Atlanta, GA 30333** within 30 days of this publication.

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**VIROLOGIST**—Mobay Corporation, Animal Health Division, located in the Kansas City area, has position available for a research scientist—virology. Position requires knowledge ordinarily acquired from Ph.D. in microbiology, virology, cell biology, or biochemistry, plus at least 3 years of experience involving the planning, scheduling, and execution of biological research projects; analysis and reporting of technical data; and training/supervising technical support personnel. Requires previous experience handling and performing tests on laboratory and farm animals and knowledge of utilizing computers for data analysis as well as knowledge of statistics. Thorough knowledge of federal regulations relating to biologicals. Expertise in suspension culture and electrophoresis.

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## POSITIONS OPEN

### VIROLOGIST

The Wisconsin Regional Primate Research Center, University of Wisconsin—Madison, is seeking a D.V.M., M.D., and/or Ph.D. in retrovirology. This person should have postdoctoral experience in retrovirology, and experience with primate retroviruses is preferred. The position provides an opportunity to participate in a program in nonhuman retrovirology and to develop independent research complementing the existing retrovirology program at the Center. This is a full-time, core-staff research appointment. Applications should be sent by 15 September 1988 to:

**Virology Search Committee  
University of Wisconsin  
Regional Primate Research Center  
1223 Capitol Court  
Madison, WI 53715-1299  
Telephone: 608-263-3500**

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## GRANTS

### HEALTH EFFECTS INSTITUTE REQUEST FOR APPLICATIONS FOR RESEARCH FUNDS

The Health Effects Institute announces its 1988 Request for Applications (RFA's).

The Health Effects Institute is a non-profit corporation that supports studies of the health effects of automotive emissions. It is funded jointly by the United States Environmental Protection Agency and the automotive industry at a level of about \$6 million per annum. Current studies are investigating a variety of pollutants, including aldehydes, carbon monoxide, nitrogen dioxide, ozone, diesel exhaust, and methanol.

Full applications are now being accepted for research concerning:

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Materials describing the Health Effects Institute, specifics of the research topics, and preparation of applications are available.

Requests and inquiries should be directed to: **Dr. Jane Warren, Director of Research, The Health Effects Institute, 215 First Street, Cambridge, MA 02142. Telephone: 617-491-2926.** Letters of intent should be submitted no later than 3 October 1988. Full applications will be accepted until 31 October 1988.

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Proceedings of an International Conference, Tuscaloosa, Alabama, April 1988  
edited by Robert M. Metzger, University of Alabama, Tuscaloosa, USA

Progress in superconductivity research in the two years since the Bednorz-Muller article was published was the topic of an international conference held at the University of Alabama this year. The proceedings of this conference constitute a compendium of the best research and thinking in the short history of high-temperature superconductivity. The conference summarized what is known about the physics and chemistry of superconducting devices, how much progress has occurred in the theory of superconducting materials, and what directions future funding of superconductivity research will take.

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edited by Donald W. Leyden, Colorado State University, Fort Collins, and Ward T. Collins, Dow Corning Corporation, Michigan

Volume 2 in the Chemically Modified Surfaces series  
This proceedings contains the papers presented at the Chemically Modified Surfaces symposium held in Colorado in September 1987, where experts from around the world presented papers on such topics as biomaterials, catalysis, surface characterization, and surface modification in electronics.

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*Lasers in Materials Engineering* aims to cover in research articles and in reviews the topical aspects of the applications of lasers in materials engineering. The range of topics covers welding, cutting, surface treatment and electrocomponent manufacture. A balance is sought between fundamental aspects, e.g. modelling of processes or solidification, and applications to metals and nonmetals. The journal will contain review articles, original papers, short communications and letters on published work, conference reports and book reviews.

Contributors are invited to send their contributions to:

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## ELECTROMAGNETOELASTICITY OF PIEZOELECTRICS AND ELECTRICALLY CONDUCTIVE BODIES

by V.Z. Parton and B.A. Kudryavtsev, Moscow Institute of Chemical Engineering  
Translated from the Russian by E.G. Strel'chenko

The principles underlying the mechanics of piezoelectric materials and the methods available for calculating piezoelements used in radio and computer technology, ultrasonics and defectoscopy are presented in this application-oriented book. To describe the properties of piezocrystals and piezoceramics, the authors use the phenomenological approach, illustrating the general relationship of the theory of deformable media interacting with electromagnetic fields. Included in the book is an examination of the incorporation of the piezoelectric effect into the theory of shells and plates and to the subsequent use of the theory in piezotransducer analysis. In addition, the authors discuss the basic principles governing the propagation of coupled electroelastic waves in piezoelectric media and use a rigorous mathematical formulation for solving a number of problems concerning the excitation of diffraction of surface waves in piezocrystals.

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## WATCH FOR: SPECIFIC HEAT, THERMAL CONDUCTIVITY, AND ELECTRICAL RESISTIVITY OF HIGH TEMPERATURE SUPERCONDUCTORS

A special issue of the journal *Comments on Condensed Matter Physics*  
by Henry E. Fischer, Susan K. Watson and David G. Cahill

This is the first comprehensive review of three important properties of the new high temperature superconductors:  $\text{La}_{2-x}\text{Sr}_x\text{CuO}_4$  and  $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ . This monograph is particularly timely since these properties are being measured for the new high temperature superconductors based on Tl, Ca, Ba and Bi. Further, the review provides a critical comparison of these properties with those of more conventional materials.

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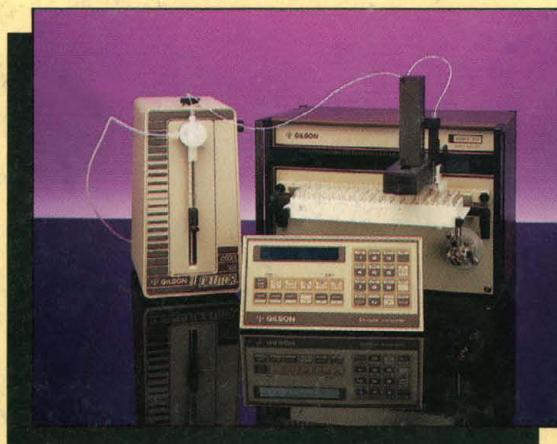
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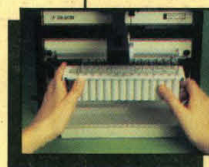
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