

## Books Received

**AIDS.** The Burdens of History. Elizabeth Fee and Daniel M. Fox, Eds. University of California Press, Berkeley, 1989. x, 362 pp., illus. \$28.50; paper, \$12.95.

**Analysis of Biogeochemical Cycling Processes in Walker Branch Watershed.** Dale W. Johnson and Robert I. Van Hook, Eds. Springer-Verlag, New York, 1989. xviii, 401 pp., illus. \$69. Springer Advanced Texts in Life Sciences.

**Analytical Methods for Geochemical Exploration.** J. C. Van Loon and R. R. Barefoot. Academic Press, San Diego, CA, 1988. x, 344 pp., illus. \$49.95.

**Animal Navigation.** Talbot H. Waterman. Scientific American Books, New York, 1989 (distributor, Freeman, New York). x, 243 pp., illus. \$32.95. Scientific American Library.

**Applying Machine Vision.** Nello Zuech. Wiley-Interscience, New York, 1988. xiv, 265 pp., illus. \$44.95.

**Asteroids.** Their Nature and Utilization. Charles T. Kowal, Horwood, Chichester, U.K., and Halsted (Wiley), New York, 1988. 152 pp., illus. \$34.95. Ellis Horwood Library of Space Science and Space Technology.

**Atlas of Wintering North American Birds.** An Analysis of Christmas Bird Count Data. Terry Root. University of Chicago Press, Chicago, 1989. xxiv, 312 pp., transparent overlays in pocket. \$60; paper, \$35.

**Basic Neurochemistry.** Molecular, Cellular, and Medical Aspects. George J. Siegel *et al.*, Eds. 4th ed. Raven, New York, 1988. xx, 984 pp., illus. \$55.

**Biology of Copepods.** Geoffrey A. Boxshall and H. Kurt Schminke, Eds. Kluwer, Norwell, MA, 1988. xii, 639 pp., illus. \$235. Developments in Hydrobiology, vol. 47. From a conference, London, U.K., Aug. 1987.

**Biomembranes.** Molecular Structure and Function. Robert B. Gennis. Springer-Verlag, New York, 1989. xviii, 533 pp., illus. \$59. Springer Advanced Texts in Chemistry.

**Cytotoxic T Cells.** Biology and Relevance to Disease. Jack R. Battisto, Janet Plate, and Gene Shearer, Eds. New York Academy of Sciences, New York, 1988. xiv, 489 pp., illus. \$122. Annals of the New York Academy of Sciences, vol. 532. From a conference, Bethesda, MD, May 1987.

**Danger and Survival.** Choices About the Bomb in the First Fifty Years. McGeorge Bundy. Random House, New York, 1988. xvi, 735 pp. \$24.95.

**Derivatives, Nuclei and Dimensions on the Frame of Torsion Theories.** Jonathan S. Golan and Harold Simmons. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xvi, 120 pp. Paper, \$44.95. Pitman Research Notes in Mathematics, vol. 188.

**Diffusion Phenomena in Thin Films and Micro-electronic Materials.** Devendra Gupta and Paul S. Ho, Eds. Noyes, Park Ridge, NJ, 1989. xvi, 588 pp., illus. \$86. Materials Science and Process Technology.

**Disenchanted Night.** The Industrialization of Light in the Nineteenth Century. Wolfgang Schivelbusch. University of California Press, Berkeley, 1988. x, 227 pp., illus. \$22.50. Translated from the German edition (Munich, 1983) by Angela Davies.

**Distance Geometry and Molecular Conformation.** G. M. Crippen and T. F. Havel. Research Studies Press, Taunton, U.K., and Wiley, New York, 1988. x, 541 pp., illus. \$142. Chemometrics Series, vol. 15.

**Dynamics of Curved Fronts.** Pierre Pelcé, Ed. Academic Press, San Diego, CA, 1988. xvi, 514 pp., illus. \$69.50. Perspectives in Physics.

**Early Prehistoric Agriculture in the American Southwest.** W. H. Hills, School of American Research Press, Santa Fe, NM, 1989 (distributor, University of Washington Press, Seattle). xii, 184 pp., illus. \$27.50. A School of American Research Resident Scholar Book.

**Famine.** G. A. Harrison, Ed. Oxford University Press, New York, 1988. xvi, 166 pp., illus. \$60. Biosocial Society Series, vol. 1.

**Fish Population Dynamics.** The Implications for Management. J. A. Gulland, Ed. Wiley-Interscience, New York, 1988. xviii, 422 pp., illus. \$49.95.

**Living with the Chesapeake Bay and Virginia's Ocean Shores.** Larry G. Ward *et al.* Duke University Press, Durham, NC, 1989. xiv, 236 pp., illus. \$35; paper, \$12.95. Living with the Shore.

**The Management and Health of Farmed Deer.** H. W. Reid, Ed. Kluwer, Norwell, MA, 1988. xii, 206 pp., illus. \$64. Current Topics in Veterinary Medicine and Animal Science, vol. 48. From a seminar, Edinburgh, Scotland, Dec. 1987.

**Managing Technology.** The Strategic View. Lowell W. Steele. McGraw-Hill, New York, 1988. xxiv, 356 pp., illus. \$39.50. McGraw-Hill Engineering and Technology Management Series.

**McGraw-Hill Dictionary of Scientific and Technical Terms.** Sybil P. Parker, Ed. 4th ed. McGraw-Hill, New York, 1989. xx, 2088 pp. + appendix. \$95.

**Mechanisms of Cerebral Hypoxia and Stroke.** George Somjen, Ed. Plenum, New York, 1988. xii, 474 pp., illus. \$89.50. Advances in Behavioral Biology, vol. 35. From a meeting, Budapest, Hungary, Aug. 1987.

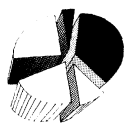
**Memory Development Between 2 and 20.** Wolfgang Schneider and Michael Pressley. Springer-Verlag, New York, 1989. xii, 274 pp., illus. \$45. Springer Series in Cognitive Development.

**The Mesocorticolimbic Dopamine System.** Peter W. Kalivas and Charles B. Nemeroff, Eds. New York Academy of Sciences, New York, 1988. xii, 540 pp., illus. \$135. Annals of the New York Academy of Sciences, vol. 537. From a conference, Miami, FL, May 1987.

**Modern Problems in Nuclear and Neutrino Astrophysics.** A. M. Mathai and H. J. Haubold. Akademie-Verlag, Berlin, 1988. 75 pp. Paper, \$15. Akademie der Wissenschaften der D.D.R., Veröffentlichungen des Forschungsbereichs Geo- und Kosmoswissenschaften, vol. 14.

**The Nervous System.** Peter Nathan. 3rd ed. Oxford University Press, New York, 1988. xvi, 383 pp., illus. + plates, Paper, \$14.95.

(Continued on page 482)



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1990

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The AAAS Scientific Freedom and Responsibility Award, established by the AAAS Board of Directors in 1980, is awarded annually to scientists and engineers who have:

- \* acted to protect the public's health, safety, or welfare; or
- \* focused public attention on important potential impacts of science and technology on society by their responsible participation in public policy debates; or
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You are invited to submit nominations now for the 1990 award, to be presented at the 1990 AAAS Annual Meeting in New Orleans. A recipient of the award is selected by a panel of judges appointed by the AAAS Board of Directors. The deadline for receipt of entries is 31 July 1989.

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The Low Angle Diamond Knife cuts at an angle of 35° instead of 45°. The smaller angle produces less deformation of resin-embedded material, leading to better-preserved structural details in biological samples. The smaller angle also reduces deformation and hard hammering of soft metals and reduces curling and fracturing of hard metals. Diatome U.S. Circle 512.

### DNA Synthesizer

The Cyclone Plus is a fully programmable DNA synthesizer. To start operation, the scientist enters the sequence, loads the reagents and disposable reaction columns, presses one key to prepare the system, and then presses the "run" key. Cycle times are less than 6 min, and the synthesizer takes up 0.2 m<sup>2</sup> of bench space. Because program cartridges can be interchanged, the Cyclone

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

Plus can accommodate many synthesis scales and chemistries. For example, if the researcher chooses the phosphoramidite method, synthesis scales of 0.2, 1.0, and 15  $\mu$ mol are available. Programmable cartridges are also available. MilliGen/Bioscience Division of Millipore. Circle 503.

### Chemiluminescent Enzyme Substrates

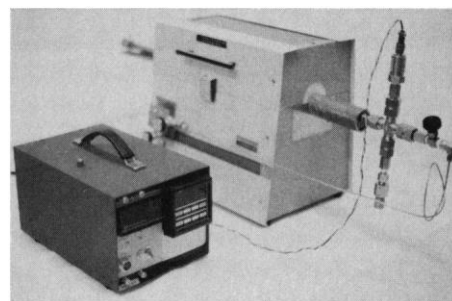
AMPPD is a chemiluminescent enzyme substrate for alkaline phosphatase and alkaline phosphatase conjugates. It is stable and water soluble. The enzymatic decomposition of AMPPD results in a prolonged emission of light that can be amplified with simple additives. These additives also permit chemiluminescence to occur in selected regions of the spectrum, providing users with a tunable light source. Detection of quantities smaller than  $10^{-20}$  mol of enzyme is possible in immunoassays. AMPPD is available in 25-mg, 50-mg, 250-mg, and 1-g quantities. Tropix. Circle 516.

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### Furnace for Superconductor Research

A new furnace system synthesizes high-temperature superconductors in high-pressure oxygen. Pressures as high as 300 atm may be applied at 930°C, and pressures as high as 200 atm may be applied at 980°C. These conditions allow the synthesis of the 1-2-4 compound, YBa<sub>2</sub>Cu<sub>4</sub>O<sub>8</sub>, in polycrystalline bulk, single crystals, and thin films. The furnace has a sample space 5 cm long with a diameter of 1 cm. Included with the furnace are a burst disk safety relief valve and



an electronic pressure gauge with a digital readout. A microprocessor-based temperature controller stores two profiles with as many as 99 steps. Morris Research. Circle 513.

### Amino Acid Analyzer

Model 420A is an automated system for analyzing amino acids. The researcher applies the protein sample to the instrument and returns later to collect results; no manual steps are required. The sample is derivatized by phenylisothiocyanate to form phenylthiocarbonyl and separated and detected by microbore liquid chromatography. The 420A is appropriate for determining protein concentration; assessing purity of synthetic peptides, proteins, and monoclonal antibodies; and making compositional profiles. Applied Biosystems. Circle 504.

### Literature

*Products for Sample Preparation* is a 32-page brochure that describes techniques and products for treating samples for high-performance liquid chromatography, electrophoresis, and molecular biology analysis. Bio-Rad Laboratories, Chemical Division. Circle 521.

*Instalab* is a brochure about a line of wood and metal laboratory workstations that can be installed within a month of ordering. Kewaunee Scientific. Circle 524.

The manual *Oligonucleotide-Directed in Vitro Mutagenesis System* reviews molecular biology approaches to protein engineering. Amersham International (United Kingdom). Circle 525.

*Catalog 11: Small Mechanical Parts and Components for R&D* features thousands of engineering materials, such as connectors, bearings, nuts, screws, and tubing, as well as hand and power tools for miniaturized applications. Small Parts. Circle 526.

*Polyclonal Antibody Production* describes a custom program to generate polyclonal antibodies with small peptides, large proteins, and organic molecules. Berkeley Antibody. Circle 527.

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**Nonlinear Evolution Equations.** J. K. Engelbrecht, V. E. Fridman, and E. N. Pelinovski. A. Jeffrey, Ed. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xiv, 122 pp. Paper, \$44.95. Pitman Research Notes in Mathematics, vol. 180. Translated from the Russian edition (1984).

**Non-Metal Rings, Cages and Clusters.** J. D. Woolins. Wiley, New York, 1989. x, 124 pp., illus. \$54.95.

**Origin and Evolution of Gymnosperms.** Charles B. Beck, Ed. Columbia University Press New York, 1988. xvi, 504 pp., illus. \$72.50.

**Parasitic Diseases.** Michael Katz, Dickson D. DeSommier, and Robert W. Gwadz. 2nd ed. Springer-Verlag, New York, 1989. xii, 301 pp., illus. \$49.

**Parasitology.** The Biology of Animal Parasites. Elmer R. Noble *et al.* 6th ed. Lea and Febiger, Philadelphia, 1989. x, 574 pp., illus. Paper, \$34.50.

**People of Pascua.** Edward H. Spicer. Kathleen M. Sands and Rosamond B. Spicer, Eds. University of Arizona Press, Tucson, 1988. xlviii, 331 pp., illus. \$35.

**Petroleum Contaminated Soils.** Vol. 1, Remediation Techniques, Environmental Fate, Risk Assessment. Paul T. Kosteki and Edward J. Calabrese, Eds. Lewis, Chelsea, MI, 1988. x, 357 pp., illus. \$55. From a conference, Amherst, MA, Sept. 1987.

**Physical Processes in Estuaries.** Job Dronkers and Wim van Leussen, Eds. Springer-Verlag, New York, 1988. xii, 560 pp., illus. \$159. From a symposium, The Netherlands, Sept. 1986.

**Pions and Nuclei.** Torleif Ericson and Wolfram Weise. Clarendon (Oxford University Press), New York, 1988. xvi, 479 pp., illus. \$125. International Series of Monographs on Physics, vol. 74.

**Pixe.** A Novel Technique for Elemental Analysis. Sven A. E. Johansson and John L. Campbell. Wiley, New York, 1988. xii, 347 pp., illus. \$95.

**Planets Beyond.** Discovering the Outer Solar System. Mark Littmann. Wiley, New York, 1988. xvi, 286 pp., illus. \$22.95. Wiley Science Editions.

**Plant Disease Epidemiology.** Vol. 2, Genetics, Resistance, and Management. Kurt J. Leonard and William E. Fry. McGraw-Hill, New York, 1988. xiv, 377 pp., illus. \$47.95.

**Plasticity of the Neuromuscular System.** David Evered and Julie Whelan, Eds. Wiley-Interscience, New York, 1988. x, 273 pp., illus. \$54.95. Ciba Foundation Symposium, vol. 138. From a symposium, London, U.K., Jan. 1988.

**The Radon Industry Directory, 1989.** Radon Press, Alexandria, VA 1989. xvi, 535 pp. Paper, \$75.

**Redirecting the RPA.** Clark S. Binkley, Garry D. Brewer, and V. Alaric Sample, Eds. Yale School of Forestry and Environmental Studies, New Haven, CT, 1988. iv, 229 pp. Paper, \$13.50. Yale School of Forestry and Environmental Studies Bulletin no. 95. Based on a conference, 1987.

**Reflection High-Energy Electron Diffraction and Reflection Electron Imaging of Surfaces.** P. K. Larsen and P. J. Dobson, Eds. Plenum, New York, 1988. xiv, 541 pp., illus. \$110. NATO Advanced Science Institutes Series B, vol. 188. From a workshop, Veldhoven, The Netherlands, June 1987.

**The Regulation of Acid-Base Balance.** Donald W. Seldin and Gerhard Giebisch, Eds. Raven, New York, 1988. xii, 603 pp., illus. \$85.

**The Retardation of Aging and Disease by Dietary Restriction.** Richard Weindruch and Roy L. Walford. Thomas, Springfield, IL 1988. xviii, 436 pp., illus. \$69.75.

**Satellite Astronomy.** The Principles and Practice of Astronomy from Space. John K. Davies. Horwood, Chichester, U.K., and Halsted (Wiley), New York, 1988. xii, 198 pp., illus. \$49.95. Ellis Horwood Library of Space Science and Space Technology.

**Science, Technology, and Social Change.** Steven Yearley. Unwin Hyman, Winchester, MA, 1988. viii, 199 pp. \$49.95; paper, \$14.95.

**SDI and Stability.** The Role of Assumptions and Perceptions. Klaus Gottstein, Ed. Nomos, Baden-Baden, 1988. 396 pp., illus. DM 79. Based on a workshop, Tutzing, F.R.G., Dec. 1986.

**Time in History.** The Evolution of Our General Awareness of Time and Temporal Perspective. G. J. Whitrow. Oxford University Press, New York, 1988. xii, 217 pp., illus. \$29.95.

**To the Arctic.** An Introduction to the Far Northern World. Steven B. Young. Wiley, New York, 1989. xiv, 354 pp., illus. \$24.95. Wiley Science Editions.

**Toposes and Local Set Theories.** An Introduction. J. L. Bell. Clarendon (Oxford University Press), New York, 1988. xii, 267 pp. \$75. Oxford Logic Guides, vol. 14.

# 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.

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## POSITIONS WANTED

**Biochemist** seeks free-lance writing assignments from scientific, consulting, advertising, public relations, and media companies. Interested in data manipulation and report writing, and in producing newsletters, product information brochures, advertisements, general scientific articles, etc. Both temporary and permanent assignments will be accepted on a contractual basis. Facsimile, electronic mail, and in-house general, scientific, and business database researching available. Former associate research scientist with 11 years of professional experience in industrial and academic research. Publications. Contact: Elizabeth Babcock-Atkinson, 7958 Pines Boulevard, Suite 250, Pembroke Pines, FL 33024.

**Biologist, Ph.D. (April 1989).** Experience in protein isolation, purification and characterization, including HPLC. Seeking challenging postdoctoral position in a laboratory with ongoing research in protein chemistry. Box 47, **SCIENCE**.

## POSITIONS WANTED

**Biochemist, M.S. Chemistry, Ph.D.** expected June 1989, seeks industrial position. Prior experience in both academic and industrial laboratories. Several publications from dissertation. Very broad biochemical, immunochemical, and molecular biology background. Box 55, **SCIENCE**.

**Biologist/Pharmacologist Ph.D.** Studies in USA 1985 to 1988. Fluent in Spanish, German, English, Portuguese. Seeks challenging and responsible position in biological/biomedical/pharmaceutical product marketing in Latin America. Business contacts in Latin American countries. Will travel. For curriculum vitae, use Telex 18797 PATCOM AR (Argentina).

**Cardiovascular Physiologist, Ph.D.,** seeks position in academia at assistant professor level. Interest and background in cardiac function during circulatory shock, myocardial ischemia. Seven years of postdoctoral experience. Also excellent background in computers. Excellent teacher and research scientist. Curriculum vitae available on request. Will also consider industry. Prefer Chicago area but will consider other locations. Box 52, **SCIENCE**.

**Community Ecologist/Entomologist.** Recent Ph.D. (arthropod influences on natural ecosystems) with a background in plant ecology, biogeochemical cycling (nutrients, heavy metals, radionuclides), soil biology, statistics and population dynamics. Have 14 years of experience in terrestrial (from coastal to alpine) and wetlands ecosystems. Publications. Seeks research opportunities in university systems or private sector. Box 56, **SCIENCE**.

**Flow Cytometrist/Immunologist, Ph.D.** Eight years of experience in flow cytometry, including detection of DNA aneuploidy in human genetic disease, sex determination and quantitative comparison of cellular DNA in numerous species of the major vertebrate classes, quantification of DNA in normal and malignant cells, study of fetal cells in maternal circulation and lymphocyte typing. Strong interest in flow cytometric detection and assay of mutagens and direct quantification of their effects in individuals and populations. Box 63, **SCIENCE**.

**Flow Cytometry Operator.** Experienced in operating and managing a flow cytometry facility involved in cell cycle and immunofluorescence analysis, and sorting. Will relocate. 2 Clifton Road, Clifton, NY 14431.

**Immunobiology Research Team; M.D. and Ph.D.'s;** experienced in field of antigen-specific and nonspecific regulatory mechanisms in normal immune and autoimmune responses, hybridoma technology, cell cloning, immunoassays, protein purification and some experience in molecular biology; good funding and publication record; experienced in grant application preparation, teaching and administration, seeking positions in academia or industry. Box 67, **SCIENCE**.

**Immunologist, Ph.D.** Highly skilled scientist with experience in cellular immunity in cancer and infectious diseases, hybridoma and monoclonal technology, and cell culture. Creative problem solver with excellent management and communication skills. Seeking position in academic medicine or biotechnology R&D. Box 57, **SCIENCE**.

**Immunologist, Ph.D. 1975.** Mature scientist seeks academia/research institute position in immunotherapy of leukemia/lymphoma. Medical school background. Teaching skills. Peer-reviewed publications. Available immediately. Box 61, **SCIENCE**.

**Native Plant Horticulturalist, M.S.** Course work in plant physiology, weed science and weed biology, statistics and technical writing. Seeks research position or employment writing reports, articles, etc., pertaining to North American native plants. A. Doukas, 1317 Whispering Pines, Clearwater, FL 34624.

**Neuroanatomist, Ph.D.** Postdoctoral experience, publications. Light microscopic and ultrastructural techniques, freeze fracture, electrophysiology. Areas of interest: development, cytoarchitecture, synapses. Seeks research position. Box 62, **SCIENCE**.

**Science Writer/Editor** for free-lance assignments. Biology degree and broad science knowledge. Research and foreign language skills. Douglas Garner, Box 7956, Austin, TX 78713-7956.

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The Department of Biology at the University of Dayton invites applications for a tenure-track position at the level of **ASSISTANT PROFESSOR**. Responsibilities include commitment to the development of a strong research program in any subdiscipline of biology with specific emphasis on the application of modern molecular biological techniques in achieving research objectives; teaching undergraduate and graduate courses in the application of molecular biology techniques, occasional participation in introductory courses, undergraduate and graduate seminars; directing graduate student research; and academic advising. Candidates with postdoctoral experience are preferred. Starting date is August 1989. Applicants must provide curriculum vitae, concise statement of teaching and research goals, recent reprints, and have three letters of recommendation sent to: **Dr. Robert J. Kearns, Chairman, Search Committee, Department of Biology, University of Dayton, Dayton, OH 45469**, by 15 June 1989. *An Equal Opportunity/Affirmative Action Employer.*

### UNIVERSITY OF ALBERTA DEPARTMENT OF GENETICS ASSISTANT PROFESSOR

Applications are invited for a tenure-track position in the Department of Genetics. We are seeking a yeast molecular geneticist, although excellent candidates in other areas of genetics will be considered seriously. Candidates should have a Ph.D. and relevant postdoctoral research experience. The appointee will establish a vigorous independent research program and teach basic genetics as well as advanced molecular genetics. The appointment would commence 1 September 1989 or 1 January 1990 or thereafter. Salary will be commensurate with experience; the assistant professor range is currently \$33,144 to \$47,280.

Candidates should send curriculum vitae, reprints of several research publications, a one-page statement of future research interests, and the names and addresses of three academic referees to: **Dr. Frank E. Nargang, Chairman, Search Committee, Department of Genetics, University of Alberta, Edmonton, Alberta, T6G 2E9, Canada.**

The closing date for applications is 30 June 1989.

*In accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada. The University of Alberta is committed to the principle of equity in employment.*

### ASSOCIATE DIRECTOR FOR TECHNOLOGY TRANSFER

The University of Georgia is accepting applications for the position of Associate Director for Technology Transfer.

This position operates within the Industrial Interface Program and is responsible for marketing and licensing intellectual property generated by University research.

Applicants should have a good working knowledge of research and some business experience, preferably related to the protection and licensing of intellectual property. A working knowledge of computer science would be desirable. Submit application and résumé by 19 May 1989 to: **Dr. John Ingle, Director, Industrial Interface Program, The University of Georgia, Office of the Vice President for Research, Athens, GA 30602.** *An Equal Opportunity/Affirmative Action Institution.*

## POSITIONS OPEN

**ASSISTANT PROFESSOR.** The Department of Biology at Lakehead University invites applications for a probationary (tenure-track) position in animal physiology. Applicants must have a Ph.D., postdoctoral experience, and will be expected to establish an independent, externally funded research program and participate in Honours and MSc. thesis supervision. The department has excellent wet-lab and analytical facilities. Departmental research interests focus on the biology of the boreal region. The successful candidate will be expected to teach courses in subjects of his/her interest as well as a semester course in human physiology. Applications should include curriculum vitae, three letters of reference, a brief statement of research interests, copies of recent publications, a list of courses to which the candidate could contribute; and be sent before 31 May 1989 to: **Dean of Arts and Science, Lakehead University, Thunder Bay, Ontario, P7B 5E1.** *In accordance with Canadian Immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.*

*An Equal Opportunity Employer.*

### ASSISTANT PROFESSOR CARDIOVASCULAR/BIOCHEMICAL PHARMACOLOGY

Applications are invited for a tenure-track assistant professor position in the Department of Pharmacology and Division of Cardiovascular Disease at the University of Alabama at Birmingham. Applicants should have a Ph.D. in relevant area with two or more years of postdoctoral training. Interest and expertise in endothelial cell biology and function in vivo and in vitro, EDRFs and EDCFs, signal transduction and second messengers studies is desired. The successful candidate will be expected to develop an independent research program with outside funding. Competitive salary and reasonable start-up funds are available. Send curriculum vitae and three letters of reference to: **Dr. David D. Ku, Search Committee Chairman, Department of Pharmacology, UAB Station, Box 402, Birmingham, AL 35294.**

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

### ASSOCIATE PROVOST AND DEAN OF THE GRADUATE SCHOOL THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

Applications and nominations are invited for the position of Associate Provost and Dean of the Graduate School at the University of North Carolina at Chapel Hill. The university is a major research institution and has an enrollment of 21,000 students including approximately 5000 graduate students in the liberal arts, sciences, health affairs and in several professional schools.

The candidate for this position is expected to hold an earned doctoral degree from an accredited institution, to be an established scholar with a distinguished professional record and to have demonstrated administrative skills in an academic setting. The candidate will be appointed to a tenured position in an appropriate academic department and is expected to maintain a program of scholarly research while acting in an administrative capacity.

The Associate Provost and Dean reports to the Provost. He/she is responsible for maintaining and improving the quality of all graduate programs at the university. He/she is responsible for reviewing departmental graduate programs, increasing funding for graduate education, administering the minority postdoctoral program and for developing new initiatives that will improve the quality of graduate life on campus. The Associate Provost and Dean is supported by a professional staff including one Associate Dean and two Assistant Deans.

The search committee will begin considering applications on 15 May 1989, and will continue until an appropriate candidate is identified. Applicants should submit a letter of application, a professional résumé, the names of four references, and a brief statement of their philosophy on graduate education.

*The University of North Carolina is an Equal Opportunity/Affirmative Action Institution. Women and minorities are especially encouraged to apply. Materials should be sent to:*

Linda L. Spemulli, Chair  
Search Committee for Associate Provost  
and Dean of the Graduate School  
Office of the Provost  
The University of North Carolina at Chapel Hill  
CB #3000, 104 South Building  
Chapel Hill, NC 27599-3000

## POSITIONS OPEN

### BROWN UNIVERSITY ASSISTANT PROFESSOR

Tenure-track position available in the Division of Urology, Brown University, for a reproductive biologist, Ph.D. Candidates should have an interest in pursuing basic research in male reproduction/infertility. Preference will be given to those with recombinant DNA experience and those demonstrating the capacity to develop extramurally-funded research projects. Send curriculum vitae, three letters of recommendation, and two recent publications to: **Barry Stein, M.D., Chairman, Division of Urology, Brown University, 90 Plain Street, Providence, RI 02903.** *Rhode Island Hospital and Brown University are Equal Opportunity Employers.*

### ASSISTANT PROFESSOR DEPARTMENT OF PHARMACOLOGY AND TOXICOLOGY DARTMOUTH MEDICAL SCHOOL

Applications are invited from qualified individuals possessing a Ph.D. or M.D. degree and postdoctoral experience. Although preference will be given to applicants with a funded research program in neuropharmacology (e.g., signal transduction, molecular pharmacology of ion channels, developmental neurobiology, molecular aspects of neurodegenerative diseases), immunotoxicology (e.g., immuno-radiotherapy), or molecular toxicology, other areas of research will also be considered. Responsibilities will include medical and graduate teaching in pharmacology and/or toxicology. Applicants should forward a complete curriculum vitae including any teaching experience and grant support, an outline of future research plans, and three letters of reference to: **Chairman, Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH 03756.** *Dartmouth College is an Equal Opportunity/Affirmative Action Employer.*

**ASSOCIATE PROFESSOR,** Department of Physiology, University of Toronto. Applications invited for tenure-stream appointment. Qualifications: Ph.D. or equivalent, in physiology or biology, with postdoctoral research experience, and with active research in cellular mechanisms related to neuronal degeneration and/or regeneration. Duties include research, training of graduate students, and lectures to undergraduate students. Applications, including curriculum vitae and names of three referees, should be sent before 1 July 1989 to: **Dr. H. L. Atwood, Chairman, Department of Physiology, Faculty of Medicine, University of Toronto, Canada, M5S 1A8.** *The University of Toronto encourages both men and women to apply for positions. In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents.*

### ASSOCIATE PROVOST AND DEAN OF RESEARCH THE UNIVERSITY OF NORTH CAROLINA AT CHAPEL HILL

The University of North Carolina at Chapel Hill invites applications and nominations for the position of Associate Provost and Dean of Research. Nominees and applicants should be scholars with strong reputations in research or the creative arts and a background in teaching, to warrant a tenured professorship in a department or School. They should have demonstrated success in grantsmanship, possess leadership qualities, and have a strong commitment to the ideals of a research university.

The University of North Carolina at Chapel Hill is one of the leading graduate research universities in the United States. Currently, there are 58 doctoral-level programs and 70 master's level programs in the Graduate School. The library ranks fifteenth in the nation, first in the Southeast.

Salary will be competitive. *Women and minority candidates are encouraged to identify themselves voluntarily.*

The position will be available 1 July 1989. Applications and nominations will begin to be reviewed by 15 May 1989. Materials should be sent to:

Chair, Search Committee  
for Associate Provost for Research  
Office of the Provost  
CB #3000, 104 South Building  
The University of North Carolina at Chapel Hill  
Chapel Hill, NC 27599-3000

*The University of North Carolina is an Equal Opportunity/Affirmative Action Institution.*

## POSITIONS OPEN

### ASSISTANT/ASSOCIATE PROFESSORSHIPS IN PHARMACOLOGY

The University of Pittsburgh School of Medicine has embarked upon a major program to expand the Department of Pharmacology. Two tenure-track positions are available for the next academic year (1989 to 1990). Applicants will be expected to develop a vigorous research program, participate in the medical and graduate programs, and to interact with existing clinical and basic science projects. Previous experience in lung and cancer pharmacology are of particular interest, although candidates in all areas of pharmacology will be considered.

Applicants should forward a letter of application, curriculum vitae, description of research interests and the names of three references to:

Search Committee  
University of Pittsburgh  
School of Medicine  
Department of Pharmacology  
518 Scaife Hall  
Pittsburgh, PA 15261

*The University of Pittsburgh is an Affirmative Action/Equal Opportunity Employer. Deadline for application is 15 June 1989. Appointment may begin 1 September 1989.*

### BIOLOGIC SCIENTIST

Position available for basic scientist to do full-time research in urology. Research would involve prostate disease, growth factors, and oncogene expression. The position is nontenure-track but includes a basic science title and courtesy appointment. Teaching load will be limited so as to permit full-time research. Applicants should have training in molecular genetics, recombinant DNA tissue culture experience and a Ph.D. in a biologic science. Salary commensurate with experience. Please send curriculum vitae to: Mark J. Noble, M.D., Urology, University of Kansas Medical Center, 39th and Rainbow, Kansas City, KS 66103. An Equal Opportunity/Affirmative Action Employer.

Baylor University—Biology: **LECTURER, BIOLOGY**. Nontenure track, available August 1989. A Ph.D. is required. Responsibilities include teaching undergraduate courses in modern concepts of bioscience for majors, and an undergraduate course in general biology for non-majors. Research is encouraged. Send letter of application, curriculum vitae, transcripts, and three letters of recommendation to: Dr. W. Keith Hartberg, Chairman, Department of Biology, Baylor University, Waco, TX 76798-7388. Review of applications will begin 24 April 1989, and continue until the position is filled. Baylor University is an Equal Opportunity/Affirmative Action Employer and is under the patronage and general direction of the Baptist General Convention of Texas.

Emory University Department of Ophthalmology offers a faculty level position for a **BIOPHYSICIST** to participate in corneal research. Specific areas of expertise or interest would include biomechanics of the cornea, optics, laser physics, and computer science. Personal qualities include laboratory management, ability to integrate engineering and biological science, flexible interaction with individuals at varying levels of training, and the ability to create and complete scientific manuscripts. Independent research and career development are encouraged. Submit qualifications to: John Carter, Department of Ophthalmology, 1327 Clifton Road, Atlanta, GA 30322. Emory University is an Affirmative Action/Equal Opportunity Employer.

### CHAIRMAN, DEPARTMENT OF MEDICINE

Four hundred thirty-five-bed acute-care community teaching hospital seeking Chairman, Department of Medicine. Responsible for Internal Medicine Residency Program and Transitional Year Residency Program. Serves as Administrative Physician in Department of Medicine. Apply by submitting curriculum vitae to: Richard D. Herman, M.D., Chairman, Search Committee for Chairman, Department of Medicine, St. Luke's Hospital, 801 Ostrum Street, Bethlehem, PA 18015. An Equal Opportunity Employer.

## POSITIONS OPEN

**CHAIRPERSON AND PROFESSOR**, Department of Horticulture, College of Agriculture and Natural Resources, Michigan State University, East Lansing, Michigan 48824.

Michigan State University is seeking a chairperson to provide a creative and scholarly environment for the faculty, staff, and students of the Horticulture Department. An applicant should have a Ph.D. in horticulture or a related plant science discipline, have demonstrated excellence in teaching, research, extension, and/or administration, and be an effective communicator with faculty, student, staff, administrative, industry, and professional groups. Send nominations or applications to: Dr. Stanley Ries, Chairperson, Search and Screening Committee, Department of Horticulture, Michigan State University, East Lansing, MI 48824-1325. Telephone: 517-355-5196. Applications should include a biographical résumé, a list of publications, a statement concerning philosophy of administration and education of not more than two pages, and have five letters of reference forwarded to: The Chairperson of the Search and Screening Committee. Application deadline: 1 July 1989, or until a suitable candidate is found.

*Michigan State University is an Affirmative Action/Equal Opportunity Institution.*

### CLIMATE CHANGE

**ECOLOGY OR CLIMATOLOGY**. Need versatile M.S. or Ph.D. experienced in greenhouse issue to assess significance of technical information for decision-makers. Requires relating science to policy, writing and people skills. Growth opportunity in excellent small firm with diverse clients. Send résumé and writing sample: SPA, Inc., Landmark 400, 1333 H Street, NW, Washington, DC 20005.

### COMPUTATIONAL SCIENTIST— AMES LABORATORY—U.S. DOE

The Applied Mathematical Sciences Program in the Ames Laboratory—U.S. DOE is seeking a computational scientist with a record of achievement in highly parallel scientific computation. Experience in adapting and developing algorithms for highly parallel computational environments and in the performance evaluation of such algorithms is required. Some knowledge of the visualization of scientific information is also expected.

The successful applicant must have the ability to work with other mathematical and physical scientists on joint projects.

A Ph.D. in mathematical, physical, or computer science and at least 5 years of experience past the Ph.D. is required. It is anticipated that the successful applicant will have an adjunct appointment with an academic department at Iowa State University.

Salary commensurate with experience. Applicants should send résumé with names and addresses of three references to: Ames Laboratory Personnel Office, 127 Spedding Hall, Iowa State University, Ames, IA 50011. Application deadline is 31 May 1989 or until filled. An Equal Opportunity/Affirmative Action Employer. M/F/V/H.

### DIRECTOR NORTHWESTERN UNIVERSITY INSTITUTE FOR NEUROSCIENCE

Applications and nominations are invited for the Directorship of the newly formed Institute for Neuroscience at Northwestern University. This is a University-wide institute whose members come from ten departments spread across four schools and several teaching hospitals. Current Institute membership exceeds 50 faculty. The Director will be expected to oversee the University-wide commitment to further expand faculty and research activities in the neurosciences. The Director will become the incumbent of an endowed Chair in Neuroscience. Candidates are expected to be internationally recognized leaders in the field of neuroscience.

Those interested should submit an up-to-date curriculum vitae along with the names of four references to:

Dr. Robert D. Goldman  
Chairman  
Institute for Neuroscience Search Committee  
Department of Cell Biology and Anatomy  
303 East Chicago Avenue  
Chicago, IL 60611-3008

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

## POSITIONS OPEN

**DEAN**, College of Basic Sciences. Louisiana State University invites applications. The college includes Departments of Biochemistry, Botany, Chemistry, Computer Science, Microbiology, Physics and Astronomy, Zoology and Physiology, Biodynamics Institute as well as School of Geoscience with the Departments of Geology and Geophysics, the Basin Research Institute and the Coastal Studies Institute. The successful candidate must merit faculty appointment as professor in one of the Departments and also have had significant administrative experience. Screening of applications will begin immediately. Applications will be accepted until 31 August 1989 or until the position is filled. Candidates should submit a letter of application, a current résumé, and the names, addresses, and telephone numbers of five professional references. Women and minorities are encouraged to apply. Correspondence should be addressed to: Dr. Nikolaus H. Fischer, Chair, Dean of Basic Sciences Search Committee, Office of Academic Affairs, 146 Thomas Boyd Hall, Louisiana State University, Baton Rouge, LA 70803-3103. Louisiana State University is an Equal Opportunity Employer.

### DEAN—SCHOOL OF EDUCATION

The University of California at Berkeley invites applications/nominations for the position of Dean of the School of Education. The School is a strong research institution with a vigorous academic program, two affiliated national research and development centers, substantial extramural funding, and flourishing outreach programs. We seek a Dean to provide continued leadership to the School in carrying out its scholarly and professional missions.

Qualifications for the Deanship include experience as a professional educator, demonstrated skills in administration and fund raising, and a national reputation for leadership in the field. Scholarly and academic achievement in Education or a related discipline warranting a full professorship is required. The Dean is expected to support an intellectual and cultural environment that will encourage and foster research and programs that address the field of education. The Dean should facilitate collaboration among programs and divisions within the School and coordinate the School's efforts with academic and professional units on the Berkeley campus, with local school districts, colleges and communities, and with state, federal, and international agencies.

Nominations and applications should be sent to:

Education Search Committee  
Provost, Professional Schools and Colleges  
200 California Hall  
University of California at Berkeley  
Berkeley, CA 94720

Applications, including curriculum vitae, at least three references, and a statement of personal interest regarding the post, should be submitted for consideration. Closing date for nominations and applications is 1 July 1989.

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

### MEDICAL MICROBIOLOGY AND IMMUNOLOGY DEPARTMENT HEAD

The College of Medicine, Texas A&M University, invites applications for the position of Head, Department of Medical Microbiology and Immunology. The Department presently consists of a small, diverse faculty and is located on the campus of a major university with excellent opportunities for interdepartmental and intercollegiate collaboration. Academic responsibilities include both medical and graduate education. Applications are encouraged from faculty at the level of associate professor and above with active research programs in immunology or one of the major subdisciplines of microbiology and a proven ability to compete successfully for extramural funding. Qualifications should also include demonstrated expertise in teaching and administration. The position is available immediately.

Submit a letter of application, curriculum vitae, statement of philosophy and goals, and names, addresses, and telephone numbers of three references to: Dr. Harris Granger, Chairman, Medical Microbiology and Immunology Search Committee, Department of Medical Physiology, College of Medicine, Texas A&M University, College Station, TX 77843-1114. Applications will be received through 30 June 1989, or until the position is filled.

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



## **FACULTY POSITION MOLECULAR VIROLOGY** *University of Pittsburgh*

The Department of Infectious Diseases and Microbiology of the Graduate School of Public Health of the University of Pittsburgh is seeking applicants for at least two tenure track faculty positions. Our department is committed to the continuing development of a strong multidisciplinary program which integrates basic research at the molecular level with ongoing immunological, clinical, and epidemiological studies in the area of HIV and EBV pathogenesis. We are seeking outstanding individuals who are able to utilize molecular tools to examine the regulation of viral gene expression in either a retrovirus or herpesvirus system. Candidates should have a Ph.D., M.D., or equivalent, and have had sufficient research experience to demonstrate their ability to establish an independent basic research program with extramural funding. Candidates must be highly motivated individuals who recognize the unique scientific opportunities offered by the integration of basic science with clinical medicine. Successful candidates will be expected to participate in the training and teaching of graduate students. Competitive start up funds and newly-renovated laboratory space with access to state of the art scientific equipment and computer facilities will be available. In addition, the University of Pittsburgh has in house facilities for the synthesis and analysis of peptides, DNA and monoclonal antibodies. Exceptional candidates who qualify for senior level positions will also be considered. Letters of application including curriculum vitae, bibliography, a brief statement of research interests, and the names of three references should be sent to: Chairperson, IDM Search Committee, A450 Crabtree Hall, University of Pittsburgh, Pittsburgh, PA. 15261.

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

## **POSITION AVAILABLE ASSISTANT MANAGING EDITOR**

*Science Magazine* is seeking an assistant managing editor. Qualifications include at least a B.S. degree in science, advanced degree preferred in biochemistry; minimum of three to five years experience with the peer review process; and two or more years experience supervising support staff and scientific editors. Strong verbal and written communication skills required; familiarity with database management systems for manuscript tracking a plus. Send resume and cover letter stating salary requirements to:

**Ms. Debra Wright  
American Association for the  
Advancement of Science  
Office of Human Resources  
1333 H. Street, N.W. Suite 850  
Washington, DC 20005**

EOE

## **The Center for Advanced Research in Biotechnology (CARB)**

### **MOLECULAR MODELING OF ANTIBODY-ANTIGEN INTERACTIONS**

IGEN Inc. wishes to appoint a post-doctoral CARB-IGEN fellow to work on the development of computer algorithms for determining the mode of interaction of antigens with antibody molecules. The successful applicant will be based primarily at the new CARB facility at the Shady Grove Campus of the University of Maryland in Rockville, Maryland, outside Washington, DC. He or she will also interact closely with the IGEN team developing catalytic antibody technology. In addition, collaboration with the antibody engineering group of Dr. A.R. Rees at the University of Oxford will be possible.

The successful candidate will have experience in the development of software for the computer modeling of protein structure and function, and will have a keen interest in meeting the challenges posed by the antibody antigen recognition problem.

Please send a current CV, and a list of 3 individuals who will serve as references to: **Dr. John Moulton, CARB, 9600 Gudelsky Drive, Rockville, MD 20850**. The University of Maryland is an equal opportunity employer.

***CARB** is a joint venture between the University of Maryland and the National Institute of Standards and Technology. CARB's goal is to build a center of research excellence in the area of protein structure, function, engineering and design. Molecular modeling is an important component of this program, and is supported by a number of Silicon Graphics workstations and an Alliant minisuper-computer.*



### **CATALYTIC ANTIBODIES**

IGEN Inc. is seeking a post-doctoral scientist with experience in computational chemistry of small molecules to join its team on the design of transition state analogues for use in the production of catalytic antibodies. Knowledge of protein structure and function would also be an advantage. The successful candidate should be able to participate in the academic activities of CARB.

Please send a current CV, and a list of 3 individuals who will serve as references to: **IGEN Inc., Human Resource Manager, 1530 East Jefferson Street, Rockville, Maryland 20852**.

***IGEN** is a biotechnology company located in Maryland, close to Washington, DC, specializing in the development of a new generic diagnostic technology and in the pharmaceutical and therapeutic applications of catalytic antibodies (ABZYMES™).*

EEOC

## COLLEGE OF SCIENCE KUWAIT UNIVERSITY STATE OF KUWAIT

The Kuwait University College of Science, Dept. of Botany and Microbiology invites applications for posts of **Professor, Associate Professor** and **Assistant Professor** for the academic year 1989/1990, tenable February 10, 1990 in the following disciplines:

Plant Breeding  
Microbial Physiology  
Agriculture & Economic Botany

The language of instruction of the College of Science is English. The method of teaching is based on the credit hour system. Applicants must hold the Ph.D. or its equivalent at the time of application. For applications and conditions of service write to:

**Kuwait University Office  
3500 International Dr., N.W.  
Washington, D.C. 20008  
(202-363-8055)**

All applications, together with non-returnable copies of academic qualifications and representative publications should be sent by registered post directly to:

**Dean  
College of Science  
P.O. Box 5969  
13060 Safat  
Kuwait**

*All applications must be received by August 31, 1989.*

## Staff Scientists/ Biochemistry/Molecular Biology/Fermentation Technology

CIBA-GEIGY has immediate openings for staff/senior scientists in the Biotechnology Department of its Pharma Research Division. The positions will involve the expression of recombinant proteins in microorganisms, mainly yeast, with emphasis on host strain improvement by physiological/fermentation means.

The qualified individuals will have a PhD in microbiology/biochemistry with a strong background in molecular biology or, alternatively, in biochemical engineering, 2-4 years postdoctoral and/or industrial experience, written and oral communication skills as well as a commitment to team work.

We provide a stimulating professional atmosphere with many opportunities for collaborative projects with small Biotech companies as well as University Institutes. We offer competitive salaries and a comprehensive benefit program. For consideration please forward your CV, list of publications and the name of three referees under ref. "Science 346" to Mr. H. Schmid, CIBA-GEIGY Ltd., Personnel Department, P.O. Box, CH-4002 Basle.

## CIBA-GEIGY

## DIRECTOR OF DRUG DISCOVERY

Corvas, Inc., a biopharmaceutical company located in the biomedical research center of La Jolla, is seeking a **Director of Drug Discovery** to lead projects in the rational design of novel agents for the treatment of **thrombosis** and related diseases.

The **Director of Drug Discovery** will be responsible for management and scientific direction of a multidisciplinary group of scientists developing anti-thrombotic drugs.

Applicants must have a **Ph.D. or Ph.D./M.D.** and 8 to 10 years of innovative accomplishment in protein biochemistry, immunochemistry or molecular enzymology. Experience in the molecular biology or enzymology of coagulation and in industrial management is highly desirable. Candidates must possess the outstanding leadership and communication skills necessary to play a major role in the growth of an exciting young company.

Corvas offers attractive salaries and benefits, an excellent opportunity for equity participation, and a highly interactive scientific environment.

If you have the necessary qualifications, and the desire to contribute to the cardiovascular health field, please send your resume, in confidence, to:

President  
Corvas, Inc.  
11077 N. Torrey Pines Road  
La Jolla, California 92037

**Corvas, Inc. is an Equal Opportunity Employer**

Corvas, Inc.

## ASSISTANT PROFESSOR

The Department of Anatomy of UMDNJ-Robert Wood Johnson Medical School seeks applicants for an Assistant Professorship (potentially tenure track). The successful applicant will participate in the teaching of the Gross and Developmental Anatomy course taught during the fall semester. He or she should have the potential to develop an active, independent research program, preferably in Neurobiology. Anatomy, an active, research-oriented department with strengths in Neurobiology and Muscle, is currently establishing an NIH-funded, multi-user computer-assisted, high resolution image enhancement and analysis facility. The UMDNJ-Robert Wood Johnson Medical School is adjacent to the Rutgers University Busch Campus in Piscataway, NJ, centrally located between New York and Philadelphia.

Please send curriculum vitae and three letters of recommendation to: **David Egger, Ph.D., Acting Chairman, University of Medicine and Dentistry of New Jersey-Robert Wood Johnson Medical School, 675 Hoes Lane, Piscataway, NJ 08854-5635.**

The UMDNJ is an Affirmative Action/  
Equal Employment Opportunity Employer M/F/H/V.

**UMDNJ**  
NEW JERSEY

# CHIEF, LABORATORY OF MOLECULAR GENETICS

## NATIONAL INSTITUTES OF HEALTH

### PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

The Intramural Research Program of the National Institute on Aging (NIA), Baltimore, Maryland invites nominations and applications for the position of Chief, Laboratory of Molecular Genetics. This is a Civil Service Position with a salary range of \$57,158 to \$74,303 per annum depending upon qualifications. Candidates may be eligible for Physician's Comparability Allowance up to \$20,000 per year. Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service.

The Chief of the Laboratory of Molecular Genetics is responsible for planning, directing and conducting research programs which use molecular and genetic approaches to the study of aging and related processes; for recruiting staff and providing professional leadership for senior staff in their projects; and for originating, designing, and conducting independent and collaborative research on age and disease related alterations in the structure and regulation of genes.

Applicants must have a Doctoral degree with a record of outstanding scientific accomplishment in the field of Molecular Genetics. In addition, applicants should possess qualifications that demonstrate competence in executive level management and leadership ability.

Further information may be obtained by contacting Ms. Barbara Hughes at (301) 550-1733. An Application for Federal Employment (SF-171) with a current curriculum vitae and bibliography should be submitted to:

**Personnel Office, Gerontology  
Research Center  
National Institute on Aging  
4940 Eastern Avenue  
Baltimore, Maryland 21224.**



**APPLICATIONS MUST BE POSTMARKED NO  
LATER THAN MAY 31, 1989.**

All qualified candidates will receive consideration without regard to race, religion, color, sex, age, national origin, lawful political affiliation, marital status, union membership, or nondisqualifying physical or mental handicap.

U.S. Citizenship is required.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

# Ph.D. Chemist

## Pharmaceutical Research

Parke-Davis Pharmaceutical Research Division of Warner-Lambert has an immediate opening for a Ph.D. Chemist to join its Computer-Assisted Drug Design (CADD) Group in the Chemistry Department at their Pharmaceutical Research Facility in Ann Arbor, Michigan.

We seek a talented scientist experienced with modern computational and graphics techniques, particularly as applied to interactions between small molecules and macromolecules. Applications expertise in molecular modeling, mechanics, dynamics and protein structure is required. A solid understanding of the principles of macromolecular crystallography and molecular biology would be a plus. The candidate will join an experienced team of dedicated scientists, working with state-of-the-art hardware and software, who believe that successful drug discovery depends on CADD.

The position involves extensive opportunities for collaboration with scientists at Parke-Davis and elsewhere, including specialists in NMR spectroscopy and x-ray crystallography; thus strong interpersonal skills are essential.

Additionally, while conducting molecular modeling approaches to support drug design projects, the candidate will be expected to help identify software needs, and to develop and support new software tools targeted to meet these needs. Therefore, programming experience and a knowledge of Fortran and C, mostly in conjunction with VAX-VMS and UNIX-based environments, is desirable.

Interested, qualified applicants should send their resume and salary requirements in confidence to: Ms. S. Hultquist, Human Resources Representative, PARKE-DAVIS, 2800 Plymouth Road, Ann Arbor, MI 48105.

## PARKE-DAVIS

DIVISION OF WARNER LAMBERT COMPANY

**"Equal Opportunity in Action"**



## POSITIONS OPEN

**EICOSANOID RESEARCH—PENN STATE—RESEARCH ASSISTANT:** Position available immediately for a molecular biologist with a M.S., or equivalent, in biochemistry or molecular biology, plus 3 to 4 years of experience. cDNA cloning expertise is essential and experience with the enzymology or molecular biology of cyclooxygenase, lipoxygenase or Se-dependent or independent glutathione peroxidases is desirable. A record of relevant publication in well-refereed journals is necessary. In addition to conducting molecular biology research related to the enzymes listed above, the successful candidate will help train and supervise graduate students and technical personnel. Starting salary \$21,000 to \$23,000, depending on qualifications. Standard University benefits included. Application deadline: 12 May 1989.

A second position will be available 1 July 1989, for **POSTDOCTORAL STUDY** in the area of lipoxygenase activity and related metabolism in bovine milk PMNL cells. Qualifications include a Ph.D. in Biochemistry or a related area and experience in RIA, HPLC, and TLC analysis of prostaglandins or leukotrienes. Specific duties and salary will be determined based on qualifications. Application deadline: 12 May 1989.

Send application specifying position sought, curriculum vitae, copies of two publications, and two letters of recommendation to: **Dr. C. Channa Reddy, Department of Veterinary Science, Penn State University, 226 Fenske Laboratory, University Park, PA 16802.** An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.

### ELECTRON MICROSCOPY RESEARCH SPECIALIST

Full-time position available for an individual to be responsible for the day-to-day operation and maintenance of our E.M. facility. A sound knowledge of transmission and scanning microscopy is required. Also required is experience in handling of biological samples and clinical pathology specimens; preparative procedures (conventional and cryomethodologies, fixation and embedding, ultrathin sectioning and immunolabelling) and photographic techniques. Applicant must be willing to collaborate with a variety of laboratories and investigators. A master's degree in biology, biochemistry, or biophysics is preferred. We offer an excellent salary and benefits package. Send résumé to: **Personnel Department, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111.** We are an Equal Opportunity Employer.

**ENVIRONMENTAL SCIENTIST.** The Research and Test Department of the Association of American Railroads has an opening for a scientist interested in conducting and supervising research on environmental issues facing the transportation industry. Skills in experimental design, statistical inference, research planning, communication, and an interest in environmental issues are essential. Knowledge of EPA regulatory procedures, environmental fate of pollutants, chemistry, and current transportation issues helpful. Ph.D. preferred but M.S. with the appropriate experience will be given full consideration. We offer competitive salary and benefits and a stimulating work environment. By 29 May 1989, applicants should send a letter of interest, résumé or curriculum vitae, names of three references, and copies of publications or reports to: **Christopher Barkan, Research and Test Department, Association of American Railroads, 50 F Street, N.W., Washington, DC 20001.** The AAR is an Equal Opportunity Employer, M/F/H/V.

### ENVIRONMENTAL SCIENTIST

The Environmental Defense Fund seeks a Ph.D. in marine science, or Ph.D. in biology with marine science graduate work or closely related field with demonstrated political and advocacy skills for a scientist position in Richmond, Virginia. Applicants will perform public policy, scientific advocacy and research work on estuarine and marine pollution problems, with special emphasis on the Chesapeake Bay and its tributaries. Applicant will be expected to apply quantitative skills and research findings to pollution abatement problems; advocate policy change in concert with staff attorneys and economists; and undertake parallel work in solid waste, recycling and land-use problems. Immediate opening. Salary range commensurate with experience. Please send résumé, writing sample, and salary requirements to: **EDF, 1108 East Main Street, Suite 800, Richmond, VA 23219.**

## POSITIONS OPEN

**ENVIRONMENTAL TOXICOLOGY AND WATER ADVISOR** (Sacramento, Yolo, Calaveras, El Dorado, and Amador Counties). Headquarters: Sacramento County. The University of California (UC), Division of Agriculture and Natural Resources, Cooperative Extension is seeking a career-track academic candidate to provide research based educational information and develop programs focusing on the environmental and health effects of agricultural, industrial and household chemicals. Special emphasis on non-target species; water, air, soil and foods. Include safe handling and disposal of chemicals. Minimum master's degree or equivalent combination of education and experience in chemistry, agricultural chemistry, environmental toxicology, environmental science, industrial hygiene, or related fields. Assure affirmative action in development and delivery of programs. Beginning salary, Cooperative Extension Assistant Advisor rank, commensurate with experience and professional qualifications. For complete description, contact: **UC Division of Agriculture and Natural Resources Personnel, 6th Floor, 300 Lakeside Drive, Oakland, CA 94612-3560. Telephone: 415-987-0088.** Close 16 June 1989. Refer to #A-89-031. Affirmative Action/Equal Opportunity Employer M/F/H.

### EXPERIMENTAL PATHOLOGY

The Department of Pathology, Emory University School of Medicine, is expanding its program in experimental pathology. We seek candidates at the **ASSISTANT OR ASSOCIATE PROFESSOR** level, tenured or tenure-track to undertake research in the areas of fundamental immunobiology, autoimmunity, transplantation biology, and tumor immunology. Experience with modern techniques of molecular biology and cellular immunology would be important determining factors. The incumbent is expected to undertake an active program of research in experimental pathology. Candidates who have successfully competed for peer-reviewed grants, or have ongoing programs, which would lead to such support, will receive preference. The incumbent will be expected to participate in a program of graduate education, at the Ph.D. and/or master's level in experimental pathology. Please send curriculum vitae and names of five references to: **Kenneth W. Sell, M.D., Ph.D., Professor and Chairman, Department of Pathology and Laboratory Medicine, 703 Woodruff Memorial Building, Atlanta, GA 30322.** Emory University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

**FACULTY POSITION IN BIOMEDICAL ENGINEERING.** The NeuroMuscular Research Center and Department of Biomedical Engineering at Boston University invite applications for an associate professorship. The successful candidate will have demonstrated ability teaching, conducting and directing research in biomedical signal processing and functional electrical stimulation; a substantial publication record in these areas; and a Ph.D. in electrical or biomedical engineering. Salary will be commensurate with experience. Please submit curriculum vitae by 15 June 1989 to: **C. J. DeLuca, NeuroMuscular Research Center, 44 Cummings Street, Boston, MA 02215.** An Equal Opportunity/Affirmative Action Employer.



### FACULTY POSITION IN NMR

The Department of Biochemistry is seeking applicants to fill a tenure-track position at the assistant/associate professor level. Applicants should have experience in high resolution NMR determination of structure of proteins or other macromolecules, with appropriate graduate and postdoctoral training. Interested individuals should send curriculum vitae, outline of research interests, and the names of three references to: **Barry P. Rosen, Professor and Chairman, Department of Biochemistry, Wayne State University, School of Medicine, 540 East Canfield Avenue, Detroit, MI 48201.** Wayne State University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

## POSITIONS OPEN

### HEAD DEPARTMENT OF SOIL SCIENCE

The College of Agriculture and Life Sciences of North Carolina State University is searching for an outstanding individual to administer the teaching, research and extension programs of the department. Applicants must have earned a Ph.D. in soil science or a closely related discipline. Must have a record of professional achievement and leadership in the field with an intimate knowledge of current development. Administrative experience or demonstrated leadership potential in teaching, research and extension preferred. Applicants should submit a résumé with publication list and names of at least three references. Screening of applications will begin 1 July 1989 and continue until a suitable candidate is found. Address applications to: **Dr. Thomas J. Monaco, Head, Horticultural Science, Box 7609, North Carolina State University, Raleigh, NC 27695-7609.** North Carolina State University is an Equal Opportunity/Affirmative Action Employer.

**INVESTIGATOR.** Tenure-track position for Ph.D. and M.S. level scientist at the Addiction Research Center in the Neuroscience Branch. U.S. citizenship required. Postdoctoral experience necessary. Expertise needed in psychopharmacology, neurochemistry, solubilization and purification of receptors, or protein biochemistry. Must have ability to lead independent research program. Salary range between \$28,000 and \$45,000, depending on experience and qualifications. Benefits and relocation expenses available. Please send curriculum vitae, bibliography, and letters of reference to: **Dr. Michael J. Kuhar, NIDA Addiction Research Center, P.O. Box 5180, Baltimore, MD 21224.** The ARC is an Equal Opportunity/Affirmative Action Employer M/F/H/V.

### THE JOHN THOMAS LADUE MCGINTY EMINENT SCHOLAR CHAIR IN MARINE BIOLOGY AT FLORIDA ATLANTIC UNIVERSITY, A MEMBER OF THE FLORIDA STATE UNIVERSITY SYSTEM

Applications and nominations are invited for the John Thomas Ladue McGinty Eminent Scholar Chair in Marine Biology at Florida Atlantic University. This position is supported by a \$1,000,000 endowment and will be filled at a senior level in the Department of Biological Sciences, College of Science.

Applicants and nominees should have a distinguished academic and research reputation that includes a successful record in obtaining contract and grant support. The primary responsibilities of the successful candidate will be to contribute significantly to the expansion of the teaching and research programs in the Department of Biological Sciences and to provide graduate level training in his or her field of specialty.

Florida Atlantic University is a 4-year and graduate state university with an enrollment of over 11,000 students and a plan for growth in numbers of students and in graduate programs over the next 5 years. The Florida Board of Regents has initiated seven new doctoral programs in science and engineering at Florida Atlantic University in recent years. In addition, the University currently has nine Eminent Scholar Chairs, and funding for a tenth has been pledged. The combination of this program development and of the impact of nine Eminent Scholar Chairs has brought about a quality research and teaching environment on campus that will be significantly enhanced by the addition of the John Thomas Ladue McGinty Scholar.

The central campus of Florida Atlantic University is located in Boca Raton, approximately 2 miles west of the Atlantic Ocean and 40 miles north of Miami. The Department of Biological Sciences is housed in a five-story building devoted primarily to teaching and research in biology. An oceanside marine laboratory will soon be under construction, and is located within a 10-minute drive of the campus. It will feature a flow-through seawater system, wet tables, and culture ponds.

The Eminent Scholar Search Committee represents faculty, students, and the community. The deadline for applications is 1 July 1989. Applications and nominations should be addressed to: **Dr. Walter R. Courtenay, Jr., Chair, Eminent Scholar Search Committee, Department of Biological Sciences, Florida Atlantic University, Boca Raton, FL 33431-0991.**

An Affirmative Action/Equal Opportunity Institution.

# POST-DOCTORAL FELLOWSHIPS

The Imperial Cancer Research Fund is one of the largest independent cancer research institutes in Europe employing approximately 400 scientists and clinicians. It has a wide-ranging programme in fundamental, applied and clinical cancer research.

There are approximately seventy research groups encompassing the major disciplines of cellular and molecular biology including biochemistry, genetics, immunology, and virology. Most are housed at the main building in Central London: there are also research units at Clare Hall, North London and at Dominion House attached to St Bartholomew's Hospital. ICRF's external clinical units based in major teaching hospitals form the link between fundamental research and clinical activities.

Each research group works independently. All have access to centralized services including cell production, oligonucleotide and peptide synthesis, amino acid and DNA sequencing, a library of DNA probes and somatic cell hybrids for gene mapping, experimental animal breeding and maintenance including transgenic mice, electron microscopy, and a large computer facility.

## Fellowships

Approximately 40 post-doctoral fellowships are available each year to scientists of any nationality. Most of these are three-year fellowships, but visiting fellowships for a period of one or two years are also offered.

Salaries for post-doctoral fellows are in the range of £12,500-£16,000, dependent on age and experience. This is subject to UK tax but avoidance of double taxation agreements exist with all countries of the EEC, the Commonwealth and the USA. Salaries for Visiting Fellows are dependent on age and experience. Visitors are entitled to medical and dental care under the National Health Service. ICRF will provide assistance with relocation expenses.

The projects currently available are listed below.

Applications giving the relevant project number and including a full Curriculum Vitae should be sent by 12 May 1989 to:

**Recruitment Officer (Ref: 108/R), Imperial Cancer Research Fund, PO Box 123, Lincoln's Inn Fields, London WC2A 3PX.**

**Fax No: 011 441 242 1510.**

1. **John Armstrong**  
Role of ras-like G-proteins in membrane traffic of *S. pombe*.
2. **Lionel Crawford (Cambridge)**  
Transformation of human keratinocytes by human papillomaviruses and oncogenes.
3. **Clive Dickson**  
The function of *int-2* and related growth factors in tumorigenesis and normal fetal development.
4. **Agamemnon Epenetos**  
Design of chimeric anti-tumour immunoconjugates.
5. **Michael Fried**  
Mammalian gene organization and expression.
6. **Michael Fried**  
Molecular analysis and cloning of amplified DNA.
7. **Stephen Goodbourn**  
Regulation of human  $\beta$  interferon expression.
8. **Bridget Hill**  
Drug resistance mechanisms in cells pre-exposed to X-irradiation and expressing atypical multidrug resistance.
9. **Bridget Hill**  
Modified DNA repair capacity and cisplatin resistance.
10. **Nancy Hogg**  
Analysis of monocyte molecules including adhesion receptors in immune responses.
11. **Michael Horton**  
Molecular analysis of bone cell specific genes.
12. **Nicholas Jones**  
Transcriptional regulation by the adenovirus E1A gene product.
13. **Peter Karran**  
DNA mismatch repair in human cells.
14. **Roger King**  
Growth factors and breast cancer cell proliferation.
15. **Roger King**  
Use of transfected oestrogen receptor (ER) cDNA to study mechanisms of oestrogen action.
16. **Kevin Lee**  
Regulation of transcription by cyclic-AMP.
17. **Mark Meuth**  
Fine structure deletion mapping of a potential origin of DNA replication in the hamster *APRT* locus.
18. **Malcolm Parker**  
Molecular aspects of steroid hormone action.
19. **Gordon Peters**  
Functions of the *int-2* and *hst* oncogenes in tumorigenesis and embryogenesis.
20. **Denise Sheer**  
Molecular genetic analysis of selected solid tumours in children.
21. **George Stark**  
Regulation of gene expression by interferon.
22. **George Stark**  
Molecular analysis of mammalian gene amplification.
23. **Michael Sternberg**  
Computer algorithms to detect protein sequence homology.
24. **Joyce Taylor**  
Use of synthetic peptides and glycopeptides as immunogens in cancer.
25. **Joyce Taylor**  
Oncogenic transformation of human mammary epithelial cells: an *in vitro* model for studying breast cancer.
26. **Graham Warren**  
Re-assembly of the Golgi apparatus in a cell-free system.
27. **Roger Watson**  
*C-myb* expression in haemopoietic cells.
28. **Stephen West**  
Homologous pairing and formation of synaptic intermediates between regions of duplex DNA by RecA protein.
29. **Stephen West**  
Characterization of an endonuclease from *S. cerevisiae* that resolves Holliday junctions in DNA.
30. **Roland Wolf (Edinburgh)**  
Identification of human genes involved in drug resistance towards alkylating agents by complementation in yeast.
31. **Richard Wood**  
The biochemistry of DNA excision repair in human cells.
32. **Nicholas Wright/Susan Kirkland**  
Control of differentiation in colorectal carcinoma cells.
33. **Bryan Young**  
Molecular analysis of Philadelphia chromosome positive leukaemias.

I M P E R I A L  
CANCER RESEARCH FUND

## POSITIONS OPEN

### THE JAMES E. BIRREN CHAIR IN GERONTOLOGY AT THE ETHEL PERCY ANDRUS GERONTOLOGY CENTER UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

Named in honor of the emeritus Dean of the Center, the Chair is supported by an endowment established by gifts from the friends and admirers of Dr. Birren. The Chair holder is expected to carry on the tradition of research and scholarship which has distinguished Dr. Birren's career.

The person selected is expected to be a distinguished scientist whose research relates to Alzheimer's disease, a devastating chronic disease that affects millions of Americans. The Chair holder is expected to be a scientist of sufficient stature to reflect well on the eminent scientist for whom the chair is named.

Some teaching is expected, but the majority of the individual's time should be devoted to research, scholarship, and national leadership. This is a key leadership position in continuing the development and expansion of a group of investigators at the Andrus Gerontology Center who will pursue an understanding of the mechanisms of Alzheimer's disease, with the ultimate goal of preventing or ameliorating the effects of this disease.

It is hoped that the Chair can be in residence by 1 September 1989.

Letters of application should be sent by 1 June 1989. Mail to:

Dr. Caleb B. Finch, Chairman  
USC Gerontology Center  
3715 McClintock Avenue  
Los Angeles, CA 90089-0191

**MANAGER, ENVIRONMENTAL LABORATORY, ASSISTANT PROFESSOR**, 12-month, tenure-track. Salary: \$34,000. Manage laboratory; teach; research; and committees. Ph.D. in health physics, pharmaceutical sciences, or related discipline required. Demonstrated teaching and research skills. Should have health physics and nuclear counting experience. Deadline 2 June 1989. Submit résumé and three references with addresses and telephone numbers to: **Dr. B. W. Graham, Idaho State University, College of Pharmacy, Box 8288, Pocatello, ID 83209.** *Equal Employment Opportunity/Affirmative Action.*

**MANAGER, PROTEIN STRUCTURE LABORATORY.** Duties will include operation and maintenance of the Protein Structure Laboratory. This facility now includes sophisticated equipment to synthesize peptides and to sequence proteins. The tasks will be to set up operating procedures for accepting sequencing or synthesis jobs from inside and outside the University. The successful applicant will be responsible for the operation and maintenance of state-of-the-art scientific equipment designed to sequence proteins, synthesize peptides, billing service of the laboratory, equipment repair and calibration, and conduct an independent research program. Ph.D. in biochemistry, chemistry, or a related area required and experience in operating protein sequencers based on the Edman Degradation type of chemistry. Send a letter of application, current curriculum vitae, statement of research interest, and three letters of recommendation by 31 May 1989 to: **Dr. Fred W. Wagner, Department of Biochemistry, University of Nebraska-Lincoln, Lincoln, NE 68583-0718.** *Affirmative Action/Equal Opportunity Employer.*

### MOLECULAR NEUROBIOLOGY NATIONAL INSTITUTE FOR DRUG ABUSE (NIDA) TENURE-TRACK AND FELLOWSHIP POSITIONS

The Addiction Research Center (ARC), NIDA, wishes to enhance its programs in molecular neurobiology. Current efforts center on cloning and assessment of regulated expression of genes relevant to neurotransmission and drug abuse, and solubilization and purification of drug receptors. Applicants for postdoctoral fellowship and tenure-track positions, preferably with expertise in molecular biology and/or molecular neurobiology should apply to: **Dr. George Uhl, Laboratories of Molecular Neurobiology, ARC/NIDA, Box 5180, Baltimore, MD 21224.** *Federal Government is an Equal Opportunity Employer.*

## DEPARTMENT OF PSYCHIATRY UNIVERSITY OF TORONTO

Applications are invited for the position of Assistant Professor in the area of Molecular Neurogenetics as applied to psychiatric disorders. This position requires a Ph.D. or other doctoral degree and significant post-doctoral experience in molecular genetics, molecular neurobiology or an equivalent field. The successful candidate will be expected to work collaboratively with a multidisciplinary neuroscience/neuropsychiatric research group comprised of basic and clinical researchers investigating the neurobiology and neurogenetics of psychiatric disorders. The position requires demonstrated ability to conduct independent research within a collaborative group and to compete for extramural funding.

The position is tenure track equivalent supported initially by the I'Anson fund. Salary is commensurate with rank and experience. The position also includes a one time start up research grant.

The University encourages both men and women to apply for positions. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

Candidates should submit a letter of application, a curriculum vitae and the names of three referees from whom letters of recommendation may be solicited. Please submit responses to: **Dr. Jerry J. Warsh, Director of Research, Clarke Institute of Psychiatry, 250 College Street, Toronto, Ontario M5T 1R8.**

The successful candidate would be expected to take up the appointment prior to September 1, 1989.

Closing date for applications is May 19, 1989.

THE STATE UNIVERSITY OF NEW JERSEY

## RUTGERS

### AGRICULTURAL MOLECULAR BIOLOGY AT RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

The Center for Agricultural Molecular Biology (AGBIOTECH) provides support to the state's agricultural, marine, and environmental industries. AGBIOTECH will eventually have 16 research groups collaborating with over 400 faculty at the New Jersey Agricultural Experiment Station, and with other faculty throughout the University. New facilities will be completed in August 1989 to house the center's growing programs.

Applications are invited for four scientist positions in plant, animal, or environmental molecular biology. Candidates should have post-doctoral experience in molecular biology and agriculturally relevant interests in their fields. Each appointee will form a core-funded research group with start-up funding provided for equipment and supplies.

The positions will be tenured or tenure-track in an appropriate University department. Candidates will be expected to undertake some teaching. Salaries are competitive, and rank will be determined by experience and achievement. These positions are funded through the NJ Commission on Science and Technology, and the NJ Agricultural Experiment Station.

Interested applicants should send curriculum vitae, an outline of their proposed research and the names of three referees before June 1, 1989 to: **Dr. Peter R. Day, Professor of Genetics and Director, Center for Agricultural Molecular Biology, PO Box 231, Cook College, New Brunswick, NJ 08903.** Rutgers is an equal opportunity employer.

## MAKE AN IMPACT

APPLIED BIOSYSTEMS INC., the leading international manufacturer of instrument/reagent systems for biotechnology research, is seeking accomplished professionals to be located at our facilities in the San Francisco Bay Area.

### SCIENTISTS AND ASSOCIATE SCIENTISTS

Positions are currently available for protein chemists, molecular biologists, organic and analytical chemists with strong backgrounds in structural chemistry and separation sciences.

**CHROMATOGRAPHY**—conduct research in promising areas for micromolecular separations. Expertise in instrumentation dealing with HPLC and its use in protein or DNA isolation/characterization needed.

**ELECTROPHORESIS**—explore and develop novel directions in the separation of biomacromolecules and their constituents. Analytical capillary electrophoresis and micropreparative isolations by HPEC are areas of current interest.

**SEQUENCING**—investigate/develop new chemical methodologies for the analysis of proteins. Experience in sample preparation, protocol development and methods troubleshooting required.

A BS, MS or PhD in Biochemistry, Analytical or Organic Chemistry, or an equivalent combination is required. Practical laboratory experience from 1-5 years and indepth understanding of instrumentation essential. (Ref. #SCI89KW)

Qualified candidates may send their resume, (INDICATING THE REFERENCE CODE), to Applied Biosystems, Inc., H.R. Dept., 850 Lincoln Centre Drive, Foster City, CA 94404. We are an equal opportunity employer.



## Research Assistant/ Postdoctoral Fellow

Beth Israel Medical Center, a major 945-bed teaching hospital affiliated with the Mount Sinai School of Medicine, has a position available for a Research Assistant/Postdoctoral Fellow to work on studies of reproductive endocrinology in rats. You will be part of our state-of-the-art environment working with high caliber colleagues. Salary commensurate with experience. Excellent benefits. Please send C.V. to: **L. Poretsky, MD, Division of Endocrinology, Department of Medicine.**

### BETH ISRAEL MEDICAL CENTER

First Avenue at East 16th Street  
New York, New York 10003

An Equal Opportunity Employer  
Committed to a SMOKE-FREE Environment

## Microbiologist

Pfizer, a leader in pharmaceutical research, has a new opening for a Microbiologist (PhD) in the Department of Clinical and Scientific Affairs at world headquarters in New York City.

As a member of a multidisciplinary project team, you will be exposed to all aspects of the development program for our anti-infective drugs. The successful team microbiologist will participate in the management of clinical research programs involving investigator selection, protocol design and the evaluation of data for new drug candidates. Designing *in vitro* microbiology studies in support of the clinical studies will be an important part of this position. You will review preclinical and clinical data of drugs undergoing licensing evaluation, provide scientific support for marketing activities and participate in preparing regulatory submissions for the FDA.

Candidates should have a PhD in Microbiology with a minimum of 5 years experience in academia/industry. We seek individuals who are self-motivated and possess excellent interpersonal and writing skills.

For immediate, confidential consideration, please send your resume including salary history to: Charlene Mirett, Associate Personnel Manager, Pfizer Pharmaceuticals, Human Resources, 15th Floor, 235 East 42nd Street, New York, NY 10017. Only candidates with appropriate backgrounds will be considered. An equal opportunity employer.



## RESEARCH SCIENTIST

Enzo Therapeutics, Inc., an expanding subsidiary of Enzo Biochem, Inc., is seeking an experienced **Molecular Biologist/Virologist** whose previous work has involved analysis of gene expression and regulation and the use of mammalian expression vectors, including retroviral vectors, to participate in a growing effort directed toward the development of therapeutic materials and genetic therapeutic strategies for disease treatment and for veterinary and agricultural applications.

This position requires an independent individual with the demonstrated ability to design and implement cohesive research programs and good communication and interactive skills. This position offers great potential for career development in exciting new areas of pharmaceutical applications of biotechnology.

Please send your CV to:

**Enzo Therapeutics, Inc.**

**ENZO BIOCHEM, INC.**

325 Hudson Street  
New York, NY 10013

Attn: SF

EOE M/F

## MOLECULAR IMMUNOLOGIST

### Cancer Therapeutics

The Dow Chemical Company, in Midland, Michigan, is a recognized world leader in the chemical industry. Expanded research efforts in the area of cancer therapeutics and immunotherapy have created an immediate need within the Bioproducts Laboratory in the Central Research Department for a qualified Molecular Immunologist.

The successful candidate will have a Ph.D. and some postdoctoral experience with developing and testing antibodies. Familiarity with state-of-the-art discovery of monoclonals, immunoassays and immunochemistry is required. Research efforts will be directed toward obtaining and testing novel antibody specificities for our biotechnology-based cancer therapeutic program. The above candidates must also possess strong communication skills and a desire to carry out independent research while functioning as part of an interdisciplinary research team.

The Dow Chemical Company offers a stimulating work environment and a competitive salary and benefits package. For consideration, send your resume to: **Technical Recruiting, Department AT, The Dow Chemical Company, 1801 Building, Midland, MI 48674.** The Dow Chemical Company is an Equal Opportunity Employer.



**DEPUTY DIRECTOR, OFFICE OF HEALTH & ENVIRONMENTAL ASSESSMENT (OHEA)**  
**DIRECTOR, HUMAN HEALTH ASSESSMENT GROUP (HHAG)**

The U.S. Environmental Protection Agency (EPA) is seeking highly qualified candidates for two Senior Executive Service (SES) positions located at EPA Headquarters in Washington, D.C.

The OHEA oversees an Exposure Assessment Group and HHAG at Headquarters, Environmental Criteria Assessment Offices at Cincinnati, Ohio, and Research Triangle Park, North Carolina. OHEA is responsible for the technical direction and management of programs for assessing effects of environmental pollutants on human health and ecological systems, i.e., performing hazard assessments, developing risk assessment methods, guidelines, providing other forms of scientific advice to Agency regulatory offices, and planning/implementing research aimed at reducing uncertainty in risk assessment.

The Director, HHAG oversees four branches with emphases on toxicology, epidemiology, biostatistics, mechanisms of toxic action. HHAG provides the Agency with health hazard, risk information for use in regulatory decision-making with recommendations being defensible at national/international levels.

Applicants must have a bachelor's or higher degree in life or health sciences, or a related field relating to the work of the positions and professional experience demonstrating leadership and technical competence in one of those fields. Notable experience in human health risk assessment or in public health protection is desirable. Must meet the technical/executive qualifications described in Vacancy Announcement. For a copy of the Vacancy Announcement call or write: **Edna Morse, Environmental Protection Agency, Executive Resources and Special Programs Division, PM-224, 401 M Street, S.W., Washington, D.C. 20460.** The telephone number is (202) 382-3328.

Applications must be postmarked by June 1, 1989. A separate SF-171, Application for Federal Employment, *MUST* be submitted for each position.

*EPA is an Equal Employment Opportunity Employer.*

# Dental Educator

The Department of Oral Medicine and Pathology at New York University College of Dentistry is seeking to fill a full time tenure-track position. The ideal candidate should have a dental degree and advanced training in either Oral Pathology or Oral Medicine and additional training (preferably at the Ph.D. level) in either Oral Biology, Biochemistry, Cell and Molecular Biology, Immunology or Experimental Pathology. Candidates who lack training in Oral Pathology or Oral Medicine but have research training in any of the above scientific disciplines, will also be strongly considered. Individuals with advanced training in Oral Pathology and Oral Medicine and only modest (1-2 years) research experience are also encouraged to apply. Research areas of particular interest to the department include bone cell biology, connective tissue biochemistry, salivary gland biochemistry or physiology, oral immunology and oral mucosal diseases. The successful candidate is expected to develop a research program and participate in the teaching of Oral Medicine and Pathology. Academic rank and salary will be commensurate with the candidate's qualifications. Kindly send letter of application and curriculum vitae to:

**NEW YORK UNIVERSITY**  
A PRIVATE UNIVERSITY IN THE PUBLIC SERVICE

David B. Kriser  
Dental Center  
College of Dentistry  
345 E. 24th Street  
New York, New York 10010  
Att: Dr. Barry R. Rifkin,  
Chairperson  
Department of Oral  
Medicine and Pathology

NYU encourages applications from women and members of minority groups.

**Pharmaceuticals**

## Regional Medical Associate

### A Proud Heritage in Pharmaceuticals

At Smith Kline & French laboratories, we revolutionized the treatment of mental illness, peptic ulcer disease and hypertension. Our anti-infective products meet virtually every antibiotic need. We're proud of our past, and we're investing nearly \$400 million annually in research and development to ensure that our future is just as exciting. We're pioneers in genetic engineering, have a demonstrated commitment to gastrointestinal and cardiovascular products; and we are the world's leading supplier of polio and measles vaccines.

### Be Part of our Future in Sales

Currently we have an opening in the Mid-Atlantic Region for a Regional Medical Associate to combine both scientific expertise and marketing skills. The selected candidate will be headquartered in Philadelphia, PA.

Responsibilities are to establish effective relationships within key medical institutions, providing scientific liaison and in-depth information essential to appropriate use of SK&F's products. There is also responsibility for training Representatives and medical professionals. Up to 50% travel.

Qualifications: Pharm. D. or Ph.D. in Pharmacology, Biochemistry, Microbiology or other Life Sciences. Must possess initiative, strong communication skills, and interest in Marketing.

In addition to an independent work environment where personal and professional growth are a way of life, we offer an outstanding training program and one of the best compensation/benefits package, including car, in the industry.

Please send your resume and salary information to:

Box 60, SCIENCE

We are an Equal Opportunity Employer, M/F/H/V

**SK&F**  
A SmithKline Beckman Company

# Colgate-Palmolive

## SENSORY EVALUATION

Colgate-Palmolive's Corporate Technology Center is currently seeking a qualified psychologist with expertise in experimental design.

As an integral member of our Basic Research-Life Sciences Group, your key responsibilities will include designing and implementing sensory product testing, developing and optimizing sensory methodology, and providing statistical design guidance for staff along with relevant computer programming for sensory needs.

The successful candidate will have a Ph.D. in Experimental Psychology or Psychometrics and 3 years experience, or an MS with 8-10 years experience.

- Demonstrated accomplishments in experimental Design/ Psychometrics
- Demonstrated accomplishments in questionnaire development/multivariate statistics, and use of SPSS and/or BMDP

Centrally located on an 80-acre campus in Piscataway, Corporate Technology develops Colgate's household and personal care products that are marketed globally.

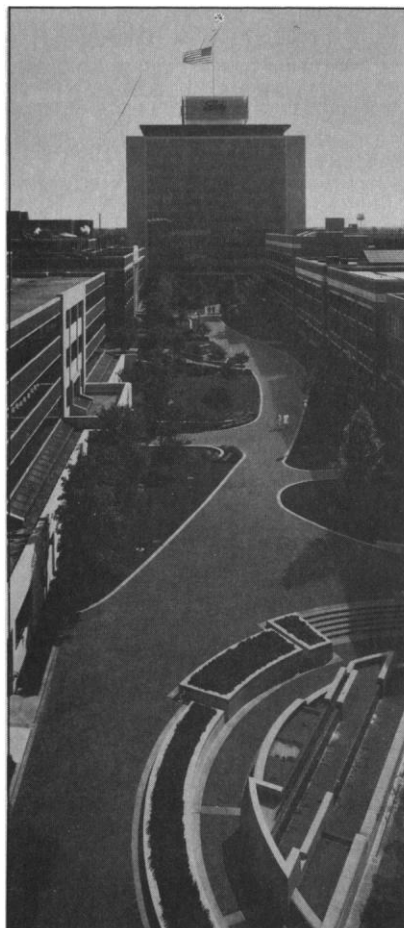
We offer competitive compensation and attractive benefits.

For immediate consideration, please forward resume with salary history in confidence to: Manager, Human Resources Department BA-30, 909 River Road, Piscataway, NJ 08854.



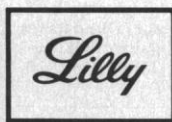
**COLGATE-PALMOLIVE COMPANY**

An Equal Opportunity Employer M/F



## BS/MS SCIENTISTS

### Monoclonal Antibody Research Group



Equal Opportunity Employer

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

To further build its research capabilities, Lilly is seeking self-motivated, innovative scientists for the Monoclonal Antibody Research Group. The ideal candidate will have the following qualifications:

- Bachelor's or Master's degree in biology, immunology, biochemistry, or a related discipline.
- Experience in hybridoma production, monoclonal antibody characterization, SDS-PAGE, protein purification, and *in vivo* animal work.
- 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 an attractive total compensation program. Entry level and salary will be based upon each candidate's experience.

For prompt consideration, please forward your *résumé* to:

Blake A. Caley  
Science Recruitment (MA-1)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285



The World Health Organization (WHO) is an inter-governmental agency internationally recognized for its integrity and lasting achievements. Guided by humanitarian concerns, WHO works to direct and coordinate global and national efforts to improve the health of peoples throughout the world. To meet its objectives, WHO depends on staff members with special qualities of leadership, dedication and commitment.

*The UNDP/WORLD BANK/WHO Special Programme for Research and Training in Tropical Diseases (TDR) is a globally coordinated effort to bring the resources of modern science to bear upon the control of major tropical diseases and to strengthen the research capability of endemic, developing countries where new disease control technologies are most needed. To meet its objectives, TDR has recruited into its global network scientists of the highest calibre to participate in this international research effort.*

**TDR**

## Scientist/Product Development Manager

### Tropical Diseases Research Programme

**WHO**

**Geneva, Switzerland**

The Tropical Diseases Research Programme (TDR) has taken a leading role in the research and development of new and improved tools for the prevention, diagnosis and treatment of tropical diseases and now wishes to promote further development, production and testing of these new products, with specific emphasis on their production and testing in developing countries. Such new products, which include drugs, diagnostic tools, vaccines and new tools/methods for vector control, are destined for eventual integration into disease control programmes.

TDR is seeking to hire a scientist/product development manager with experience in the development, production and testing of biotechnological products and pharmaceuticals. The successful candidate will work in close collaboration with various TDR Steering Committees and will provide expertise and support related to the promotion and management of product development, particularly in relation to disease endemic countries. The product development manager will be expected to contribute to TDR's strategies for product development, including the establishment of innovative and productive interactions with industry, and to coordinate their implementation. One of the major challenges will be to initiate the development and production, in particular in developing countries, of biotechnology-derived products for use in large-scale field testing and eventual use in disease control programmes.

Applicants should have extensive experience in biotechnology or pharmaceutical research and development, ideally in a major biotechnology or pharmaceutical company, including up-to-date knowledge of the development, production and testing of biotechnological products and pharmaceuticals. A broad knowledge of the biology of tropical diseases would be an asset. A doctoral level degree in biological sciences is a requirement, as is an excellent knowledge of English or French, with a good working knowledge of the other.

Please send your detailed *curriculum vitae* and a letter of application by 12 May 1989 to Personnel, WHO, Avenue Appia, CH-1211 Geneva 27, Switzerland, quoting PDM/TDR/89 and the name of the journal in which this announcement appeared. Applications from women are encouraged.

Only candidates under serious consideration will be contacted.



## POSITIONS OPEN

### MANAGER, VIRUS PRODUCTION

Ambico, Inc., a rapidly growing veterinary biotechnology company, located just outside Des Moines, Iowa, is seeking a manager for its Virus Production Department. We will consider candidates with a Master's Degree and at least 3 to 5 years of work experience in cell culture methodology and virology. Responsibilities will also include certain developmental activities in collaboration with our research department. This is an excellent growth opportunity for the right individual. Please send résumé to: **Human Resources, Ambico, Inc., Box 522, Dallas Center, IA 50063.**

University of South Carolina (USC) at Aiken anticipates a **TENURE-TRACK POSITION IN MOLECULAR BIOLOGY** for fall 1989. Ph.D. required. Excellence in teaching and research in context of undergraduate institution expected. Preference for persons with active research program in molecular genetics. Application letter, curriculum vitae, transcripts, names and telephone numbers of three references by 19 May 1989 to: **Dr. Harold Ornes, Biology Department, USC-Aiken, Aiken, SC 29801.** *USCA is an Affirmative Action/Equal Opportunity Employer.*

### MOLECULAR GENETICS COLUMBIA UNIVERSITY POSTDOCTORAL FELLOWSHIPS

We invite inquiries from candidates with a Ph.D. or M.D. degree for a 2-year (minimum) postdoctoral fellowship to study heritable neurological and psychiatric disorders. Two awards beginning at \$30,000 per annum are available, one immediately and one in July 1989. Preference will be given to candidates with postdoctoral experience or outstanding thesis work including chromosomal mapping and cloning, or a related area of molecular biology. Projects include mapping and cloning of disease gene regions; development of brain specific DNA markers; and computer analysis of complex banding patterns. Positions are supported by the W. M. Keck Foundation.

Please address inquiries plus curriculum vitae to: **Dr. Conrad Gilliam, Molecular Genetics Laboratory, College of Physicians and Surgeons at Columbia University, Box 23, 722 West 168th Street, New York, NY 10032.**

*Equal Opportunity/Affirmative Action Employer.*

### OPPORTUNITIES FOR ADVANCED STUDY IN MAMMALIAN REPRODUCTIVE BIOLOGY

NIH-supported predoctoral and postdoctoral training opportunities with an interdepartmental, multidisciplinary orientation. Research areas include: Glycoprotein synthesis and role in implantation (**Carson**), mechanism of stroma/epithelial interactions (**Chung**), steroid hormones and carcinogenesis (**Jones**), neuroendocrine control of gonadal function in primates (**Knobil**), protein transitions in spermatogenesis and reproductive toxicology (**Meistrich**), control of placental blood flow and fetal cardiac output (**Parisi**), molecular mechanisms controlling spermatogenesis and uterine relaxation (**Sanborn**), cell interactions during fertilization and early development (**Shur**), sertoli cell function and regulation of testicular functions (**Steinberger**), receptor-chromatin interactions and testicular polyamine metabolism (**Tsai**), placental prostaglandins in hypertension, pregnancy and labor (**Walsh**), chemistry of glycoprotein hormones and inhibin (**Ward**). *Limited to U.S. citizens and permanent residents.* Send inquiries to: **Dr. B. Sanborn, Director, Training Program in Mammalian Reproduction, Department of Biochemistry and Molecular Biology, University of Texas Medical School at Houston, P.O. Box 20708, Houston, TX 77225.** *The University of Texas is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

**POSTDOCTORAL FELLOW**—Position available to work on molecular biology of estrogen-induced transferrin receptor. Background in molecular/biology and/or glycoprotein structural/function highly preferred. Send curriculum vitae and names of three references to: **Dr. John J. Lucas, Department of Biochemistry and Molecular Biology, SUNY Health Science Center at Syracuse, 750 East Adams Street, Syracuse, NY 13210.** *SUNY-HSC is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**OB/GYN FACULTY POSITION—POSTDOCTORAL**—The Department of Obstetrics and Gynecology, University of Oklahoma Health Sciences Center in Oklahoma City is seeking an individual with research interest in endometriosis. Training in immunology, biochemistry; Ph.D. required. Must be skilled in student and resident teaching, research design, and statistical analysis. Send curriculum vitae and bibliography: **Robert A. Wild, M.D., Associate Professor, Department of Obstetrics and Gynecology, University of Oklahoma College of Medicine, P.O. Box 26901, 4SP720, Oklahoma City, OK 73190.**

### PHYSIOLOGY, VISITING ASSISTANT PROFESSOR

Division of Biological Sciences, University of Montana seeks a 1-year sabbatical-leave replacement. Ph.D. in zoology or related field required, teaching experience is desirable. Teaching responsibilities include: (i) second quarter of a two-quarter introductory human anatomy and physiology course (using cadaver material), (ii) two lecture sections and the laboratory of an upper-division course in principles of physiology and (iii) general biology or zoology. Send curriculum vitae, official transcripts and three letters of recommendation by 15 May 1989 to: **Chairman Physiologist Search Committee, Division of Biological Sciences, University of Montana, Missoula, MT 59812; Fax: 406-243-4184.** *Affirmative Action/Equal Opportunity Employer.*

### POLYMER SCIENCE AND ENGINEERING UNIVERSITY OF MASSACHUSETTS

Applications and nominations are invited for a tenure-track faculty appointment at the **ASSISTANT PROFESSOR** level in the Department of Polymer Science and Engineering to begin September 1989. Candidates must have an earned doctorate and a strong commitment to research and teaching excellence. Salary commensurate with qualifications and experience. Applicants should submit curriculum vitae, and an outline of research plans, and arrange for three letters of reference to be sent to: **Professor Frank E. Karasz, Search Committee Chairman, Department of Polymer Science and Engineering, University of Massachusetts, Amherst, MA 01003.** Closing date 15 May 1989. *The University of Massachusetts is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL ASSOCIATE** position(s) available in a neuroscience laboratory which studies neurotransmitter release due to pain and analgesia, especially with respect to substance P and excitatory amino acids. Experience doing HPLC, receptor binding or in vivo microdialysis is desirable. Ph.D. in biological sciences required. Send curriculum vitae by 15 May 1989 to: **Alice A. Larson, Ph.D., Department of Veterinary Biology, University of Minnesota, 1988 Fitch Avenue, St. Paul, MN 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

### COLUMBIA UNIVERSITY CENTER FOR RADIOLOGICAL RESEARCH POSTDOCTORAL/ASSOCIATE RESEARCH SCIENTIST POSITION(S)

Molecular cytogenetics as applied to the effects of ionizing radiation and other agents on mammalian cells. Oriented to an understanding of the molecular basis of mutation, aberration induction and oncogenic transformation and application of this knowledge to human needs. Interested candidates should write to: **Dr. Charles Geard, Center for Radiological Research, College of Physicians & Surgeons, Columbia University, 630 West 168th Street, New York, NY 10032.**

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

**POSTDOCTORAL FELLOW—IMMUNOLOGY**, to study systemic autoimmune disease in mice and humans: Organization/expression of genes encoding pathogenic autoantibodies and structure/specificity of T cell receptors used by pathogenic autoantibody-inducing T cells. Experience in molecular biology techniques preferred. Send résumé and names of three references to: **Dr. Syamal K. Datta, Department of Medicine, Tufts University—New England Medical Center, 750 Washington Street, Boston, MA 02111.** *Tufts-NEMC is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### POSTDOCTORAL AND GRADUATE STUDENT FELLOWSHIPS

The University of Cincinnati College of Medicine offers a modern interdepartmental training program in environmental molecular and cellular carcinogenesis and mutagenesis. Cincinnati is a leading academic and industrial center for environmental studies providing numerous employment opportunities. Experimental approaches within the program include the role of growth factors and oncogenes in cellular transformation, the use of transgenic cells and animals, and molecular toxicology. Participating faculty are: **Dr. Roy Albert** (carcinogenic mechanisms and risk assessment); **Dr. Stuart Baxter** (tumor promotion); **Dr. Michael Lieberman** (growth factors and differentiation); **Dr. John Loper** (P450 systems in yeast); **Dr. Steven Potter** (insertional mutagenesis in transgenic mice); **Dr. Howard Shertzer** (chemoprevention of carcinogenesis); **Dr. Peter Stambrook** (mutagenesis in transgenic cells and mice); **Dr. Edward Stavnezer** (oncogenes and cell transformation); **Dr. James Stringer** (recombination and gene targeting in ES cells); and **Dr. David Warshawsky** (mechanisms of chemical carcinogenesis).

Positions are immediately available and are funded through a national research training program. Applicants must have U.S. citizenship or permanent residency and have completed a Ph.D. degree or equivalent. Candidates should send curriculum vitae and three letters of recommendation to: **Dr. Peter J. Stambrook, Department of Anatomy and Cell Biology, University of Cincinnati College of Medicine, Cincinnati, OH 45267.** *An equal Opportunity/Affirmative Action Employer.*

Full-time **POSTDOCTORAL FELLOW** to conduct research, analysis, synthesis, and experimentation on organoselenium compound and phospholipids. Analyze organoselenium compounds and phospholipids to determine chemical and physical properties utilizing techniques such as chromatography spectroscopy. Conduct research on phospholipids. Confers with scientist and physicians regarding research, solution to problems and prepare technical reports and management and publish findings in chemical journals. Development of new aspects of selenium methodology and its application to the synthesis of phospholipids. Must have general knowledge of organic synthesis with particular in synthesis of organoselenium compounds. Knowledge with infra red, high field  $^1\text{H}$  and  $^{13}\text{C}$  nuclear magnetic resonance spectroscopy and mass spectrometry and knowledge of high pressure and thin-layer chromatography. Knowledge in phospholipid synthesis. Must have Ph.D. in chemistry. Salary: \$18,000 annually. Send résumé to: **Georgia Department of Labor, 1275 Clarendon Avenue, Avondale Estates, GA 30002,** or to the nearest Georgia Job Service Center. Control #GA 5350511.

**POSTDOCTORAL FELLOW:** A postdoctoral position is available in the Department of Cardiothoracic Surgery of the New England Medical Center Hospitals and Tufts University School of Medicine beginning 1 July 1989 or earlier. Research will concentrate on the role of humoral mediators in solid organ preservation for transplantation. Salary commensurate with experience. Send curriculum vitae to: **Raymond J. Connolly, Ph.D., Director of Surgical Research, Box 37, New England Medical Center, 760 Washington Street, Boston, MA 02111.** *New England Medical Center is an Equal Opportunity Employer.*

### ARCHBOLD BIOLOGICAL STATION POSTDOCTORAL FELLOWSHIPS

Archbold Biological Station invites ecologists or evolutionary biologists to apply for one of two postdoctoral fellowships based at the Station. Preference will be given to applicants in the fields of limnology, aquatic ecology, population genetics and biogeography of fragmented populations or endemics (animal or plant). Primary responsibility is to conduct field research appropriate to the Station's ecological setting in South Central Florida. One-year appointments include housing and a stipend of \$20,000 and may be renewed for a second year. Applicants should send curriculum vitae, brief research proposal, and three references, by 31 May 1989. Address all inquiries or applications to: **Executive Director, Archbold Biological Station, Department S, P.O. Box 2057, Lake Placid, FL 33852.** Telephone 813-465-2571.

*Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**POSTDOCTORAL FELLOW**—Leading vascular biology/growth factor laboratory has an immediate opening for a postdoctoral fellow with experience in molecular biology. Our research program involves analysis of growth factor expression (e.g. FGF, TGF- $\beta$ ) in neural development and pathology. Familiarity with *in situ* hybridization, mRNA analysis and recombinant cDNA techniques is desired. Send curriculum vitae and names of three references to: **Drs. Patricia A. D'Amore and Michael Klagsbrun, Laboratory for Surgical Research, The Children's Hospital and Harvard Medical School, 300 Longwood Avenue, Boston, MA 02115.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOW**—University of North Carolina at Chapel Hill. Protein Chemistry and Enzymology of Blood Coagulation. Completion of advanced degree (Ph.D., M.D. and/or D.D.S.) required. Prefer background in protein chemistry, site-specific mutagenesis, PCR reaction, enzyme kinetics, receptor characterization, or protein solution conformational analysis. Send curriculum vitae and letter of recommendation to: **Dr. Roger Lundblad, Dental Research Center, CB#7455, School of Dentistry, University of North Carolina at Chapel Hill, Chapel Hill, NC 27599-7455.** *Equal Opportunity Employer.*

**POSTDOCTORAL FELLOWSHIP IN BIOLOGICAL NMR** available now for Ph.D. chemist or biochemist at SUNY-Health Science Center, Syracuse. Projects will involve  $^{31}\text{P}$ - and  $^1\text{H}$ -NMR studies of cultured epithelial cells. Salary will be determined using NIH scale for level of postdoctoral experience. Experiments will be performed at NIH Resource Lab for Multinuclei NMR at Syracuse University in collaboration with **Dr. George Levy**. Send curriculum vitae and names of three references to: **Dr. Steven Scheinman, SUNY-Health Science Center, 750 East Adams Street, Syracuse, NY 13210.** *Equal Opportunity Employer.*

**TWO POSTDOCTORAL FELLOWSHIP POSITIONS** are available immediately for Ph.D.'s or M.D.'s interested in investigating the function of growth factor receptors in normal and malignant cells, using genetic, biochemical, and immunologic approaches. The laboratory is especially interested in EGF and related molecules. Skills in molecular biology will be particularly valuable. Salary based on level of experience. Send curriculum vitae with names and addresses of three references by 30 May 1989 to: **John Mendelsohn, Laboratory of Receptor Biology, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021.**

**POSTDOCTORAL OR RESEARCH SCIENTIST** available immediately for research on *in vivo* and *in vitro* (cellular, biochemical) mechanisms of obesity diabetes and hyperlipidemia. Send résumé to:

**Dr. Barbara Hansen**  
Department of Physiology  
School of Medicine  
Room 257  
660 West Redwood Street  
Baltimore, MD 21201

**A POSTDOCTORAL POSITION** is available to study the molecular biology of simian immunodeficiency virus (SIV). Possible projects include (i) elucidating molecular mechanisms of SIV pathogenesis; (ii) identifying factors that regulate viral expression; (iii) studying mechanisms of viral activation in macrophages.

Please send curriculum vitae, publications, and three references to:

**Dr. Yen Li**  
New England Regional Primate Research Center  
Harvard Medical School  
1 Pine Hill Drive  
Southboro, MA 01772

**POSTDOCTORAL POSITION:** Immediate opening to study translational regulation in the mouse testis. Background in molecular biology, biochemistry or monoclonal antibodies. Salary competitive. Send curriculum vitae, a brief description of research experience, copies of publications, and names of three references by 19 May 1989 to: **Dr. Kenneth C. Kleene, Department of Biology, University of Massachusetts, Boston, MA 02125.** *An Affirmative Action/Equal Opportunity/Title IX Employer.*



## Research & Development

### Scientists/Chemists

#### An Environment For Career Growth At CIBA-GEIGY Corporate Headquarters In Westchester

CIBA-GEIGY is known for quality pharmaceuticals and specialty chemicals that touch the lives of people worldwide. At our headquarters in suburban Westchester County, New York you may participate in research and development activities that result in innovative new products, and work with professionals who maintain the highest standards of excellence. Recent graduates and experienced candidates are invited to consider these current openings:

#### Transdermal Drugs

Be part of a team involved in physical chemical characterization, *in vitro* percutaneous absorption, pharmaceutical formulations, and polymeric membrane diffusion of drugs. BS/MS in Chemistry, Chemical Engineering, or equivalent is necessary, plus up to 5 years experience in transdermal drug delivery systems R&D. **Respond to Dept. 227-4.**

#### Binding Assay/Radioimmunoassay Analysis

Determine drugs in biological fluids using RIA, ELISA, EMIT, HPLC and related techniques. Will also apply radioisotopes/separation and various chromatographic techniques. BS/MS in Chemistry, Biochemistry, Immunology, or equivalent is necessary, along with up to 3 years academic or industrial experience in chemistry, biochemistry or immunology. Must have some exposure to computers/microprocessors and be proficient in developing radioimmunoassays. **Respond to Dept. 228-4.**

#### Analytical Chemistry

Assist in developing sensitive and specific methods for assaying drug and metabolite levels in biological fluids by GC/MS, LC/MS or MS/MS, optimizing assay performance and providing basic validation data. Will also assist in metabolite identification. BS/MS in Analytical Chemistry, Chemistry, Biochemistry or equivalent is required; up to 3 years academic or industrial experience with extraction methods and/or GC/MS assay development is desirable and computer literacy is an advantage. **Respond to Dept. 229-4.**

#### Gastrointestinal Absorption Studies

Participate in both *in vivo* pharmacokinetic/pharmacodynamic and *in vitro* gastrointestinal absorption studies, perform analyses and small animal surgery. BS/MS in Chemistry, Physiology, Biochemistry or equivalent is required, plus up to 3 years experience in oral drug delivery research and development. Additional experience with large animals would be helpful. **Respond to Dept. 230.**

#### Synthetic Organic Chemistry

Conduct research projects leading to the development of new and improved products, assisting to attain relevant technical data. BS in Chemistry, or equivalent is necessary. Recent graduates and those with up to 3 years laboratory experience will be considered. **Respond to Dept. 192.**

In addition to significant professional advantages, you will enjoy CIBA-GEIGY's distinctive campus-like setting, conveniently located to major highways. We offer competitive salaries and benefits, and high corporate quality of life. Please forward two copies of your resume and salary requirements, indicating appropriate department number, to: **Patricia A. Garrett, CIBA-GEIGY Corporation, 444 Saw Mill River Road, Ardsley, New York 10502-2699.** We Are An Equal Opportunity Employer M/F/H/V.

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# POSTDOCTORAL POSITION IN MOLECULAR BIOLOGY AT NIH

Position available immediately to study transcriptional regulation of bacteriophage T4 replication proteins. Candidate must be a recent Ph.D. with a background in biochemistry or molecular biology. Position is for two years with a one-year extension possible. Please send curriculum vitae and names and addresses of three references to:

**Dr. Deborah Hinton**  
**National Institute of Diabetes  
and Digestive and Kidney  
Diseases**  
**National Institutes of Health**  
**Building 8, Room 2A-13**  
**9000 Rockville Pike**  
**Bethesda, MD 20892**



NIH IS AN EQUAL OPPORTUNITY EMPLOYER

## Senior Research Biochemist

*Eisai Research Institute of Boston, Inc., a recently established pharmaceutical research company, is looking for a creative and motivated Biochemist or Biological Pharmacologist to join an existing team of scientists working toward innovative solutions to challenging pharmaceutical problems.*

*Suitable candidates will have a Ph.D. in a relevant biological science and more than five years' experience beyond the postdoctoral level developing procedures and directing others to work on new approaches to the screening of potential drug entities. The successful candidate will have experience in academic or pharmaceutical research with demonstrated ability to communicate new ideas and supervise a team of researchers. Areas of expertise will include design and development of quantitative enzyme and drug receptor assay systems, especially with respect to signal transducing systems. In addition the candidate should be well versed in establishing and maintaining animal cell cultures.*

*Interested candidates should send a resume and salary requirements to the Director of Administration, Eisai Research Institute, 128 Spring Street, Lexington, MA 02173. An equal opportunity employer.*



**EISAI RESEARCH  
INSTITUTE OF BOSTON**

## Research Scientist Immunoparasitologist

Pfizer Central Research has an excellent opportunity for a creative scientist at its modern Animal Health Research facility in Terre Haute, Indiana. As a member of the anticoccidial project team, you will have an opportunity to exercise ingenuity and originality in developing and conducting basic and applied research toward the *in vivo* evaluation of potential anticoccidial agents.

We are seeking an accomplished scientist who is innovative, enthusiastic, has good communication skills and enjoys working as part of a strong multidisciplinary project team. You must possess a PhD and postdoctoral experience would be an asset; however, educational training, intellectual capabilities and leadership traits are most important.

Pfizer provides an outstanding opportunity for professional recognition and career growth. We offer excellent compensation, comprehensive benefits and relocation assistance. Qualified applicants should submit a current resume with names of three references to: Ms. Christina Batjer, Senior Personnel Supervisor, Pfizer Inc., P.O. Box 88, Terre Haute, IN 47808. An equal opportunity employer.



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## PROTEIN CHEMIST FOR PROTEIN SEQUENCING AND MOLECULAR ANALYSIS FACILITY

The Clinical Neuroscience Branch, Division of Intramural Research Programs, National Institute of Mental Health, invites applications for a highly motivated, innovative protein chemist to operate a core facility performing protein sequence and molecular structure analysis, as well as participate on a collaborative basis with other investigators within the program. The candidates will join a multidisciplinary basic and clinical research group exploring the genetic and biochemical basis of neuropsychiatric disorders. Candidates must have a background in the analysis of functional domains of enzymes, receptors, and other nervous system protein/peptides, as well as an understanding of the biochemical basis of lysosomal and other neurological and psychiatric disorders. Experience in state-of-the-art microsequencing, amino acid analysis, and synthesis, purification and HPLC analysis of peptides and oligonucleotides is required. Candidates must have working knowledge of purification of proteins from mammalian cell cultures, recombinant DNA techniques, automated DNA sequencing, PCR technology, and be experienced in purification/characterization of recombinant proteins (especially glycoproteins) from retroviral and baculoviral expression systems. Candidates must be U.S. citizens or permanent residents, must have a doctoral degree or the equivalent, and have at least 5 years of relevant postdoctoral experience. Appointment is at the GS-13 level, with a salary range of \$41,121 - \$50,000, depending on qualifications and current salary. Further appointment requirements may be obtained by calling Mr. Joseph Whitaker at (301) 496-5337. The position is located on the NIH campus in Bethesda, Maryland. Interested candidates should send curriculum vitae, a statement of research interests, and the names and telephone numbers of three references to:

Dr. Edward Ginns  
Clinical Neuroscience Branch  
Building 10, Room 4N212  
NIMH/NIH  
9000 Rockville Pike  
Bethesda, Maryland 20892



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## Scientist

Genentech, Inc., a leader in the field of biotechnology, is currently seeking a Protein Biochemist to work on programs using recombinant molecules for identification of novel new leads for therapeutic molecules. Responsibilities will include protein isolation and characterization, mechanism of action studies and development of *in vitro* assays.

Requirements include a minimum of 2 or more years' post-doctoral experience in cardiovascular research with experience in protein purification and characterization, enzyme-substrate and/or receptor-ligand interactions. Experience in cellular mechanisms desirable.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For consideration, please send your c.v. to Carol Deasy, Department 1817, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support and promote affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

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## Molecular Biologist Gene Expression

**Somatix Corporation** is a growing biotechnology company developing applications of somatic cell delivery systems in the field of human gene therapy. We are seeking talented scientists to join with us in investigating and building the foundations of a new and exciting technology in human health care. Research positions are available at the **Ph.D., M.S. and B.S.** levels in our expanding gene expression group for qualified individuals experienced in molecular cloning methods, eukaryotic gene expression systems, DNA sequencing and cell culture techniques.

### Staff Scientists

Candidates should possess a Ph.D. in molecular biology or virology and have a strong background including publication record in molecular cloning and eukaryotic expression studies. Preference will be given to candidates with experience in retrovirus or yeast gene expression systems. The successful candidates will be expected to conduct independent research that will contribute to the development of gene expression systems designed to address the specialized requirements of our ongoing cell biology programs.

### Research Associates

Applicants must possess a B.S. or M.S. in molecular biology, biochemistry or biology. Laboratory experience in molecular cloning methods is highly desirable.

We offer a competitive salary and benefits package including stock options. **Somatix** combines a stimulating academic research environment with the opportunities to be found in a start-up company with excellent career potential for its employees. Qualified individuals should apply to: **Somatix Corporation.**

**Somatix**

1 Kendall Square, Building 650, Cambridge, MA 02139

## Respiratory Pharmacologist

The Procter & Gamble Company has an immediate entry level opening for a Ph.D. respiratory pharmacologist or physiologist. Postdoctoral research experience would be desirable. Requirements include an understanding of the *in vivo* and *in vitro* techniques used to investigate the pharmacological regulation of pulmonary function in normal and diseased states. Research experience in allergic airway disease would be an advantage. The successful candidate will be expected to design preclinical research strategies to evaluate novel approaches to treat airway diseases.

Applicants must be U.S. citizens or permanent residents. Send resume and publication list to:

Dr. T. J. Logan, Manager  
Ph.D. Recruiting  
Respiratory Pharmacologist Position  
THE PROCTER & GAMBLE COMPANY  
P.O. Box 398707  
Cincinnati, Ohio 45239-8707

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## POSITIONS OPEN

**POSTDOCTORAL POSITION**—Control of human muscle cell growth and differentiation in defined medium. Experience in biochemical fractionation, growth factors, or muscle cell differentiation preferred. Prior cell culture experience optional. Available immediately. Funded for 3 years. Please send curriculum vitae and names of three references to: **Dr. Richard G. Ham, Department of Molecular, Cellular, and Developmental Biology, Campus Box 347, University of Colorado, Boulder, CO 80309. Telephone: 303-492-7847. Equal Opportunity/Affirmative Action. Minorities, women, and disabled are encouraged to apply.**

**POSTDOCTORAL POSITION** for summer/fall, 1989 to construct mouse strains with deficiencies of the purine salvage gene APRT. Work will include the isolation and molecular characterization of APRT-deficient cells directly from mouse tissues and from cultured cell lines. Send curriculum vitae and names and addresses of three references to: **Dr. Mitchell Turker, Department of Pathology, Markey Cancer Center, University of Kentucky, Lexington, KY 40536-0093.**

**POSTDOCTORAL POSITION:** Funded project for a postdoctoral to become immediately productive using available reagents and probes to study the expression of specific enzymes that control normal and malignant cell behavior. Experience in molecular biological techniques essential. \$25,000 stipend. Send curriculum vitae and references to: **Dr. James P. Quigley, Pathology, SUNY at Stony Brook, Stony Brook, NY 11794. SUNY/Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer.**

**POSTDOCTORAL POSITION** is immediately available to study the molecular mechanism of protein import into the chloroplast, proteolytic processing of precursor proteins, processing enzyme characterization, gene isolation and expression. Candidate should have extensive experience in either molecular biology or protein biochemistry. Send curriculum vitae, summary of graduate research, and references to: **Dr. Gayle Lamppa, Department of Molecular Genetics and Cell Biology, The University of Chicago, 920 East 58th Street, Chicago, IL 60637. An Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available immediately for studies on cellular development and myelination in the mammalian central nervous system. Ph.D. required; experience in tissue culture, biochemistry, and molecular biology is desirable. Send curriculum vitae and the names of three references to: **Dr. F. Arthur McMorris, The Wistar Institute, 36th and Spruce Streets, Philadelphia, PA 19104. Equal Opportunity Employer M/F.**

### POSTDOCTORAL RESEARCH (IMMUNOLOGY/VIROLOGY)

Applications are invited from qualified candidates for a research position in an NIH-funded research program to study host immune responses to lentivirus infections and experimental lentivirus vaccines. The current research emphasis is centered around experimentation with cell-mediated immune responses to the Equine Infectious Anemia Virus (EIAV) and the Simian Immunodeficiency Virus (SIV). Fully equipped laboratory facilities are available and include a new BL-3 Biocontainment facility and a Flow Cytometry facility.

Applicants should have a Ph.D. degree in immunology or virology. Candidates with a D.V.M. or M.D. and advanced training in the fields of immunology and virology are also encouraged to apply. The salary range is \$21,000 to \$25,000 per year and is commensurate with experience and education. Initial appointment will be for 2 years with a possibility of reappointment for additional years.

Interested applicants should send a current résumé and the names, addresses, and telephone numbers of three references to:

**Dr. Mark J. Newman  
Assistant Professor of Immunology  
Veterinary Microbiology and Parasitology  
School of Veterinary Medicine  
Louisiana State University  
Baton Rouge, LA 70803**

Closing date for receipt of applications is 19 May 1989. *LSU is an Equal Opportunity Employer.*

## POSITIONS OPEN

**POSTDOCTORAL POSITION**, available on or around 1 July 1989, to study autocrine/paracrine relationships in the ovarian follicle, ovarian growth factors, in particular. Candidates should have a Ph.D. or equivalent, preferably with related experience in reproductive endocrinology, cell culture, steroid and/or peptide hormones, and immunochemical or molecular techniques. Send curriculum vitae and the names of three references to: **J. M. Hammond, M.D., Professor, Division of Endocrinology, M. S. Hershey Medical Center, Pennsylvania State University, P.O. Box 850, Hershey, PA 17033. An Affirmative Action/Equal Opportunity Employer. Women and minorities encouraged to apply.**

**POSTDOCTORAL POSITIONS IN IMMUNOLOGY, MOLECULAR BIOLOGY, AND VIROLOGY.** Several are available in multidisciplinary experimental studies utilizing anti-idiotypic antibodies to examine the molecular basis of idiotype networks induced during viral infections. The viral systems to be studied include hepatitis B virus, human immunodeficiency virus (HIV), simian immunodeficiency virus and simian virus 40. In addition, positions are also available to examine the use of anti-idiotypes to mimic various toxic substances and in cellular immunology aspects of HIV and SIV infection. These studies will be performed in the laboratories of **Drs. Ronald C. Kennedy and Tran C. Chanh.** Annual postdoctoral salaries range from \$21,070 to \$29,266, dependent upon prior relevant postdoctoral experience. Applicants must have a Ph.D. or M.D. degree or expect to obtain one by the end of 1989. Send curriculum vitae, and names, addresses and telephone numbers of at least three references to: **Personnel Director (23), Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, TX 78284. Equal Opportunity Employer M/F.**

**POSTDOCTORAL/RESEARCH ASSOCIATE** position available to study RNA Processing in animal cells and viruses. Background either in biochemistry, microbiology or molecular biology needed. Experience in recombinant DNA technology desirable. Salary negotiable. Send résumé with two names for references to: **Dr. Mary Edmonds, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, PA 15260. Equal Opportunity/Affirmative Action Employer.**

### THE UNIVERSITY OF TEXAS AT DALLAS POSTDOCTORAL RESEARCH ASSOCIATE UNCLASSIFIED

A postdoctoral position will be available Summer 1989 to study the structure, organization, expression and regulation of the genes that encode different isoforms of subunits of the mammalian mitochondrial ATP synthase complex. Applicants should have a Ph.D., and experience in recombinant DNA methods is desirable. A competitive salary is available for at least 3 years. Send curriculum vitae and names, addresses, and telephone numbers of three references (indication of sex and ethnicity for Affirmative Action statistical purposes is requested but not required) to:

**Dr. G. Breen  
Molecular and Cell Biology Program  
FO 3.1  
The University of Texas at Dallas  
P.O. Box 830688  
Richardson, TX 75083-0688**

*The University of Texas at Dallas is an Affirmative Action/Equal Employment Opportunity Employer.*

**RADIOLOGY**—Full-time, tenure-track position available in the Department of Dental Diagnostic Science, School of Dentistry, University of Texas Health Science Center at San Antonio (UTHSCSA) available 1 September 1989. D.D.S. from accredited dental school, Ph.D. in radiation biology, a demonstrated research record in radiation bioeffects, and teaching experience in oral radiology required. Rank and salary commensurate with training and experience. *UTHSCSA is an Affirmative Action/Equal Opportunity Employer.* Direct applications with curriculum vitae and two references to: **Dr. Stephen R. Matteson, Chairman, Department of Dental Diagnostic Science, UTHSCSA, 7703 Floyd Curl Drive, San Antonio, TX 78284-7919 by 1 June 1989.**

## POSITIONS OPEN

### UNIVERSITY OF CALIFORNIA IRVINE POSTDOCTORAL RESEARCH IN PSYCHOBIOLOGY

The Department of Psychobiology, University of California, Irvine (UCI), anticipates filling several postdoctoral research positions in the laboratories of the faculty with starting dates between 1 May 1989 and 30 November 1989. The current faculty and their research interests are: **D. Aswad** (neurochemistry); **M. Baudry** (cell biology and neurochemistry); **C. Cotman** (synaptic growth and plasticity); **R. Josephson** (comparative physiology of muscles); **M.-L. Kean** (linguistics and neural mechanisms of language processing); **H. Killackey** (developmental neuroanatomy); **M. Leon** (neurobiology of early learning); **G. Lynch** (physiology, neurochemistry); **J. Marshall** (neural plasticity of catecholamines); **J. McGaugh** (memory, storage processes); **R. Miledi** (synaptic physiology and molecular neurobiology); **I. Parker** (synaptic physiology); **A. Starr** (cognition, sensation and evoked potentials); **K. Sumikawa** (molecular neurobiology); **N. Weinberger** (neural mechanisms of learning); and **P. Yahr** (neuroendocrinology and behavior).

Candidates should address inquiries to: **Postdoctoral Research Advisor, Department of Psychobiology, University of California, Irvine, CA 92717.**

UCI

*An Equal Opportunity/Affirmative Action Employer.*

A **RESEARCH ASSOCIATE** position (Job Order #: 4237128) is available to participate in an ongoing research project focused in evaluation of radiation damage to biological materials; research on x-ray radiation damage, chemical radioprotection and optical monitoring of x-ray damage; and preparation of sample holders. Applicant(s) must have a Ph.D. in radiation biology. Forty hours per week. Excellent benefit package. Salary: \$19,475 yearly. Send résumé or curriculum vitae to: **The Philadelphia Job Bank, 444 North 3rd Street, 3rd Floor, Philadelphia, PA 19123.**

### RESEARCH SCIENTIST NMR SPECTROSCOPIST

The University of Arizona has an opening for a research scientist with experience in NMR spectroscopy. Applicants should have an advanced degree, preferably a Ph.D., in a relevant discipline and several years of NMR experience. Duties will involve managing a core facility equipped with two new Bruker spectrometers (AM 500 and AMX 400WB), and training users. The successful applicant will be expected to conduct independent research and apply for grants to support his/her research program, as well as to coordinate joint applications for the facility. This state-funded position is continuing eligible and the salary will be commensurate with qualifications. It is anticipated that this position will be at a level of assistant research scientist, but particularly well-qualified candidates at more advanced levels are encouraged to apply. Applicants should submit curriculum vitae and three letters of recommendation to: **Dr. John H. Law, Biotechnology Program, Biosciences West Building, University of Arizona, Tucson, AZ 85721.** Inquiries may be directed to: **Dr. Neil MacKenzie: 602-626-4898 or Dr. Robert Gillies: 602-626-5052.** Applications will be examined after 31 May 1989, but will be accepted until the position is filled. *The University of Arizona is an Equal Opportunity/Affirmative Action Employer.*

### RESEARCH SCIENTIST/ PHARMACOKINETICS

Design and conduct pharmacokinetic and drug disposition studies to support the discovery of novel chemical entities for the treatment of eye and skin diseases. Supervise personnel to develop bioanalytical analyses. Publish results of research in scientific literature. Must have strong background in pharmacokinetics and drug disposition of ocular drugs, with experience in developing novel chemical entities, with strong publication record in the ocular drug research. One year of experience required. Must have Ph.D. in pharmaceutical chemistry, pharmaceutics, or pharmacology.

Salary: \$3,500 per month. Forty hours per week. Place of employer and interview: Irvine, California. Send this ad and letter stating your qualifications to: **Job # BLW 2640, P.O. Box 9560, Sacramento, CA 95823-0560, not later than 13 May 1989.**

# Research Opportunities at Monsanto

The Monsanto Corporate Research organization, located in suburban St. Louis, is committed to quality life science related research leading to new products in health care, animal nutrition and agriculture. Scientists are being recruited to fill the positions described below.

## Analytical Immunochemist

This assignment involves coordinating and leading a team of researchers focused on developing and providing state-of-the-art assay technology (including ELISA and receptor procedures) and antibody production (including preparation of hybridoma cell lines and antisera).

The position calls for a Ph.D. or equivalent in a relevant area of biology or chemistry and significant experience in assay and antibody technologies. Supervisory experience is desirable.

## Biochemist

This assignment involves developing and running screening assays for a wide range of pharmacological targets. The position calls for a Ph.D. or equivalent in biochemistry and laboratory experience with receptor binding and/or enzymology. Experience in robotics and computer controls is preferred.

## Natural Products Chemist

This assignment involves the isolation and structural elucidation of natural products with biological activities. The position calls for a Ph.D. or equivalent in natural products chemistry or a related area and experience in structural elucidation by nuclear magnetic resonance and mass spectroscopic techniques.

## Purification Chemist

This assignment involves the isolation and characterization of potential new products from diverse raw materials produced by fermentation, tissue culture, and biotransformations. These activities include process definition, evaluation, development and scale-up.

This position calls for a Ph.D. or equivalent in biochemistry, chemistry, analytical chemistry or biochemical engineering, and a strong basic science background with an interest in applied science is highly desirable.

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

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with ideas

# Monsanto

## R&D Scientists for Biotechnology

Life Technologies, Inc. Research Products Division on Grand Island, New York, a well-established and rapidly-growing company, has immediate openings for research scientists to develop innovative products for cell culture technology.

Vacancies are at the B.S., M.S. and Ph.D. levels. Applicants should have experience or postdoctoral training in the following:

- Culturing of cells and cultivating of viruses by various methods.
- Cell culture nutrition, metabolism and media formulations.
- Regulation of cellular proliferation.
- Protein production, purification and characterization.
- Ability to publish, work independently, and supervise.

The company offers a competitive salary, and an attractive benefit package, as well as an opportunity for advancement. The location offers a wide variety of cultural, recreational, and educational opportunities as well as excellent availability of housing and quality of life.

Please send your resume, with references, to:

Mr. Harry Cardin, *Personnel Manager*

LIFE TECHNOLOGIES, INC.

Research Products Division

P.O. Box 68, Grand Island, NY 14072

(A suburb of Buffalo)

**LIFE TECHNOLOGIES, INC.**

**RESEARCH PRODUCTS DIVISION**

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Ph.D. OR M.D.

## Recombinant Protein Research (Including Pilot Production)

Hoechst, one of the world's largest pharmaceutical companies, has opportunities for creative, highly motivated scientists to join its Japanese Research Laboratories. We are committed to the rapid expansion of recombinant research, pursuing programs in fermentation and mammalian cell culture technology, cell biology and protein chemistry.

Located in a pleasant suburb of Tokyo, our laboratories offer an open and independent research environment. Interaction with other scientists throughout the world and publication of scientific papers are actively supported.

Candidates for these highly visible positions (Recombinant Protein Researcher/Pilot Plant Deputy Manager) must be fluent in both Japanese and English. Ph.D. or M.D. degree essential with extensive background in the above mentioned scientific fields and management ability to guide a research group.

If you are interested and qualified, please send CV including details of publications to: Dr. Elmar Konz, Head of Pharma Research Laboratories, Hoechst Japan Limited, 1-3-2 Minami-dai, Kawagoe-shi, Saitama 350, Japan (0492-43-6110).

**Hoechst** 



## BIOCHEMIST/ MOLECULAR BIOLOGIST

The Molecular Pharmacology and Biochemistry Department of Merck Sharp & Dohme Research Laboratories is currently expanding its research group involved in the study of the molecular mechanisms of transmembrane signal transduction. We have two positions open for biochemists: (1) The first position involves study of structure function relationships of G protein produced by recombinant DNA techniques. Experience in proteins purification techniques including chromatography, electrophoresis and the use of radioisotopes is required. Experience in the basic techniques of molecular biology and working knowledge of HPLC/FPLC is desirable. (2) The second position involves structure-function studies of membrane receptors in signal transduction pathways. Candidates should have at least 2-3 years of laboratory experience in recombinant DNA, sequencing and mutagenesis techniques, or gene expression studies. A strong background in biophysics is desirable but not required.

Candidates for both positions should have a B.S., M.S. or equivalent in biochemistry or a related field.

Merck Sharp & Dohme Research Laboratories are located in Rahway, New Jersey, approximately 25 miles from New York City. Our salaries, benefits and growth potential are excellent. Interested candidates should submit their resumes with the names of three references and salary requirements to: **Mr. Dan Hoffman, Merck & Co., Inc., P.O. Box 2000, Rahway, New Jersey 07065.**

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**Merck & Co., Inc.**

## FACULTY POSITION IN DEVELOPMENTAL AND MOLECULAR BIOLOGY

**Institute for Molecular Biology and Biotechnology  
McMaster University**

The newly-created Institute for Molecular Biology and Biotechnology seeks to build a group composed of independent, but interactive scientists interested in the molecular biology of development. One tenure-track position is currently available at the assistant professor level. Applications are invited from but not restricted to individuals with research interests in the regulation of gene expression, the role of oncoproteins in development, growth and differentiation factors, and gene targeting in embryonic stem cells. A Ph.D. or M.D. degree and postdoctoral experience is required. The start date is July 1, 1990, or as soon thereafter as possible. Salary will be commensurate with experience. This position is subject to final budgetary approval.

In accordance with Canadian Immigration requirements priority will be given to Canadian citizens and permanent residents of Canada.

Applicants should send a current curriculum vitae, a statement describing research accomplishments and future goals, and the names of three references by May 31, 1989 to:

**Dr. John A. Hassell  
Institute for Molecular Biology  
and Biotechnology  
McMaster University  
1280 Main Street West  
Hamilton, Ontario L8S 4K1, Canada**

## Vaccines Research

Our ability to attract and maintain a growing number of highly skilled scientific and managerial professionals is attributed to our innovative environment and the very best laboratory, technical and administrative support staff available. We currently have two positions available involving the research and development of our vaccine products at our U.S. headquarters in Swiftwater, PA:

**SR. RESEARCH BIOCHEMIST**—Requires a Ph.D. in Chemistry or Biochemistry and 2-3 years experience in the chemical modification of biological molecules or peptide synthesis for modulation of antigenicity. Specific experience in protein, carbohydrate, and/or immuno chemistry, protein purification and characterization, or analytical biochemistry a plus.

**RESEARCH ASSISTANT**—Requires an individual with an MS degree in Chemistry or Biochemistry and at least 1 - 2 years industrial laboratory experience in quantitative chemical and instrumental analysis (UV, HPLC) and protein or polysaccharide preparation/purification. A BS degree with several years relevant experience will also be considered.

Work with highly innovative and enterprising individuals, and benefit from one of the finest compensation programs in the industry. Please send your resume and salary requirements to: **Human Resources, Dept. SC, CONNAUGHT LABORATORIES, INC., Rt. 611, P.O. Box 187, Swiftwater, PA 18370.** An equal opportunity employer.



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The National Institutes of Health (NIH) invites nominations and applications for the position of Director, Office of Scientific Integrity. This is a Civil Service position in the Senior Executive Service (SES), with a salary range of \$68,700 to \$76,400 per annum. The person selected may be eligible for Physician's Comparability Allowance ranging from \$5,000 to \$20,000 per year. A one year probationary period must be served by the individual selected if not currently in the Senior Executive Service.

The Office of Scientific Integrity is responsible for detecting, investigating, reporting and resolving allegations of scientific misconduct.

The Director of the Office of Scientific Integrity is responsible for developing and implementing policies and procedures relating to scientific misconduct in extramural and intramural research activities.

For more information contact Ms. Dolores Jeter at (301) 496-6521. The following forms are **required**:

Application for Federal Employment (SF-171) accompanied by a current curriculum vitae and bibliography.

These must be submitted to:

**Ms. Dolores Jeter  
National Institutes of Health  
Office of the Director,  
Personnel  
Building 31,  
Room 1C-23  
9000 Rockville Pike  
Bethesda, Maryland 20892**



**APPLICATIONS MUST BE  
POSTMARKED NO LATER THAN  
MAY 23, 1989.**

All qualified candidates will receive consideration without regard to race, religion, color, sex, age, national origin, lawful political affiliation, marital status, union membership, or non-disqualifying physical or mental handicap.

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# MOLECULAR BIOLOGIST/ ANTIBODY CLONING

## *Cancer Therapeutics*

The Dow Chemical Company, in Midland, Michigan, is a recognized world leader in the chemical industry. Expanded research efforts in the area of cancer therapeutics and immunotherapy have created an immediate need within the Bioproducts Laboratory in the Central Research Department for a qualified Molecular Biologist for Antibody Cloning.

The successful candidate will have a Ph.D. and some postdoctoral experience in genetic engineering, as well as hands-on experience with immunological systems. Experience in cDNA cloning, preparation and screening of genomic libraries, eukaryotic expression vectors, and DNA sequencing is required. Research efforts will be directed toward protein design for application in our biotechnology-based cancer therapeutic program.

The above candidates must also possess strong communication skills and a desire to carry out independent research while functioning as part of an interdisciplinary research team.

The Dow Chemical Company offers a stimulating work environment and a competitive salary/benefits package. For consideration, send your resume to: **Technical Recruiting, Department MB-1, The Dow Chemical Company, 1801 Building, Midland, MI 48674.** An equal opportunity employer.



## Postdoctoral Scientist Drug Metabolism

The Drug Metabolism Department of Smith Kline & French Laboratories is seeking Postdoctoral Scientists to perform basic research in areas relevant to Drug Metabolism. These positions offer the opportunity to interact with senior members of the department to facilitate professional growth. Candidates will report research results within the company and at national scientific meetings and are encouraged to publish these results in leading scientific journals. All positions require a Ph.D. in biological, chemical or pharmaceutical sciences and a working knowledge of bioanalytical methods development. Positions, which are 2 years in duration, exist in the following areas:

### Protein/Peptide Chemistry

The scientist will perform studies directed toward understanding the effects of glycosylation and carbohydrate structure on metabolism/pharmacokinetics of therapeutic glycoproteins. A scientist with a working knowledge of electrophoretic and HPLC techniques applicable to protein quantification is preferred. Refer to position L0057

### Bioanalytical Chemistry

The scientist will formulate and conduct a basic research program on the use of specific antibodies in the development of new analytical technologies in Drug Metabolism. A scientist with a working knowledge of radioimmunoassay development is preferred. Position L0058

### Biochemistry

The scientist will conduct a basic research program directed at understanding the mechanisms of metabolism or absorption of novel therapeutic agents. A scientist with previous experience in *in vitro* or *in vivo* techniques for quantification of drug metabolism or absorption is preferred. Position L0059

### Separation Science

The scientist will initiate a basic research program in the application of high performance liquid chromatography, capillary zone electrophoresis and novel chemical derivatization approaches to the development of bioanalytical methods for drugs and metabolites, including peptides and proteins. Position L0060

We offer an attractive compensation/benefits/relocation package and a stimulating, highly supportive research environment. Resume & names of three references to: Liz McKendry, Position L0060, Smith Kline & French Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0939. Equal Opportunity Employer, M/F/H/V.

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## POSITIONS OPEN

**RESEARCH FELLOW** (M.D. or Ph.D.) position available immediately to perform research in one of the following: (i) immune privilege in the anterior chamber of the eye; (ii) immunobiology of corneal transplants; and (iii) immune regulation in the eye. Applicant must have Ph.D. or immunology research experience. Send curriculum vitae, cover letter stating research interests, and three letters or recommendation to: **Dr. J. Y. Niederkorn, Department of Ophthalmology, University of Texas Southwestern Medical Center, Dallas, TX 75235. Equal Opportunity Employer.**

**RESEARCH TECHNICIAN/ASSOCIATE** needed to maintain plant cell cultures and isolate plant cell walls, cell wall polysaccharides, and oligosaccharide fragments of the polysaccharides. The technician will be trained to structurally characterize complex carbohydrates. Experience in any of the following techniques would be desirable: liquid or gas chromatography, working with enzymes, tissue culture, carbohydrate chemistry. B.S. required/M.S. preferred in biology or biochemistry. Salary negotiable depending on experience. Send applications by 15 May 1989 to: **Dr. Alan Darvill or Dr. Peter Albersheim, Co-Directors, Complex Carbohydrate Research Center, University of Georgia, P.O. Box 5677, Russell Research Center, Athens, GA 30613. An Equal Employment Opportunity/Affirmative Action Institution.**

## THEORETICAL/EXPERIMENTAL NEUROSCIENTIST NORTHWESTERN UNIVERSITY MEDICAL SCHOOL AND INSTITUTE FOR NEUROSCIENCE

Applications are invited for a tenure-track faculty position in the Department of Physiology. Level may vary from assistant to full professor, depending on experience and credentials of the applicant. Candidates must have a Ph.D. and/or M.D. degree(s) and at least 2 years of postdoctoral experience. Individuals with research interests in neural network models are encouraged to apply. The appointee will complement an interactive group of faculty with strong commitment to the study of cellular and integrative aspects of neural control of physiological systems. Candidates should exhibit potential for developing a strong independent research program. Duties also include teaching to professional and Ph.D. students and development of computer-assisted instruction. In order to receive full consideration, interested applicants should submit curriculum vitae, statement of research goals and accomplishments, summary of teaching experience, and the names of four references to the address below by 1 July 1989. *Northwestern University is an Affirmative Action and Equal Opportunity Employer.* Hiring is contingent upon eligibility to work in the United States.

**Barry W. Peterson, Ph.D.**  
Chairman, Search Committee  
Department of Physiology  
Northwestern University Medical School  
303 East Chicago Avenue  
Chicago, IL 60611

**UNDERGRADUATE CHEMISTRY LABORATORY DIRECTOR (ULD)**—Nontenure-track, full-time position of technical and administrative supervisor of the chemistry undergraduate teaching laboratories at MIT with direct responsibility for their efficient management and operation, starting 15 August 1989. The ULD provides interactive supervision of laboratory activities throughout every scheduled laboratory period; enforces proper safety procedures; is responsible for maintenance of laboratory equipment, facilities and supplies; is thoroughly knowledgeable with and capable of troubleshooting problems in experimental procedures and operation of equipment; provides training to teaching assistants in experimental procedures and in the use of equipment and instrumentation. In conjunction with the faculty, the ULD suggests and develops new experiments for future use in the teaching laboratories. An advanced degree in chemistry, or a B.S. in chemistry with substantial equivalent experience is required. Submit curriculum vitae and arrange for three letters of recommendation to be sent by 19 May 1989 to: **Ms. M. T. Kouo, Department of Chemistry, 18-399, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, MA 02139. MIT is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### VERTEBRATE BIOLOGIST— ASSISTANT PROFESSOR

A tenure-track, position at the assistant professor level is available in the Biology Department at Benedictine College, a small, liberal arts college located in Atchison, Kansas. A Ph.D. is required. Teaching duties include: team-teaching a majors and a non-majors freshman biology course and teaching one upper division course per semester in comparative vertebrate anatomy, animal behavior, or ecology. The successful candidate is also expected to supervise undergraduate students in original research projects and to obtain outside research support. Please send curriculum vitae, statement of research and teaching interests and the names of four references no later than 19 May 1989 to:

**Dr. Daniel E. Bowen, Chair**  
Biology Department  
Benedictine College  
N-20  
Atchison, KS 66002

### WETLAND ECOLOGIST

Envirosphere Company, the environmental consulting division of Ebasco Services Inc., located in Northern New Jersey, is seeking a wetland ecologist with experience in field delineation of wetlands using multi-parameter methodology, or in design of freshwater wetland mitigation plants. Good oral and written communication skills essential, advanced degree preferred but not required. Ebasco offers excellent growth opportunities as well as competitive salaries and a comprehensive benefits package. Please send résumé including salary history/requirements to: **T. A. Caparo, Ebasco Services Inc., 160 Chubb Avenue, Lyndhurst, NJ 07071.**

## CONFERENCE

### AMERICAN SOCIETY FOR CELL BIOLOGY (ASCB) 1989 Annual Meeting

5 to 9 November 1989 Houston, Texas

Abstract deadline: 1 August 1989

### ASCB SUMMER RESEARCH CONFERENCE

Chromosome Structure and Segregation

8 to 12 September 1989 Airlie, Virginia

Application deadline: 26 May 1989

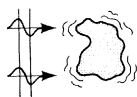
For information contact: **ASCB National Office, 9650 Rockville Pike, Bethesda, MD 20814. Telephone: 301-530-7153.**

## PROGRAM

### CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain the Doctor of Optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education and research. Contact: **Dr. D. Chauncey, Program Director, Accelerated Program, The New England College of Optometry, Room S, 424 Beacon Street, Boston, MA 02115.**

## WORKSHOP



**X-RAY MICROIMAGING  
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24 to 26 May 1989**

Sponsored by the U.S. Department of Energy, Office of Health and Environmental Research and Lawrence Berkeley Laboratory. This **WORKSHOP** is designed to explore the potential for direct imaging of macromolecular to suborganelle structures with spatial resolution beyond that which has been demonstrated to date. The emphasis will be on direct x-ray imaging techniques applied to biological problems of structure and function, sequencing and mapping, as well as requisite high brightness radiation sources such as short wavelength undulators and lasers. In addition there will be overviews of current and projected capabilities utilizing tunneling techniques, electron microscopy, and x-ray crystallographic techniques. For information, contact: **Shirley Ashley, Conferences, Lawrence Berkeley Laboratory, Berkeley, CA 94720. Telephone: 415-486-6387.**

## COURSE

### SUMMER COURSES IN GROSS ANATOMY HISTOLOGY, EMBRYOLOGY AND NEUROANATOMY

Will be offered to medical, dental, health science and medical illustration students by the Department of Anatomy and Cell Biology, Georgetown University, starting 19 June 1989. For further information, contact:

**Dr. Martin Dym, Chairman**  
Department of Anatomy and Cell Biology  
Georgetown University  
Georgetown University Medical Center  
3900 Reservoir Road, NW  
Washington, DC 20007  
Telephone: 202-687-1051/-1711

## TRAINING PROGRAM

### POSTDOCTORAL FELLOWSHIPS

Multidisciplinary postdoctoral training in tumor biology and genetics is available immediately at the University of Alabama at Birmingham (UAB). This program supported by the National Cancer Institute includes scientists and clinicians as preceptors in the Departments of Microbiology, Biochemistry, Medicine, Pediatrics, Surgery, Pathology and Epidemiology who have active research programs in subdisciplines such as molecular genetics, immunogenetics, cellular immunobiology, tumor immunology, immunochemistry, virology, molecular cell biology as well as clinical investigations on improved methods for the diagnosis and treatment of patients with malignant diseases. In addition to research experience, courses, Journal Clubs and Research Symposium are offered in various areas of tumor biology. The fellowships are available on a competitive basis to applicants (U.S. citizens and permanent residents only) with a Ph.D., M.D., D.D.S., or D.V.M. Send: (i) curriculum vitae, (ii) three letters of reference, and (iii) a statement of research and career goals to: **Ronald T. Acton, Ph.D., Department of Microbiology and Director, Multidisciplinary Training in Tumor Biology Training Program, UAB Station, Volker Hall, P.O. Box 201, University of Alabama at Birmingham, Birmingham, AL 35294.**

## FELLOWSHIP

### ALFRED P. SLOAN FOUNDATION SABBATICAL AWARDS IN MOLECULAR STUDIES OF EVOLUTION

Molecular or evolutionary biologists at U.S. and Canadian institutions are invited to apply for sabbatical awards for academic year 1990 to 1991, for development of interdisciplinary knowledge needed for molecular studies of evolution. Awards include matching funds for sabbatical salary and expendable allowance. Deadline: 30 June 1989. Contact: **Dr. Michael S. Teitelbaum, 630 Fifth Avenue, Suite 2550, New York, NY 10111. Telephone: 212-582-0450.**

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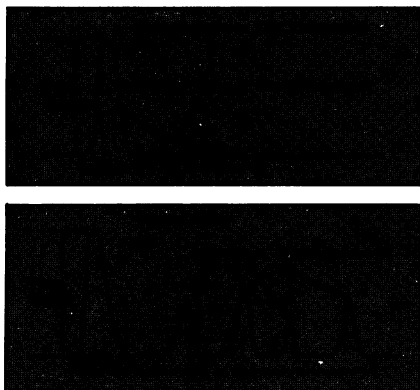
In the past, liquid scintillation counting used traditional technology to overcome background noise. Now, there's a new, more sensitive technology – TR-LSC or Time-Resolved Liquid Scintillation Counting – that reduces background noise by an additional 30%-40%, and more. This new patented technology is available only in Packard's Tri-Carb® liquid scintillation analyzers.

Originally developed for extremely low level counting, TR-LSC technology has now been applied to a broad range of applications. While these don't always require high sensitivity, additional benefits have been realized. By increasing sensitivity, TR-LSC reduces sample and cocktail consumption while shortening the time required for accurate counts. The benefits? Lower cocktail costs, lower disposal costs, and increased throughput.

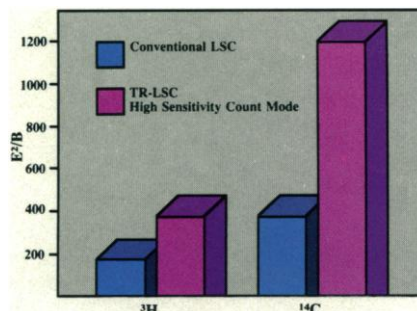
## How TR-LSC is superior to older technology

Traditional counters are based on two-dimensional pulse analysis: pulse height and pulse counts. They provide a level of sensitivity that's merely adequate for most applications.

Patented TR-LSC adds a third dimension to pulse analysis: a pulse index that measures over time the afterpulses associated with background. In doing so, TR-LSC clearly distinguishes between beta pulses and background pulses. By identifying, and reducing, background noise, TR-LSC provides a great level of sensitivity (see chart comparing  $E^2/B$  values) and more accurate counts.



The typical beta scintillation pulse (top) is very fast and may be followed by a delayed component. The typical background pulse is followed by a series of afterpulses. Patented TR-LSC distinguishes between the two.



Typical  $E^2/B$  values for  $^3\text{H}$  and  $^{14}\text{C}$  using traditional and TR-LSC counting.

## Achieve accurate counts on samples as small as 25 $\mu\text{L}$

Traditional technology limits sensitivity. The improved sensitivity of TR-LSC, however, allows you to achieve accurate DPM results for single and dual label samples in volumes as small as 25  $\mu\text{L}$ . That can add up to substantial savings in sample and cocktail costs.

## Slash radioactive waste disposal costs

Counting smaller samples will also reduce radioactive liquid disposal costs, which can be \$500 per drum, or higher. While you may not pay this cost directly, your operating budget could be affected. With TR-LSC you can cut operating costs while reducing environmental hazards.

## Increase sample throughput by over 80%

Just as TR-LSC reduces the volume of sample and cocktail required for accurate counting, it also reduces the time required for an accurate count. By cutting background in half, high sensitivity TR-LSC lets you count nearly twice the number of vials of a 250-DPM sample, in the time it would

take to count a single vial using conventional technology. For lower activity samples, the increase in throughput with TR-LSC is even greater.

## Automatic data interpretation, too

Another advanced feature available only with Tri-Carb analyzers is automatic tandem processing. This unique capability processes your counting data automatically using one software program after another – RIA packages, spreadsheets, word processing, or custom-written programs – until the results are printed in whatever format you have specified. All this is done automatically, without operator intervention, for up to 30 users.

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More information on TR-LSC, and other exclusive Packard features, is available in a new publication, the Investigator's Guide to TR-LSC Technology and Tri-Carb Liquid Scintillation Analyzers. For your free copy, mark the reader service number below or call us today.



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# Here's why Gilson may be the only source you need for liquid handling, LC and HPLC instruments

Whether you're considering a new instrument or putting together a complete HPLC system, start with *Instruments for Liquid Chromatography and Sample Preparation*. You're likely to find everything you need in this new guide to Gilson instruments and systems. It presents an overview of the entire line—our well-known fraction collectors and Minipuls® peristaltic pumps, plus HPLC systems, detectors and automated sample processors. Here are a few examples.

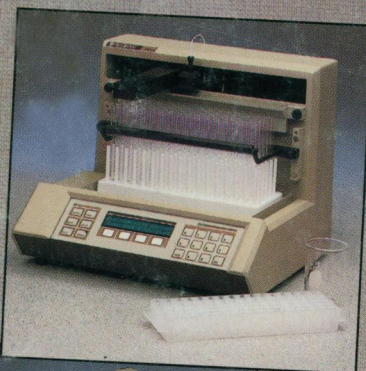
## A fraction collector with 98% problem-free performance

Most people associate Gilson with reliable fraction collectors. Many FC 80 and FC 100 micro-fractionators have been in use more than 15 years. But reliability doesn't stop with these instruments. Our newest collector, the FC 203, has a 98% problem-free performance record. A stationary rack system is one feature that assures reliable performance. Other features simplify operation. A special HELP key gives on-line instruction for time, drop or peak mode operation. And the FC 203 is just one of five Gilson fraction collectors.

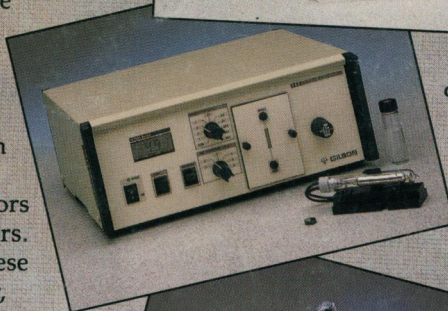
## A versatile detector with 254/280 nm built-in

Among the five Gilson detectors, one of the more versatile is the 112 UV/VIS detector. It has built-in 254 nm and 280 nm wavelengths to meet the most common detection requirements. And with optional lamp/filter assemblies, it can detect at 214 nm, 229 nm, and in the visible range of 340-640 nm. A choice of flow cells is offered for prep and analytical sample loads. Other Gilson detectors include variable wavelength UV, electrochemical, refractive index and fluorometric detectors.

Multi-mode fraction collector



UV/VIS detector



Automatic solid phase extraction system



Gradient auto-analytical HPLC system



## A new system that automates solid phase extraction

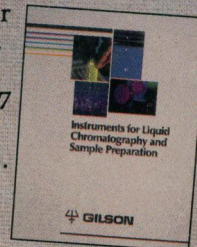
The ASPEC system is one of the newest Gilson products. It automates sample cleanup with extraction columns...and then automatically injects the prepared sample into an on-line HPLC system. Other Gilson systems and instruments for sample prep and injection range from simple sample changers to large capacity auto-sampling injectors for up to 540 samples.

## Eight complete HPLC systems to meet specific needs

Besides individual instruments, we also offer complete HPLC systems. Eight complete series are offered. These are based on gradient or isocratic elution, analytical or prep sample loads, automatic or manual injection. System controllers and software provide both control and data analysis. And peripheral components such as fraction collectors and detectors can be easily added. In fact, the modular system design facilitates upgrading at any time.

## Request your free guide today

*Instruments for Liquid Chromatography and Sample Preparation* provides an overview of these and other Gilson instruments. It includes general specifications to help you determine the suitability of an instrument for your application. For your free copy, call toll-free 1-800-445-7667 (in Wisconsin, 608-836-1551). Or mark the reader service number below.



**GILSON**

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