

## Artifacts in Biological Electron Microscopy.

RICHARD F. E. CRANG and KAREN L. KLOMPARENS, Eds. Plenum, New York, 1988. xx, 233 pp., illus. \$45.

In the foreword to this volume Charlotte L. Ownby notes several examples of biological structures whose reality has been a matter of uncertainty—the Golgi apparatus, once thought to be an artifact of the technique by which it was revealed; bacterial mesosomes, products of chemical fixation once thought to be natural structures; and the microtubular lattice, still of uncertain status. The present book dealing with the problems that gave rise to such uncertainties “is not intended to be an atlas of artifacts, but rather a discussion of the basis for some of the most common artifacts, with advice on how to avoid or at least understand them.” In 11 chapters 14 authors discuss artifacts in the sampling and preparation—chemical fixation, dehydration and epoxy embedding, sectioning, and staining—of specimens, artifacts due to the operation of the instruments, and artifacts associated with photography. Problems in the less traditional procedures of cryo- and analytical electron microscopy are also dealt with.

—K.L.

## Books Received

**Amenable Banach Algebras.** Jean-Paul Pier. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xiv, 161 pp. Paper, \$47.95. Pitman Research Notes in Mathematics Series, vol. 172.

**Analysis of Means in Some Non-Standard Situations.** J. B. Dijkstra. Centrum voor Wiskunde en Informatica, Amsterdam, 1988. x, 138 pp. Paper, Dfl. 21.60. CWI Tract 47.

**Ancient Egypt.** The Land and Its Legacy. T. G. H. James. University of Texas Press, Austin, 1988. 223 pp., illus. \$29.95.

**Animal Cell Biotechnology.** Vol. 3. R. E. Spier and J. B. Griffiths, Eds. Academic Press, San Diego, CA, 1988. xviii, 450 pp., illus. \$96.

**Antarctic Mineral Exploitation.** The Emerging Legal Framework. Francisco Orrego Vicuña. Cambridge University Press, New York, 1988. xvi, 615 pp., illus. \$89.50. Studies in Polar Research.

**Anticarcinogenesis and Radiation Protection.** Peter A. Cerutti, Oddvar F. Nygaard, and Michael G. Simic, Eds. Plenum, New York, 1987. xiv, 509 pp., illus. \$85. From a conference, Gaithersburg, MD, March 1987.

**Antiviral Drug Development.** A Multidisciplinary Approach. Erik De Clercq and Richard T. Walker, Eds. Plenum, New York, 1988. viii, 309 pp., illus. \$59.50. NATO Advanced Science Institutes Series A, vol. 143. From an institute, Lucca, Italy, May 1987.

**Aportes a la Ecología Urbana de la Ciudad de México.** Eduardo H. Rapoport and Ismael R. López-Moreno, Eds. Instituto de Ecología, Mexico City, 1987. 228 pp., illus. Paper, \$15. Publication no. 16.

**The Archaeology of Prehistoric Coastlines.** Geoff Bailey and John Parkinson, Eds. Cambridge University Press, New York, 1988. vi, 154 pp., illus. \$42.50. New Directions in Archaeology.

**Artificial Intelligence and Expert Systems.** Stuart E. Savory, Ed. Horwood, Chichester, U.K., and Wiley, New York, 1988. 278 pp. \$39.95. Ellis Horwood Series in Artificial Intelligence.

**Aspergillus and Aspergillosis.** Hugo Vanden Bossche, Donald W. R. Mackenzie, and Geert Cauwenbergh, Eds. Plenum, New York, 1988. x, 322 pp., illus.

\$59.50. From a symposium, Antwerp, Belgium, June-July 1987.

**Astrophysical and Laboratory Spectroscopy.** R. Brown and J. Lang, Eds. Scottish Universities Summer School in Physics, Edinburgh, 1968. xxiv, 415 pp. £24. From a school, St. Andrews, Scotland, Sept. 1988.

**Atmosphere, Weather and Climate.** Roger G. Barry and Richard J. Chorley. 5th ed. Methuen (Routledge), New York, 1988. xxii, 460 pp., illus. \$99.50; paper, \$27.50.

**Bacterial Cell Surface Techniques.** Ian Hancock and Ian Poxton. Wiley-Interscience, New York, 1988. xvi, 329 pp., illus. \$89.95. Modern Microbiological Methods.

**The Bald Eagle.** Haunts and Habits of a Wilderness Monarch. Jon M. Gerrard and Gary R. Bortolotti. Smithsonian Institution Press, Washington, DC, 1988. xvi, 177 pp., illus. \$24.95; paper, \$12.95. A Smithsonian Nature Book.

**Base Metal Sulfide Deposits in Sedimentary and Volcanic Environments.** Günther H. Friedrich and Peter M. Herzig, Eds. Springer-Verlag, New York, 1988. x, 290 pp., illus. \$65.50. Society for Geology Applied to Mineral Deposits Special Publication no. 5. From a meeting, Aachen, F.R.G., Sept. 1985.

**Basic Histochemistry.** Barbara E. H. Sumner. Wiley-Interscience, New York, 1988. xvi, 271 pp. Spiral bound, \$29.95.

**Before the Indians.** Björn Kurtén. Columbia University Press, New York, 1988. vi, 158 pp., illus., + plates. \$29.95.

**The Biochemistry of Plants.** A Comprehensive Treatise. Vol. 14. Carbohydrates. Jack Preiss, Ed. Academic Press, San Diego, CA, 1988. xvi, 529 pp., illus. \$95.

**Biology.** Norman K. Wessells and Janet L. Hopson. Random House, New York, 1988. xxviii, 1251 pp., illus., + appendixes. \$35.

**Biology and Diseases of the Ferret.** James G. Fox. Lea and Febiger, Philadelphia, 1988. xii, 345 pp., illus. \$45.

**Boundary Layer Climates.** T. R. Oke. 2nd ed. Methuen (Routledge), New York, 1988. xxiv, 435 pp., illus. \$97.50; paper, \$32.50.

**Cadmium.** M. Stoeppeler and M. Piscator, Eds. Springer-Verlag, New York, 1988. xii, 237 pp., illus. \$89.70. Environmental Toxin Series, vol. 2. From a workshop, Juelich, F.R.G., Aug. 1985.

**California Mammals.** E. W. Jameson, Jr., and Hans J. Peters. University of California Press, Berkeley, 1988. xii, 403 pp., illus., + plates. \$24.95. California Natural History Guides, vol. 52.

**Carbohydrate Chemistry.** Monosaccharides and Their Oligomers. Hassan S. El Khadem. Academic Press, San Diego, CA, 1988. x, 256 pp., illus. \$44.95.

**Cell and Molecular Biology of the Uterus.** Wendell W. Leavitt, Ed. Plenum, New York, 1988. vii, 246 pp., illus. \$55. Advances in Experimental Medicine and Biology, vol. 230. From a symposium, Bethesda, MD, Dec. 1986.

**Chemical Activities.** Teacher Edition. Christie L. Borgford and Lee R. Summerlin. American Chemical Society, Washington, DC, 1988. xii, 330 pp., illus. Spiral bound, \$24.94.

**Computation of Solution Equilibria.** A Guide to Methods in Potentiometry, Extraction, and Spectrophotometry. M. Meloun, J. Havel, and E. Höglfeldt. Horwood, Chichester, U.K., and Halsted (Wiley), New York, 1988. xii, 297 pp., illus. \$69.95. Ellis Horwood Series in Analytical Chemistry.

**Computer Graphics for Surveying.** P. H. Milne. Spon, London, 1988 (U.S. distributor, Chapman and Hall, New York). xiv, 241 pp., illus. \$57.50; paper, \$27.50.

**Computer Translation of Natural Language.** Walter Goshawke, Ian D. K. Kelly, and J. David Wigg. Sigma, Wilmslow, U.K., and Halsted (Wiley), New York, 1988. xiv, 275 pp. Paper, \$29.95.

**Computing for Engineers and Scientists with Fortran 77.** Daniel D. McCrackan and William I. Salmon. 2nd ed. Wiley, New York, 1988. xiv, 730 pp., illus. Paper, \$35.

**Consumer Safety Regulation.** Putting a Price on Life and Limb. Peter Asch. Oxford University Press, New York, 1988. x, 172 pp., illus. \$24.95.

**Coral Reef Geomorphology.** André Guilcher. Wiley, New York, 1988. xiv, 228 pp., illus. \$67.95. Coastal Morphology and Research.

**Coxsackieviruses.** A General Update. Mauro Bendinelli and Herman Friedman, Eds. Plenum, New York, 1988. xx, 430 pp., illus. \$79.50. Infectious Agents and Pathogenesis.

**Cross-Linked Polymers.** Chemistry, Properties, and Applications. Ray A. Dickie, S. S. Labana, and Ronald S.

Bauer, Eds. American Chemical Society, Washington, DC, 1988. x, 492 pp., illus. \$99.95. ACS Symposium Series, vol. 367. Based on a symposium, Denver, CO, April, 1987.

**Cytochrome Systems.** Molecular Biology and Bioenergetics. S. Papa, B. Chance, and L. Ernster, Eds. Plenum, New York, 1987. xvi, 805 pp., illus. \$125. From a workshop, Bari, Italy, April 1987.

**Decision, Probability, and Utility.** Selected Readings. Peter Gärdenfors and Nils-Eric Sahlin, Eds. Cambridge University Press, New York, 1988. x, 449 pp., illus. \$49.50; paper, \$15.95.

**Developmental Biology.** Scott F. Gilbert. 2nd ed. Sinauer, Sunderland, MA, 1988. xvi, 843 pp., illus. \$38.95.

**Dictionary of Antibiotics and Related Substances.** B. W. Bycroft, Ed. Chapman and Hall, New York, 1988. xviii, 944 pp., illus. \$620.

**Differential Geometry Applied to Curve and Surface Design.** Vol. 1. Foundations. Anthony W. Nutbourne and Ralph R. Martin. Horwood, Chichester, U.K., and Halsted (Wiley), New York, 1988. 282 pp., illus. \$115.

**Digital Pictures.** Representation and Compression. Arun N. Netravali and Barry G. Haskell. Plenum, New York, 1988. xvi, 586 pp., illus. \$75. Applications of Communications Theory.

**Energy Stability and Convection.** G. P. Galdi and B. Straughan, Eds. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xvi, 448 pp., illus. Paper, \$74.95. Pitman Research Notes in Mathematics, vol. 168. From a workshop, Capri, Italy, May 1986.

**Environmental Science.** An Introduction. G. Tyler Miller, Jr. 2nd ed. Wadsworth, Belmont, CA, 1988. xiv, 407 pp., illus., + appendixes. \$35.25.

**F<sup>+</sup> Centers in Alkali Halides.** Mladen Georgiev. Springer-Verlag, New York, 1988. xii, 282 pp., illus. \$26.40. Lecture Notes in Physics, vol. 298.

**Facets of Emotion.** Recent Research. Klaus R. Scherer, Ed. Erlbaum, Hillsdale, NJ, 1988. x, 267 pp. \$36; paper, \$19.95.

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**Fifty Years of the Southern Sociological Society.** Change and Continuity in a Professional Society. Ida Harper Simpson with Richard L. Simpson. University of Georgia Press, Athens, 1988. xii, 279 pp. \$30.

**The Final Frontier.** The Rise and Fall of the American Rocket State. Dale Carter. Verso (Routledge), New York, 1988. viii, 280 pp. \$45; paper, \$15.95. The Haymarket Series.

**Hierarchy.** Perspectives for Ecological Complexity. T. F. H. Allen and Thomas B. Starr. University of Chicago Press, Chicago, 1988. xvi, 310 pp., illus. Paper, \$12.95. Reprint, 1982 ed.

**Human Evolution.** H. James Birx. Thomas, Springfield, IL, 1988. xviii, 358 pp., illus. \$37.50.

**Human Reproductive Behaviour.** A Darwinian Perspective. Laura Betzig, Monique Borgerhoff Mulder, and Paul Turke, Eds. Cambridge University Press, New York, 1988. viii, 363 pp., illus. \$75; paper, \$24.95. Cambridge Studies in Biological Anthropology.

**Hydrogen in Intermetallic Compounds I.** Electronic, Thermodynamic, and Crystallographic Properties, Preparation. L. Schlappbach, Ed. Springer-Verlag, New York, 1988. xiv, 350 pp., illus. \$69.50. Topics in Applied Physics, vol. 63.

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**Inhibin-Non-Steroidal Regulation of Follicle Stimulating Hormone Secretion.** H. G. Burger *et al.*, Eds. Raven, New York, 1988. xvi, 315 pp., illus. \$69. Sero Symposium Publications from Raven Press, vol. 42. From a symposium, Tokyo, 1987.

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**Kinetic Aspects of Analytical Chemistry.** Horacio A. Mottola. Wiley-Interscience, New York, 1988. xvi, 285 pp., illus. \$69.95. Chemical Analysis, vol. 96.

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**A Man Who Loved the Stars.** The Autobiography of John A. Brashear. University of Pittsburgh Press, Pittsburgh, 1988. xviii, 190 pp. + plates. \$19.95; paper, \$9.95. Reprint, 1924 edition.

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**The Nature of Information.** Paul Young. Praeger, New York, 1987. x, 192 pp. \$35.

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**Nemesis.** Richard Muller. Weidenfeld and Nicolson, New York, 1988. xiv, 193 pp., illus. \$17.95.

**Neurocomputing.** The Foundations of Research. James A. Anderson and Edward Rosenfeld, Eds. MIT Press, Cambridge, MA, 1988. xxii, 729 pp., illus. \$55. Forty-three reprinted papers, 1890-1987, with introductions.

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**Nonlinear Partial Differential Equations and Their Applications.** College de France Seminar. Vol. 8. H. Brezis and J. L. Lions, Eds. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xvi, 220 pp. Paper, \$51.95. Pitman Research Notes in Mathematics, vol. 166. From a lecture series, 1984-1985.

**Nonlinear Water Waves.** K. Horikawa and H.

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**Nonparametric Statistics for the Behavioral Sciences.** Sidney Siegel and N. John Castellan, Jr. 2nd ed. McGraw-Hill, New York, 1988. xxvi, 399 pp. \$45.95.

**Nonstandard Analysis.** Alain Robert. Wiley-Interscience, New York, 1988. xx, 156 pp., illus. \$34.95. Translated from the French edition (Lausanne, 1985).

**North American Terrestrial Vegetation.** Michael G. Barbour and William Dwight Billings, Eds. Cambridge University Press, New York, 1988. x, 434 pp., illus. \$49.50.

**Nucleus.** History of Atomic Energy of Canada Limited. Robert Bothwell. University of Toronto Press, Toronto, 1988. xx, 524 pp., illus., + plates. \$34.95.

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**Photorefractive Materials and Their Applications I. Fundamental Phenomena.** P. Gunter and J.-P. Huignard, Eds. Springer-Verlag, New York, 1988. xvi, 295 pp., illus. \$69.50. Topics in Applied Physics, vol. 61.

**Physical Organic Chemistry.** G. Boche *et al.* Springer-Verlag, New York, 1988. viii, 209 pp., illus. \$89.70. Topics in Current Chemistry, vol. 146.

**Physics.** Joseph W. Kane and Morton M. Sternheim. 3rd ed. Wiley, New York, 1988. xx, 843 pp., illus. \$51.25.

**Planets and Perception.** Telescopic Views and Interpretations. William Sheehan. University of Arizona Press, Tucson, 1988. xii, 310 pp., illus. \$35.

**The Practical Archaeologist.** How We Know What We Know about the Past. Jane McIntosh. Facts on File, New York, 1988. 192 pp., illus. Paper \$12.95.

**Principles and Methods of Temperature Measurements.** Thomas D. McGee. Wiley-Interscience, New York, 1988. xv, 581 pp., illus. \$54.95.

**Probleme Genereller Determiniertheit Allen Geschehens.** Bernhard Rensch. Parey, Berlin, 1988. 121 pp., illus. DM 34. Biologie und Evolution Interdisziplinär.

**Proceedings of the Eighteenth Lunar and Planetary Science Conference.** (Houston, TX, March 1987.) Graham Ryder, Ed. Cambridge University Press, New York, and Lunar and Planetary Institute, Houston, TX, 1988. xiv, 753 pp., illus., + plates. \$65.

**Prospects of Mathematical Science.** T. Mitsui, K. Nagasaka, and T. Kano, Eds. World Scientific, Teaneck, NJ, 1988. xviii, 266 pp. \$53; paper, \$28. From a symposium, Tokyo, Japan, Nov. 1986.

**The Psychobiology of Bulimia Nervosa.** K. M. Pirke, W. Vandereycken, and D. Ploog, Eds. Springer-Verlag, New York, 1988. viii, 181 pp., illus. Paper, \$44. Based on a workshop, Munich, F.R.G., April 1987.

**Psycho-Logic.** Jan Smedslund. Springer-Verlag, New York, 1988. x, 112 pp. \$35.

**The Psychologist's Companion.** A Guide to Scientific Writing for Students and Researchers. Robert J. Sternberg. 2nd ed. Cambridge University Press, New York, and The British Psychological Society, Leicester, 1988. xii, 208 pp. \$29.95; paper, \$9.95.

**The Psychology of the Dentist-Patient Relationship.** Stephen Bochner. Springer-Verlag, New York, 1988. viii, 187 pp. \$50. Contributions to Psychology and Medicine.

**The QCD Vacuum, Hadrons and the Superdense Matter.** E. V. Shuryak. World Scientific, Teaneck, NJ, 1988. xiv, 401 pp., illus. \$78; paper, \$36. World Scientific Lecture Notes in Physics, vol. 8.

**Quantitative Analysis of Mineral and Energy Resources.** C. F. Chung, A. G. Fabbri, and R. Sinding-Larsen, Eds. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xviii, 738 pp., illus. \$139. NATO Advanced Science Institutes Series C, vol. 223. From an institute, Lucca, Italy, June-July 1986.

**Quantum Theory of Polymers as Solids.** János J. Ladik. Plenum, New York, 1988. xiv, 417 pp., illus. \$69.50.

**Radiative Transfer in Nontransparent, Dispersed Media.** Harald Reiss. Springer-Verlag, New York, 1988. x, 205 pp., illus. \$65.50. Springer Tracts in Modern Physics, vol. 113.

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**Ring Theory.** Vol. 1. Louis H. Rowen. Academic Press, San Diego, CA, 1988. xxiv, 538 pp. \$89.50. Pure and Applied Mathematics, vol. 127.

**Saving the Tropical Forests.** Judith Gradwohl and Russell Greenberg. Earthscan, Washington, DC, 1988. 207 pp., illus. Paper, \$12.95.

**Sensitivity Analysis in Linear Regression.** Sampit Chatterjee and Ali S. Hadi. Wiley, New York, 1988. xvi, 315 pp., illus. \$29.95. Wiley Series in Probability and Mathematical Statistics.

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**Solute Transport in Plant Cells and Tissues.** D. A. Baker and J. L. Hall, Eds. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xx, 592 pp., illus. \$175. Monographs and Surveys in the Biosciences.

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**Statistical Ecology.** A Primer on Methods and Computing. John A. Ludwig and James F. Reynolds. Wiley-Interscience, New York, 1988. xx, 337 pp., illus., + floppy disk in pocket. \$34.95.

**Stress and Coping across Development.** Tiffany M. Field, Philip M. McCabe, and Neil Schneiderman, Eds. Erlbaum, Hillsdale, NJ, 1988. xvi, 264 pp. \$34.95. From a symposium, Miami, FL, Feb. 1984.

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**Supernova Remnants and the Interstellar Medium.** R. S. Roger and T. L. Landecker, Eds. Cambridge University Press, New York, 1988. xii, 540 pp., illus. \$59.50. From a colloquium, Peniticon, B.C., June 1987.

**Superstrings.** Peter G. O. Freund and K. T. Mahanthappa, Eds. Plenum, New York, 1988. x, 350 pp., illus. \$75. NATO Advanced Science Institutes Series B, vol. 175. From a workshop, Boulder, CO, July-Aug. 1987.

**Text and Document Processing in Science and Technology.** Robert Ransom. Sigma, Wilmslow, U.K., and Halsted (Wiley), New York, 1988. 239 pp., illus. Paper, \$24.95.

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**Tribe and Polity in Late Prehistoric Europe.** Demography, Production, and Exchange in the Evolution of Complex Social Systems. D. Blair Gibson and Michael N. Geselowitz, Eds. Plenum, New York, 1988. xii, 234 pp., illus. \$42.50. From a symposium, Toronto, Ontario, May 1987.

**Understanding Z.** A Specification Language and Its Formal Semantics. J. M. Spivey. Cambridge University Press, New York, 1988. viii, 131 pp. \$27.95. Cambridge Tracts in Theoretical Computer Science, vol. 3.

**Urban Change and Poverty.** Michael G. H. McGeary and Laurence E. Lynn, Jr., Eds. National Academy Press, Washington, DC, 1988. xii, 379 pp., illus. \$29.95.

**U.S.-Soviet Security Cooperation.** Achievements, Failures, Lessons. Alexander L. George, Philip J. Farley, and Alexander Dallin, Eds. Oxford University Press, New York, 1988. xii, 746 pp. \$42; paper, \$18.95.

**Vector Calculus.** Jerrold E. Marsden and Anthony J. Tromba. 3rd ed. Freeman, New York, 1988. xiv, 655 pp., illus. \$38.95.

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**Vision, Dessin, Créativité.** Betty Edwards. Mardaga, Liège, 1988. xiv, 260 pp., illus. Paper, F 222. Psychologie et Sciences Humaines, vol. 169. Translated from the English edition (New York, 1986).

**Yangtze.** Nature, History, and the River. Lyman P. Van Slyke. Addison-Wesley, Reading, MA, 1988. xii, 211 pp., illus. \$14.95. A Portable Stanford Book.

**Zimbabwe.** Industrial and Commercial Energy Use. Richard H. Hosier, Ed. The Beijer Institute, Stockholm, and The Scandinavian Institute of African Studies, Uppsala, 1988. viii, 142 pp. SKr 75. Energy, Environment and Development in Africa, vol. 10.

**Zoonoses and Communicable Diseases Common to Man and Animals.** Pedro N. Acha and Boris Szyfres. 2nd ed. Pan American Health Organization, Washington, DC, 1987. xxii, 963 pp., illus. Paper, \$20. Scientific Publication No. 503.

## Products & Materials

### True 3-D Graphic Display

The SpaceGraph is a computer display system that shows objects with depth, not depth cues. Images appear as luminous drawings floating within a dark void; no special glasses are needed. Also, viewers can look over, under, and around the image by moving their heads. The user can interact with the three-dimensional (3-D) image by changing its size, cutting away pieces, measuring internal distances, and rotating it. The display image measures approximately 26 cm by 26 cm by 26 cm and can contain 32,768 points. The black-and-white display system has 256 brightness levels. The display comes with operation software subroutines for both programmers and nonprogrammers. The SpaceGraph is compatible with IBM AT and RT personal computers. BBN Laboratories. Circle 550.

### Splitter for Dual-Detection SFC

A modified flow splitter is available that allows the simultaneous monitoring of two detectors during supercritical flow chromatography (SFC). For example, a flame ionization detector (or other universal detector) can be paired with a ultraviolet-visible absorbance detector (or other selective detector) to obtain two forms of solute information. When two detectors so specialize, dual detection increases both selectivity and universal response. Simultaneous detection also reduces analysis time, because two chromatograms of the same component are obtained from a single trial. Lee Scientific. Circle 551.

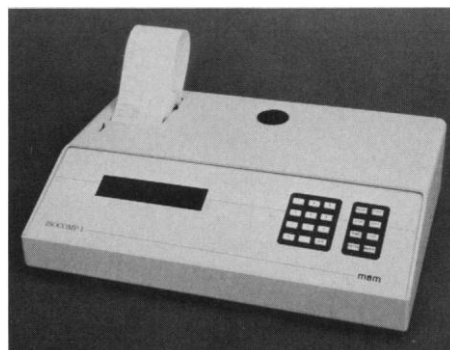
### Complement

Rabbit and guinea pig complement is available for fixation assays. The guinea pig complement is derived from pooled blood; serum is prepared quickly, frozen at  $-80^{\circ}\text{C}$ , and lyophilized. The rabbit complement is available in four grades: complement opti-

mized for histocompatibility antigen typing, complement optimized for use with monoclonal antibodies to human lymphocytes, complement optimized for use with monoclonal antibodies to mouse lymphocytes, and complement from rabbits 21 to 28 days old. Sera-lab (United Kingdom). Circle 552.

### Single-Well Gamma Counter

The ISOCOMP I is a gamma counter and data-processing system. The compact single-well instrument has an RS-232 computer interface, 12 user-definable assay programs,



automatic background subtraction, and 10 data reduction methods, including counts per minute, ratio, and standard curve routines.  $^{57}\text{Co}$  and  $^{125}\text{I}$  can be counted simultaneously. MGM Instruments. Circle 548.

### Bioreactor Control System

The Mentor monitors and controls the functions of a fermenter or bioreactor. Menu-driven software allows automatic control of process parameters by time-based or event-based protocols. The monitor displays set points and actual values with trend indications. The Mentor is compatible with many vessel sizes and types. Sensor elements, such as electrodes, tachometers, pH meters, thermometers, and antifoam probes, connect directly to the controller. The Mentor's software provides data logging and proportional integral derivative control for all parameters. Nomad Systems. Circle 558.

### Fast Fourier Transform Software Library

RMFTL is a fast Fourier transform (FFT) software library with arbitrary dimensional capacity. Its transform routines are based on a new algorithm that reduces the number of complex multiplications required to evaluate

a multidimensional FFT by a factor inversely proportional to the dimensionality of the problem relative to other FFT methods. This algorithm does not ever require the data array to be transposed, thus permitting efficient transformation and manipulation of large externally stored arrays. RMFTL consists of 110 user-callable Fortran routines. The library is supplied on 9-track magnetic tape for either IBM VM/CMS or DEC VAX/VMS computers. \$8,500 to \$12,800. Davis Associates. Circle 553.

### Digital Imaging SEM

The model 1810 scanning electron microscope (SEM) displays real-time images on its 12-inch monitor. It can resolve  $40\text{ \AA}$  and features push-button control of magnification from  $\times 10$  to  $\times 200,000$  and of voltage from 0 to 30 kV. The model 1810 automatically optimizes contrast and brightness for either recording or for instantaneous display viewing. The specimen chamber measures 280 mm wide by 340 mm deep by 180 mm high internally. The universal specimen stage can move 1800 mm in the  $x$  plane, move 1800 mm in the  $y$  plane, move 52 mm in the  $z$  plane, tilt  $-5^{\circ}$  to  $+90^{\circ}$ , and rotate continuously  $360^{\circ}$ . Amray. Circle 559.

### Literature

*Scientists Report Better Results After a Nice Warm Bath* is a brochure about a washing device for transfer membranes used in DNA blots, colony and plaque lifts, and similar applications. Schleicher & Schuell. Circle 566.

The *Quality Measuring Instruments & Precision Tools* catalog features electronic, mechanical, and optical precision instruments, including electronic calipers, optical measuring equipment, and vertical measuring systems. Fred V. Fowler. Circle 567.

The *1989-90 General Catalog* features more than 50,000 products, including chemicals, inorganic membrane filters, clean room supplies, vacuum pumps, and chromatography columns, chemicals, and supplies. Sargent-Welch Scientific. Circle 569.

*Biosystems Reporter* is a quarterly newsletter for life scientists; the first issue highlights automatic DNA sequencing. Applied Biosystems, Foster City Biosystems Division. Circle 571.

*The Diode-Array Advantage in UV/Visible Spectroscopy* is a book that describes the advantages of diode-array spectrophotometers over those based on mechanical-scanning technology. Hewlett-Packard. Circle 572.

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.

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## Qué SRA, SRA.



# Personnel Placement

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

## LINE CLASSIFIED ADVERTISING DEADLINES:

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

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

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

## To ESTIMATE ad cost:

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

## CANCELLATION POLICY:

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

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

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

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

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

Blind ad replies should be addressed as follows:

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

## POSITIONS WANTED

**Biochemist, Ph.D. (1978).** Extensive teaching experience to medical and graduate students. Principle investigator of a study on sickle cell anemia, and other related disorders in non American population. Currently principle investigator in a study designed to evaluate a newly developed antisickling agent. Good publications. Strong collaborative ties with international academic and research institutes. Seeks academic or clinical research position. Box 153, SCIENCE.

**Protein Biochemist, Molecular Biologist, Ph.D.** Extensive experience in protein purification, antibody production. Expertise in microbial physiology, anaerobic techniques, tissue culture, nucleic acid extractions, plasmid preparations, northern, western blots and much more. Seeking position in industry/academia. Box 155, SCIENCE.

## POSITIONS WANTED

**Immunochemist, Ph.D.** with a proven record in immunoassay development and protein purification. Currently employed at a reputable international research organization. Seeking a challenging position in research and development. Box 147.

**Microbial Physiologist.** To receive January Ph.D. from Cornell University. Experience in small-scale fermentation, HPLC, gel filtration, affinity chromatography, measurement of intracellular metabolites. Seeking entry-level research position in public/private sector. Box 158, SCIENCE.

**Toxicologist, Consulting:** Board certified Toxicologist; Ph.D. biochemistry; R&D, product evaluation, literature analysis, health hazard and risk assessment, occupational and environmental regulations, science/legal interface. Excellent credentials and communication skills. Box 157, SCIENCE.

## POSITIONS OPEN

**ANIMAL VIROLOGIST**—The Department of Veterinary Sciences, University of Wyoming, has a 12-month tenure-track position at the assistant or associate professor level in veterinary virology. D.V.M./Ph.D. or Ph.D. required. Duties include approximately 60% commitment to conduct diagnostics within the Wyoming State Veterinary Laboratory; approximately 20% commitment to teach and 20% commitment to research. Technical support and competitive salary are available. Send a current curriculum vitae and three letters of reference to: **Dr. Ken Mills, Department of Veterinary Sciences, 1190 Jackson, Laramie, WY 82070.** Applications accepted through 1 January 1989. *Wyoming is an Equal Employment Opportunity Employer.*

## ASSISTANT PROFESSOR M. D. ANDERSON CANCER CENTER

A position is available immediately to join a laboratory investigating immunotoxins directed to human tumors. Applicants should have a recent Ph.D. in molecular biology with a strong background in recombinant DNA technology. Experience in immunoglobulin gene molecular biology is preferred. Projects will focus on development of recombinant antibodies and immunotoxins. Send curriculum vitae, thesis abstract, and names and addresses of three references to: **Dr. Jack A. Roth, M. D. Anderson Hospital and Tumor Institute, Box 109, 1515 Holcombe Boulevard, Houston, TX 77030.** An Equal Opportunity/Affirmative Action Employer.

Applications are invited for a position at the **ASSISTANT PROFESSOR** level in the Department of Radiation Oncology of McGill University. The appointee would join a small research group working in tumor biology and experimental therapeutics and the position could be of interest to radiobiologists, tumor or cell biologists. The applicants should have a Ph.D./M.D. and 2 to 3 years of relevant experience.

In accordance with Canadian Immigration requirements this notice is directed initially to Canadian citizens and permanent residents. Please send curriculum vitae and names of three referees to: **Dr. Shirley Lehnert, Radiation Oncology, Montreal General Hospital, 1650 Cedar Avenue, Montreal, Quebec H3G 1A4, Canada.**

The University of California, San Diego, **ASSISTANT PROFESSOR, BIOCHEMISTRY.** The Chemistry Department expects to have a position for a tenure-track opening for an outstanding candidate in the biochemistry area. Candidate must have a Ph.D. and a demonstrated ability for creative research and teaching at the undergraduate and graduate levels. Duties would include teaching in the Cell-Biology and Biochemistry Course in the Medical School. All applications received through 1 December 1988 will be given thorough consideration. Salary commensurate with experience and based on the University of California pay scale. Candidates should send curriculum vitae, a list of publications, reprints of representative papers, a summary of research plans and names and addresses of three references to: **Chairman, Biochemistry Search Committee, Department of Chemistry B-032, University of California, San Diego, La Jolla, CA 92093-0332.**

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

## POSITIONS OPEN

**ASSISTANT PROFESSOR**—Tenure-track in analytical or inorganic chemistry starting August, 1989. Must possess doctorate; subsequent postdoctoral experience is preferred. Must establish a vigorous program of research. Commitment to excellence in undergraduate and graduate teaching essential. Send application, including a complete résumé, a description of research plans, and three letters of recommendation, by 14 November 1988 to: **Professor T. Adrian George, Department of Chemistry, University of Nebraska—Lincoln, Lincoln, NE 68588-0304. Telephone: 402-472-3513.** *Affirmative Action/Equal Opportunity Employer.*

## ASSISTANT PROFESSOR

The Department of Chemistry, Philadelphia College of Pharmacy and Science, invites applications for a full-time, tenure-track faculty position at the assistant professor level, starting August 1989. We seek a candidate who will establish a vigorous, productive research program and who will excel at teaching in both our undergraduate and graduate programs. Applicants in the areas of biochemistry or molecular biology are preferred, although exceptional candidates from other areas of chemistry will also be considered.

The Philadelphia College of Pharmacy and Science is an independent, co-educational institution with 1,500 undergraduate science majors in eight disciplines, 120 full-time faculty, and 60 graduate students. The Department of Chemistry has 14 faculty members and offers ACS approved undergraduate degrees in chemistry and biochemistry. Graduate programs lead to the M.S. and Ph.D. degrees in medicinal chemistry and pharmacognosy, and may involve interdisciplinary research with the Departments of Biology, Pharmacology and Toxicology, and Pharmaceutics.

Applications should consist of curriculum vitae, a brief statement of teaching experience and interests, and a description of research projects that would be pursued, as well as start-up requirements. Applicants should also arrange to have undergraduate and graduate transcripts, and three letters of recommendation, sent by 15 November 1988 to:

**Dr. Peter Campbell**  
Chair, Faculty Search Committee  
Philadelphia College of Pharmacy and Science  
Woodland Avenue at 43rd Street  
Philadelphia, PA 19104  
Telephone: 215-596-8839

*Equal Opportunity/Affirmative Action Employer*

The Department of Microbiology at The Ohio State University has a tenure-track vacancy to be filled by Autumn 1989 at the **ASSISTANT PROFESSOR** level. Applicants must have a Ph.D., postdoctoral research experience and demonstrated research productivity in molecular or cellular immunology. Candidates with research interests in an infectious disease system are particularly encouraged to apply. Participation in the Department's instruction of undergraduate and graduate students is expected. Excellent laboratory space and Departmental support are available to establish independent and interactive research programs. Candidates should submit curriculum vitae, a summary of research plans and names of three referees by 15 December 1988 to: **Dr. John N. Reeve, Chairperson, Department of Microbiology, 484 West 12th Avenue, Columbus, OH 43210.** *The Ohio State University is an Affirmative Action/Equal Opportunity Employer and specifically invites and encourages minority and women applicants.*

## ASSISTANT PROFESSOR NEUROBIOLOGY DUKE UNIVERSITY

Applications are invited for a tenure-track position in the Department of Zoology at Duke University. We are especially interested in candidates with postdoctoral experience and high research promise in neurobiology, particularly in the cellular, molecular, and/or developmental areas. In addition to maintaining a vigorous research program responsibilities will include teaching at the graduate and undergraduate levels. Send curriculum vitae, description of research interests, plus the names and addresses of three references by 30 November 1988 to: **Chairman, Neurobiology Search Committee, Department of Zoology, Duke University, Durham, NC 27706.** *Duke University is an Equal Opportunity/Affirmative Action Employer. Women and members of minority groups are encouraged to apply.*



## POSITIONS OPEN

### ASSISTANT PROFESSOR IN CRANIOFACIAL DEVELOPMENT

The Department of Plastic Surgery and Division of Craniofacial Surgery at the University of Virginia in Charlottesville, Virginia, is seeking an individual with experience and training in craniofacial skeletal development. Optimally, the individual will have had experience in research related to cell biology, collagen chemistry or glycosaminoglycan research. The opening for this academic position is 1 January 1989. Salary is negotiable depending upon the experience and qualifications of the individual. The qualified individual will have postdoctoral research experience and have the ability to conduct independent research. The research effort in craniofacial biology at the University of Virginia is expected to be an expanding effort involving multiple disciplines over the course of the next 5 to 10 years. It is expected that the individual will be capable of coordinating a full range of research activities, and collaborate with individuals already present in the University community.

Applications should be received by 15 December 1988. Please send curriculum vitae, reprints of previous publications, plus the names, addresses, and telephone numbers of three references to:

**Dr. John A. Persing**  
Division of Craniofacial Surgery  
Department of Plastic Surgery  
Box 376  
University of Virginia  
Health Sciences Center  
Charlottesville, VA 22908

*The University of Virginia is an Equal Opportunity Employer.*

### THE SALK INSTITUTE ASSISTANT PROFESSOR MOLECULAR NEUROSCIENCE

The Salk Institute for Biological Studies invites applications for a new junior faculty appointment in the Molecular Neurobiology Laboratory (MNL). We seek candidates with research interests and experience in the application of molecular genetics to the study of the nervous system, and are particularly interested in candidates addressing questions related to neural development. Current areas of research in MNL include the study of neurotransmitter receptor genes (S. Heine-mann), neural development in *Drosophila* (J. Thomas), neural induction in *Xenopus* (C. Kintner), and myelination (G. Lemke). The Salk Institute offers a highly interactive environment, with a number of research groups working in areas of molecular biology and the neurosciences. Interested individuals should submit curriculum vitae, a brief statement of present and future research interests, and the names of three references to:

**Molecular Neuroscience Search Committee**  
The Salk Institute  
P.O. Box 85800  
San Diego, CA 92138

*The Salk Institute is an Equal Opportunity Employer, M/F/H/V.*

### DEPARTMENT OF PSYCHOLOGY CORNELL UNIVERSITY POSITION IN COGNITION AND/OR PERCEPTION

The Department of Psychology at Cornell University is considering candidates for a tenure-track ASSISTANT PROFESSORSHIP in cognition and/or perception. Areas of specialization are completely open as are all perspectives (including computational, cross-cultural, developmental and mathematical). Exceptionally well-qualified individuals may apply at the associate or full professor level, although an appointment at such a rank has not yet been authorized. Dossier including curriculum vitae, sample reprints, and preprints, and at least three letters of recommendation should be sent to:

**Cognition/Perception Search Committee**  
c/o Elke Schofield  
Department of Psychology  
223 Uris Hall  
Cornell University  
Ithaca, NY 14853-7601

Review of applications will begin 15 November 1988 and will continue until an appointment has been made. *Cornell University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**TWO POSITIONS IN PSYCHOLOGY:** The Duke University Department of Psychology announces two openings at the ASSISTANT PROFESSOR (tenure-track) level to begin fall 1989. Interest in undergraduate and graduate teaching is important. Salaries are negotiable. **Quantitative methods:** A person broadly trained in experimental methodology and quantitative methods. Area of quantitative emphasis is open. An active and excellent empirical research program is expected; the preferred areas of interest include personality/social, neuroscience, and cognition. **Developmental:** A person broadly trained in developmental psychology to begin Fall 1989. Preference will be given to individuals whose research interests pertain to problems in human cognitive development in areas such as perception, language and communication, information processing, etc., and the neural organizations supporting such processes. Application materials, which should include curriculum vitae and at least three letters of recommendation, should be directed to: **Robert C. Carson, Chair, Personnel Committee, Department of Psychology, Duke University, Durham, NC 27706.** *Duke University is an Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT PROFESSOR: MOLECULAR BIOLOGY

The Department of Biochemistry and the Institute of Human Genetics at the University of Minnesota Medical School invite applications for a tenure-track position at the assistant professor level. Preference will be given to individuals who have had at least 2 years of postdoctoral experience with a strong background in eukaryotic molecular genetics, who show promise of developing a vigorous research program, and whose research interests complement those of the current faculty. Applicants must be qualified to teach in the graduate and professional school courses offered by the Department and Institute. Applications must be postmarked no later than 31 December 1988. Send curriculum vitae, a concise plan for future research, and names of three references to: **Search Committee, Department of Biochemistry, Medical School, 4-225 Millard Hall, University of Minnesota, Minneapolis, MN 55455.** *The University of Minnesota is an Equal Opportunity Educator and Employer, and specifically invites and encourages applications from women and minorities.*

**ASSISTANT PROFESSOR PHARMACOLOGY.** The Division invites applications for a tenure-track position at the assistant professor level with a primary appointment in the School of Pharmacy. Must have a Ph.D. degree and postdoctoral experience in pharmacology or toxicology and be a U.S. citizen or have the legal right to work in this country. Will be expected to assume an active teaching role and establish an extramurally funded research program. Send résumé, statement of research interests, and names of three references to: **Robert C. Lanman, Ph.D., Chairman, Division of Pharmacology, University of Missouri-Kansas City, 2411 Holmes Street, Kansas City, MO 64108.** *The University of Missouri is an Equal Opportunity Employer.*

### ASSISTANT/ASSOCIATE PROFESSOR ENVIRONMENTAL TOXICOLOGY

The Department of Environmental Health Sciences, School of Public Health and Tropical Medicine, Tulane University, invites applications for a tenure-track faculty position at a level based on professional experience. The applicant should be trained in environmental toxicology with a Ph.D. or an equivalent degree. It is desirable that the applicant have experience in toxicology, environmental health and environmental risk assessment and have the ability to develop a research program in aquatic toxicology. Those interested should send curriculum vitae and three references by 30 November 1988 to:

**Dr. A. J. Englehardt, Jr., Chairman**  
Tulane University  
Department of Environmental Health Sciences  
1430 Tulane Avenue  
New Orleans, LA 70112  
*Tulane University is an Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN ASSISTANT PROFESSOR PROTEIN CRYSTALLOGRAPHY

Applications are invited for a tenure-track position in protein crystallography at the assistant professor level starting August, 1989. Applicants are required to have a doctoral degree and postdoctoral experience. The successful candidate is expected to develop a vigorous independent research program and participate in our undergraduate and graduate teaching programs. He/she will join a strong group of molecular biophysicists including two diffractionists as part of the commitment to establish an outstanding program in structural biology. Starting salary will be in the range of \$33,000 to \$36,000, depending on experience. An additional 2-month summer salary may be generated from teaching or research sources. In order to ensure full consideration, applications must be received by 15 November 1988. Interviews may be conducted before 15 November 1988, but all applications received by that date will receive full consideration. Applicants should submit curriculum vitae, a list of publications, a short statement of future research plans, and the names of at least three references to: **Dr. Andrew H.-J. Wang, Chairman, Search Committee, Department of Physiology and Biophysics, 524 Burrill Hall, The University of Illinois at Urbana-Champaign, 407 South Goodwin Avenue, Urbana, IL 61801. Telephone: 217-244-6637.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

### ASSISTANT PROFESSOR POSITIONS DUKE UNIVERSITY MEDICAL CENTER SECTION OF CELL GROWTH, REGULATION, AND ONCOGENESIS DUKE COMPREHENSIVE CANCER CENTER

Duke University Comprehensive Cancer Center invites applications for tenure-track positions in a new Section of Cell Growth, Regulation, and Oncogenesis at the level of assistant professor. Investigators working at the molecular level in any area of cancer biology are encouraged to apply, but special consideration will be given to those working in the areas of growth and differentiation factors, signal transduction, molecular basis of oncogene action including recessive oncogenes and multiple drug resistance. Applicants with postdoctoral experience should have demonstrated high potential for imaginative substantial independent research. Successful candidates will also be appointed into a basic science department within the Medical Center.

Applicants should send curriculum vitae, and a brief description of present and proposed research to: **Dr. Robert M. Bell, Head, Section of Cell Growth, Regulation and Oncogenesis, Duke Comprehensive Cancer Center, Box 3814, Durham, NC 27710.** Applicants should arrange for three or more letters of recommendations to be forwarded to the same address.

To be assured of full consideration, application should be received by 5 December 1988.

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

### ASSISTANT/ASSOCIATE/ FULL PROFESSOR

Applications are invited for a tenure-track position in the Department of Anatomy of the University of South Carolina School of Medicine available 1 June 1989. The area of research interest is open but preference will be given to individuals who are funded and have a strong background in biochemistry, cell biology, and/or molecular biology. Candidates with research interests in developmental biology, cardiovascular cell biology and/or the neurosciences are encouraged to apply. The successful candidate will be expected to participate in teaching one of the following courses: embryology, gross anatomy, microanatomy or neuroanatomy. Applicants should send curriculum vitae and the names of three references to: **Dr. Louis Terracio, Department of Anatomy, University of South Carolina, School of Medicine, Columbia, SC 29208.** *An Equal Opportunity M/F Affirmative Action Employer.*

## POSITIONS OPEN

**ASSOCIATE FOR ENVIRONMENTAL QUALITY** sought by The Conservation Foundation, environmental policy research organization, to work primarily on Superfund Project. Associate will draft issue papers and background materials and participate in planning and implementation of research effort. Extensive interaction required with representatives of industry, government, and environmental area. Advanced degree in public or environmental policy or related area and 3 years of environmental experience required. Superfund policy and implementation background preferred. Send résumé to:

M. J. Jamar  
The Conservation Foundation  
1250 24th Street, N.W.  
Washington, D.C. 20037

**AVIAN/WATERFOWL ECOLOGIST.** A research scientist position with the USDA Forest Service, Pacific Northwest Research Station's Forestry Sciences Laboratory in Juneau, Alaska. May be filled on either a permanent basis, or as a 2-year postdoctoral research appointment. The incumbent will develop and conduct an independent research program with emphasis on functional processes between birds and their riparian and wetland habitats in southeastern Alaska and Prince William Sound, including the Copper River Delta.

Applicants must hold a Ph.D. in ecology, wildlife biology, or a related field. A strong background in avian biology and habitat ecology is required. Experience with waterfowl and wetlands is desired but not necessary. Preference will be given to applicants with a demonstrated ability to publish scientific literature. *We are an Equal Opportunity Employer and encourage women and minorities to apply.*

Salary: GS-12 or 13 (about \$41,500 to \$55,000 including 25% tax-free cost-of-living allowance) depending on qualifications.

Send current résumé, transcripts of college work, names of three references, and one copy of recent publications to: **Dr. Thomas A. Hanley, USDA, Forestry Sciences Laboratory, P.O. Box 20909, Juneau, AK 99802-0909.** Deadline: 30 November 1988.

**BIOCHEMIST.** Lewis & Clark College, Visiting Assistant Professor, winter term, 1989 (3 January to 17 March) seeking applications to teach undergraduate biochemistry (lecture and laboratory) for 10 weeks. A Ph.D. or all but dissertation in biochemistry is required. Send letter of application, résumé, transcripts, as well as two letters of recommendation by 31 October 1988 to: **Dr. C. R. Keedy, Chair, Chemistry Department, Lewis & Clark College, Portland, OR 97219.**

### THE UNIVERSITY OF CALGARY CAMPBELL MCLAURIN FOUNDATION CHAIR IN HEARING DEFICIENCIES

The University of Calgary invites applications for the newly endowed Chair for Hearing Deficiencies. The Chairholder will hold a full-time appointment in the appropriate department of the Faculty of Medicine at The University of Calgary, and may be a clinical and/or basic scientist.

The incumbent of the Chair must have a Ph.D., M.D., or equivalent degree, and will be an expert and specialist in hearing deficiencies and will have a distinguished international reputation in research and proven leadership in education.

The Chairholder's responsibilities will include providing leadership in basic and/or clinical research in hearing deficiencies, developing an independent world-class research program oriented towards hearing deficiencies, promoting collaborative research across disciplines, promoting service and educational programmes fostering a bench-to-bedside approach to research in hearing deficiencies, and attracting to the University outstanding students, research associates and faculty.

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

Applicants are requested to submit curriculum vitae, a statement of research interests and academic goals, and names of three references by 1988 to:

Dr. M. Watanabe, Dean  
Faculty of Medicine  
The University of Calgary  
3330 Hospital Drive N.W.  
Calgary, Alberta T2N 4N1

## POSITIONS OPEN

**BIOLOGY—MOLECULAR BIOLOGY.** A tenure-track position at **ASSISTANT OR ASSOCIATE PROFESSOR** rank is available at Delaware State College in January 1989. Minimum qualifications include a Ph.D. in molecular biology or related field, and demonstrated ability to work effectively with students. The successful candidate will be expected to develop a research program and teach graduate courses in area of expertise. Involvement in undergraduate program may include teaching introductory and/or advanced level courses. Experience supervising masters level students and publication record desirable. Send curriculum vitae, official transcripts, and three letters of reference by 28 October 1988 to: **Dr. Dorene Petrosky, Chairperson of Biological Sciences, Delaware State College, Dover, DE 19901.** *Affirmative Action/Equal Opportunity Employer.*

**CELLULAR/MOLECULAR PHYSIOLOGY FACULTY POSITION.** A tenure-track position in the Biology Department is available for August, 1989. The position is at the assistant professor level, although more experienced outstanding candidates will be considered. The successful candidate will be expected to develop a productive, extramurally funded research program; and alternately teach an undergraduate physiology course and a specialty graduate class. All research areas to be considered, although candidates who complement existing strengths in endocrinology, muscle physiology and neuroscience are especially encouraged to apply. Send complete vitae, statement of research, and names of at least three references by 15 December 1988 to: **Dr. Peter Abramoff, Biology Department, Marquette University, Milwaukee, WI 53233.** *Equal Employment Opportunity/Affirmative Action Employer.*

### CHAIR—DEPARTMENT OF BIOLOGY

The University of Nevada—Reno solicits applications and nominations for the position of chair of the Department of Biology. A doctorate in the biological sciences is required. The successful candidate will have a nationally recognized reputation with an excellent record of research and extramural funding, a demonstrated commitment to undergraduate and graduate education, and evidence of outstanding leadership and administrative abilities. Experience in collaborating with individuals outside of the candidate's area of specialty is desirable. Send a letter of interest, a current curriculum vitae, a statement of administrative philosophy, and the names, addresses, and telephone numbers of five references by 16 November 1988, to: **Biology Search Committee, c/o Barb Glazner, College of Arts and Science, University of Nevada—Reno, Reno, NV 89557.** *UNR is an Affirmative Action/Equal Opportunity Institution and employs only U.S. citizens and aliens lawfully authorized to work in the United States.*

### CHAIRPERSON, DEPARTMENT OF BIOLOGY

The University of Missouri—St. Louis invites applications and nominations for Chairperson of the Department of Biology. Applicants should have a Ph.D. in the Biological Sciences and research interests in an area of ecology, evolution, or systematics. Selection criteria include achievements in research commensurate with appointment at the rank of full professor, proven administrative and leadership skills, and a concern for quality undergraduate and graduate education. The Department of Biology, with 20 full-time and 15 adjunct faculty, is undergoing a phase of vigorous growth which includes expansion of facilities with a new science building and increased funding for the graduate program. A recently approved Ph.D. program with emphasis in evolutionary biology, systematics, and tropical ecology will be offered in conjunction with the Missouri Botanical Garden. The new chair should have experience appropriate for implementation of the Ph.D. program and a commitment to the continued growth and development of the entire biology department. Salary is open and competitive. Expected starting date is July 1989.

We invite interested individuals to send a letter of application, curriculum vitae, statement of research, and names, addresses, and telephone numbers of five references to: **Dr. Victoria Sork, Search Committee Chairperson, Department of Biology, University of Missouri—St. Louis, 8001 Natural Bridge Road, St. Louis, MO 63121-4499.** Deadline: 30 November 1988.

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

## POSITIONS OPEN

### CELL BIOLOGIST

The Biology Department seeks a cell biologist working on structural aspects of cell function at the molecular level. This is a tenure-track position at the assistant professor level that has been made possible by an award from the Howard Hughes Medical Institute. Candidates are expected to develop an active research program that could attract external support, to play a leadership role in our Ph.D. program, to participate in an upper level interdepartmental laboratory course in structural biology and to teach in cell biology at the undergraduate level. Candidates must have postdoctoral experience. This position will be available for September 1989. Applications should include curriculum vitae, a statement of future research plans, and three letters of reference. Send applications, by 1 December 1988, to: **Cell Biologist Search Committee, Biology Department, Wesleyan University, Middletown, CT 06457-6032.**

*Wesleyan University is an Affirmative Action, Equal Opportunity Employer. We encourage applications from minority candidates and women.*

**CHAIRPERSON, DEPARTMENT OF PLANT BIOLOGY.** New department to be formed in July 1989 from merger of botany, plant pathology, horticulture, and agronomy. Seek candidates presently at associate or full professor rank with earned doctorate in plant biology and productive research record. Experience in academic administration within the Land Grant System preferred. Salary and rank commensurate with experience. To apply, send curriculum vitae (non-citizens must include current visa status), three letters of reference (have sent directly), list of publications, and statement of academic and administrative philosophy by 15 November 1988 to: **Dr. Linn Bogle, Botany, University of New Hampshire, Durham, NH 03824.** *Women and minorities encouraged to apply. UNH is an Affirmative Action/Equal Employment Opportunity Employer.*

### CURATORIAL POSITION IN ORNITHOLOGY AMERICAN MUSEUM OF NATURAL HISTORY

The Department of Ornithology invites applications from ornithologists with Ph.D.'s for a tenure-track curatorial position. Research and training should involve evolution and systematics of birds; interest in museum specimens is desirable. The Department maintains large worldwide collections of all avian taxa. The primary responsibility of the successful applicant will be to conduct an active research program. Other responsibilities will include curation of the collection, assistance with the preparation of exhibits and with educational programs of the Museum, administration, and other Departmental duties. Rank and salary will be determined on the basis of qualifications. Full Museum benefits apply. Interested applicants must submit the following information: (i) curriculum vitae, (ii) statement of long-term research objectives, (iii) complete bibliography and sample publications, and (iv) letters of recommendation from at least three professionals acquainted with the applicant's qualifications and accomplishments. Submit to:

Dr. Francois Vuilleumier  
Chairman, Search Committee  
Department of Ornithology (S)  
American Museum of Natural History  
Central Park West at 79th Street  
New York, NY 10024

*An Equal Opportunity Employer*

**DIRECTOR—CENTER FOR GREAT LAKES STUDIES/Great Lakes Research Facility, University of Wisconsin—Milwaukee (UWM).** Major research unit of The Graduate School of UWM seeks applicants for a Director to develop and promote interdisciplinary research programs, manage the Research Facility, and foster expansion of research activities and laboratory facilities. Must have Ph.D. qualifications for tenured faculty appointment, record of research achievement in lake and ocean science or technology, and management experience in marine research programs. Salary competitive. Apply with letter, curriculum vitae, names and addresses of three references by 1 January 1989, to: **George W. Keulks, Dean, The Graduate School and Research, University of Wisconsin—Milwaukee, P.O. Box 340, Milwaukee, WI 53201.** *An Affirmative Action/Equal Opportunity Employer.*

## Ph.D. Scientist A.I.D.S. Research

As part of our expanding activities in A.I.D.S. antiviral and vaccine research, the Merck Sharp and Dohme Research Laboratories is able to offer a significant career research opportunity. Our laboratory studies are wide-ranging and encompass most aspects of human immunodeficiency virus (HIV) biology.

Our commitment to A.I.D.S. research is long-term and we are searching for an exceptional scientist at the Ph.D. level to join the program. Previous research experience with HIV is highly desirable. However, all applicants with experience in virological studies will be seriously considered.

An excellent salary and a superb benefits program accompany this position at our modern, state-of-the-art facilities located in suburban Philadelphia, Pennsylvania.

Please send your resume with salary requirements to:

Manager, Research Personnel, WP42-2

**Merck Sharp & Dohme  
Research Laboratories**

West Point, PA 19486

EEO/AA/VH/Employer



**Merck & Co., Inc.**

## SENIOR IMMUNOLOGIST

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

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

We offer a highly competitive salary, extensive benefits and a state-of-the-art environment in a convenient suburban location. Qualified candidates are invited to submit CV or resume with salary requirements in confidence to: **WYETH-AYERST LABORATORIES, INC., Recruitment Manager, Position #298, P.O. Box 8299, Philadelphia, PA**



**19101. Equal Opportunity Employer, M/F/H/V responses encouraged.**

## SENIOR SCIENTISTS

Enzo Biochem, Inc., a dynamic healthcare company located in New York City, is dedicated to the development of antibody-based and DNA probe-based diagnostic tests. The company offers challenging positions, competitive salaries and excellent benefits. Enzo is actively seeking highly motivated professionals for the following positions:

### Ph.D. Immunochemist (Protein Chemist)

Candidates should have experience in developing immunodiagnostic kits, non-radioactive labeling of proteins and using monoclonal antibodies for immunopathology and immunohistochemistry. Industry experience preferred.

### Ph.D. Immunologist

Candidates should have experience in the development and production of monoclonal antibodies. Previous experience in antibody purification required.

### Ph.D. Molecular Biologist

Candidates should have experience in nucleic acid hybridization, cloning, probe development and signal amplification. Postdoctoral experience preferred.

Submit resume, including references, to:

**ENZO BIOCHEM, INC.**

Personnel Department-SF  
325 Hudson Street, New York, N.Y. 10013  
Equal Opportunity Employer M/F

## GRADUATE STUDY IN MICROBIOLOGY AT COLUMBIA UNIVERSITY Predoctoral Fellowships

· Prokaryotic and eukaryotic gene structure ·  
Regulation of gene expression · Microbial, yeast  
and viral molecular genetics · Developmental  
biology · Animal virology · Genetics and cellular  
regulation of the immune response · Chemical  
and viral carcinogenesis

The program provides a broad experience in microbiology, immunology and cell and molecular biology, in addition to rigorous research training. Full financial support is provided including tuition, fees and a living allowance, which is currently \$12,000 per year. Housing is available in the area of the Medical Center in upper Manhattan and convenient, inexpensive public transportation makes it possible for students to commute from other areas and to enjoy the vast cultural resources of New York City.

For further information please write to

**Graduate Program Director  
Department of Microbiology  
Columbia University  
701 West 168 Street  
New York, NY 10032**





### **Molecular Biology and Molecular Pharmacology Group Leaders**

Leadership positions are available at Neurogenetic Corporation, Paramus, New Jersey, for the heads of its molecular biology and molecular pharmacology divisions.

The Section Head for the Molecular Biology division should have at least four years experience beyond the Ph.D., including experience in gene cloning, procaryotic and eucaryotic expression systems, and mutagenesis. The Section Head will supervise a group of ten scientists.

The Section Head for the Molecular Pharmacology division should have at least four years experience beyond the Ph.D., including experience in binding assays, cell biology, second messenger systems and neurophysiology. The Section Head will supervise a group of ten scientists.

Neurogenetic Corporation is a rapidly growing company involved in the development of diagnostic and therapeutic agents for the treatment of neurological and psychiatric disorders. The company offers an excellent compensation package as well as the opportunity to contribute to the development of new treatments for human diseases. All applications will be kept confidential. Applications, including a full curriculum vitae and the names and addresses of three references, should be directed to:

**Neurogenetic Corporation  
215 College Road,  
Paramus, NJ 07652**

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## *Glaxo's Growth Is Your Opportunity*

*Glaxo Inc. is not only one of the Top 10 ethical pharmaceutical firms in America, we're also the fastest growing research-oriented company in the country. As such, we can offer exceptional career opportunities, state-of-the-art facilities, and a firm commitment to producing the most effective pharmaceuticals that experience, imagination, and advanced technology can create. Join Glaxo, and apply your knowledge and career ambitions where they'll do you the most good.*

*We currently have the following position available at our Corporate Headquarters located in Research Triangle Park, N.C.*

### **RESEARCH SCIENTIST Drug Metabolism**

*This key individual will be part of an interdisciplinary department applying modern synthetic, analytical and biochemical methods to drug discovery and development programs. Major responsibilities will include the development of extraction and HPLC methods for the purification of metabolites from biological matrices and the use of spectroscopic techniques for their identification. The ability to carry out synthetic schemes developed by a senior staff member and the independent development of quantitative HPLC and GC assays are also required. Familiarity with *in vitro* drug metabolizing systems is desirable.*

*Qualifications must include a BS Degree with 5 or more years of relevant experience or a MS Degree with 3-5 years of experience.*

*At Glaxo Inc., growth opportunities and up-to-date facilities are complemented by a location (near Raleigh/Durham) that has excellent resources in close proximity. Prestigious universities, scenic vistas, lively recreational areas, and exciting cultural opportunities are all a part of the daily life of the Glaxo professional. Further, we reward talent and creativity with an excellent salary and benefits package (including a completely equipped, on-site athletic facility). Candidates interested in this position, please send resume, including salary history to:*

**Human Resources Department  
Job #8625B915**

**Glaxo Inc.**

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Research Triangle Park, N.C. 27709  
(No Phone Calls, Please)  
No Private Agency Referrals, Please  
An Equal Opportunity Employer M/F/H/V  
Paving the way to a healthier world.



## POSITIONS OPEN

### UNIVERSITY OF GLASGOW DEPARTMENT OF GENETICS ROBERTSON CHAIR OF BIOTECHNOLOGY

Applications are invited for the Robertson Chair of Biotechnology in the Department of Genetics, tenable from 1 April 1989. This Chair will be housed in a new Robertson Institute of Biotechnology. A recent major benefaction to the University has led to the immediate creation of the Chair and the building of the Institute by 1990.

The successful candidate will have a proven record of research achievement and will have experience in fostering academic and industrial collaborations in the interdisciplinary areas that related to biotechnology.

Further particulars can be obtained from: **The Academic Personnel Office, University of Glasgow, Glasgow, G12 8QQ**, where application (three copies; one copy in the case of overseas applicants), giving the names and addresses of three referees, should be lodged on or before 4 November 1988.

In reply please quote Ref. No. 6327SK.

### DEAN COLLEGE OF PHYSICAL AND MATHEMATICAL SCIENCES NORTH CAROLINA STATE UNIVERSITY

Applications and nominations are invited for the position of Dean, College of Physical and Mathematical Sciences effective 1 July 1989. The college has a comprehensive research program as well as significant teaching programs in graduate and undergraduate levels. The dean should be a person with a high energy level, integrity, proven leadership ability, a record of scholarship, and an earned doctorate in an appropriate field. Applicants should submit a letter of interest, résumé, and names, addresses, and telephone numbers of at least three references by 1 December 1988 to: **Mr. William H. Simpson, Secretary of the University, North Carolina State University, Box 7001, Raleigh, NC 27695**. An Affirmative Action/Equal Opportunity Employer.

**DENDROCHRONOLOGIST.** The Laboratory of Tree-Ring Research invites applications for a tenure-track faculty position, available August 1989. It is envisaged that appointment will be at assistant professor level. The successful applicant will be capable of developing imaginative uses of the environmental record held in tree rings and possibly also similarly annual layers of biological or geological origin. A Ph.D. is required as is evidence of effective creativity in recovering environmental history. Applications received by 1 December 1988 will be given first consideration. If no suitable candidate is identified, then late applications will be reviewed. Send curriculum vitae, bibliography with copies of selected publications, statement of research interests and the names and addresses of three referees to: **William J. Robinson, Laboratory of Tree-Ring Research, University of Arizona, Tucson, AZ 85721**. The University of Arizona is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

### DIRECTOR CARDIOVASCULAR/PULMONARY RESEARCH INSTITUTE

Position available for Ph.D. with broad research and administrative experience to direct a cardiovascular and pulmonary research institute. The successful candidate should have experience with myocardial protection, new perfusion methods, left-ventricular assist devices, laser surgery, heart transplantation research, or valve and blood vessel transplantation research.

In addition, the candidate will be able to bring about a balance between basic and clinical research, as well as direct efforts in extramural grant writing, grant distribution and the direction and planning of the scientific activities of the research institute.

The research institute adjoins a renowned specialized hospital in New Jersey. For confidential consideration, please forward your résumé to:

**R-1, P.O. Box 17182  
Philadelphia, PA 19105**  
Please respond on or before  
31 October 1988.

Equal Opportunity Employer

## POSITIONS OPEN



The Institut für Neue Materialien and the Universität des Saarlandes invite applications for the position of

### DIRECTOR

of the **INSTITUT FÜR NEUE MATERIALIEN GEM. GMBH, Saarbrücken**. The director will be simultaneously appointed

### FULL PROFESSOR (C4)

in the Faculty of Mathematics and Science, Department of Materials Science, Universität des Saarlandes. The position of Director includes the scientific responsibility for one of the departments of the Institute. The research work of the successful candidate should be concentrated on the production of new materials and/or the characterization of such substances.

Applicants should be scientifically qualified in one or more of the following fields:

Metallic materials  
Ceramic materials  
Semiconductors

The Institut für Neue Materialien is a research facility of the Saarland and cooperates with the Universität des Saarlandes in both research and graduate education as well as with other research institutions and industrial enterprises.

Applications (résumé, scientific background and bibliography) should be submitted by 15 November 1988, to: **The Managing Director, Institut für Neue Materialien GmbH, Professor Dr. H. Gleiter, Universität des Saarlandes, Gebäude 2, D-Saarbrücken, West Germany**.

### DIRECTOR OF BIOTECHNOLOGY PROFESSOR OF BIOCHEMISTRY VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Applications and nominations are invited for the position of Director of Biotechnology and Associate or Full Professor of Biochemistry. The Director will lead the expansion of biotechnology/molecular biology, develop and coordinate interdisciplinary instruction and research programs, oversee service facilities and training laboratories for biotechnology, allocate resources to specific programs, and participate in recruiting new faculty. The Director will be a faculty member and lead a strong research program in the Department of Biochemistry. The Department of Biochemistry is expanding research in protein biotechnology and eukaryotic molecular biology. Applicants should hold the Ph.D. and have experience at an academic institution.

Applications and nominations will be received until the position is filled. Applicant screening will begin on 15 December 1988. Applications should include a description of research program, curriculum vitae, and names and telephone numbers of three references. Send to:

**E. R. Stout  
Associate Provost for Research  
Research Division  
Virginia Tech  
Blacksburg, VA 24061-0244**

Virginia Tech is an Equal Opportunity/Affirmative Action Employer.

**DIRECTOR, NEW PRODUCT DEVELOPMENT**—Established manufacturer of scientific instruments used in cellular electrophysiology, cell biology, neuropharmacology, and biophysics seeks a director, New Product Development. Candidate must have electrical engineering degree; advanced degrees in either engineering or biological sciences; and several years of laboratory experience in one or more of above mentioned fields. Responsibilities include participation in new product decision making process, overall technical direction of new developments, field evaluations, and production engineering.

Individual must be aggressive, personable, a "can-do" achiever, and have excellent command of English language. Compensation in \$40,000 to \$50,000 per year range, plus benefits. Send résumé and salary history to: **Box 159, SCIENCE**.

## POSITIONS OPEN

### DIRECTOR

The Science Museum of Minnesota seeks full-time director for its newly established St. Croix Field Research Center. Responsibilities: Develop research and educational programs relating to the plants, animals, and general ecology of the St. Croix and its drainage basin; develop and maintain facilities (house, labs, etc.); supervise on-site Field Center and contract staff, assist in preparing exhibits/programs for main museum (800,000 annual visitors). Qualifications: Ph.D. in biological sciences (aquatic focus preferred) or equivalent research record; development and administrative experience; demonstrated commitment to both scholarship and public education. Salary commensurate with experience. Send letter of interest, curriculum vitae, and three references by 1 November 1988 to: **Dr. Louis B. Casagrande, Senior Vice President, Science Museum of Minnesota, 30 East 10th Street, St. Paul, MN 55101**.

### DIRECTOR DEVELOPMENTAL NEUROSCIENCE CENTER

Vanderbilt University's John F. Kennedy Center for Research on Education and Human Development seeks a senior individual with a record of outstanding research accomplishments and high scholarly achievement in the area of developmental neurobiology. Research in any area of developmental neuroscience is appropriate to the position. The applicant's research background should either relate directly to mental retardation or be sufficiently broad to be related to that of other investigators in mental retardation research. The tenured position offers the opportunity for developing a new center for developmental neuroscience at Vanderbilt while at the same time joining Vanderbilt's already strong and expanding effort in neuroscience.

Nominations and applications should be forwarded with curriculum vitae and names of referees to: **Professor Vivien A. Casagrande, Neuroscience Search Committee, Box 74 Peabody College, Vanderbilt University, Nashville, TN 37203** (BITNET address: **CASAGRVA@VUCTRVAX**). Women and minorities are encouraged to apply.

### WESLEYAN UNIVERSITY DIRECTOR EDUCATIONAL STUDIES PROGRAM

Wesleyan University seeks an individual of accomplishment to direct its Educational Studies Program. Requirements are a strong scholarly and/or practitioner's record in education; a doctorate; broad school experience, preferably in primary or secondary as well as higher education; demonstrated leadership ability. Please send applications and nominations by 1 December 1988 to: **Richard Boyd, Department of Government, Public Affairs Center, Wesleyan University, Middletown CT 06457**. Telephone: 203-347-9411, Extension: 3103. Affirmative Action/Equal Opportunity Employer.

### ENVIRONMENTAL SCIENCES UNIVERSITY OF MASSACHUSETTS AT BOSTON

The Environmental Sciences Program seeks to fill a tenure-track faculty position in the area of phytoplankton ecology, rank open. A doctoral degree is required and postdoctoral experience desired. The program is a doctoral degree granting program training students in both the natural and social sciences largely focused on marine coastal issues. Duties will include teaching at the graduate level. Research interests should include, but not be necessarily restricted to, coastal primary production. Areas of immediate programmatic interest are the processes controlling production, eutrophication, nutrient cycling, and pelagic-benthic coupling. The successful candidate will join an interdisciplinary group of scientists whose primary interests include organic and inorganic geochemistry and biogeochemistry, benthic ecology, aquatic toxicology, microbial ecology, coastal estuarine physics, marine policy, environmental economics and environmental law. Send résumé, cover letter, and the names of at least three references to: **Chairperson, Phytoplankton Ecologist Search Committee, Environmental Sciences Program, University of Massachusetts at Boston, Boston, MA 02125**. Application received by 4 November 1988 will be given priority. An Affirmative Action/Equal Opportunity/Title IX Employer.

**FACULTY AND POSTDOCTORAL  
POSITIONS AT THE  
UNIVERSITY OF MEDICINE AND  
DENTISTRY OF NEW JERSEY-  
NEW JERSEY DENTAL SCHOOL**

Applications are invited for the positions at the newly established Dental Research Center. Seeking M.D., Ph.D. or D.D.S. individuals with interest and experience in the area of chemistry and function of salivary and gastro-intestinal secretions. Preference will be given to molecular biologists, biochemists, immunologists, and physiologists pursuing research in glycoprotein synthesis and processing, biochemical pharmacology, enzymology, lipid and protein metabolism, connective tissue and bone mineralization, membrane receptors and signal transduction, and immune and nonimmune mechanisms in the health of the oral cavity.

Send resume, statement of research interests, and references to: **Dr. Bronislaw L. Slomiany, Director, Dental Research Center, UMDNJ-New Jersey Dental School, (S), 110 Bergen Street, Newark, NJ 07103-2425.**

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



## Research Veterinarian



An equal opportunity employer

Pfizer's Animal Health Research group has an exciting array of newly-discovered compounds for the treatment of animal diseases and for improving the health and productivity of food animals. We therefore need to enhance our clinical research and development team and are seeking applications from qualified people who would like to use their scientific organizational skills in a multi-disciplinary project-team environment.

We currently have a position on our clinical development team in our Terre Haute, Indiana facility which initially will involve contributing to the design of clinical field programs across the U.S., organizing the clinical testing, and interpreting the results. This position affords one an outstanding opportunity for a personal and original contribution to the development of major new products in one of the world's leading health care companies.

If you are a veterinarian or have a post-graduate degree in a relevant discipline with some clinical or research experience and have good interpersonal communication skills, we would like to hear from you.

Pfizer offers excellent compensation, comprehensive benefits and opportunity for professional recognition and growth. If interested and qualified, please send a current resume in confidence to: Christina Batjer, Senior Personnel Supervisor, Pfizer Inc., P.O. Box 88, Terre Haute, Indiana 47808.

## IBI POSITION OPENINGS

### DNA SEQUENCING WORKSHOP INSTRUCTOR

This position is an exciting opportunity for a molecular biologist to combine teaching, marketing and travel. Responsibilities include developing, scheduling, managing and teaching short courses in dideoxy sequencing technology. The ideal candidate will have significant laboratory experience in sequencing DNA and exceptional organizational and interpersonal skills. Approximately 50% travel is required.

### TECHNICAL SERVICES REPRESENTATIVES

Apply your technical expertise in Molecular Biology and interpersonal skills to this critical customer service position. Required qualifications include an M.S. or B.S. with laboratory experience in Molecular Biology or a related field. A thorough knowledge of standard Molecular Biology laboratory techniques is required to provide technical assistance on the use of IBI products and related techniques. Familiarity with genomic analysis is desired.

### SOFTWARE TECHNICAL SPECIALIST

IBI is currently seeking candidates for the position of Software Technical Specialist for its exciting new line of sequence analysis software. This position would involve technical support for sales as well as training for software users. The ideal candidate will have basic understanding of recombinant DNA techniques and familiarity with MS-DOS and Macintosh computer systems.

### SOFTWARE PRODUCT DEVELOPMENT

IBI is currently seeking a Programmer/Biologist to direct the development and maintenance of our sequence analysis software for microcomputers. The ideal candidate must have a graduate degree in the Biological Sciences and have a proven track record in developing software for microcomputers. A proficiency in C is required and experience with both PC-DOS and Macintosh systems helpful.

**Interested candidates should mail their resume to:**

*Position Title*  
International Biotechnologies, Inc.  
A Kodak Company  
P.O. Box 9558 • New Haven, CT 06535

*An Equal Opportunity Employer*



## POSITIONS OPEN

### ENVIRONMENTAL SCIENCE MANAGER

Freese and Nichols, Inc., a Texas-based consulting engineering firm, has a challenging opportunity for an established individual to guide the expansion of and perform business development activities for our Environmental Science Department. This department prepares impact statements and assessments for engineering and development projects with particular emphasis on environmental evaluations for federal and state permitting. The department manager will direct projects relating to the environmental impact of water supply reservoirs, water and wastewater treatment plants, water quality modeling, wastewater reuse, public transportation and flood control.

Required qualifications: M.S. in environmental science or related degree, 15 years of experience in the environmental field, experience as an expert witness in hearings or litigation, management experience and marketing capabilities, knowledge of the guidelines and regulations of federal and Texas agencies responsible for environmental protection.

Please submit résumé to: **Personnel Department, Freese and Nichols, Inc., 811 Lamar Street, Fort Worth, TX 76102.** *Equal Opportunity Employer.*

### FACULTY POSITION

The Microbiology Department of The University of Texas at Austin has an opening for an assistant professor. Appointment at a higher rank will be considered for individuals with an outstanding record of independent research. We are searching for an outstanding molecular biologist who can develop a creative, productive research program. Preference will be given to individuals with interest in Microbial or Yeast Biochemistry, Pathogenic Mechanisms, and Developmental Processes in Prokaryotes or Lower Eukaryotes. However, highly qualified individuals with interests in molecular biology outside of these areas also will be considered. This is an outstanding opportunity to join an excellent Department during a period of expansion. Please submit curriculum vitae, including names, and addresses of three references and a summary of research interests to: **Microbiology Department Search Committee, The University of Texas at Austin, Austin, TX 78712-1095.** *The University of Texas is an Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITION**—Synthetic Organic Medicinal Chemistry. A tenure-track position is available in fall 1989 for an outstanding scientist with a Ph.D. in medicinal or organic chemistry. Appropriate postdoctoral experience is desirable. Although we anticipate filling the position at the assistant professor level, candidates at higher ranks will be considered. The applicant will be expected to develop a strong, independent, and externally-funded research program and to participate in the teaching of both undergraduate and graduate departmental courses in medicinal and/or organic chemistry. Applicants should submit curriculum vitae, a brief outline of future research plans, and should arrange to have three letters of recommendation sent to: **Professor David E. Nichols, Chair, Faculty Search Committee, Department of Medicinal Chemistry and Pharmacognosy, School of Pharmacy and Pharmaceutical Sciences, Purdue University, West Lafayette, IN 47907.** Review of applications will commence 1 November 1988 and continue until the position is filled. *Purdue is an Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITION AVAILABLE

Applications are invited for a tenure-track position in the Department of Pharmacology, University of South Carolina, School of Medicine. Ph.D. and/or M.D. degree and postdoctoral experience required (rank open). The successful candidate will be expected to develop an independent research program which merits extramural support and to teach medical/graduate students. Preference will be given to individuals whose research uses molecular or biochemical techniques to study biological actions. Candidates with backgrounds in biochemistry, physiology, pharmacology, or other biomedical sciences will be considered. Individuals should submit curriculum vitae, statement of professional goals, and the names of three references: **Dr. D. O. Allen, Chairman, Department of Pharmacology, University of South Carolina, School of Medicine, Columbia, SC 29208.** *The University of South Carolina is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**FACULTY POSITION:** Cornell College, an undergraduate liberal arts college of 1100 students and 70 faculty in Mount Vernon, Iowa, plans to make a full-time tenure-track appointment in its chemistry department in the fall of 1989. Ph.D. required; teach analytical, inorganic, and general chemistry. Interdisciplinary interests welcome. Send letter of application, curriculum vitae, transcripts of both undergraduate and graduate education, and names of three references to: **Dr. Addison Ault, Department of Chemistry, Cornell College, Mount Vernon, IA 52314.** Formal consideration of applications will begin 15 December 1988. *Cornell College is an Equal Opportunity/Affirmative Action Employer and actively seeks women and minority candidates.*

**FACULTY POSITION: TRANSPLANTATION, BIOLOGY AND IMMUNOLOGY.** Permanent track position for persons with Ph.D. and/or M.D. degrees. Involves conducting an independent research program on some aspect of transplantation, biology such as physiology and/or immunology with a focus toward transplantation. Candidate expected to be competent in basic immunology, to conduct an independent research program and be willing to participate with clinicians involved in a large multi-organ transplantation program (liver, renal, pancreas, heart, lung, bone marrow). Will receive academic appointment commensurate with his/her qualifications. Startup funds for establishment of the laboratory are available. Send curriculum vitae, a description of research interests and names of three references to: **Dr. Keith A. Kelly, Chairman, Department of Surgery, Mayo Clinic, Rochester, MN 55905.** *An Equal Opportunity/Affirmative Action Institution.*

**FACULTY POSITIONS**—Tenure-track for all academic ranks including full professor of biochemistry, College of Medicine, University of Illinois at Chicago. The Department is research oriented with a strong commitment to graduate and biomedical education. Applicants should provide curriculum vitae, names of three references and a statement of research plans. Applicants for tenured positions must have current extramural funding and a record of significant research accomplishments. The deadline is 2 January 1988 or until the positions are filled; foreign travel expenses will be paid.

Areas of research interests:

1) Studies of enzyme reaction mechanisms, protein-protein or ligand-protein interactions related to important biological phenomena such as signal transduction or metabolic regulation using modern biochemical approaches, especially protein engineering. The Department has excellent research facilities, including a protein sequencer and peptide synthesizer. Send applications for this position to: **Dr. James C. Vary, Department of Biochemistry, 1853 West Polk Street, University of Illinois at Chicago, Chicago, IL 60612.**

2) Molecular biology of gene expression in vertebrate or cell culture systems at the level of transcriptional control and processing. The Department is strong in this area and, with the College of Medicine, is committed to further expansion of this group. Send applications for this position to: **Dr. Robert Storti, Department of Biochemistry, University of Illinois at Chicago, 1853 West Polk Street, Chicago, IL 60612.**

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

### FACULTY POSITIONS IN CELLULAR AND MOLECULAR BIOLOGY

Applications are invited for a tenure-track position in the Department of Cell Biology and Anatomy at Northwestern University Medical School. This position is at the assistant professor level. Applicants must have a Ph.D. or equivalent degree, with research experience in cellular and/or molecular biology. Applicants will be screened with respect to their ability to carry on vigorous research programs and to participate in departmental teaching programs. Send complete curriculum vitae, brief description of research interests, and at least three letters of recommendation by 1 December 1988, to: **Dr. Robert D. Goldman, Department of Cell Biology and Anatomy, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611.** *Northwestern University is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.*

## COLBY COLLEGE

invites applications from

## PLANT MOLECULAR BIOLOGISTS

for a tenure-track position as Assistant Professor or Associate Professor of Biology. This position may include appointment to an endowed chair. Candidates should have a Ph.D., a strong commitment to undergraduate education, broad training and interest in the botanical sciences, and special interest and expertise in the molecular aspects of plant biology. Familiarity with liberal arts colleges, teaching experience, and/or post-doctoral training are desirable. Responsibilities will include teaching in introductory courses and in advanced courses in the successful candidate's areas of specialization. An active research program, including supervision of undergraduate research, will be expected. Submit letter of application, statement of teaching and research interests, curriculum vitae, reprints of publications, undergraduate and graduate transcripts, and the names and addresses of three individuals who could serve as references to: **Professor Arthur K. Champlin, Chair, Department of Biology, Colby College, Waterville, ME 04901.** Completed applications should be received by 15 December 1988. *Colby College is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minorities.*

## NEUROIMMUNOLOGIST

**NOVA PHARMACEUTICAL CORPORATION**, a leading research and development company in Baltimore, MD, is accepting applications for an immediate opening in the Division of Drug Discovery at the level of Staff Scientist/Senior Research Associate. The ideal candidate will have a background in neurotransmitters, neuro-modulators and/or neuroactive peptides as they pertain to interacting or regulating the immune system. The specific experience being sought includes tissue culture, including primary cultures, immunoassays, monoclonal antibody production and more general chromatographic or biochemical techniques. The successful candidate will be expected to (1) independently direct a program targeted toward the development of therapeutic approaches for myelin-based disorders of the CNS, (2) actively participate in the identification and characterization of synthetic antagonists and (3) input to the staff of the Division on other scientific programs. Responsibilities will include the daily administration of a tissue culture facility and a laboratory group. Qualifications required include a PhD or MD degree and at least 2 years of postgraduate training.

**NOVA PHARMACEUTICAL CORPORATION** is an equal opportunity employer offering a competitive compensation and benefits package which includes relocation expenses. Interested individuals should send their resume to: **L. Faris-Ra/WJR, Nova Pharmaceutical Corp., 6200 Freeport Center, Baltimore, MD 21224-2788.** EOE.





## *The Race is Hours!*

*GENE-TRAK Systems in just two years has become one of the largest groups in the world dedicated to the commercialization of DNA probe based products for diagnosing infectious diseases.*

### **SENIOR SCIENTIST**

Position available to further develop methods of replicating nucleic acids for use in DNA/RNA probe hybridization assays. Applicants must have substantial experience with in vitro nucleic acid replication systems and knowledge of RNA and DNA polymerases, transcriptases, or replication complexes. Requires Ph.D. in molecular biology or biochemistry and at least 4 years' post-doctoral experience with a strong publication record.

### **RESEARCH SCIENTISTS**

Many positions available for molecular biologists to develop novel assay formats and to optimize non-radioactive detection methods. Requires BS/MS degree in the biological sciences with 2 or more years' experience in the handling and manipulation of nucleic acids.

*GENE-TRAK Systems, located in the western suburbs of Boston, offers a lucrative compensation and benefits package that includes equity participation. Send your resume to: Brian Mazar, Human Resources Director, Dept. S10-28, GENE-TRAK Systems, 31 New York Avenue, Framingham, MA 01701.*

An equal opportunity employer



**GENE-TRAK  
SYSTEMS**

### **HHMI-NIH Research Scholars at the National Institutes of Health**

The Howard Hughes Medical Institute (HHMI) and the National Institutes of Health are accepting applications for the 1989-1990 class of Research Scholars to begin in the summer of 1989.

- HHMI-NIH Scholars are selected from medical schools, usually after the first two years, for a year of laboratory research at the NIH in Bethesda.
- Scholars must be U.S. citizens or permanent residents attending medical school in the United States or Puerto Rico.
- Scholars are paid as employees of HHMI and housed on the NIH campus.
- Applications must be received by January 15, 1989. Candidates will be notified of results by April 1, 1989.
- Application kits and brochures have been sent to the deans' offices of all medical schools. Additional kits and brochures can be obtained from:

Howard Hughes Medical Institute  
1 Cloister Court  
Bethesda, Maryland 20814-1460  
(301) 951-6710

**HHMI is an Equal Opportunity Employer.**

### **Howard Hughes Medical Institute Announces a New Program**

### **Medical Student Research Training Fellowships**

The Howard Hughes Medical Institute will award up to 60 fellowships to medical students who wish to spend a year in intensive research during the 1989-90 academic year.

#### **Eligibility:**

- Applicants must be attending a U.S. medical school, but there are no citizenship requirements.
- The fellowship research may be undertaken at any academic or research institution in the United States.
- Students enrolled in M.D./Ph.D. programs are not eligible.
- Applicants may not apply simultaneously to the HHMI-NIH Research Scholars Program.

#### **Fellowship Awards:**

- \$12,300 stipend.
- \$7,700 allowance to the fellowship institution for research supplies (\$4,000) and institutional expenses (\$3,700).

#### **Deadlines:**

- January 13, 1989, for completed applications.
- Awards announced by early April 1989.
- Fellowship tenure must begin by October 1989, at the latest.

**For information:**  
Call (301) 571-0324  
or write:

Medical Student Research Training Fellowships  
Office of Grants and Special Programs  
Howard Hughes Medical Institute  
6701 Rockledge Drive  
Bethesda, Maryland 20817

**The Howard Hughes Medical Institute welcomes all qualified applicants and encourages women and members of minority groups to apply.**



Albuquerque, NM

## TOXICOLOGIST

Staff position available at Lovelace Inhalation Toxicology Research Institute for toxicologist with orientation towards multidisciplinary team approach to solving research problems. The individual we seek will have doctoral level training in toxicology and have completed a rigorous postdoctoral fellowship or possess equivalent experience in an area compatible with the research interests of the institute. A background in chemistry, biochemistry, cell or molecular biology, pathology, immunology, particle deposition/clearance, physiology, pharmacology, pharmacokinetics, metabolism or other fields will be considered. Competitive salary and fringe benefit package. Submit resume to **Personnel Unit, Dept. M, P.O. Box 5890, Albuquerque, NM 87111**. We are an Equal Opportunity/Affirmative Action Employer.

## MAX-PLANCK-INSTITUT FÜR BIOCHEMIE

MUNICH-MARTINSRIED

### POSTDOCTORAL POSITION

Applications are invited from physicists or physico-chemists for (initially) a three-year appointment to join a group within the Department of Structural Biology (Professor W. Baumeister) using Scanning Tunneling Microscopy (STM) for investigating the structure of biomolecules. Currently, our STM is used in the topographic mode; a second instrument specifically designed for scanning tunneling spectroscopy is under construction.

Experience in Scanning Tunneling Microscopy/Spectroscopy or in IR/Raman spectroscopy will be advantageous but not essential.

Salary scale: DM 53,000 to DM 57,600 according to experience.

Please send applications including c.v. and names of two referees to

**Dr. R. Guckenberger,  
Max-Planck-Institut für Biochemie  
D-8033 Martinsried bei München,  
F.R.G.**

## WORKSHOP

### MOLECULAR AND CELLULAR BIOLOGY OF PLASMINOGEN ACTIVATION

**April 17-21, 1989 at  
Brookhaven National  
Laboratory, Long Island,  
New York**

This second international workshop will include such topics as: Regulation of Gene Activity—Cis Elements and Trans Factors; Role in Cell Physiology and Pathology; Inhibitors; Role in Development and Reproduction; Protein Structure and Function; and Receptors.

Participants will be selected solely on the basis of abstracts (one page) sent by December 5th to Drs. W.F. Mangel, F. Blasi, K. Dano & D. Rifkin, Biology Department, Brookhaven National Laboratory, Upton, NY 11973 USA.

## SENIOR SCIENTIST

PhD Chemist and/or Toxicologist is needed by a North Carolina based manufacturer, to play a key role in the areas of product quality and new product development. Candidates should be thoroughly familiar with the theory of advanced analytical instrumental techniques and have five years in functional interaction of analytical chemistry in toxicology disciplines. Experience in residue analysis a plus. Must be an able communicator with top management team. Smoker preferred. Excellent starting salary and benefit package. Send resume to:

VP - Employee Relations

**Liggett & Myers  
Tobacco Co.**

P.O. Box 1572, Durham, NC 27702  
An Equal Opportunity Employer M/F/V/H

## RESEARCH PHARMACOLOGIST SCIENTIST

Nelson Research, a wholly-owned subsidiary of Ethyl Corporation, situated on the campus of the University of California at Irvine, is a pharmaceutical research firm committed to the discovery and development of new drugs. The Company currently has an opening for a Pharmacologist.

The successful candidate will be involved in:

Development of in vivo and in vitro assays to evaluate the specificity and efficacy of new chemical entities developed by the company.

Coordination of various programs in discovery research with academic and industrial scientists worldwide.

Qualified candidates will have a Ph.D. with 3 or more years postdoctoral experience in general and cardiovascular pharmacology. Industrial pharmaceutical experience is desirable.

Excellent oral and written communication skills are essential.

Nelson Research offers a professional environment and competitive salary and benefits. Interested candidates may send resume with salary history to:

**Personnel Manager  
Nelson Research & Development Company  
1001 Health Sciences Rd. West  
Irvine, CA 92715**

*An Equal Opportunity Employer*

**INCSTAR**  
*Science, Technology and Research*

If you are planning for the future and are looking for an opportunity to become established with an industry leader, we invite you to apply for the following positions.

### RESEARCH PROJECT LEADER

We desire individuals who are innovative and strong team players to manage bench level research and development of EIA/RIA based products. Candidates must possess an MS in Bio-Chem or related field with 3-5 years of experience in diagnostics.

### PROTEIN CHEMIST

Candidates must have experience with all types of protein/peptide purification techniques, quantitation methods using AAA and conjugation of enzymes to antibodies or proteins/peptides. This position will support both production and R&D functions. MS or PhD in Bio-Chem or related discipline necessary. A knowledge of immunoassays and EIA desirable.

INCSTAR, an invitro diagnostics company, is located in historic Stillwater, MN just 25 minutes from the cultural and entertainment attractions of Minneapolis/St. Paul. We offer an excellent compensation and benefits package. Qualified candidates should submit their resume in confidence to: **Human Resources Manager, 1951 Northwestern Ave., Stillwater, MN 55802.**

*Equal Opportunity Employer*

## FACULTY POSITION IN TOXICOLOGY

### ST. JOHN'S UNIVERSITY COLLEGE OF PHARMACY AND ALLIED HEALTH PROFESSIONS

**ASSISTANT/ASSOCIATE PROFESSOR**, tenure track. Individuals with a research background in biochemical and environmental toxicology and applicants from other areas of toxicology will be considered. Ph.D. with post-doctoral experience required. Responsibilities will include teaching undergraduate and graduate toxicology courses, training graduate students, and the development of a strong research program capable of attracting extramural funds. Research facilities include: AAALAC-accredited animal facilities, GC, GC-MS, NMR, AA, HPLC, LSC, gamma counter, EM (scanning, transmission), ultracentrifuge, and tissue culture facilities. Faculty interests encompass neurotoxicology, pulmonary toxicology, renal toxicology, carcinogenesis, drug metabolism, and clinical and forensic toxicology. We are located on a 100-acre campus in a residential area of Queens, with access to Manhattan (20 min.) by subway or train. Application letters with curriculum vitae, statement of research interests, and names of three references should be sent before November 15 to: **Dr. Sue M. Ford, Dept. Pharmaceutical Sciences, St. John's University, Jamaica, NY 11439.**

*St. John's University is an Equal Opportunity/  
Affirmative Action Employer M/F*

### Sr. Corn Agronomist Sr. Potato Agronomist

**ESCAgenetics Corporation**, a public San Francisco Bay Area biotech company applies plant biotech to develop better ingredients and improved crops for the food processing industry.

#### Sr. Corn Breeder/Agronomist.

Join a program in specialty corns for food processing. Position includes personnel management, experimental design, seed production, and inbred line and new hybrid development. Ph.D. and 3+ yrs. experience in corn breeding, agronomy and extension management required.

**Sr. Potato Agronomist.** Our TPS program requires experience in potato field management, disease identification and seed certification. Ph.D. and 2+ yrs. experience in potato agronomy/crop development required.

**Assoc. Potato Breeder.** B.S./M.S.

Send résumé to:  
Personnel, ESCAgenetics Corporation  
830 Bransten Road  
San Carlos, California 94070



**LEVER RESEARCH & DEVELOPMENT**, the central R&D facility for Lever Brothers Company- a leading consumer products manufacturer, has an immediate opening for a

## GROUP LEADER, TOXICOLOGY

to supervise a safety testing group and work on product safety issues. As Group Leader you will work closely with R&D groups and develop well designed safety testing programs focused on irritation, dermal toxicity, sensitization and photoallergenicity. Additionally, you will handle special assignments and advise research management and business units.

Qualified candidates must have a Ph.D with a strong background in Toxicology and related sciences, and at least 3-5 years of relevant toxicology experience.

Lever offers an excellent salary and company paid benefits package. Send resume complete with salary history and requirements to **Mr. Jim Conti** at:



### LEVER R&D CENTER

45 River Road  
Edgewater, NJ 07020  
equal opportunity employer m/f

Pharmaceutical

## PhD TOXICOLOGIST

Wyeth-Ayerst Laboratories, a major pharmaceutical division of a Fortune 100 Corporation, has an immediate opening for a PhD level toxicologist to direct pre-clinical toxicology studies within the Drug Safety Evaluation Division. Post doctoral experience is preferred although entry level senior candidates with appropriate background will be considered. The position requires broad based technical expertise and skills in interpreting safety data as well as the ability to communicate results orally and in writing. The successful candidate will work on a cooperative basis with senior level personnel to define and characterize the toxicologic potential of a broad range of potential therapeutic agents.

The Wyeth-Ayerst Drug Safety Evaluation Division is located between the foothills of the Adirondack Mountain and the shores of Lake Champlain, New York. The area offers the benefits of a relaxed rural lifestyle and a wide range of outdoor recreational activities, while being within easy driving distance of such cultural centers as Lake Placid, Burlington, Vermont and Montreal, Canada. Wyeth-Ayerst is an equal opportunity employer offering the successful candidate an attractive benefits package and salary commensurate with experience.

Please send resume and salary history to:



**Gary Wagoner, Personnel**  
**WYETH-AYERST**  
**LABORATORIES**  
Rouses Point, New York 12979

An Equal Opportunity Employer M/F/H/V

## POSITIONS OPEN

### FACULTY POSITION IN ANALYTICAL CHEMISTRY AT IOWA STATE UNIVERSITY

Applications are invited for this position which will become available 1 July 1989. All research areas in analytical chemistry will receive consideration. The appointment probably will be at the level of assistant professor; however, applications at all levels will be considered. Candidates with outstanding potential for, and commitment to, excellence in both research and teaching are sought to join a faculty with a strong tradition of research in analytical chemistry. Candidates with appropriate research interests will also be considered for a joint appointment in the Ames Laboratory—USDOE. Applicants should submit curriculum vitae, transcripts, a documented summary of past accomplishments and an explicit statement of research plans and teaching objectives to: **Analytical Search Committee, c/o Professor D. K. Hoffman, Chairman, Chemistry Department, Iowa State University, Ames, IA 50011.** Junior applicants also should arrange for at least three letters of recommendation to be sent. Evaluation of applications will begin in November 1988. *Women and minority applicants are encouraged to apply. Iowa State University is an Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITION IN DEVELOPMENTAL BIOLOGY

Applications are invited for a tenure-track position in the field of developmental biology within the Department of Biological Sciences at Carnegie Mellon University. The level of the appointment will be commensurate with the qualifications of the candidate. To apply, send curriculum vitae and a concise description of research interests (no more than three pages) and, in addition, have three letters of recommendation sent to:

**Dr. D. Lansing Taylor, Search Committee  
Department of Biological Sciences  
Carnegie Mellon University  
4400 Fifth Avenue  
Pittsburgh, PA 15213**

*Carnegie Mellon University is an Equal Opportunity/  
Affirmative Action Employer.*

### FACULTY POSITIONS IN THE MACROMOLECULAR STRUCTURES GROUP OF THE DEPARTMENT OF BIOLOGICAL SCIENCES PURDUE UNIVERSITY

The Department of Biological Sciences invites applications for tenure-track faculty positions that would augment and complement the interests of the current eight members of the macromolecular structures group, which also is a component of an interdisciplinary, campus wide, biochemistry program. We are seeking individuals with interests in the areas of molecular biology of viruses, molecular immunology, molecular dynamics, membrane protein structure, and related topics. It is anticipated that appointments will be made over a 3-year period, at an assistant professorial level, but qualified candidates at a more senior level are welcome to apply. First deadline for receiving applications is 1 December 1988. Applicants should send curriculum vitae, bibliography, names of three references, and a statement of their research interests to: **Michael G. Rossmann, Department of Biological Sciences, Purdue University, West Lafayette, IN 47907.** *An Equal Opportunity/Affirmative Action Employer.*

**IMMUNOLOGIST.** Tenure-track assistant professorship available August 1989. Postdoctoral experience desirable. Teaching duties involve graduate courses in immunology and virology and participation in the teaching of a general microbiology course. The successful applicant will be expected to develop an externally-funded research program in area of specialty and to participate in an M.S. graduate program. Send curriculum vitae, complete list of courses or transcripts, a brief description of research interests, and three letters of recommendation by 21 November 1988 to: **Dr. Douglas Wartzok, Department of Biological Sciences, Indiana University—Purdue University at Fort Wayne, Fort Wayne, IN 46805-1499.** *An Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### FACULTY POSITION IN CELL/MOLECULAR BIOLOGY CARNEGIE MELLON UNIVERSITY

Applications are invited for a tenure-track position in the Department of Biological Sciences at Carnegie Mellon University. Applicants must be strongly motivated toward carrying out research in cell and/or molecular biology. Candidates who are just completing their postdoctoral research training will be considered for a position of starting assistant professor; exceptionally well-qualified individuals may be considered for appointment at a higher level. To apply, send curriculum vitae and a concise description of research interests (no more than three pages) and, in addition, have three letters of recommendation sent to:

**Dr. Susan Henry, Head  
Department of Biological Sciences  
Carnegie Mellon University  
4400 Fifth Avenue  
Pittsburgh, PA 15213**

Deadline for applications: 15 December 1988. *Carnegie Mellon University is an Equal Opportunity/Affirmative Action Employer.*

### FOOD SCIENCE DEPARTMENT HEAD

The University of Arkansas, Fayetteville invites applications for this position just vacated due to retirement. The successful candidate should have a doctorate in Food Science or a closely related discipline, a commitment to teaching, leadership ability in identifying and helping attract extramural support, a willingness to delegate responsibilities, a commitment to student recruiting and to the field of Food Science, and knowledge of the Land Grant System. The Department has eight full-time faculty, 15 technical and support staff, 30 undergraduate and 25 graduate students in M.S. and Ph.D. programs. Offices, well equipped laboratories and a pilot plant are located together in a 32,000-square-foot facility with a new two-story wing occupied in 1985. The University is in the scenic Ozark region of northwest Arkansas, and is part of the Land Grant System. Applicants should submit a letter of interest and qualifications, professional vitae, and the names, addresses, and telephone numbers of at least three references by 10 December 1988 to: **Dr. Paul R. Noland, Chair, Search Committee, Department of Animal Sciences, University of Arkansas, Fayetteville, AR 72701.** *The University of Arkansas is an Equal Opportunity/Affirmative Action Institution.*

### HUMAN GENETICIST

The Department of Molecular Genetics, Biochemistry, and Microbiology is searching for a human geneticist particularly an individual who is currently interested in genetic diseases affecting the cardiovascular system. The appointment is in the tenure-track and can be at any level. Generous space and start up monies are available. The current department has 26 faculty and 50 graduate students and maintains core facilities in tissue culture, DNA technology and transgenic mice. Interested applicants should submit their curriculum vitae, a short write-up of their anticipated research, and names of three individuals who are qualified to judge their abilities to: **Jerry B. Lingrel, Ph.D., Professor and Chair, Molecular Genetics, Biochemistry and Microbiology, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Cincinnati, OH 45267-0524.**

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

### MARINE INVERTEBRATE ECOLOGIST

The Department of Zoology, University of Florida, invites applications for a 9-month tenure-track position, beginning August 1989, at the assistant professor level. Applicant's research should involve the ecology of marine invertebrates. The successful candidate is expected to maintain a productive research program, teach an upper division course in marine ecology, and develop a course in his/her specialty. Applicants should submit curriculum vitae, a succinct statement of research and teaching interests, including a course outline for marine ecology, representative publications, and names, addresses, and telephone numbers of four references by 30 November 1988 to: **Dr. Frank Maturo, Chair, Marine Ecology Search Committee, Department of Zoology, University of Florida, Gainesville, FL 32611.** *The University of Florida is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### HEAD, BIOCHEMISTRY AND MOLECULAR BIOLOGY

Applications and nominations are invited for the position of Head to establish an innovative program in Biochemistry and Molecular Biology at Montana State University. The Head will administer research and teaching activities of existing faculty and at least two faculty with expertise in molecular biology and biochemistry to be hired in the next 3 years. The Program is currently affiliated with the Department of Chemistry in the College of Letters and Science, but it will become autonomous soon after the Head is hired. The Head will implement and coordinate an interdepartmental biochemistry and molecular biology program, establish teaching programs and collaborative research efforts with faculty in other departments.

Qualifications: Doctoral degree in the biological or physical sciences, knowledge of molecular genetics, a record of excellence in teaching undergraduates and graduates, and evidence of leadership of an internationally-recognized research program in molecular biology and biochemistry required. Six years of independent research experience past the doctorate including success in procuring extramural funding for original research, and a record of continuous publication in refereed journals are also required. Expertise in the control of gene expression in eukaryotes is preferred. The successful applicant will show evidence of leadership, personnel management skills, innovativeness, and enthusiasm for program development.

Salary: Negotiable based on qualifications. Start date: On or before 1 July 1989.

Applicants should submit a letter of application addressing the required and preferred qualifications and describing how they would develop an innovative biochemistry/molecular biology program, a current curriculum vitae, and three letters of recommendation to: **Biochemistry and Molecular Biology Head Search Committee, Office of the Vice President for Research, Montana State University, Bozeman, MT 59717.** Screening of applicants will begin on 1 December 1988 and continue until a suitable applicant is hired. *MSU is an Equal Opportunity/Affirmative Action Employer.*

### DEPARTMENT OF ECOLOGY AND EVOLUTIONARY BIOLOGY

The Department of Ecology and Evolutionary Biology at the University of Arizona seeks an **INVESTIGATOR** in the analysis of complex systems of biological origin. Areas of special interest include the origin and diversification of life, including evolution at molecular and cellular levels, and the genetics and evolution of temporal and spatial patterning in development, physiology, or behavior in multicellular organisms. This position will probably be filled at the junior level. Mail curriculum vitae, statement of research plans, reprints or preprints, and arrange to have letters from at least three referees sent to: **Conrad A. Istock, Head, Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85721.** The deadline for application is 15 December 1988, or until the position is filled. *The University of Arizona is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

### MALACOLOGIST

A major museum with the country's second largest collection seeks an outstanding scientist, with research interests in terrestrial, marine, or paleontological malacology, for the career-track position, Assistant Curator of Malacology. The candidate must have a Ph.D. and is expected (i) to develop a strong synthetic research program in systematics and evolutionary biology, (ii) to be knowledgeable of and actively involved in collections curation, (iii) to be authoritative for species diversity in the area relevant to his/her research, and (iv) to attract grant support for his/her research program. This position includes opportunities for adjunct appointment and graduate students at the University of Pennsylvania.

Send curriculum vitae, statement of research/career goals, and names of three references no later than 15 December 1988 to: **Margaret Fischer, Malacology Search Committee, Academy of Natural Sciences, 19th and the Parkway, Philadelphia, PA 19103.**

*The Academy of Natural Sciences is an Equal Opportunity/  
Affirmative Action Employer.*

# Opportunities in Biochemistry, Immunology, and Molecular Biology

Miles Research Center's Institute for Arthritis and Autoimmunity (IAA) is engaged in a major expansion of its staff. IAA is the newest of four major research groups located at the newly-formed Research Center in West Haven, CT near the Yale University Campus. The Center functions as a major research resource of Bayer AG of West Germany and its subsidiary, Miles Inc.

IAA is seeking applicants with a PhD or MD and 1-8 years of post-doctoral experience to participate in research programs devoted to the study and treatment of rheumatoid arthritis and osteoarthritis. Applicants should be able to function in an informal, cooperative, and challenging research environment with strong academic ties. The research goals of the applicant should include the discovery of new therapeutic agents through a basic research program which analyzes the mechanism of disease. Experience in drug development is desirable. Specific areas of our research interest are described below:

## PROTEASE BIOCHEMISTRY

The research will emphasize the relative importance of the various cartilage proteases, as well as their activation and inhibition. The mechanisms by which the synthesis of proteases and matrix components is regulated will also be studied.

## MOLECULAR BIOLOGY OF THE CHONDROCYTE

This position is conceived to work in close collaboration with the above biochemist and other molecular biologists within IAA. Projects may include gene sequencing, cloning, and the use of molecular biology to develop new models.

## DNA BINDING PROTEINS

We are interested in the process of signal transduction in synoviocytes, chondrocytes, and lymphocytes with special interest in the DNA binding proteins mediating the differentiation events induced by lymphokine/hormone stimulation.

## ANIMAL MODELS OF ARTHRITIS AND AUTOIMMUNITY

A broad knowledge of and experience with the various animal models of autoimmunity and/or osteoarthritis is essential. In addition, the applicant must have demonstrated an interest in the development of newer models and the improvement of existing ones.

## HUMAN T CELL DIFFERENTIATION

Experience with the in vitro analysis of the interaction of human T cells involved in the regulation of immune responses is essential. Familiarity with the study of T cells in autoimmune disease is desirable.

## LYMPHOCYTE ADHESION AND HOMING

This project will investigate the mechanisms regulating the interaction of vascular endothelial cells with lymphocytes. Experience with HEV biology is preferred.

These positions offer attractive compensation commensurate with qualifications, generous benefits including a premiere relocation package, and an excellent opportunity for personal growth. Publication and interaction with the academic community will be encouraged. Resumes should be forwarded to: Research Director, DDW, Miles Research Center, 400 Morgan Lane, West Haven, CT 06516.

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



**Research  
Center**

## POSITIONS OPEN

**MANAGER, MEDICAL RESEARCH HEPATITIS/AIDS.** Manages and exercises executive responsibility for product development group of scientists and research professionals in the Hepatitis AIDS diagnostic area. Innovates Hepatitis AIDS diagnostic tests utilizing enzyme immunoassay, monoclonal antibody and recombinant DNA. Identifies and has personal responsibility for innovating diagnostic tests in the AIDS Hepatitis area for special applications, including blood bank testing, hematology specialist testing and transfusion applications in international target markets. Ph.D. in human biology required together with 3 years of experience in the job offered or 3 years of experience as Director, Research and Development for Plasma Derivatives. The 3 years of experience as Director, Research and Development for Plasma Derivatives must have involved managing the development of new methods of purification of plasma proteins for therapeutic use utilizing diagnostic tests and biochemistry methods including Western Blot, Enzyme Linked Immuno Sorbent Assay, monoclonal antibody and recombinant DNA proteins. Forty hours Monday through Friday, 8 a.m. to 5 p.m., \$74,984 per year. Send résumé and Social Security Number to: **Illinois Department of Employment Security, 401 South State Street-3 South, Chicago, IL 60605, Attention: Mrs. Marie Ninneman, Reference #8156-N.** An Employer paid ad.

**MICROBIOLOGY/BIOLOGY INSTRUCTOR:** M.S. required in biological sciences, preferably in microbiology. Must possess a strong background in immunology, biochemistry, and pathology. Requires successful teaching experience at college level; community college experience preferred. Applications will be accepted until the position is filled. Transcripts, letters of recommendation and/or credentials are required. Contact: **Personnel Office, Kirkwood Community College, P.O. Box 2068, Cedar Rapids, IA 52406; Telephone: 319-398-5615.** Affirmative Action/Equal Employment Opportunity Employer.

### YALE UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF HUMAN GENETICS MOLECULAR AND CLINICAL GENETICIST

The Department of Human Genetics invites applications for a tenure-track faculty position in a stimulating environment that includes excellent laboratory and clinical facilities. This faculty appointment will be made at the level of assistant, associate, or full professor, depending on the credentials of the successful candidate. We seek a person with an M.D. degree in addition to a strong record of accomplishment in research and experience in clinical genetics. Applicants should submit curriculum vitae, reprints, and a statement of research interests, and should arrange to have three letters of recommendation sent to:

**Dr. Sherman M. Weissman**  
Chairman, Faculty Search Committee  
Department of Human Genetics  
Yale University School of Medicine  
P.O. Box 3333  
New Haven, CT 06510

The deadline for applications is 15 November 1988. Yale is an Equal Opportunity Affirmative Action Employer.

### MOLECULAR BIOLOGIST

Millsaps College invites applications for an opening as assistant/associate professor of molecular biology, Ph.D., beginning September 1989, to have primary responsibility for teaching cell biology, molecular genetics, and to participate in teaching general introductory biology courses. This appointment is a tenure-track position. Teaching experience is desirable. Millsaps College seeks faculty members with a strong commitment to the liberal arts and sciences and undergraduate teaching, and encourages research through a strong program of faculty development. Send letters of application, résumé, transcripts, and three letters of recommendation to: **James P. McKeown, Chairman, Department of Biology, Millsaps College, Jackson, MS 39210.** To ensure consideration, application materials should be received by 1 December 1988. Women and minorities are encouraged to apply.

## POSITIONS OPEN

**MICROBIOLOGIST/MOLECULAR GENETICIST.** Tenure-track assistant professorship available August 1989. Postdoctoral experience desirable. Duties: to teach microbiology, the molecular portion of the genetics course for biology majors, to develop an externally-funded research program in area of specialty, and to participate in an M.S. graduate program. Send curriculum vitae, complete list of courses or transcripts, a brief description of research interests and three letters of recommendation by 21 November 1988 to: **Dr. Douglas Wartok, Department of Biological Sciences, Indiana University-Purdue University at Fort Wayne, Fort Wayne, IN 46805-1499.** An Affirmative Action/Equal Opportunity Employer.

**MOLECULAR NEUROBIOLOGY RESEARCH.** Postdoctoral research position available in molecular neurobiology to study voltage gated ion channels. A multidisciplinary approach including electrophysiology, protein purification and recombinant DNA techniques will be used. A highly motivated individual who is willing to work with other scientists and has a background in molecular biology or biochemistry is preferred. Please send résumé and names of three references to: **Dr. A. Blume, Molecular Neurobiology, c/o Maureen Quigley, Professional Employment Representative, Lederle Laboratories, American Cyanamid Company, Pearl River, NY 10965.** Equal Opportunity Employer.

**PEDIATRIC ONCOLOGIST**—Medical College of Wisconsin. Applications are invited for a tenure-track faculty position. The level of appointment will be commensurate with training and experience. The appointee is to develop an innovative research program in pediatric oncology, immunology or molecular biology. A record of publications in referred journals and the ability to obtain extramural research support are essential. Ph.D. or M.D. required. Laboratory space and start-up funds are available. Please send curriculum vitae and the names and addresses of three references to: **Starkey D. Davis M.D., Professor and Chairman, Pediatrics, Medical College of Wisconsin, P.O. Box 1997, Milwaukee, WI 53201.** Equal Opportunity/Affirmative Action Employer M/F/H.

The Department of Psychology at the University of California, Riverside, is adding a tenure-track position to its current faculty of nineteen. Although preference is for an assistant professor, applications will be accepted from exceptional candidates at a higher rank. Each candidate must have a strong commitment to excellence in teaching.

**PHYSIOLOGICAL PSYCHOLOGIST.** The successful applicant will have a research program bearing on a substantive behavioral problem using modern neurobiological techniques.

Applicants should submit curriculum vitae and reprints and arrange to have at least three letters of recommendation sent to the appropriate committee:

**Chair—Box D**  
Physiological Psychologist Committee  
Department of Psychology  
University of California  
Riverside, CA 92521

UCR is an Equal Opportunity/Affirmative Action Employer. Minority and female candidates are encouraged to apply. Application review will begin 1 December 1988.

**POLICY COORDINATOR FOR MULTILATERAL DEVELOPMENT BANKS (MDB)** sought by World Wildlife Fund (WWF) to establish technical cooperation between WWF and MDBs and participate in public policy debate on MDB conservation role. International experience, particularly in developing countries, and ability to maintain effective relations with government agencies are required. Competitive salary appropriate to U.S. nonprofit sector. By 1 November 1988 send résumé to:

**M. J. Jamar**  
World Wildlife Fund  
1250 24th Street, N.W.  
Washington, D.C. 20037

## POSITIONS OPEN

**PHYSICAL CHEMIST.** Hamilton College is seeking a physical chemist for a 1-year replacement for the 1989 to 1990 academic year. All areas of expertise will be considered, but preference will be given to an experimentalist. Applicants should have a strong interest in teaching and research at the undergraduate level. Teaching responsibilities include junior level physical chemistry, sharing responsibility for the junior level laboratory course and one upper level course in the area of expertise. If agreeable, some supervision of senior research is possible. Send a current curriculum vitae and transcripts, and arrange for three letters of recommendation to be sent by 1 January 1988 to: **Professor Robin B. Kinnel, Department of Chemistry, Hamilton College, Clinton, NY 13323.** Hamilton College is an Equal Opportunity Employer, and women and minority candidates are encouraged to apply.

**Quantitative PLANT/CROP PHYSIOLOGIST OR ECOLOGIST** needed to participate in research, applying mathematical modeling of the physiology of loblolly pine trees to forest stand growth and productivity. Candidate should be a U.S. citizen and have a Ph.D. with a strong background in whole-plant physiology, crop growth modeling, and mathematics, including differential equations. The position is permanent; salary range is \$22,900 to \$33,200. Position location: **USDA Forest Service, Forestry Sciences Laboratory, Charleston, South Carolina.** Applicants should send curriculum vitae, work history, and names of three references to: **Ivory Walker, Personnel Section, Southeastern Forest Experiment Station, P.O. Box 2680, Asheville, NC 28802.** The Forest Service is an Equal Opportunity Employer; women and minority candidates are encouraged to apply.

**PLANT MOLECULAR BIOLOGIST, ASSISTANT/ASSOCIATE PROFESSOR.** A tenured-track position to establish a research program in molecular mechanisms regulating plant resistance to insect pests. The University of Arizona is developing a strong interdepartmental program in plant molecular biology and there is an opportunity to interact with the newly established Center for Insect Science. In addition to establishing a prominent research program, the successful candidate will be expected to develop and teach a course compatible with the departmental curriculum. Application deadline 15 November 1988 or until filled. Interested individuals should submit curriculum vitae, transcripts, statement of research objectives, recent publications and three letters of reference to: **Dr. Brian A. Larkins, Head, Department of Plant Sciences, The University of Arizona, Tucson, AZ 85721.** The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

**POSTDOCTORAL ASSOCIATE AND EXPERIENCED RESEARCH ASSISTANT**—Opportunities available to participate in research involving biochemical, molecular biological and cellular studies of roles of reversible interactions of growth promoting ligands/carcinogens with protein in normal mitosis and cell proliferation in the liver. Interested candidates please send résumé to: **Mary Ann Michini, Personnel Department, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, PA 19111.** Equal Opportunity Employer.

### TWO POSTDOCTORAL FELLOWSHIPS

Two postdoctoral fellowships are available for work on development of a mammary cell model for expression of foreign genes. The research team includes experienced cell and molecular biologists. Require demonstrated ability to perform research with minimum supervision. M.D. or Ph.D. in biochemistry, molecular biology or virology required. Experience in molecular biology is desired but not essential. Stipend range Department of Energy (DOE). Send curriculum vitae and names of references to: **Dr. Mina Bissell and Martha Stampfer, Division of Cell and Molecular Biology, Attention: Mr. Ron Lowder, Lawrence Berkeley Laboratory, University of California, Employment Office, 90-1012, #1 Cyclotron Road, Berkeley, CA 94720.** Please specify Job #A-4907. An Affirmative Action Equal Opportunity Employer M/F/H.



# Opportunities in Investigative Dermatology

Procter & Gamble has four entry-level openings for Ph.D. or post-doctoral scientists at our Miami Valley Laboratories in Cincinnati, Ohio. Selected candidates would become members of multidisciplinary project teams applying fundamental principles to the development of skin care technology.

**Biochemist or Molecular Biologist**—Training or experience in transcription, translation, and characterization of dermal matrix proteins.

**Biochemist**—Training and interests in the enzymatic processes involved in proliferation, differentiation, and keratinization. Additional experience with histology and photobiology of the skin is highly desirable.

**Skin Biophysicist**—Background in biophysics with ability to develop automated characterization of biological structures. Experience in dermatological and medical instrumentation, image processing, or histology would be advantageous.

**Cell Biologist**—Background in cell biology with specific experience in cell culture techniques involving epithelial cells, fibroblasts, growth factors, or extracellular matrix components. Supporting biochemistry or physiology training or knowledge of cutaneous immunology also desired.

Procter & Gamble is a world leader in the research, development, manufacture, and sale of a broad range of health and beauty care products. We offer a competitive salary, a superb benefit package that is in the top 5% of U.S. firms, and excellent opportunities for personal and professional growth. We are the 18th largest U.S. corporation and our support of R&D reached \$652 million last year.

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

Dr. T. J. Logan  
Dermatology Positions  
THE PROCTER & GAMBLE CO.  
P.O. Box 398707  
Cincinnati, Ohio 45239-8707

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## Procter & Gamble



## Director Molecular Biology Program University of Missouri-Columbia

The University of Missouri-Columbia is seeking a Director for its Program in Molecular Biology. The faculty and administration of the Columbia campus recently established two permanent programs, Molecular Biology and Food for the 21<sup>st</sup> Century, which are expected to attain international prominence. The Molecular Biology Program is the focus of a large interactive group of molecular biologists and funds activities in four Colleges: Agriculture, Arts and Sciences, Medicine and Veterinary Medicine.

**The Program funds hiring new faculty - four faculty have been hired in the last year; Recruits and sponsors graduate trainees and postdoctoral fellows - 20 individuals are currently supported; Funds core facilities for molecular technologies - DNA Synthesis, Protein Purification and Sequencing, and Monoclonal Antibody Production and Screening, each with a permanent director; Sponsors seminars, symposia and workshops.**

The Director will guide the development and expansion of the program, which will double in size over the next year. The Director will be expected to develop ties between the University and Industry. Candidates should be internationally recognized scientists with vigorous and well-funded research programs, and will be appointed to the faculty of the University of Missouri-Columbia at the rank of full professor in an appropriate academic unit.

**Nominations and applications should be submitted before December 1, 1988 to:**

Molecular Biology Program  
c/o Vice Provost for Research  
University of Missouri-Columbia  
202 Jesse Hall  
Columbia, Missouri 65211

University  
of Missouri  
**150**  
1839 - 1989

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## POSITIONS OPEN

### POSTDOCTORAL CHEMIST

Postdoctoral position available immediately for synthetic studies of organic and inorganic chemicals that are thermally unstable at about 100°C. A solid background in organic synthesis is essential. Previous experience with synthesis of nitrogen and/or sulfur containing compounds preferred. Send curriculum vitae and three names of references to: **Lawrence Berkeley Laboratory, Employment Office, 90-1012, (Specify Job #4901), Berkeley, CA 94720.** An Equal Opportunity Employer, M/F/H.

### POSTDOCTORAL FELLOWSHIP IN LUNG CANCER BIOLOGY NATIONAL CANCER INSTITUTE-NAVY MEDICAL ONCOLOGY BRANCH

Applications are invited for three different postdoctoral positions. One position involves studies of growth factor effects requiring experience in tissue culture, functional assays and a background in peptide biochemistry. A second position involves identification and characterization of peptide hormone growth factors produced by lung cancer cell lines and requires a background in analytical biochemistry. The final position is in the area of peptide growth factor quantitation and requires background in analytical techniques including chromatography and radioimmunoassays. Positions are available immediately and would be 3-year appointments.

Send curriculum vitae and three references to: **Dr. James Mulshine, NCI-Navy Medical Oncology Branch, Bethesda Naval Hospital, Bethesda, MD 20814.** An Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately to undertake research in lipoprotein metabolism/atherosclerosis at Sinai Hospital of Detroit. The successful candidate will be expected to study the regulation of lipoprotein metabolism by specific receptor-ligand interactions on human cultured cells. The position requires a Ph.D. in biochemistry/molecular biology and knowledge of tissue culture techniques, iodination, electrophoresis, and protein isolation. Send curriculum vitae and names of three references to: **Director, Center for Cardiovascular Research, Sinai Hospital of Detroit, 6767 West Outer Drive, Detroit, MI 48235.** Sinai Hospital is affiliated with Wayne State University and is an Equal Opportunity Employer.

**POSTDOCTORAL POSITION**—A postdoctoral position in biochemistry is available immediately to study the photoaffinity labelling and sequencing of allosteric and catalytic binding sites with emphasis on the 2-5A synthetase/RNase L system in normal and diseased cells. Funding is available for at least 2 years. Applicants should submit résumés and names and addresses of three references to: **Dr. Robert J. Suhadolnik, Department of Biochemistry, Temple University School of Medicine, Philadelphia, PA 19140.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available immediately to study multidrug resistance in human tumors. Project will involve culturing of tumor cells, flow sorting, immunological and molecular assays. Experience in tissue culture and conceptual background in molecular biology are essential. Salary commensurate with experience. Send curriculum vitae and names of three references to: **Dr. Igor Roninson, Department of Genetics, University of Illinois at Chicago, 808 South Wood Street, Chicago, IL 60612.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION**—A postdoctoral position in biochemistry is available immediately to study the enzymology and molecular biology of double stranded RNA as related to the mechanism of regulation of HIV-1 and HHV-6 replication and control of cancer cell growth in humans and in culture. Project will include identification and sequencing of the dsRNA receptor. Funding is available for at least 2 years. Applicants should submit résumés and names and addresses of three references to: **Dr. Robert J. Suhadolnik, Department of Biochemistry, Temple University School of Medicine, Philadelphia, PA 19140.** An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available 1 January 1989 for studies of gene introduction and stability in *Bacillus* thermophiles using transposon Tn916. Background in microbial genetics preferred. Send curriculum vitae and letters of reference to:

**Dr. Patrick Oriel  
Department of Microbiology and Public Health  
Michigan State University  
East Lansing, MI 48824**

### POSTDOCTORAL POSITION

Ph.D. experienced in tissue culture required for development of tissue model for inherited metabolic disease. Requires knowledge or development of a variety of skills including tissue culture, immunocytochemistry, subcellular fractionation, metabolic and kinetic studies using reconstituted membrane enzyme. Position is non-federally funded. Start immediately. Contact: **Dr. Gary J. Murray, Building 10, Room 3D04, National Institutes of Health, Bethesda, MD 20892.**

A **POSTDOCTORAL POSITION** is available immediately for a biochemist/molecular biologist to participate in studies of gene regulation by steroid receptors. Potential projects include molecular and mutagenic analyses of structure-function relationships for human estrogen and progesterone receptors, cloning and characterization of genomic DNAs for these proteins, analysis of receptor-gene interactions, and studies of receptor action in heterologous cells. Experience with recombinant DNA techniques is desired. Experience with steroid receptors, protein analysis and/or monoclonal antibody production techniques would be helpful. Salary is negotiable, depending upon experience. Send curriculum vitae, statement of interests, and three letters of reference to: **Dr. Geoffrey L. Greene, The University of Chicago, Ben May Institute—Box 424, 5841 South Maryland Avenue, Chicago, IL 60637.**

**POSTDOCTORAL POSITION:** Recent Ph.D. with experience in intracellular recording wanted to participate in behavioral and neural analyses of rhythmic feeding in snails. Efforts could be directed toward: videomicroscopical analysis of behavior; modulation of membrane excitability or synaptic efficacy; or network analysis of neuronal pattern generation. Send curriculum vitae, references, and statement of interests to: **Dr. A. Don Murphy, Department of Biological Sciences, University of Illinois at Chicago, Chicago IL 60607.** Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available for up to 3 years to study the molecular mechanisms of transcriptional regulation of the lactose regulation in yeast or to study yeast sphingolipid function and biosynthesis using molecular genetic approaches. Experience in recombinant DNA techniques desirable. Salary: \$24,000. Send résumé and three reference letters to: **Dr. Robert Dixon, Department of Biochemistry, University of Kentucky, Lexington, KY 40536.**

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**POSTDOCTORAL POSITION** available to participate in an on-going study of a novel metabolic pathway expressed when macrophages are immunostimulated [see *Proc. Natl. Acad. Sci. U.S.A.* **84**, 6369 (1987)]. This pathway involves an unusual oxidation of the amino acid L-arginine and, generates nitric oxide as an intermediate. Participation could be in any one of three areas: enzyme purification, chemical characterization of the intermediates, or cellular role of the pathway. Some relevant experience is necessary and might include: protein purification, enzymology, bioorganic chemistry or cell culture techniques. Please send a curriculum vitae and the names of three references to: **Dr. Michael A. Marletta, College of Pharmacy, 428 Church Street, University of Michigan, Ann Arbor, MI 48109-1065.**

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### POSTDOCTORAL POSITION IN VITRO TOXICOLOGY

Immediate opening for an individual with experience in mammalian cell culture to study the biochemical mechanisms of acute and chronic toxicities of cadmium and other selected metals. Send curriculum vitae and names of three references to: **Dr. Zahir A. Shaikh, Department of Pharmacology and Toxicology, University of Rhode Island, Kingston, RI 02881.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available to study basic problems in gating and ion permeation in membrane ionic channels using patch clamp/single channel techniques and both ionic and gating current studies on internally perfused giant axons. Experience in cellular electrophysiology required. Background in membrane biophysics or physical sciences preferred. Send curriculum vitae and names of three references to: **Dr. L. Goldman, Department of Physiology, School of Medicine, University of Maryland, Baltimore, MD 21201.** Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available 1 January 1989 to join a collaborative investigation of mechanisms of recovery following spinal cord injury. Fellow will work with **Drs. Alan R. Light, Elizabeth Bullitt** (Departments of Physiology and Neurosurgery), and **Charles Vierck** (Department of Neuroscience, University of Florida), and techniques will include: immunohistochemistry, single unit recording, retrograde and anterograde anatomical tracing, and primate psychophysics. Experience with any of these techniques will permit the fellow to contribute immediately and then expand his or her expertise. Send curriculum vitae and three letters of reference to: **Dr. Alan Light, Department of Physiology, University of North Carolina at Chapel Hill, Campus Box #7545 MacNider, Chapel Hill, NC 27599-7545.** The University of North Carolina is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION IN BIOCHEMICAL PHARMACOLOGY** for recent Ph.D. interested in the biochemical modulation of anticancer drug activity. Research on the use of nucleoside transport inhibitors to increase the selectivity of antimetabolites against human tumors growing in culture or as xenografts in mice. Salary \$22,000 to \$25,000. Send curriculum vitae and four letters of recommendation to: **Judith A. Belt, Ph.D., Department of Biochemical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, P.O. Box 318, Memphis, TN 38101.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION IN VASCULAR CELL BIOLOGY

This position is in an interdisciplinary group with research activities in cardiovascular physiology, cell biology, hemodynamics, and related areas. Studies involve an emphasis on mechanical stress effects on vascular endothelial and smooth muscle cells. Qualifications include a Ph.D. and the ability to work independently. Experience in mammalian cell culture desirable. Starting date negotiable. Send curriculum vitae and names and addresses of three references to: **Dr. Robert M. Nerem, Biomechanics Center, Georgia Institute of Technology, Atlanta, GA 30332-0405. Telephone: 404-894-2768.** Georgia Tech is an Equal Opportunity Employer.

### POSTDOCTORAL POSITION INSULIN ACTION

Available 1 March 1989 to study insulin resistance in primary cultured adipocytes and mechanisms of insulin action on protein synthesis, glucose transport and lipogenesis. Send curriculum vitae, outline of research goals, letters of reference, and reprints to: **Dr. Stephen Marshall, University of Tennessee/Memphis, Department of Biochemistry, 800 Madison Avenue, Memphis, TN 38163.**

### POSTDOCTORAL POSITIONS

Available January 1989 to study the structure and function of sarcoplasmic reticulum  $\text{Ca}^{2+}$  release channel, dihydropyridine-sensitive  $\text{Ca}^{2+}$  channel or dystrophin using biochemical, biophysical, immunological and molecular biological techniques. Applicants should have a Ph.D. and a strong background in biochemistry, biophysics, cell biology, or physiology. Submit letter of application, curriculum vitae, reprints and two letters of recommendation to:

**Dr. Kevin P. Campbell  
University of Iowa  
Department of Physiology and Biophysics  
Iowa City, IA 52242**

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

# Opportunities in AIDS Related Research

## Basic Research and Drug Discovery



Hoffmann-La Roche, a research-intensive pharmaceutical company, and Roche Institute of Molecular Biology, its basic research institute, are seeking **postdoctoral fellows** to join a multidisciplinary team engaged in AIDS related research. These positions are supported by a grant from the **NIAID National Cooperative Drug Discovery Group For The Treatment Of AIDS**. The program leaders are: Dr. Ming-Chu Hsu (Roche Exploratory Research), Dr. Craig Rosen (Roche Institute of Molecular Biology), Dr. Robert G. Roeder (The Rockefeller University) and Dr. David J. Volsky (St. Luke's/Roosevelt Hospital, Columbia University). Successful candidates will have the opportunity to carry out basic research while interacting with colleagues skilled in translating relevant findings into therapeutic approaches. In addition, these positions will offer opportunities for extensive collaborative interactions with scientists at the Rockefeller University and Columbia University in the area of regulation of viral gene expression. Publication of basic research findings is encouraged.

### Molecular Biology

Several positions are available for PhD molecular biologists to conduct studies on the regulations of gene expression of human immunodeficiency virus. Familiarity with recombinant DNA technology is essential and experience in the areas of transcription factors, protein purification, protein-DNA interaction and microbial genetics (yeast and bacteria) is desirable.

### Structural Chemistry

Positions are available for PhD chemists to investigate the three-dimensional structures and ligand-binding attributes of HIV proteins via NMR spectroscopy and crystallography. Facilities include a dedicated VXR-500-S spectrometer, a Rigaku AFC-5 system with twin Xuong-Hamlin area detectors, a VAX-8800 computer, and an E&S graphics system. These positions offer close interactions with our molecular modeling group. Applicants should be experienced in two-dimensional protein NMR or protein crystallography.

These positions offer a stimulating research environment, competitive stipends, and excellent benefits. We are conveniently located 12 miles from New York City. Interested individuals should send curriculum vitae, a brief summary of research interest and career goals, and names of three references, to: **Dr. Ming-Chu Hsu, Department of Oncology and Virology, Roche Research Center, 340 Kingsland Avenue, Nutley, New Jersey 07110**. We are an equal opportunity employer.



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The ability to give high quality technical presentations, research existing as well as finding new marketing opportunities, and good technical skills with experience in developing innovative, analytical techniques are required. This person must be highly motivated and a self starter with the ability to work well with people. Travel 20-30% of the time required.

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## POSITIONS OPEN

**POSTDOCTORAL POSITIONS**—gene expression and signal transduction. Positions available to study regulation of gene expression of G-proteins and G-protein-linked receptors [P.N.A.S. 85, 5021-5025 (1988)] cell and molecular biology techniques emphasized including high-resolution indirect immunofluorescence and site-directed mutagenesis. Send curriculum vitae to: **Dr. Craig C. Malbon, Department of Pharmacology, School of Medicine, State University of New York at Stony Brook, Stony Brook, Long Island, NY 11794-8651.**

**POSTDOCTORAL RESEARCH POSITION**—Postdoctoral training position in the molecular cell biology of clathrin coated membranes. Focus is on the regulation of coat assembly in cells and on coat-membrane receptor interactions in endocytosis. Experience in protein chemistry or molecular biology preferred but not required. Send curriculum vitae and names of three references to: **Dr. James H. Keen, Fels Institute for Cancer Research and Molecular Biology, Temple University School of Medicine, Philadelphia, PA 19140. An Equal Opportunity/Affirmative Action Employer.**

## POSTDOCTORAL RESEARCH ASSOCIATES

Positions through the Nitrogen Availability Program at Michigan State University. The Program is direct-by twelve faculty in Departments of Biochemistry, Botany/Plant Pathology, Chemistry, Crop/Soil Sciences, Genetics, Microbiology, and MSU-DOE Plant Research Laboratory. The program fosters innovative interdisciplinary research emphasizing biotechnological approaches to nitrogen availability to plants: biological nitrogen fixation, denitrification and ureolysis. Starting salaries: \$18,000 or higher, depending on experience, plus benefits. Candidates with strong potential for basic research and degrees/experience in molecular or cellular biology or the disciplines above should contact: **Dr. Kenneth Nadler, NAP Director, Botany/Plant Pathology Department, Michigan State University, East Lansing, MI 48824. Telephone: 517-353-5167.**

MSU is an Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH** on the Effect of Mutations at an Enzyme Active Site on Function. A position is available for a candidate with research experience in enzymology or biophysical chemistry to join a research group active in this area [see J. Biol. Chem. 263, 9187 and 10304 (1988)]. Training will be provided in methods for studying ligand binding, conformational equilibria and catalysis, include methods for the study of transient state kinetics. Starting salary \$22,000 or higher depending on relevant experience. To apply send curriculum vitae and three references to: **Dr. R. L. Blakley, Department of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, TN 38101. An Equal Opportunity Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE**—Immediate opening for postdoctoral research associate to work on DNA Damage and DNA Repair. Background in biochemistry or molecular biology. Send curriculum vitae to: **Dr. Nahum J. Duker, Department of Pathology, Temple University Medical School, 3400 North Broad Street, Philadelphia, PA 19140. An Equal Opportunity/Affirmative Action Employer.**

## POSTDOCTORAL RESEARCH POSITION MOLECULAR MECHANISMS OF MAMMALIAN CELL GROWTH CONTROL MAYO CLINIC/MAYO FOUNDATION

Postdoctoral position available 1 January 1989 to study the molecular and cellular biology of peptide growth factors. Specific areas of research include the identification and cloning of growth factor-regulated genes and the delineation of specific protein-DNA interactions involved in transcriptional control. Applicants should possess a strong background in one or more of the following areas: recombinant DNA methodology; protein biochemistry; mammalian cell culture techniques. Send curriculum vitae and three references to: **Dr. Michael J. Getz, Department of Biochemistry and Molecular Biology, Mayo Clinic/Mayo Foundation, Rochester, MN 55905. An Equal Opportunity/Affirmative Action Institution.**

## POSITIONS OPEN

**POSTDOCTORAL RESEARCH POSITION** available to study the role of polyunsaturated fatty acids in immunoinflammatory phenomena, particularly the salutary effect of essential fatty acid deficiency on glomerulonephritis and renal transplants. Experience in lipid biochemistry or immunology desirable. Salary competitive and commensurate with experience. Send curriculum vitae and names of three references to: **James B. Lefkowitz, M.D., Department of Pharmacology, Box 8103, Washington University School of Medicine, 660 South Euclid Avenue, St. Louis, MO 63110.**

**POSTDOCTORAL RESEARCH POSITION** is available immediately for a biochemist/molecular biologist to participate in studies of two important human blood clotting proteins, plasminogen activator inhibitor-1 (PAI-1), and von Willebrand factor (vWF). Current work is focussed on (i) molecular structure/function studies for both proteins; (ii) regulation of PAI-1 gene expression; and (iii) the molecular basis of von Willebrand's Disease. Please send a description of research interests, curriculum vitae, and names and telephone numbers of three references to: **Dr. David Ginsburg, Howard Hughes Medical Institute, 1150 West Medical Center Drive, 4520 MSRB I, University of Michigan, Ann Arbor, MI 48109-0650. Equal Opportunity Employer.**

**POSTDOCTORAL TRAINING—CELL MATRIX BIOLOGY.** Postdoctoral positions are available in the area of cell biology of cell-extracellular matrix interactions. Applicants should have a recent Ph.D. in cell biology or a related field. Projects include (i) effects of proteoglycans and non-enzymatic glycosylation on vascular cell-basement membrane signaling as molecular models of atherosclerosis and diabetes, (ii) molecular mechanisms controlling matrix architecture and (iii) cell-matrix interactions in morphogenesis. Send curriculum vitae and names and addresses of references to: **Drs. David E. Birk and Peter D. Yurchenco, Department of Pathology, 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 Opportunity Employer. M/F/H/V.**

## PROTEIN BIOCHEMIST

Pitman-Moore, Inc., a leading animal health company, has a challenging opportunity for a Protein Biochemist with experience in protein primary structure analysis.

The successful candidate will have a Ph.D. in protein biochemistry and a proven track record in amino and carboxy terminal sequence analysis, tryptic peptide mapping and amino acid analysis. He/she will lead a group of four other scientists who are responsible for developing strategies for verifying the primary structure of proteins produced by recombinant DNA technology. This includes the development of methods for identifying the structure basis of chromatographic variants and for verifying protein modifications. Prior supervisory experience is essential, as are excellent written and verbal communication skills.

As a member of the Bioanalytical Research Section, the individual will join a dynamic research group that is solving problems related to biotechnology, drug delivery, and new product development.

Salary will be commensurate with experience and includes a complete benefits package. Please send resume and list of publications in confidence to:

**Mr. M.G. Ray  
Pitman-Moore, Inc.  
P.O. Box 207  
Terre Haute, IN 47808**

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## Faculty Positions

**The Milton S. Hershey Medical Center  
The Pennsylvania State University**

The Department of Biological Chemistry is making a major commitment in the general area of molecular biophysics and structural biology. Applications and nominations are invited for six new faculty positions, three to be filled this year, with the remaining three to be filled in the next successive two years. All six positions will be either tenured or tenure-track 12-month appointments, with the initial three at any level from Assistant to Full Professor. Space, start-up funds, and salary are extremely competitive.

Successful candidates will be responsible for developing independent research programs and teaching in their discipline. Applicants who utilize X-ray crystallography, spectroscopic methods including 2-dimensional NMR, and modeling are particularly sought.

The ten current faculty members within the Department represent research interests in molecular genetics, enzymology, carbohydrate and lipid biochemistry, and protein folding. The Department also participates actively in several interdepartmental programs including those in Cell and Molecular Biology, Neuroscience, and the MD/PhD program.

The deadline for receipt of this year's applications is 1 December 1988. Interested individuals holding the Ph.D. degree with appropriate experience are invited to apply by sending their curriculum vitae, a short description of future research interests, and the names of three references to:

**Search Committee  
c/o Dr. George Rose, Chairman  
Department of Biological Chemistry  
The Milton S. Hershey Medical Center  
P.O. Box 850C  
Hershey, PA 17033**

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# MIT

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## POST-DOCTORAL SCIENTISTS

Several positions are available for the study of genetic change in humans and human cells. Development and application of technology to observe mutational spectra in human blood and tissue DNA are emphasized. Both epidemiologic and mechanistic studies are possible.

Salary: \$25,000 per annum for entry-level candidates.

Please send resume to:  
**Prof. William G. Thilly and  
Dr. Phouthone Keohavong**  
MIT, Room E18-666  
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Cambridge, MA 02139  
Telephone: (617) 253-6221

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## POSITIONS OPEN

### PRESIDENT GEORGIA STATE UNIVERSITY

The Board of Regents of the University System of Georgia announces its search for a new President at Georgia State University to take office on 1 July 1989. Candidates should have a distinguished record of accomplishments in teaching, research and administration in higher education or executive-level accomplishments and a working knowledge of higher education. A doctorate or appropriate terminal degree is desirable. Nominations should include the nominee's current address. Applications should include a letter of interest, curriculum vitae, and the names and addresses of five persons who can serve as references. Nominations and applications should be received by 18 November 1988 to be assured of consideration. All nominations and applications should be addressed to: **Dr. H. Dean Propst, Chancellor, University System of Georgia, 244 Washington Street S.W., Atlanta, GA 30334.**

*Georgia State University is an Equal Opportunity, Affirmative Action Employer, and is a unit of the University System of Georgia.*

The Department of Pathology and Laboratory Medicine, The University of Texas Medical School at Houston, is seeking outstanding candidates for the position of **PROFESSOR AND CHAIRMAN** of the department. The successful candidate will have a medical degree (M.D. or equivalent). The candidate should have administrative experience to give leadership to this multifaceted department. The candidate should be able to build upon and further strengthen the significant research base already established and strengthen the clinical service aspects of the department. The department has major teaching responsibility including participation in the graduate school of biomedical sciences. In addition to customary medical teaching, the department is charged with the teaching of immunology. Applications or nominations should be addressed to: **J. van Eys, M.D., Ph.D., Chairman, Search Committee, c/o Department of Pediatrics, The University of Texas Medical School at Houston, P.O. Box 20708, Houston, TX 77225.** Deadline for applications is 15 November 1988. *The University of Texas is an Equal Opportunity Employer and specifically invites and encourages applications from women and minorities.*

**PROFESSOR AND DIRECTOR OF ASSOCIATE PROFESSOR AND DIRECTOR**, Division of Health Services Administration. Qualifications: M.D. or Ph.D.; experience in teaching, administration, research and development, significant publications in critically reviewed journals, and active membership in scholarly societies. Responsibilities: teaching, research, curriculum development, supervision of medical students, graduate students, and postdoctorals. Academic rank depends on qualifications. Salary competitive, negotiable. Available 1 May 1989.

Applications deadline: 1 December 1988. To: **Chairman, Department of Preventive Medicine and Biometrics, c/o Director, Civilian Personnel, Uniformed Services University of the Health Sciences, Bethesda, MD 20814-4799.**

*The University is an Equal Opportunity Employer.*

### RADIATION BIOLOGIST

Oak Ridge National Laboratory's (ORNL) Biology Division is seeking applicants with a Ph.D. or equivalent in radiation biology with a research emphasis on the mechanisms of induction of cancer. Persons with experience in molecular biology, experimental biology, or related disciplines are encouraged to respond. The successful applicant will be expected to develop their own research as well as collaborate in ongoing projects of the Radiation Carcinogenesis Program.

ORNL offers an excellent benefits package and a generous relocation program plus a stimulating working environment. Salary commensurate with experience. Qualified applicants should forward résumé, publication list, copies of academic transcripts, and names of three references to: **R. J. Michael Fry (Chairman, Search Committee), Biology Division, P.O. Box 2009, Oak Ridge National Laboratory, Oak Ridge, TN 37831-8077.**

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## POSITIONS OPEN

The Department of Neurosciences, School of Medicine, University of California, San Diego is seeking qualified candidates (Ph.D. in biochemistry or molecular biology) for one **POSTGRADUATE RESEARCH** position to work in a laboratory of human biochemical genetics, available immediately. Position requires background in (i) enzymology and protein chemistry, or (ii) molecular biology. Salary is based upon published University of California salary schedule. Send curriculum vitae and names of three referees to: **Professor John S. O'Brien, Department of Neurosciences, University of California, San Diego, Mail Code M-034, La Jolla, CA 92093.** Applications will be accepted through 1 March 1989. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

### PROFESSOR OF PATHOLOGY DIVISION OF IMMUNOLOGY

The Department of Pathology at The University of Iowa College of Medicine is accepting applications for the position of Professor in the subspecialty area of Immunology with emphasis in immunogenetics and autoimmunity. Experience in transgenic mice and hybridoma technology necessary. Successful candidates should have M.D. degree and be eligible for licensure in the State of Iowa or Ph.D. degree in appropriate discipline. The applicant should have a record of satisfactory scholarship. Salary commensurate with experience. Letters of application should be directed to: **Richard G. Lynch, M.D., Professor and Head, Department of Pathology, The University of Iowa College of Medicine, Iowa City, IA 52242.** *The University of Iowa is an Affirmative Action/Equal Opportunity Employer.*

### REPRODUCTIVE ENDOCRINOLOGISTS:

The Department of OB/Gyn, University of Kansas School of Medicine-Wichita invites applicants for two research positions in the Women's Research Institute. Qualified candidates must hold a Ph.D. or M.D. and postdoctoral training, and be capable of establishing an independent research program in reproductive endocrinology. Individuals with expertise in molecular endocrinology are especially encouraged to apply. The successful candidate will join clinical and basic scientists whose research interests include in vitro fertilization, gamete physiology, implantation, testicular and ovarian physiology, and biochemical endocrinology. Academic rank and salary are negotiable. Send curriculum vitae, statement of research interests, and names of three references by 1 January 1989 to: **Dr. Brooks A. Keel, Ph.D., Scientific Director, The Women's Research Institute, University of Kansas School of Medicine-Wichita, 2903 East Central, Wichita, KS 67214.** *An Equal Opportunity/Affirmative Action Employer. Applicants are sought from all qualified people regardless of race, religion, color, sex, disability, veteran status, national origin, age, or ancestry.*

**RESEARCH ASSISTANT PROFESSOR** (M.D., Ph.D., M.D./Ph.D.) with experience in molecular biology of the human immune response system. Please forward curriculum vitae to: **Dr. Shu Man Fu, University of Virginia, Division of Rheumatology, Box 412, Charlottesville, VA 22908.** Telephone: 804-924-5213.

**RESEARCH ASSOCIATE** position. Ph.D. immunology or biochemistry. Duties involve designing and conducting research in: cellular cytotoxicity; cytoskeletal dynamics; macrophage activation; cell fractionation; protein separation; lipopolysaccharide chemistry; and immunochemistry. Starting salary is \$17,400, based on a 40-hour week. If not a U.S. citizen, please indicate visa status. Apply to: **Employment Security Commission, 516 Mangum Street, Durham, NC 27701.** Attention: **Job Order Number NC8103449, DOT Code 090.227-010.** *Affirmative Action/Equal Opportunity Employer.*

### RESEARCH ASSOCIATES

Two research positions are available immediately for Ph.D. with experience in reproductive biology or molecular biology. Work includes in vitro fertilization in animals, protein biochemistry and recombinant DNA technology. Send curriculum vitae to: **Dr. Rajesh Naz, Department of Obstetrics and Gynecology, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461.** Telephone: 212-430-2225.

## POSITIONS OPEN

**RESEARCH ASSOCIATE** needed by Neurophysiology Laboratory in the Department of Neurology, Columbia University College of Physicians and Surgeons, for studies of epilepsy and human motor control. Applicants must have experience with design and implementation of electronic circuitry involved in biological signal acquisition, capability for computer programming and interfacing, and basic knowledge of biology and physiology. Engineering and/or computer background an advantage. Ability to interact with patients and human subjects required. Write to: **Dr. Timothy A. Pedley, The Neurological Institute, 710 West 168th Street, New York, NY 10032.** *Columbia University takes Affirmative Action to ensure Equal Opportunity.*

**RESEARCH ASSOCIATE** position is available in the Department of Biochemistry for a Ph.D. with some postdoctoral research experience. Utilizing techniques such as tissue fractionation, chromatography and radioisotopic tracer studies, the successful candidate will conduct independent research on the distribution, biosynthesis and metabolism of polyisoprenoid alcohols, intermediates in glycoprotein biosynthesis. Salary \$25,000 to \$30,000 plus benefits. Send curriculum vitae, list of publications and names of three referees to: **Martha Harley, Employment, Room 262 Stevenson-Lawson Building, University of Western Ontario, London, Ontario, Canada N6A 5B8.** *In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents of Canada. An Equal Opportunity Employer.*

**RESEARCH ASSOCIATE** who will purify plasma membranes by ultracentrifugation from human white blood cells isolated by centrifugal elutriation and isolate membrane proteins by detergent extraction and column chromatography. Perform radioiodination of extracted proteins, radioimmunoassays, two dimensional polyacrylamide gel electrophoresis, western blot analysis and thin layer chromatography of cellular lipids. Prepare liposomes containing membrane fragments and measure the biological activities in cellular proliferation and cellular cytotoxicity tissue culture bioassays. Evaluate the immunological response of liposome-protein complexes for development of synthetic vaccines. Perform animal studies evaluating the effectiveness of liposome-protein complexes for the control of tumor growth and metastasis. Ph.D. Degree in microbiology or biochemistry with 2 years of research training. Forty hours per week. \$25,300 annual salary. Contact: **Texas Employment Commission, Houston, Texas** or send résumé to: **Texas Employment Commission, Placement Unit, Austin, TX 78778.** J.O. #5515202. *Ad Paid for by an Equal Employment Opportunity Employer.*

**RESEARCH ASSOCIATE** position available immediately to study interrelation of host-pathogenic human mycoplasmas. Qualifications include a recent Ph.D. in immunology or related field, experience in protein purification, immunochemical techniques, production of monoclonal antibody and comprehensive background in recombinant DNA technology. Send curriculum vitae and three references to: **M. R. Coker-Vann, Ph.D., Arthritis Institute, 2455 Army Navy Drive, Arlington, VA 22206.** *Equal Opportunity Employer.*

**RESEARCH ENVIRONMENTALIST**—The South Florida Water Management District is seeking a wetland ecologist with backgrounds in plant ecology and nutrient cycling. Minimum requirements are a Bachelor's degree in biology or ecology and over 2 years of responsible experience conducting ecological/environmental research; or an equivalent combination of training and experience. An M.S. or Ph.D. with research experience in the above field is desirable. Specific responsibilities will include (i) design of a research and development program utilizing vegetation to remove nutrients from agricultural runoff water; (ii) research on nutrient impacts, retention capacities and management techniques for freshwater wetlands; (iii) administration of research contracts. Starting salary \$27,352 to midpoint \$34,860 commensurate with qualifications. Applications may be obtained from: **The Personnel Office, South Florida Water Management District, P.O. Box 24680, West Palm Beach, FL 33416-4680** or call: 407-686-8800, extension 726. The deadline for applications is 5:00 p.m. on 14 November 1988. *Equal Opportunity Employer.*

**GRADUATE PROGRAM  
CELL AND MOLECULAR BIOLOGY  
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- NEUROBIOLOGY
- MOLECULAR VIROLOGY AND IMMUNOLOGY

The Graduate School at BAYLOR COLLEGE OF MEDICINE has recently created a graduate program in CELL AND MOLECULAR BIOLOGY stressing basic research in the above areas. Students accepted for studies leading to the Ph.D. degree will receive financial support. For further information contact:

Dr. Savio Woo, Director  
Graduate Program in Cell and Molecular Biology  
Baylor College of Medicine, Room 185A  
One Baylor Plaza  
Houston, Texas 77030  
Phone: (713) 799-6557

## Staff Scientist

The Health Effects Institute (HEI) is an independent nonprofit organization that sponsors and evaluates research on the health effects of automotive emissions. It is jointly funded by the United States Environmental Protection Agency and the domestic and foreign automotive industry. HEI is seeking a staff scientist to work with the Institute's Health Research Committee and other staff scientists to develop and oversee its research program.

Applicants should have the following qualifications: Ph.D., M.D., or equivalent degree; relevant scientific experience; an interest in science management and environmental problems; and good communication skills. Research experience in the following areas is particularly desirable: exposure monitoring, epidemiology, or lung physiology and pathology. Individuals with other backgrounds will also be considered. Salary commensurate with experience.

Send curriculum vitae and the names and addresses of three references to: **Dr. Jane Warren, Health Effects Institute, 215 First Street, Cambridge, MA 02142, by November 14, 1988.** An Affirmative Action/Equal Opportunity Employer.

**The Health Effects Institute**

### NATIONAL SCIENCE FOUNDATION (NSF)

NSF's Division of Astronomical Sciences is seeking qualified applicants to fill the position of Program Manager, Astronomy Centers Section. The position will be filled on a permanent basis; or rotator/temporary basis for one-two years, and is excepted from the competitive civil service. The salary range is \$46,679 to \$72,500 per annum.

The Section is responsible for the funding and oversight of three National Astronomy Centers. The Program Manager has the Foundation's lead responsibility for understanding the scientific and technical content of Center programs. The incumbent will serve as the principal point of contact in the NSF for matters concerning the assigned Center; monitor scientific and technical work under an existing award; coordinate reviews and provide analysis of proposed new or upgraded facilities; develop budget and long range planning information to support Administration requests to the Congress; accomplish a variety of administrative tasks connected with funding actions for the Center's programs.

Applicants should have a Ph.D. in astronomy or astrophysics or equivalent experience. In addition, 4 or more years of successful independent scientific research experience and some project management experience together with knowledge of technology and techniques likely to be applied in the programs in the Center are required.

For technical information concerning the position contact Dr. Kurt Riegel, Head, Astronomy Centers Section, (202) 357-9450.

Applicants should send resume or SF-171, Application for Federal Employment to: National Science Foundation, Division of Personnel and Management, 1800 G. St., NW., Washington, DC 20550. Attn: Catherine Handle. For further information call 202/357-7840. Hearing impaired individuals should call TDD 202/357-7492. NSF is an Equal Opportunity Employer.

## Immunologist

Merck Sharp & Dohme Research Laboratories, the leader in medical research is offering a unique opportunity for an Immunologist to join our expanding research program.

Selected candidate will be involved in studying immunotherapeutic approaches to cancer treatment and the immune response to vaccine protein carriers; experience in tissue culture, cellular proliferation assays, ELISA's, lymphocyte activation, lymphokine secretion and RIA's desirable. Ability to work independently is a must.

A B.S. or M.S. degree or the equivalent with 1-3 years meaningful experience in above or similar techniques is required.

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## POSITIONS OPEN

**RESEARCH ASSOCIATE** position in biochemistry available for a Ph.D. with some postdoctoral research experience to conduct independent research on the effects of diet on mammary cancer in vitro and in vivo. Salary \$24,000 to \$30,000 plus benefits. Send curriculum vitae, list of publications and names of three referees to: **Martha Harley, Employment, Room 262 Stevenson-Lawson Building, University of Western Ontario, London, Ontario, Canada N6A 5B8.** In accordance with Canadian Immigration requirements this advertisement is directed to Canadian citizens and permanent residents of Canada. An Equal Opportunity Employer.

Louisiana State University (LSU) Eye Center is looking for a **SENIOR PHARMACOLOGIST**. Applicant should be interested in drug delivery systems although other areas of research will be considered.

Previous experience in ophthalmology not necessary. Interested applicants send curriculum vitae to: **Herbert E. Kaufman, M.D., LSU Eye Center, 2020 Gravier Street, Suite B, New Orleans, LA 70112.** LSUMC is an Equal Employment Opportunity/Affirmative Action Employer.

**SENIOR SCIENTIST/GROUP LEADER.** Opportunity to provide scientific direction in an interdisciplinary research program in Grand Canyon. This 2-year extension of the 6-year Glen Canyon Environmental Studies will focus on short-term studies on the effects of dam releases on endangered fishes, trout, beach stability, and resource economics, as well as development of a long-term research plan. Applicants shall have a significant degree of research and project management experience with expertise in hydrology/geomorphology, riverine ecology, or related skills. The ability to coordinate and provide leadership to interagency research groups is critical. Send for RFP to: **Tom Walsh, Contracts, U.S. Bureau of Reclamation, Upper Colorado Region, P.O. Box 11568, Salt Lake City, UT 84147-0568.** An Equal Opportunity/Affirmative Action Employer.

### SPACE LIFE SCIENCES PROJECT AND CURRICULUM ASSISTANTS

The NASA Space Life Sciences Training Program at the Kennedy Space Center is accepting applications for temporary staff positions (January through August 1989) supporting development and implementation of life science laboratory projects to be included in an intensive summer educational program for undergraduates. These staff positions offer on the job exposure to NASA's life science operations and research under the supervision of resident and visiting scientists. Graduate student level persons with background in human physiology (vestibular, cardiovascular, or muscle), plant physiology, animal nutrition, microbiology, bioengineering or combinations of the above are especially encouraged to apply. For more information contact: **Dr. Ronald Biro at 407-867-2521.** Applicants should send a letter of interest, curriculum vitae, and three letters of reference by 1 December 1988 to:

**John R. Puleo**  
The Bionetics Corporation  
Mail Code BIO-1  
Kennedy Space Center, FL 32899  
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### UNIVERSITY OF UTAH DEPARTMENT OF BIOCHEMISTRY

**TENURE-TRACK POSITIONS** are available for autumn, 1989 in the area of physical biochemistry, including determination of the structure of macromolecules, investigation of their mechanism of action, and measurement of energetic contributions to these properties. Preference will be given to applicants at the level of assistant professor, but candidates at more senior ranks may also be considered. Teaching responsibilities are largely to graduate and medical students. Applicants should hold a doctoral degree, have postdoctoral experience and demonstrable research ability. Interested individuals should submit curriculum vitae, a statement of research background and interests, and three letters of recommendation to: **Faculty Search Committee, Department of Biochemistry, University of Utah School of Medicine, Salt Lake City, UT 84132.** Deadline for applications is 1 December 1988; late applications may be considered if openings are still available. Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**STAFF PHYSICIAN** with the Veterans Administration Medical Center and assistant professor of medicine (infectious diseases), University of California San Diego. Applicant should be capable of establishing an independent research program related to HIV infections, and will be expected to participate in clinical and teaching activities. *We are an Equal Opportunity Employer.* Please send curriculum vitae and names of references to: **Dr. Joshua Fierer (111F), VA Medical Center, 3350 La Jolla Village, Drive, San Diego, CA 92161.**

**SUPERVISORY PHYSICAL SCIENTIST**—Responsible for developing/managing a QA program for testing of chemical, biological defensive and smoke/obscurant systems. Broad education/experience in physical sciences, engineering, and statistics is essential, as are personnel management and communication skills; familiarity with applied microbiology helpful. A 4-year degree in physical science, engineering or mathematics that included 24 semester hours in physical science plus 3 years of professional experience which equipped the candidate to manage substantial QA programs. U.S. citizenship and security clearance required. Salary: \$46,679 to \$60,683. Contact: **Ms. Pat Austin, Civilian Personnel Office, Dugway Proving Ground, Dugway, UT 84022-5000. Telephone: 801-831-2181, Monday to Thursday 7:00 a.m. to 5:30 p.m. MDT, for information.** An Equal Opportunity/Affirmative Action Employer.

**TOXICOLOGIST.** Tenure-track assistant professorship to investigate the mechanism of xenobiotic toxicity, the specific area of research to complement interests of existing faculty. Ph.D. in toxicology or a related field; postdoctoral experience preferred. The applicant will be expected to develop an externally-funded research program in toxicology and participate mainly in graduate student education at the M.S. level. Submit curriculum vitae, a complete list of graduate courses or transcripts, a statement of research interests, and three letters of recommendation by 21 November, 1988 to: **Dr. Douglas Wartzok, Chairman, Department of Biological Sciences, Indiana University—Purdue University, Fort Wayne, IN 46805-1499.** An Affirmative Action/Equal Opportunity Employer.

**VETERINARY PATHOLOGIST.** The Yerkes Primate Research Center of Emory University has an opening for a veterinary pathologist. Responsibilities include service pathology and participation in research activities of the Division of Pathobiology and Immunobiology. Areas of research include spontaneous diseases of nonhuman primates and the development of animal models for human disease. Emphasis is currently being placed on the development of animal models for AIDS (SIV and HIV). A D.V.M. with training in pathology and an interest in research is desired. Interested applicants should send a résumé and the names of three references to: **Dr. Harold M. McClure, Yerkes Primate Research Center, Emory University, Atlanta, GA 30322.** Emory University is an Affirmative Action/Equal Opportunity Employer.

## TRAINING PROGRAM

**POSTDOCTORAL TRAINING PROGRAM IN NEUROBIOLOGY,** Columbia University. Emphasis is placed on the analysis of the cellular and molecular basis of neural development, behavior, and behavioral plasticity. Training faculty include: **Richard Ambron, Richard Axel, Craig Bailey, David Colman, Jane Dodd, Michael Gershon, Claude Ghez, Daniel Goldberg, Lloyd Greene, Mary Hatten, Robert Hawkins, Thomas Jessell, Eric Kandel, Arthur Karlin, John Koester, Irving Kupfermann, Ronald Liem, Amy MacDermott, Carol Mason, Frederick Maxfield, John Martin, John Pintar, Steve Rayport, Lorna Role, Taube Rothman, Samuel Schacher, James Schwartz, Eli Shapiro, Michael Shelanski, Steven Siegelbaum, Ann-Judith Silverman, Gary Struhl, Hadassah Tamir, Ekkehart Trenkner, Klaudiusz Weiss, and Robert Wong.** Applicants for this NIMH-sponsored program must have the M.D., Ph.D., or D.V.M. degree, and be either U.S. citizens or have permanent residency status. Send curriculum vitae, a letter describing research interests, and three letters of reference to: **Admissions Committee, Postdoctoral Training Program, Center for Neurobiology and Behavior, 722 West 168th Street, New York, NY 10032.** Columbia University is an Equal Opportunity/Affirmative Action Employer.

## 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.**

## SYMPOSIUM

### NEW TECHNOLOGIES AND CONCEPTS FOR REDUCING DRUG TOXICITIES

A symposium sponsored by the Association of Government Toxicologists to be held 26 to 27 October 1988 at the Holiday Inn Crown Plaza, Rockville, Maryland. Some of the topics to be discussed are listed below.

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For additional information and reservations please contact **Dr. Sidney Green, 202-245-1195.**

Registration fee: Non-members—\$75.00

Members—\$45.00

For hotel reservation, call: **301-468-1100.**

## WORKSHOP

### CALCIUM RESEARCH ON PLANTS: A WORKSHOP ON METHODS 8 to 11 January 1989, Kona Surf Resort, KAILUA-KONA, HAWAII

The workshop will evaluate the methods currently used in the study of  $Ca^{2+}$  in plants. Emphasis will be on difficulties in plant/ $Ca^{2+}$  studies and developing technologies that may provide insight into the molecular mechanisms of  $Ca^{2+}$  action. Topics:  $Ca^{2+}$  measurement, localization, movement; inositolide metabolism;  $Ca^{2+}$ -binding proteins; calmodulin, CaM-binding proteins, CaM-mediated processes. Young investigators seeking financial assistance should submit curriculum vitae and research interests. Registration/abstract deadline 21 November 1988. Contact: **H. Michael Harrington, University of Hawaii, Department of Plant Molecular Physiology, 3190 Maile Way, Honolulu, HI 96822. Telephone: 808-948-6069.**

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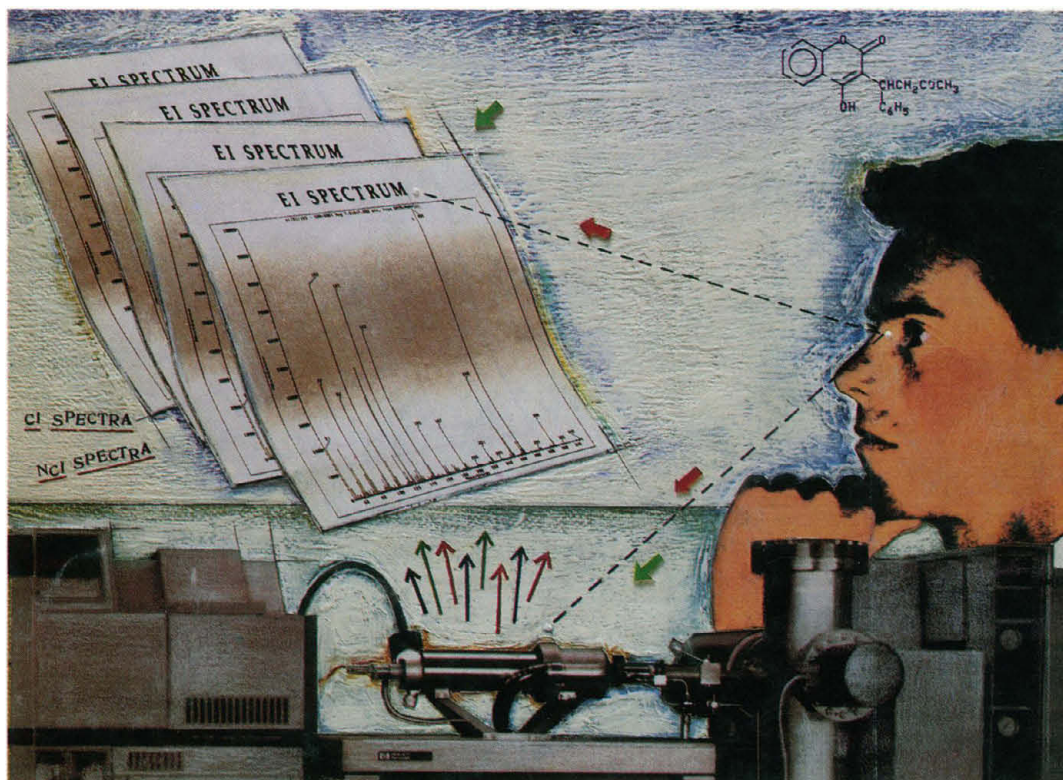
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### Number 1 for customer satisfaction.

In numerous customer surveys—including *Analytical Chemistry's*—HP is consistently top rated for service, support, reliability and technological leadership. Another thing, HP is the only instrument vendor to make and service all system components. *Not only LCs and MSs, but GCs and data systems, too.* So one phone call is all it takes to summon support for your *entire* system.

### If you'd like to know more.

Just call **TOLL FREE, 800-556-1234, Ext. 1029.** In California, call **800-441-2345 Ext. 1029.**

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