

sands of enthusiasts. Let a thousand programs bloom; we will find ourselves a lot closer to the answers.

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Thermophysiology

Temperature Biology of Animals. A. R. COSSINS and K. BOWLER. Chapman and Hall (Methuen), New York, 1987. x, 339 pp., illus. \$57.50.

Temperature is both the most pervasive of environmental variables that affect organisms and the simplest to measure. Together these facts have yielded a diverse and abundant literature, ranging from unadorned phenomenology to major advances in our understanding of organisms. Yet, although we now know more about the biology of temperature than about that of any other environmental variable, the very size of the literature has often defied attempts at summary and articulation of general principles. With this book, however, Cossins and Bowler have achieved an excellent synthesis.

The basic organization of the book differs little from that of the corresponding sections of textbooks of animal physiology and environmental physiology: chapters on the biophysics of temperature, thermal effects on animal function, thermoregulation in ectothermic and endothermic animals, and capacity and resistance adaptation. A final chapter, describing temperature effects on reproduction, development, and growth, is an unusual but welcome addition. The presentation within these chapters is what distinguishes this book from others. Although specialists will find it an excellent overview of the field, the book is intended for advanced students of physiology and for other biologists. A successful book for such an audience must strike a fine balance between facts and principles and between old data and new: too many data and the reader is overwhelmed, too much theoretical or general material and the reader becomes detached, too eclectic a selection of examples and the reader is misled. Cossins and Bowler are as much artists as scientific authors in achieving this balance. Each chapter emphasizes underlying principles and basic patterns, but every principle and pattern is illustrated by just the right number of examples. Moreover, Cossins and Bowler take

pains to present alternative interpretations of data, emphasize where conclusions are tentative, and stress where additional data are needed. Taxon-by-taxon summaries of phenomenology are fortunately few. Also remarkable is the balance struck among topics. Any given topic in the book (hypothalamic mechanisms of thermoregulation in mammals, biophysics of heat exchange, and molecular mechanisms of adaptation to high temperatures, for example) could well consume an entire book; Cossins and Bowler have an exquisite sense of when to leave one topic for the next.

The text is not without deficiencies and errors (for example, that "birds and mammals have separate origins from the reptiles"), and very recent advances (concerning metabolic arrest and heat-shock proteins, for example) are understandably absent. But *Temperature Biology of Animals* is an exceptional book, the best available work on this topic for the general reader, and should serve as a model of scientific exposition for the nonspecialist or student. Ecological physiology would be well served by comparable books dealing with the other major factors affecting animal life.

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Neutrinos

Physics of Massive Neutrinos. FELIX BOEHM and PETR VOGEL. Cambridge University Press, New York, 1988. viii, 211 pp., illus. \$34.50.

Neutrinos have played a special role in the theory of elementary particle physics since their existence was first postulated by Wolfgang Pauli in 1930. This is primarily because neutrinos interact only through the weak interaction, which is usually overwhelmed by the other two forces important in particle physics, the strong and the electromagnetic. In the present "standard model," which describes all known phenomena in particle physics, the weak and electromagnetic interactions are unified into one, the electroweak. As is stated in the first chapter of this book, "The study of neutrino properties is one of the few avenues which could lead to new physics beyond the standard model, and this is the chief reason why the neutrino is such an interesting particle."

According to the standard model, there are three distinct neutrinos, each with zero rest mass and each a pure, stable state. A number of speculative ideas to extend the

standard model predict deviations from this picture. Since 1980 there has been a series of experiments designed to look with extreme sensitivity for indications of small neutrino rest masses or of mixing among the neutrino types. *Physics of Massive Neutrinos* was written to review this period of intense activity, both theoretical and experimental, in the area of neutrino properties.

The questions addressed in the book are of fundamental importance, and the answers draw on nuclear physics, particle physics, astrophysics, and cosmology. Do the three types of neutrinos share with the photon the property of zero mass and thus travel at the speed of light? If they have mass, do the neutrinos constitute the "dark matter" that is widely believed to provide the mass needed to close the universe? Are the neutrinos and antineutrinos distinct objects, or are they in fact just the right-handed and left-handed manifestations of the same particle? Is the observed deficit of solar neutrinos due to transformations among the various neutrino types? The authors deal with the theoretical significance of these questions, but they also take great care to explain the present status of experiments in neutrino physics and to indicate which future experiment might radically change our picture.

The reasons such a book is needed are clear. The field has expanded so dramatically in the last decade that graduate-level textbooks cannot keep up. In addition, because of the wide range of specialties related to neutrino physics, it is very difficult for someone new to the field to read the entire current literature without an organized, comprehensive review. This book provides such a review, with references to more specialized publications for those interested in pursuing particular topics. It is just the bridge needed between textbooks in nuclear or particle physics and the advanced literature.

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Books Received

Basic Environmental Engineering. Text and Disk with 80 Programs. Henry R. Bungay. BiLine Associates, Troy, NY, 1988. Various paged, illus., + floppy disk in pocket. Spiral bound, \$24.50.

Computational Physics. R. D. Kenway and G. S. Pawley, Eds. Scottish Universities Summer School in Physics, Edinburgh, 1987. x, 483 pp., illus. £24. From a school, St. Andrews, Scotland, Aug. 1987.

Disputed Parentage. The Story of the Universe. G. M. Bergman. World Studies Press, Los Angeles, CA, 1988. xvi, 238 pp., illus. \$17.95.

The Engineering of Consent. Democracy and Authority in Twentieth-Century America. William Graebner. University of Wisconsin Press, Madison, 1987. xii, 262 pp., illus. \$26.50.

- Environmental Studies in Port Valdez, Alaska.** A Basis for Management. David G. Shaw and Mohammad J. Hameedi, Eds. Springer-Verlag, New York, 1988. xiv, 423 pp., illus. Paper, \$58.20. Lecture Notes on Coastal and Estuarine Studies, vol. 24.
- The European Journals of William Maclure.** John S. Doskey, Ed. American Philosophical Society, Philadelphia, 1988. 1,815 pp., illus. \$40.
- Felix Klein and Sophus Lie.** Evolution of the Idea of Symmetry in the Nineteenth Century. I. M. Yaglom. Birkhäuser Boston, Cambridge, MA, 1987. xii, 237 pp., illus. \$40. Translated from the Russian by Sergei Sossinsky.
- Foundations of the Theory of General Equilibrium.** Yves Balasko. Academic Press, Orlando, FL, 1988. xiv, 285 pp., illus. \$39.95. Economic Theory, Econometrics, and Mathematical Economics.
- Fourier Analysis.** T. W. Körner. Cambridge University Press, New York, 1988. xii, 591 pp., illus. \$95.
- Fundamentals of Endocrinology.** W. Roy Slaunwhite, Jr. Dekker, New York, 1988. xiv, 422 pp., illus. \$45.
- Gene Wars.** Military Control Over the New Genetic Technologies. Charles Piller and Keith R. Yamamoto. Beech Tree (Morrow), New York, 1988. 302 pp. \$22.95.
- Land Transformation in Agriculture.** M. G. Wolman and F. G. A. Fournier, Eds. Published for the Scientific Committee on Problems of the Environment (SCOPE) of the International Council of Scientific Unions by Wiley, New York, 1988. xii, 531 pp., illus. \$154. SCOPE, vol. 32.
- Laser Raman Spectrometry.** Analytical Applications. Halina Barańska, Anna Labudzinska, and Jacek Terpiński. Horwood, Chichester, U.K., Halsted (Wiley), New York, and PWN, Warsaw, 1988. 271 pp., illus. \$64.95. Ellis Horwood Series in Analytical Chemistry.
- Modern Approaches to Animal Cell Technology.** R. E. Spier and J. B. Griffiths, Eds. Butterworths, Stoneham, MA, 1987. xviii, 828 pp., illus. \$210. From a meeting, Tiberias, Israel, 1987.
- Modern Techniques of Surface Science.** D. P. Woodruff and T. A. Delchar. Cambridge University Press, New York, 1988. xii, 453 pp., illus. Paper, \$24.95. Cambridge Solid State Science Series. Reprint, 1986 ed.
- Molecular Biology of the Human Brain.** Edward G. Jones, Ed. Liss, New York, 1988. xiv, 198 pp., illus. \$48. UCLA Symposia on Molecular and Cellular Biology, vol. 72. From a symposium, Keystone, CO, April 1987.
- Molecules.** P. W. Atkins. Scientific American Books, New York, 1987 (distributor, Freeman, New York). x, 197 pp., illus. \$32.95. Scientific American Library Series, no. 21.
- The Mollusca.** Karl M. Wilbur, Ed. Academic Press, Orlando, FL, 1988. Vol. 11, Form and Function. E. R. Treuman and M. R. Clarke, Eds. xxx, 504 pp., illus. \$115. Vol. 12, Paleontology and Neontology of Cephalopods. M. R. Clarke and E. R. Treuman, Eds. xxvi, 355 pp., illus. \$110.
- Mothers and Medicine.** A Social History of Infant Feeding, 1890–1950. Rima D. Apple. University of Wisconsin Press, 1988. xvi, 261 pp., illus. \$39.50; paper, \$16.25. Wisconsin Publications in the History of Science and Medicine, no. 7.
- Multidimensional Brownian Excursions and Potential Theory.** K. Burdzy. Longman Scientific, Harlow, U.K., and Wiley, New York, 1988. xii, 172 pp. Paper, \$44.95. Pitman Research Notes in Mathematics, vol. 164.
- Natural History of the Antarctic Peninsula.** Sanford Moss. Columbia University Press, New York, 1988. xii, 208 pp., illus. \$27.50.
- Neurobiology.** Gordon M. Shepherd. 2nd ed. Oxford University Press, New York, 1988. xiv, 689 pp., illus. \$47.95; paper, \$32.95.
- Neurosciences.** Horst D. Steklis, and J. Erwin, Eds. Liss, New York, 1987. xiv, 769 pp., illus. \$190. Comparative Primate Biology, vol. 4.
- Organic Synthesis.** Modern Trends. Oleg Chizhov, Ed. Blackwell Scientific, Palo Alto, CA, 1987. viii, 327 pp., illus. \$58.50. From a symposium, Moscow, U.S.S.R., Aug. 1986.
- Organization of Communities, Past and Present.** J. H. R. Gee and P. S. Giller, Eds. Published for the British Ecological Society of Blackwell Scientific, Palo Alto, CA, 1987. xii, 576 pp., illus. \$125; paper, \$49.50. From a symposium, Aberystwyth, Wales, 1986.
- The Organometallic Chemistry of the Transition Metals.** Robert H. Crabtree. Wiley-Interscience, New York, 1988. xviii, 422 pp., illus. \$39.95.
- Oxygen Transport to Tissue X.** Masaji Mochizuki et al., Eds. Plenum, New York, 1988. xviii, 766 pp., illus. \$125. Advances in Experimental Medicine and Biology, vol. 222. From a meeting, Sapporo, Japan, July 1987.
- Palaeohydrology in Practice.** A River Basin Analysis. K. J. Gregory, J. Lewin, and J. B. Thornes, Eds. Wiley-Interscience, New York, 1987. xii, 370 pp., illus. \$79.95. International Geological Correlation Programme, project 158.
- Patterns, Thinking, and Cognition.** A Theory of Judgment. Howard Margolis. University of Chicago Press, Chicago, 1988. xii, 332 pp., illus. \$45; paper, \$15.95.
- Permanent and Transient Networks.** M. Pietralla and H.-G. Kilian, Eds. Steinkopff, Darmstadt, and Springer-Verlag, New York, 1987. vi, 249 pp., illus. \$72. Progress in Colloid and Polymer Science, vol. 75. From a conference, Gomadingen, F.R.G., Oct. 1986.
- Petrochemicals.** The Rise of an Industry. Peter H. Spitz. Wiley, New York, 1988. xxx, 588 pp., illus. \$29.95.
- Pharmaceutical Microbiology.** W. B. Hugo and A. D. Russell, Eds. 4th ed. Blackwell Scientific, Palo Alto, CA, 1987. x, 511 pp., illus. \$90; paper, \$48.50.
- Phenotypic Variation in Populations.** Relevance to Risk Assessment. Avril D. Woodhead, Michael A. Bender, and Robin C. Leonard, Eds. Plenum, New York, 1988. x, 305 pp., illus. \$55. Basic Life Sciences, vol. 43. From a symposium, Upton, NY, Dec. 1986.
- Phonological Parsing in Speech Recognition.** Kenneth W. Church. Kluwer, Norwell, MA, 1987. xviii, 261 pp. \$49.95. Kluwer International Series in Engineering and Computer Science, vol. 38.
- Photoacoustic and Photothermal Phenomena.** P. Hess and J. Pelzl, Eds. Springer-Verlag, New York, 1988. xx, 573 pp., illus. \$65. Springer Series in Optical Sciences, vol. 58. From a meeting, Heidelberg, F.R.G., July 1987.
- The Physical World.** Martin Sherwood and Christine Sutton, Eds. Oxford University Press, New York, 1988. 256 pp., illus. \$35. An Equinox Book.
- Physics of Massive Neutrinos.** Felix Boehm and Petr Vogel. Cambridge University Press, New York, 1988. viii, 211 pp., illus. \$34.50.
- The Planetary System.** David Morrison and Tobias Owen. Addison-Wesley, Reading, MA, 1988. xviii, 519 pp., illus., + plates. \$43.25.
- Plant Pathology.** George N. Agrios. 3rd ed. Academic Press, San Diego, CA, 1988. xvi, 803 pp., illus. \$45.
- Real Reductive Groups I.** Nolan R. Wallach. Academic Press, San Diego, CA, 1988. xx, 412 pp. \$59.95. Pure and Applied Mathematics, vol. 132.
- Real Variables.** Alberto Torchinsky. Addison-Wesley, Reading, MA, 1988. xii, 403 pp. \$43.25.
- Recent Advances in Nemertean Biology.** P. Sundberg, R. Gibson, and G. Berg, Eds. Junk, Dordrecht, 1988 (U.S. distributor, Kluwer, Norwell, MA). xii, 207 pp., illus. \$99. Developments in Hydrobiology, vol. 43. From a meeting, Tjärno, Sweden, Aug. 1986.
- Recent Advances in Steroid Hormone Action.** V. K. Moudgil, Ed. De Gruyter, Hawthorne, NY, 1987. x, 552 pp., illus. \$150.
- Recent Topics in Theoretical Physics.** H. Takayama, Ed. Springer-Verlag, New York, 1988. x, 129 pp., illus. \$49. Springer Proceedings in Physics, vol. 24. From a symposium, Nishinomiya, Japan, Nov. 1986.
- The Relations of Literature and Science.** An Annotated Bibliography of Scholarship, 1880–1980. Walter Schatzberg, Ronald A. Waite, and Jonathan K. Johnson, Eds. Modern Language Association of America, New York, 1987. xx, 458 pp. \$40; paper, \$19.75.
- Reproduction of Marine Invertebrates.** Vol. 9, General Aspects: Seeking Unity in Diversity. Arthur C. Giese, John S. Pearse, and Vicki B. Pearse, Eds. Blackwell Scientific, Palo Alto, CA, and Boxwood, Pacific Grove, CA, 1987. xxiv, 712 pp., illus. \$50.
- Reproductive Energetics in Mammals.** A. S. I. Loudon and P. A. Racey, Eds. Published for the Zoological Society of London by Clarendon (Oxford University Press), New York, 1987. xxii, 371 pp., illus. \$95. Symposia of the Zoological Society of London, no. 57. From a symposium, London, U.K., April 1986.
- Research and Development in Expert Systems IV.** D. S. Moralee, Ed. Published for the British Computer Society by Cambridge University Press, New York, 1988. vii, 288 pp., illus. \$49.50. The British Computer Society Workshop Series. From a conference, Brighton, U.K., Dec. 1987.
- Sexual Selection.** Testing the Alternatives. J. W. Bradbury and M. B. Andersson, Eds. Wiley-Interscience, New York, 1987. xii, 308 pp., illus. \$81.95. Life Science Research Reports, vol. 39. From a workshop, Berlin, F.R.G., Aug.-Sept. 1986.
- Shaping Space.** A Polyhedral Approach. Marjorie Senechal and George Fleck, Eds. Birkhäuser Boston, Cambridge, MA, 1987. xx, 284 pp., illus. \$49.95. Design Science Collection. Based on a conference, Northampton, MA, April 1984.
- Short-Term Bioassays in the Analysis of Complex Environmental Mixtures V.** Shahbeg S. Sandhu et al., Eds. Plenum, New York, 1987. xii, 409 pp., illus. \$75. Environmental Science Research, vol. 36. From a symposium, Durham, NC, Oct. 1986.
- The Single-Particle Density in Physics and Chemistry.** N. H. March and B. M. Deb, Eds. Academic Press, Orlando, FL, 1987. x, 385 pp., illus. \$39.50. Techniques of Physics, vol. 8.
- The Social Animal.** Elliot Aronson. 5th ed. Freeman, New York, 1988. xx, 444 pp. \$21.95; paper, \$14.95. A Series of Books in Psychology.
- Social Development.** History, Theory, and Research. Joan E. Grusec and Hugh Lytton. Springer-Verlag, New York, 1988. xiv, 545 pp. Paper, \$41.
- The Social Psychology of Intergroup Conflict.** Theory, Research and Applications. Wolfgang Stroebe et al., Eds. Springer-Verlag, New York, 1988. x, 198 pp. \$72. Springer Series in Social Psychology.
- The Social Psychology of Procedural Justice.** E. Allan Lind and Tom R. Tyler. Plenum, New York, 1988. xii, 263 pp., illus. \$32.50. Critical Issues in Social Justice.
- The Social World.** Ian Robertson, Ed. 3rd ed. Worth, New York, 1987. xiv, 360 pp. Paper, \$15.95.
- Spectroscopy of Solid-State Laser-Type Materials.** Baldassare Di Bartolo and Güzin Armağan, Eds. Plenum, New York, 1987. xxvi, 592 pp., illus. \$115. Ettore Majorana International Science Series (Physical Sciences), vol. 30. From a course, Erice, Italy, June 1985.
- Statistical Field Theory.** Giorgio Parisi. Addison-Wesley, Redwood City, CA, 1988. xvi, 352 pp. \$48.50. Frontiers in Physics.
- Structure and Function of Major and Minor Small Nuclear Ribonucleoprotein Particles.** Max L. Birnstiel, Ed. Springer-Verlag, New York, 1988. vi, 216 pp., illus. \$120.
- Symmetries in Physics.** Group Theory Applied to Physical Problems. W. Ludwig and C. Falter. Springer-Verlag, New York, 1988. xii, 461 pp., illus. \$59.50. Springer Series in Solid-State Sciences, vol. 64.
- Synoptic Meteorology in China.** Bao Chenglan, Ed. China Ocean Press, Beijing, and Springer-Verlag, New York, 1987. vi, 269 pp., illus., + plates. \$77.60.
- Tales of Physicists and Mathematicians.** Semyon Grigorevich Gindikin. Birkhäuser Boston, Cambridge, MA, 1987. xii, 157 pp., illus. \$29.50. Translated from the Russian edition (Moscow, 1985) by Alan Shuchat.
- Tales of the Field.** On Writing Ethnography. John Van Maanen. University of Chicago Press, Chicago, 1988. xvi, 173 pp. \$25; paper, \$7.95. Chicago Guides to Writing, Editing, and Publishing.
- Techniques and Concepts of High-Energy Physics IV.** Thomas Ferbel, Ed. Plenum, New York, 1987. viii, 592 pp., illus. \$115. NATO Advanced Science Institutes Series B, vol. 164. From an institute, St. Croix, U.S. Virgin Islands, June 1986.
- Thermal Physics Reviews.** Vol. 1. A. E. Scheindlin and V. E. Fortov, Eds. Harwood, New York, 1987. xvi, 440 pp., illus. \$290. Soviet Technology Reviews, Section B.
- The Timing of Biological Clocks.** Arthur T. Winfree. Scientific American Books, New York, 1987 (distributor, Freeman, New York). xiv, 199 pp., illus. \$32.95. Scientific American Library Series, no. 19.
- Tokamaks.** John Wesson. Clarendon (Oxford University Press), New York, 1987. x, 309 pp., illus. \$85. The Oxford Engineering Series, vol. 20.
- Toxicology of Coal Conversion Processing.** Robert H. Gray, Harvey Drucker, and Michael J. Massey, Eds. Wiley-Interscience, New York, 1988. xxviii, 603 pp., illus. \$80.
- The Transformation of Old Age Security.** Class and Politics in the American Welfare State. Jill Quadagno. University of Chicago Press, Chicago, 1988. xiv, 253 pp., illus. \$27.50.
- The Tropical Rain Forest.** A First Encounter. Marius Jacobs. Remke Kruk et al., Eds. Springer-Verlag, New York, 1988. xvi, 295 pp., illus. Paper, \$39.95. Translated from the Dutch edition (Muiderberg, 1981).
- Tsunami!** Walter C. Dudley and Min Lee. University of Hawaii Press, Honolulu, 1988. xii, 132 pp., illus. Paper, \$10.95. A Kolowalu Book.
- Turbo C at Any Speed.** Richard S. Wiener. Wiley, New York, 1988. xx, 310 pp. Paper, \$27.95. The Borland-Wiley Higher Education Series.
- Understanding Genetics.** Norman V. Rothwell. 4th ed. Oxford University Press, New York, 1988. xviii, 703 pp., illus. \$39.95.
- The Work of Mara Selvini Palazzoli.** Matteo Selvini, Ed. Aronson, Northvale, NY, 1988. xviii, 437 pp. \$45. Translated in part from the Italian by Arnold J. Pomerans.

Products & Materials

Mathematical Workstation Software

MathStation is a software program for interactively creating mathematical applications and models on engineering workstations. Equations and symbols, including subscripts, exponents, and fraction bars, can be directly entered into the program's free-form document window. When a value can be calculated for an equation, the program solves the equation and displays the solution after the equal sign. Not only can MathStation execute existing Fortran routines, but the program can also generate Fortran source code for models and equations. Data and functions can be graphed in a variety of styles. The user can add text and plots anywhere in the document. Math, text, and graphics are displayed together in WYSIWYG (what-you-see-is-what-you-get) style. The program dynamically checks each equation and algorithm for consistency and errors. MathStation operates on workstations from Sun Microsystems and Digital Equipment. The workstation must have the X.11 version of X-Windows, a FORTRAN-77 compiler, and a VMS or UNIX operating system. MathSoft. Circle 469.

Nonlinear Dynamics Software

Dynamical Software I and II are software programs for modeling nonlinear systems and chaos and for analyzing nonlinear data. Dynamical Software I has commands for mathematical models, phase portraits, discrete maps, data preparation, utilities, and help. Dynamical Software II has similar utility and help functions, as well as commands for mathematical models, spectral analysis, fractal dimensions, eigenvalues and Lyapunov exponents, graphics, and statistics. The programs operate on the IBM PC family of computers with a Microsoft Fortran compiler and a graphics card; a hard disk and mouse are recommended. Dynamical Software I, \$250; Dynamical Software II, \$350. Dynamical Systems. Circle 471.

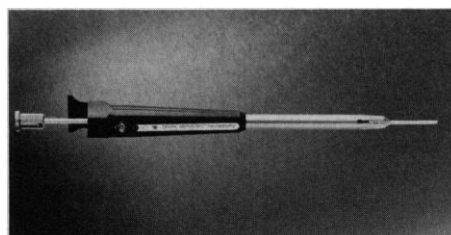
Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement 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.

Restriction Map Software

Clone Manager is a program for drawing and manipulating circular and linear restriction maps of recombinant DNA molecules. Maps may be created at the keyboard or loaded from another file. Maps can be cut; available enzymes and their cut sites are listed to the left of a linear map of the molecule, and the user selects the site to cut by choosing an enzyme. Also, maps can be altered by adding or removing enzyme cut sites and gene and marker locations. Previously cut DNA fragments can be combined. After alterations, base positions of enzyme sites, genes, and markers are automatically recalculated. All operations are accomplished with pull-down menus. The user can customize the restriction map, and finished maps can be printed on a Laserjet II or some dot-matrix printers. \$100. Scientific & Educational Software. Circle 473.

Micropipetter

The DV-15 is a positive-displacement adjustable-volume micropipetter. It dispenses from 0.5 to 15 μl . At the smallest volume,



precision is 0.05 μl . The DV-15 calibrates at zero and has no calibration gauge. The micropipetter has a digital display and unbreakable plastic tips that snap on and off and are precalibrated. Recalibration for each reagent is not necessary, because sample volumes are unaffected by surface tension, viscosity, vapor pressure, or density. \$225. Labindustries. Circle 474.

Research Microscopes

The AH-S and AH-T are photoresearch microscopes. The AHS contains a computer that automatically selects illumination systems in conjunction with objective change, photographic functions, and focus from $\times 1$ to $\times 10$. The AH-S also features an electronic panel for motorized control of field and aperture diaphragms, light intensity, coarse or fine focus speeds, and stage lowering with automatic return to focus position. When an objective magnification is selected, the condenser appropriate for that objective is rotated into place, and the field dia-

phragm, the aperture diaphragm, and the light intensity are automatically adjusted to full Koehler illumination. The microscope has three camera ports, and camera controls are on the front of the microscope for ease of use. These controls allow the user to override the automatic exposure function, select the light path, and make multiple exposures. The AH-T is equipped with the same features as the AH-S, except that it has fewer motorized function controls. Olympus, Precision Instrument Division. Circle 498.

Literature

Bridging Research and Reality Worldwide is a catalog of immunology, cell culture, molecular biology, and virus testing services, as well as research products such as lipoproteins and conjugated antibodies. Bionetics Research. Circle 482.

Catalog & Reference Guide describes more than 450 products for life science research, including enzymes, nucleic acids, molecular size standards, immunology products, and biochemical reagents. Bethesda Research Laboratories. Circle 483.

Focus on Crossflow Filtration is a brochure that discusses advantages of and applications for processing proteins, enzymes, viruses, and cells by cross-flow filtration. Sartorius Filters. Circle 484.

The leaflet *How to Choose a Densitometer* discusses how a densitometer works, causes of errors in spot measurement, relative advantages and disadvantages of different light sources and detectors, and different scanning requirements of two-dimensional and one-dimensional gels. Molecular Dynamics. Circle 485.

Unique Scientific Instrumentation and Equipment for 1988/89 is a catalog of analytical mills, tabletop centrifuges, gas chromatography accessories, low-temperature dry ashers, rotary lab shakers, sonic disrupters, and other scientific products. Tekmar. Circle 486.

The *Compact Floor Model Centrifuges* brochure features three centrifuges: a nonrefrigerated model, a refrigerated model, and a thermostated model that can both cool and heat. Jouan. Circle 487.

The Transmission and Scanning Electron Microscopes for the Future is a brochure that describes a line of electron microscopes with microprocessor-controlled systems for automatic analyses. Carl Zeiss. Circle 490.

The *Model 270 Electrochemical Analysis Systems* brochure features an electrochemical analysis system for the study of redox reactions by means of electrochemical measurement techniques. EG&G Princeton Applied Research. Circle 491.

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Telephone: 202-326-6555

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Ph.D. Analytical biochemist/microbiologist/immunologist solid experience with GC-MS, ECN, FID, methods development, LC, PAGE. Seeks industrial, academic position. Box 138, **SCIENCE**.

POSITIONS WANTED

Toxicologist, recent M.S. from St. John's University. Experienced in mammalian cell culture, spectrophotometric analyses, histochemical and immunohistochemical staining techniques and electron microscopy. Also familiar with thin layer and column chromatography and the use of radio-isotopes. Seeking position in west central Florida. P.O. Box 1619, Elfers, FL 34680-1619.

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

POSITIONS OPEN

ANIMAL ECOLOGIST ENDOWED CHAIR IN VETERINARY MEDICINE

ANIMAL ECOLOGIST is sought with experience preferably in domestic animal species and their interaction with humans for a tenure-track faculty position and an endowed chair in the School of Veterinary Medicine, University of Pennsylvania. Additional background may include ethical issues, the use of animals, and insight into the ethical belief system of the veterinary profession. Candidates should have credentials of innovation and academic leadership. Address inquiries to:

Dr. K. C. Bovee, Chairman
Moore Chair Search Committee
School of Veterinary Medicine
University of Pennsylvania
3850 Spruce Street
Philadelphia, PA 19104-6010

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

ASSISTANT PROFESSOR, 12-month tenure-track position in Colleges of Science and Agricultural Science, with research interests in immunology or eukaryotic microbiology or anaerobic microbiology. Expertise in any other research discipline of microbiology will be considered. Postdoctoral experience required. Undergraduate and graduate teaching consistent with other science faculty. Application closing date: 30 November 1988. Send curriculum vitae, transcripts and three letters of recommendation to: **J. L. Fryer, Chairman, Department of Microbiology, Nash Hall 220, Oregon State University, Corvallis OR 97331-3804.** *OSU is an Affirmative Action/Equal Employment Opportunity Employer, complies with Section 504 of the Rehabilitation Act of 1973, and has a policy of being responsive to the needs of dual-career couples.*

ASSISTANT PROFESSOR

Department of Physiology, New York Medical College, seeks applicants for a tenure-track appointment. Applicants should have significant postdoctoral research accomplishments. The successful candidate will be expected to establish an independent research program, interact with a group of researchers from a broad spectrum of disciplines related to physiology, and participate in medical and graduate student teaching. Applicants with an interest in cell and molecular biology of receptors are preferred. Send curriculum vitae, bibliography, description of future plans, and names of references to: **Gabor Kaley, Ph.D., Professor and Chairman, Physiology Department, New York Medical College, Valhalla, NY 10595.** Telephone: 914-993-4089.

ASSISTANT PROFESSOR: Applications are invited for a position at the level of assistant professor (tenure-track) in the Department of Chemistry at Stanford University, with primary research and teaching interests in the general area of organic or inorganic chemistry. Applicants must be strongly motivated toward creative research and have a commitment to teaching at the undergraduate and graduate levels. In applying, please send curriculum vitae, list of publications, a brief statement of research interests (three pages or less) and, in addition, have three letters of recommendation sent to: **Professor John Ross, Chairman, Department of Chemistry, Stanford University, Stanford, CA 94305.** *Stanford is committed to Equal Opportunity through Affirmative Action in Employment, and we are especially eager to identify minority persons and women with appropriate qualifications.* Applications should be received by 1 November 1988.

POSITIONS OPEN

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

ASSISTANT PROFESSOR, non-tenure track. The Virginia Institute of Marine Science (VIMS), School of Marine Science, College of William and Mary, is seeking a Ph.D. with experience in aquatic (preferably marine or estuarine) pathology and toxicology. Applicant must be willing to work with a team on the fate and effect of toxic chemicals in aquatic environments. *Women and minority scientists are encouraged to apply.* Send three references and vitae by 16 September 1988 to: **Professor M. E. Bender, Search Committee, VIMS, Gloucester Point, VA 23062.** *Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR—NEUROCHEMIST. The Department of Pharmacology, Texas College of Osteopathic Medicine (TCOM), anticipates opening a 3-year, non-tenure-track position for an advanced Ph.D. neurochemist, with interests in behavior and plasticity of receptors. Rank at research assistant professor or research associate, depending upon experience. Salary and benefits very competitive. Send credentials to: **Dr. John Lane, TCOM Pharmacology, 3516 Camp Bowie Boulevard, Fort Worth, TX 76107-2690.**

ASSISTANT PROFESSOR, Ph.D., NEUROSCIENTIST with neuroanatomical and neurophysiology background. Qualifications and experience must include strong graduate or medical school teaching skills, significant research accomplishments, postdoctoral experience and a proven track record. Send curriculum vitae, statement of proposed research, and names of three references to: **Gloria R. Semente, Director of Special Projects, New York College of Osteopathic Medicine, Old Westbury, NY 11568.** Telephone: 516-626-6927.

ASSISTANT PROFESSOR, RESEARCH-TRACK. Position available immediately for patch electrode and micropipette specialist to study transduction in olfactory receptor neurons. Vigorous research group in a state-of-the-art laboratory has developed innovative preparations and experimental methods to study vertebrate chemoreception in an institution with an expanding neuroscience focus. Salary negotiable. Send curriculum vitae, statement of research experience and names of three references to: **R. C. Gesteland, Chair, Neurobiology Division, Anatomy and Cell Biology Department (ML 521), University of Cincinnati Medical Center, Cincinnati, OH 45267.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/ASSOCIATE PROFESSOR—Tenure-track position available for a cell biologist with experience in electron microscopy and cell culture. Independently funded research programs and experience directing graduate students at the Ph.D. level is preferred. Candidate will also participate in ongoing dental research involving connective tissue and bone cell metabolism. Salary and title are commensurate with experience. Send curriculum vitae and three names of references to: **Dr. Pamela Jones, State University of New York at Buffalo, Department of Oral Biology, 109 Foster Hall, Buffalo, NY 14214.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR OF VETERINARY SCIENCE. Department of Veterinary Science, Fort Valley State College seeks a D.V.M. or equivalent with postgraduate degree preferably Ph.D. to teach courses in veterinary technology program and conduct independent or collaborative research. Advise and recruit students. Salary commensurate with experience. Application deadline 30 August 1988 or until filled. Starting date 1 October 1988. Send curriculum vitae, official transcripts, and three reference letters to: **Dr. Geoffrey Ibim, Chairman of Search Committee, Box 5787, Fort Valley State College, Fort Valley, GA 31030.**

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

ASSOCIATE PROFESSOR—PHARMACOLOGY AND NUTRITION. Tenure-track position open 1 July 1988. Candidate must have extensive experience in hormone pharmacology and physiology and a strong publication record. Experience with insulin physiology is preferred. Candidate required to teach in both medical and graduate pharmacology and nutrition programs. Applicant should send curriculum vitae, bibliography, significant reprints, a statement of research plans, and three names for reference purposes to: **Samuel P. Bessman, M.D., Professor and Chairman, Department of Pharmacology and Nutrition, University of Southern California, School of Medicine, MMR 512, Los Angeles, CA 90033.** Applications will be considered until the position is filled. *The University of Southern California is an Equal Opportunity/Affirmative Action Employer.*

BIOLOGIST: cell/molecular/microbial. 1 February 1989. Rank negotiable, tenurable position. Ph.D. required. Expertise in cell/molecular/microbial biology and interest in assuming responsibility in these areas of a quality undergraduate program in biology at a church-related liberal arts college. Submit curriculum vitae, graduate and undergraduate transcripts, and three letters of recommendation by 30 September 1988 to: **Biology Search Committee, Personnel Office, Whitworth College, Spokane, WA 99251.** *Equal Opportunity Employer/IX/504.*

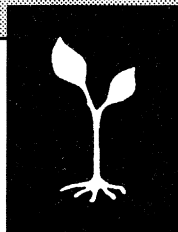
CHAIR— NEW DEPARTMENT OF GEOSCIENCES UNIVERSITY OF CALIFORNIA, IRVINE

The University of California at Irvine (UCI) invites applications for the position of Founding Chair of the planned Department of Geosciences. This position is the first of a number of new faculty appointments included in a long range commitment to develop a new department on this campus. The level of the appointment will be in the full professorial ranks and the salary will depend upon the qualifications of the candidate and based upon the U.C. pay scale. Candidates must have demonstrated excellence in their specialization of research. Administrative experience is not required but is desired since the candidate will have the opportunity and challenge of building a new department in the U.C. system.

The Department is envisaged to focus on the more quantitative disciplines of the geosciences and to specialize in global studies. It will ultimately include a spectrum of areas with an emphasis on the effects of changes in the geosphere-biosphere. The initial growth will likely be in areas such as atmospheric modeling, meteorology and climatic changes, global dynamics, geophysics, and geochemistry. Future expansion of the department will be into the areas of plate tectonics and seismology.

Please send a letter of application, curriculum vitae including research, teaching and administrative experience, and names of five references to: **Professor Myron Bander, Chair, Search Committee, Dean's Office, School of Physical Sciences, University of California, Irvine, CA 92717.** This search will continue until filled; first consideration will be given to applications received before 1 December 1988.

UCI is an Equal Opportunity/Affirmative Action Employer.



TISSUE CULTURE SCIENTISTS

CIBA-GEIGY's Agricultural Division has excellent opportunities for multi-faceted scientists in our genetic engineering and crop improvement program. Long recognized as one of the world's foremost producers of crop protection chemicals, we have made a major commitment to expanded biotechnology research at our new facility in Research Triangle Park, NC.

The scientists we seek will assist in the development and engineering of plants using a variety of techniques such as callus, suspension and protoplast cultures as well as plant regeneration and transformation. The program's goal is to develop plants with increased tolerance to environmental stress and greater resistance to disease and insect damage.

A BS or MS in plant science or a related field is required, as is 2-5 years of lab experience, preferably with the in vitro culture of major crop species.

You'll find that CIBA-GEIGY offers exceptional career support and advancement opportunities, as well as a competitive salary and generous company-paid benefits. Please forward your resume, including three letters of professional reference, in confidence, to: **CIBA-GEIGY Corporation, Agricultural Division, Dr. Mary-Dell Chilton, P.O. Box 12257, Research Triangle Park, NC 27717.** We are an equal opportunity employer m/f/h/v.

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CIBA—GEIGY

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If you're ready to break new ground in biotechnology, explore the opportunity to contribute to breakthroughs in pharmaceutical development at Schering-Plough. As a research-driven \$2.7 billion company, we can offer you strong support and responsiveness to stimulate your best achievements.

You will join a bio-isolation team in our biotechnology division, developing methods to purify and characterize recombinant proteins from bacteria and mammalian cell cultures. The applications will be in human pharmaceuticals.

You must have a PhD in protein chemistry, biochemistry, or a related field, plus 0-5 years' experience in purification and characterization of proteins. Familiarity with HPLC, FPLC and conventional chromatographic techniques is also required.

We offer a competitive salary and excellent benefits. For immediate consideration, please forward resume, including salary history to: **Mr. M. Urdanick, Schering-Plough Corporation, 1011 Morris Avenue, Union, NJ 07083.** We are an equal opportunity employer.



Schering-Plough

RESEARCH SCIENTISTS

Central Nervous System Research

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

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

CNS Electrophysiologist

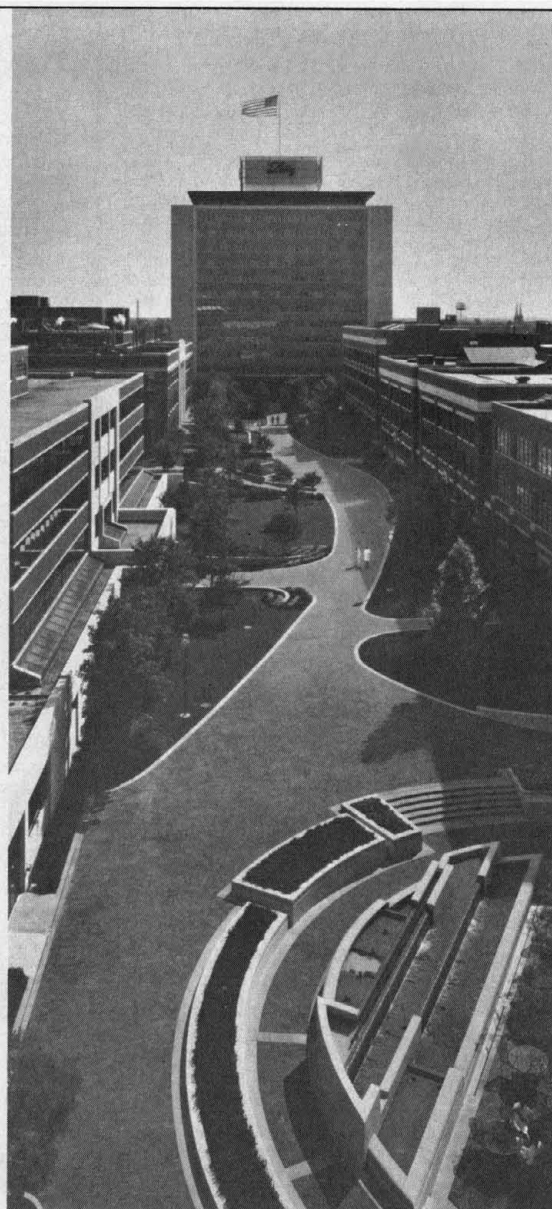
- Doctoral-level electrophysiologist who can advance our understanding of the basic mechanisms by which neurotransmitters, neuropeptides, and drug candidates exert their effects at the cellular, tissue and whole animal level.
- Should be proficient in single-unit recording, iontophoresis, and patch clamp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

CNS Molecular Pharmacologist

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

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

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



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

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



Equal Opportunity Employer

POSITIONS OPEN

DEPARTMENT OF ZOOLOGY UNIVERSITY OF WASHINGTON CELL BIOLOGIST

A tenure-track faculty position is available for a cell biologist. Those having research interests in extracellular matrix, cell adhesion, intracellular transport, cytoskeleton, or signal transduction are especially encouraged to apply. Appointment will likely be at the assistant professor level, although appointment at associate or full professor is possible under exceptional circumstances. Responsibilities include teaching at the undergraduate and graduate level, and research in areas appropriate to the individual's field of specialization. Applicants should submit curriculum vitae, three publications, statements of specific interests, and three letters of recommendation to: **Dr. C. Laird, Chairman, Department of Zoology NJ-15, University of Washington, Seattle, WA 98195**, by 1 November 1988. *Equal Opportunity/Affirmative Action Employer.*

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

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

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

CHAIRPERSON, DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS

The University of Nebraska College of Medicine is seeking a nationally-recognized investigator to fill the position of Chairperson of the Department of Physiology and Biophysics. The candidate should have a Ph.D. or M.D. degree, a distinguished record in research in physiology which is currently active and funded, strong leadership qualities and a major interest in the education of health professionals. Interested applicants should submit curriculum vitae and the names and addresses of three references to: **Office of the Dean, Chairman, Physiology and Biophysics Chairperson Search Committee, University of Nebraska College of Medicine, Room 5025, Wittson Hall, 42nd and Dewey Avenue, Omaha, NE 68105.** The closing date for applications is 15 October 1988. *An Equal Opportunity/Affirmative Action Employer.*

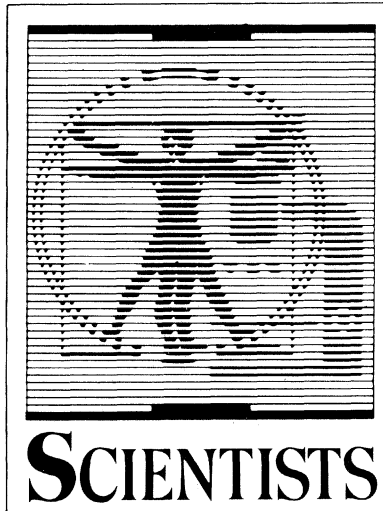
COMPUTER SIMULATION/TOXICOLOGY

Position available immediately for Ph.D. (or equivalent) to develop biologically based computer simulation models. Models currently under development include: physiologically based pharmacokinetics, biochemical mechanisms of toxicity, and chemical carcinogenesis. Solid background in chemistry/biochemistry/biology, with interest in applying these skills to computer simulation, desired. Simulation model development will complement ongoing and proposed laboratory studies. Publication of all results and presentation at national meetings strongly encouraged.

Title and salary will be commensurate with background and experience. Interested individuals should send curriculum vitae, together with name and addresses of three references, to:

**Ms. Lois Doncaster
Human Resources
NSI Technology Services Corporation
Environmental Sciences
101 Woodman Drive, Suite 12
Dayton, OH 45431**

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We currently have staff positions and one-year appointments for researchers experienced in micro-

biology, immunology, toxicology, biochemistry, virology and genetics. As a member of the PRI team, you'll collaborate in areas of national importance, such as viral carcinogenesis, recombinant DNA, AIDS vaccine development, viral diseases and immunity, retrovirology, biological response modifiers and cytotoxic cells studies.

Plus, PRI will reward your expertise with a salary commensurate with credentials and an attractive fringe benefits program, including insurances, relocation allowance, and a 401(k) savings plan. For consideration, please forward CV in confidence to Barbara Norton-Gill, Technical Recruiter.

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RESEARCH ASSOCIATES

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OTSUKA PHARMACEUTICAL CO., LTD is an international organization with more than 12,000 employees worldwide and a reputation for excellence and success in health care. We have openings for Research Associates in the following fields to work on vital, state-of-the-art R&D projects at our suburban Washington DC headquarters.

• **IMMUNOLOGIST**—Position requires experience in various aspects of IN VIVO and IN VITRO assay systems. A B.S. Degree with 3+ years laboratory experience is a must.

• **PROTEIN CHEMIST**—Position requires experience using HPLC system to purify cytokines and growth factors. A B.S. Degree with 3+ years of laboratory experience is a must.

If you would like to explore the possibilities of a long term career in an advanced and challenging R&D environment, send your C.V. to: **Anna Haight, OTSUKA PHARMACEUTICAL CO., LTD., 9900 Medical Center Drive, Rockville, MD 20850.** An Equal Opportunity Employer M/F.



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new products for
better health worldwide."*

Cell and Molecular Biology

POSTDOCTORAL POSITIONS

Postdoctoral positions in the areas of cellular and molecular aspects of development are available at the Worcester Foundation for Experimental Biology, supported by an NIH Training Grant and individual investigator awards. The faculty and their research interests are:

Earl Baril: Enzymology of eukaryotic DNA replication.

William Crain: Gene expression during embryonic development.

Grant Fairbanks: Organization and function of erythrocyte and sperm plasma membrane.

John Goodchild: Chemical and therapeutic properties of antisense oligonucleotides.

F. Rob Jackson: Molecular genetic studies of behavior and the nervous system in *Drosophila* including studies of biological rhythms and neurotransmitter systems.

Daniel Kilpatrick: Transcriptional regulation of neuropeptide gene expression; opioid peptide gene expression and function in the testis.

Elizabeth Luna: Structure and regulation of cytoskeleton-membrane attachment during cell motility, adhesion and phagocytosis.

Clare O'Connor: Regulation of protein stability during gametogenesis.

Thoru Pederson: Transcription and RNA processing.

Joel Richter: Maternal mRNA expression in early *Xenopus* development; molecular mechanisms of adenovirus E1A transactivation.

Alonzo Ross: Nerve growth factor receptor, structure and function roles in normal and transformed cells.

Greenfield Sluder: Timing and molecular control of mitotic events during early development.

Richard Vallee: Biochemical, immunological and molecular biological analysis of microtubules and cell motility.

Samuel Wadsworth: Structure and function of *Drosophila* oncogenes, growth factors and receptors.

Yu-li Wang: Assembly and dynamics of actin and myosin in living cells.

George Witman: Molecular basis for flagellar movement; biochemistry of sperm maturation.

David Wolf: Diffusion and control of membrane regionalization; sperm maturation and capacitation.

Paul Zamecnik: Synthesis of modified oligonucleotides for chemotherapy.

Carol Ziomek: Membrane structure and cell polarity in early mouse development.

Send curriculum vitae and names of references to the faculty member(s) of interest, **C/O Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545, USA.**



WORCESTER FOUNDATION FOR EXPERIMENTAL BIOLOGY

AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER M/F/H

ImmuLogic is a growing company dedicated to the creation of novel therapeutic products which modulate the human immune system. We are employing state-of-the-art techniques and proprietary knowledge in immunology, biochemistry and molecular biology to develop products in the vaccine, allergy and autoimmune disease areas.

Ph.D./M.D. CELLULAR IMMUNOLOGIST

We are currently seeking a Cellular Immunologist to reinforce our established research team working on novel immunotherapeutic approaches to allergic diseases. A strong background and substantial record of achievement in cellular immunology research are required together with interest in or experience with human T/B cells.

ImmuLogic provides an outstanding working environment with state-of-the-art laboratory facilities in Cambridge, Massachusetts. We have a dedicated team

of innovative scientists and an outstanding support network of academic advisors and collaborators. An active Post-Doctoral research program has been initiated and the publication of important research findings is positively encouraged and supported.

This position has an attractive remuneration and benefits package including equity participation through stock options.

Please send curriculum vitae and list of publications and/or resume to:

IMMULOGIC
Pharmaceutical Corporation



ImmuLogic Pharmaceutical Corporation
One Kendall Square, Building 600
Cambridge, MA 02139
Attn: Human Resources Department

POSITIONS OPEN

CHIEF CLINICAL MICROBIOLOGIST: forty hours per week; 9 a.m. to 5 p.m.; \$24,960 per year. Job requires: Ph.D. degree with major field of study microbiology and 2 years experience in postdoctoral fellowship in clinical microbiology. Job also requires: (i) Postdoctoral fellowship should be through American Academy of Microbiology or equivalent and must include experience in bacteriology, mycology, mycobacteriology, virology, serology, and parasitology; (ii) fellowship must include training in identification and susceptibility testing of fungi, and mycobacteriology; culturing of mycoplasma, chlamydia, and viruses; and (iii) research experience in polyisobutyl cyanoacrylate nanoparticle drug carrier systems as evidenced by one professional publication/presentation. Job duties: Supervise and direct an expanding microbiology laboratory that provides both intra- and inter-state services. Services of laboratory include: bacteriology, mycology, mycobacteriology, virology, serology, and parasitology. Participate in College of American Pathologists (CAP) proficiency tests program. Perform special request test procedures. Serve as liaison between laboratory and clinicians. Conduct clinical research in vitro susceptibility testing for new antimicrobials with or without the use of polyisobutyl cyanoacrylate nanoparticle drug carrier systems for establishing Minimum Inhibitory Concentrations (MIC) values for clinical isolates.

Qualified applicants should send résumé and verification of requirements to: 7310 Woodward, Room 415, Detroit MI 48202. Ref. #46488. Employer paid ad.

City College, CUNY. Anthropology Department is accepting applications for a senior position as **DEPARTMENT CHAIR** for fall 1989. Preference given to candidates interested in urban, medical, and/or educational anthropology who will develop research programs in the Greater New York area. The candidate should be committed to teaching an ethnically diverse undergraduate population in a four-field anthropology program and contributing to an urban-applied M.A. program. Participation in the CUNY Ph.D. Program is also possible. Salary commensurate with experience. Interviews AAA meeting, Phoenix. Send curriculum vitae and names of three references by 1 November 1988, to: **Chair, Search Committee, Department of Anthropology, City College of CUNY, New York, NY 10031.** *Equal Opportunity/Affirmative Action Employer M/F.*

DIRECTOR HEALTH RESEARCH AND EDUCATION CENTER WASHINGTON STATE UNIVERSITY-SPOKANE

The Director is responsible for the overall administration of the Health Research and Education Center located in WSU-Spokane. Specific responsibilities of the director include: (i) providing leadership and direction for the health research efforts of the Center; (ii) establishing a strong biomedical research program, and (iii) participating in other research and educational activities of Washington State University.

The Center is a newly established program developed to promote and coordinate research activities in the various disciplines of the health sciences and enhance economic development in eastern Washington.

Qualifications include: Doctoral degree (Ph.D., M.D., or Pharm.D.); a minimum of 5 years of experience in biomedical research, preferably in the area of clinical pharmacology; a strong record of research accomplishments; managerial experience, including preparing and managing program budgets; and interpersonal and communication skills.

This is a permanent, full-time position at the associate or full-professor level in the College of Pharmacy. The salary is competitive and commensurate with experience and qualifications.

Application deadline is 30 September 1988.

Letters of nomination or application; a current résumé; and names, addresses and telephone numbers of at least three references should be addressed to:

**Dr. Mahmoud M. Abdel-Monem, Chair
HREC Director Search Committee
Dean, College of Pharmacy
Washington State University
Pullman, WA 99164-6510**

Washington State University is an Equal Opportunity/Affirmative Action Educator and Employer. Protected group members are encouraged to apply.

POSITIONS OPEN

UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE DIVISION OF IMMUNOLOGY DEPARTMENT OF PATHOLOGY AND LABORATORY MEDICINE DIRECTOR PROTEIN CHEMISTRY LABORATORY

The Department of Pathology and Laboratory Medicine of the University of Pennsylvania School of Medicine has an opening for the director of the existing protein sequencing and peptide synthesis laboratory. The position offers opportunities for collaborations in research involving projects in the areas of immunology, cancer biology and in neurosciences. Applicants should have extensive experience in protein chemistry and familiarity with gas phase sequencers, oligonucleotide synthesizers and peptide synthesizers. Individuals with independent and funded research projects will be preferred. Salary and level of appointment will be commensurate to the applicant's experience.

Inquiries and curriculum vitae with names of three referees should be sent to:

**Mark Greene, M.D., Ph.D.
Director
Division of Immunology
Department of Pathology and Laboratory Medicine
University of Pennsylvania
John Morgan Building
Philadelphia, PA 19104-6082**

The University of Pennsylvania is an Equal Employment Opportunity and Affirmative Action Employer.

ECOLOGY AND EVOLUTION

The University of Iowa's Department of Biology is inviting applications for two **TENURE-TRACK POSITIONS**, one at the assistant professor level: the other may be at a more advanced level. This is phase one in rebuilding an internationally recognized group in ecology and evolution. Outstanding candidates engaged in theoretical or experimental analysis of any major problem in ecology or evolution will be considered. Postdoctoral experience is preferred. Screening will begin in September 1988. Applicants should submit curriculum vitae, statement of research interests, and should arrange for at least three letters of reference to be sent to: **Professor Richard V. Bovbjerg, Department of Biology, University of Iowa, Iowa City, IA 52242.**

The University of Iowa is an Equal Opportunity and Affirmative Action Employer. We encourage applications from women and minorities.

ECOLOGY TENURE-TRACK POSITION—The Mitrani Center for Desert Ecology at the Jacob Blaustein Institute for Desert Research, Ben-Gurion University of the Negev, Israel, seeks to fill a faculty position in ecology to begin not later than September 1989. Preference will be given to applicants with postdoctoral experience and research interests in chemical, mathematical, biophysical, genetical, plant or nutrient cycling ecology. The successful candidate will be expected to establish a research program in desert ecology, and to collaborate with other investigators of the Mitrani Center. Applications will be considered as they are received until the position is filled. Send curriculum vitae, selected reprints, outline of research interests and arrange to have three letters of reference sent to: **Professor U. Safriel, Institute for Desert Research, Sede Boqer Campus, 84993 Israel.**

ELECTRON MICROSCOPY FACILITY COORDINATOR—immediate opening for individual with bachelor's degree and experience—with NICHHD Center for Population Research at Harvard Medical School. Will perform basic electron microscope (EM) maintenance, teach EM techniques and to develop protocols with Center users, process samples, cut thick and thin sections, make EM negatives, do photography, maintain chemical supplies and log book, prepare quarterly report of progress, correspond with vendor/service representatives regarding instrument performance. Send résumé and references to: **Dr. Everett Anderson, Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School 45 Shattuck Street, Boston, MA 02115.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ENVIRONMENTAL SPECIALISTS

Limnologists, wetland and estuarine ecologists, environmental scientists. The St. Johns River Water Management District has current and projected openings in applied research and research management for surface water restoration and preservation programs. Appropriate areas of specialization include limnology, aquatic, wetland and estuarine ecology, and environmental sciences. Starting salaries are commensurate with experience and vary approximately \$20,000 to \$28,000. Bachelor's degree in limnology, biology, ecology, and related sciences required. Send résumé with ad by 23 September 1988 to: **St. Johns River Water Management District, Office of Employee Relations, P.O. Box 1429, Palatka, FL 32078-1429.**

Equal Employment Opportunity/Affirmative Action/Veterans Preference Employer.

FACULTY AND POSTDOCTORAL POSITIONS IN PHARMACOLOGY

The Department of Pharmacology and Therapeutics, Louisiana State University Medical Center-Shreveport invites applications and nominations for postdoctoral and tenure-track faculty positions in neuropharmacology. Applicants should have a M.D. or Ph.D. degree, and a demonstrated ability in research. Specialization in receptor mechanisms, neuropeptide research, behavioral pharmacology, or nervous-immune system interactions is preferred. Successful candidates will be expected to develop independent research programs, and to participate in medical and graduate teaching. Applications should include curriculum vitae, a list of publications, selected reprints and pre-prints, a summary of current research, and future research plans, and the names of three individuals from whom letters of recommendation may be solicited. Applications and nominations should be sent to: **Dr. Adrian J. Dunn, Ph.D., Department of Pharmacology and Therapeutics, LSUMC-S, P.O. Box 33932, Shreveport, LA 71130.** *The University is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION

Delaware—Environmental Engineering. The Department of Civil Engineering at the University of Delaware invites applicants for a tenured or tenure-track position in environmental engineering. The rank will depend on the qualifications and experience of the applicant. Expertise in hazardous waste or wastewater treatment will be preferred. Major responsibilities include teaching both undergraduate and graduate courses and developing a strong research program. Senior candidates must have an outstanding record of research; junior candidates will be expected to demonstrate exceptional potential for scholarly achievement. A Ph.D. degree and evidence of excellent teaching and research are required. Candidates with at least one degree or teaching experiences in civil/environmental engineering are desirable. Applications received by 30 November 1988 will be given first consideration; however the search will continue until the position is filled. Applicants should send a résumé and the names of three references to: **Professor C. P. Huang, Chair, Search Committee, Department of Civil Engineering, University of Delaware, Newark, DE 19716.** *The University of Delaware is an Affirmative Action/Equal Opportunity Employer.*

BIOLOGY DEPARTMENT, UNIVERSITY OF SOUTH CAROLINA FACULTY POSITIONS IN PLANT BIOLOGY

Applications are sought for two tenure-track positions available in 1989. We are especially interested in individuals applying molecular and biochemical techniques to questions in plant biology. The specific field of research is open and could include areas from molecular to organismic biology. Applicants must demonstrate a productive, independent research program. Generous start up funds will be provided; academic rank open. Please send curriculum vitae and names of three references by 15 October 1988 to: **Dr. David Lincoln, Plant Biology Search Committee, Department of Biology, University of South Carolina, Columbia, SC 29208.**

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

POSITIONS OPEN

FACULTY POSITION

Research position available at the instructor level for Ph.D. with background in histology and ultrastructure to participate in investigations in malignant hyperthermia. Applicants should have training and proficiency in use of transmission electron microscopy and immunocytochemistry to assess cell/tissue structure and function. Salary commensurate with education and experience. Applicant should reply with curriculum vitae and three letters of recommendation by 30 September 1988 to: **Dennis F. Landers, M.D., Ph.D., Interim Chairman, Department of Anesthesiology, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, NE 68105.** An Equal Opportunity/Affirmative Action Employer.

FACULTY POSITIONS, BIOMEDICAL ENGINEERING

The University of Southern California invites applications for two tenure-track faculty positions available 1 January 1989. Applicants must have a Ph.D. or an M.D. degree with experience in sensory physiology, biosensors, medical imaging, or laser applications in medicine. Duties include both teaching and research; appointees will be expected to establish his or her own research program. Rank and salary will be commensurate with qualifications.

Send résumé and the names of three references to:

**H. K. Chang, Chairman
Department of Biomedical Engineering
University of Southern California
Los Angeles, CA 90089-1451**

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THE UNIVERSITY OF CALGARY HEAD, DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS

The University of Calgary Faculty of Medicine invites applications and nominations for the position of Head of the Department of Pharmacology and Therapeutics. In this Faculty, pharmacology and therapeutics is taught within an integrated curriculum emphasizing problem-solving and a comprehensive approach to individual body systems. In recent years, there has been substantial development of biomedical research with support from government agencies and foundations including the Alberta Heritage Foundation for Medical Research.

The applicant must have a Ph.D., M.D., or equivalent degree, have demonstrated strong leadership and administrative abilities, be able to recruit outstanding scientists and teachers to the Faculty of Medicine, be recognized internationally for excellence in biomedical research and have a commitment to medical education.

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

Applications and nominations, including curriculum vitae, a statement of research interests and academic goals, and names of three referees, should be forwarded by 15 October 1988 to:

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

IMMUNOLOGIST: The Biology Department invites applications for a tenure-track assistant professorship in immunology beginning as early as January 1989, but no later than September 1989. Candidates should have at least 2 years of postdoctoral experience; teaching experience is also desirable. He/she will be expected to establish a vigorous research program (research start-up funds are available), and pursue funding for it. Teaching responsibilities include participation in the biology major's and/or nonmajor's introductory sequences, undergraduate and graduate courses in immunology, and the training of M.S. and Ph.D. students. Applicants should submit: curriculum vitae, list of publications and recent reprints, a statement of current and projected research and teaching interest, and have three letters of recommendation sent to: **Dr. Robert Bast, Biology Department, Cleveland State University, East 24th and Euclid Avenue, Cleveland, OH 44115** by 7 October 1988. Cleveland State University encourages applications from qualified minority groups and women. Equal Opportunity Employer, M/F/H.

26 AUGUST 1988

Research That Is Shaping The Future Of Biotechnology... Starts With A Commitment From Johnson & Johnson And YOU.

A commitment to innovative research and new product development is the cornerstone of Johnson & Johnson and its newly formed R.W. Johnson Pharmaceutical Research Institute. Recognizing the tremendous potential of the biotechnology market, Ortho Biotech Research & Development Division is expanding its staff of top scientists to extend the areas of biotechnology research and discover new classes of drugs that will improve the quality of life.

Working as part of a small team, you should thrive on the high-risk, high-reward challenges of an entrepreneurial environment. You'll enjoy exceptional visibility with senior management, have the backing and resources of a world-class health care organization, and the opportunity to interact with a dedicated team of applied scientists developing breakthrough products.

Principal Scientist

Requires PhD or equivalent in Biochemistry or allied field and 5-8 years' experience developing immunological/biochemical assays related to potential or existing therapeutics. Prior development of RIA, ELISA and HPLC assays necessary, as applied to protein products.

The successful candidate will supervise professional-level technicians and develop assays to measure potency and physio-chemical characterization of proteins. (Dept. 61A)

Sr. Associate Scientists

These openings require Master of Science or equivalent in bioanalytical area with 5 plus years of experience in bioanalytical analysis; or BS or equivalent with 7 plus years' experience. You must have demonstrated skills in design of assay methods, including writing protocols in standard SOP format, and working familiarity with protein methods.

The successful candidates will be responsible for scheduling and coordinating investigative assays for in-process testing as well as experimental and multi-arm stability study testing of protein products. You will troubleshoot assay problems and resolve by interacting with other research groups; modify, develop and write assay methods in SOP format; compile and write data summaries and reports for submission to Regulatory. (Dept. 61B)

Research Associate

Requires MS or equivalent in Biochemistry, Protein Chemistry or allied discipline; or BS or equivalent and minimum of 2 years' experience. You must have done research involving the isolation and purification of proteins, preferably in an industrial environment.

You will assist in protein purification and biochemical analysis; collect, record and analyze data for report summary; interact with Ortho personnel at all levels as well as colleagues in experimental areas. (Dept. 61C)

We offer competitive salaries and the comprehensive benefits you would expect from a Johnson & Johnson Company. We invite you to forward your resume, including salary requirements, to: **Mr. Frank Folio, Ortho Pharmaceutical Corporation, Dept. # as indicated above, P.O. Box 300, Raritan, New Jersey 08869-0602.**

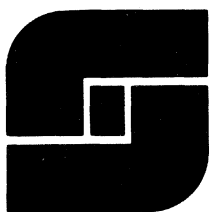
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ORTHO PHARMACEUTICAL
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VIROLOGISTS

Southern Research Institute has immediate positions available for five Ph.D. virologists to participate in expanded research programs in antiviral drug development for government and industry. Positions require a Ph.D. in virology or other appropriate field with specialization in virology. Preference will be given to candidates with training or experience in retrovirology, especially with human immunodeficiency virus (HIV), or in work with exotic RNA viruses. One position is available for a Ph.D. molecular virologist experienced in recombinant DNA techniques, DNA cloning and sequencing, and viral genetics.

Research involves evaluation and development of new drugs for use in treatment of AIDS and other viral diseases. Some work will be conducted in a BL-3 containment facility.

Responsibilities include work on current and anticipated research contracts and grants, supervision of junior staff members, the writing of research proposals and reports; and collaboration with other scientists in the conception, development, and performance of virus-related research programs. Opportunity available to publish and present papers at scientific meetings.

Located in a 20-acre complex with a staff of approximately 700, Southern Research Institute is a diversified, not-for-profit research organization in its fifth decade of operation. The metropolitan Birmingham area, with a population of approximately one million, offers a mild four-season climate, lower-than-average cost of living, many recreational and cultural opportunities, and a variety of convenient and attractive housing alternatives. To apply, send c.v. to **Denise D. Johnson, Human Resources Office, Dept. 304, SOUTHERN RESEARCH INSTITUTE, P.O. Box 55305, Birmingham, AL 35255.**

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SYRACUSE UNIVERSITY

SEARCH REOPENED CHAIRPERSON

DEPARTMENT OF BIOLOGY

Syracuse University has embarked on a major program of growth and development in Biology. Substantial increases in the number of faculty and in the quality and extent of research facilities and support will occur during the next five years. We seek applications and nominations of candidates for the position of chairperson to lead this program.

Candidates must have distinguished records and currently active programs in research, strong qualities of leadership, and demonstrated administrative skills. Women and members of minority groups are encouraged to apply. Applications received by November 1, 1988, will receive full consideration. The appointment is to take effect July 1, 1989, if possible.

Syracuse University is a major private research university with an enrollment in excess of 16,000 students in its 13 colleges. The Biology faculty of 26 conduct research and supervise Ph.D. candidates in diverse areas including Biochemistry, Population Biology, Genetics, and Cell and Molecular Biology. Faculty at the adjacent campuses of the State University of New York Health Sciences Center and the College of Environmental Science and Forestry contribute additional strength in these areas.

Interested applicants should send a curriculum vitae to:

Dr. H. Richard Levy
Search Committee Chair
Department of Biology
Syracuse University

Syracuse, New York 13244-1220

Post-Doctoral Position Neurobiology

G.D. Searle, a world-wide leader in the pharmaceutical industry, is seeking candidates for a post-doctoral research position, working with Dr. Thomas H. Lanthorn, within the Department of Central Nervous System Diseases Research. The primary research direction will be to study the components of the receptor/channel complexes for acidic amino acids, especially as expressed in oocytes.

Required: Ph.D., experience in voltage-clamp techniques, working knowledge of neuropharmacology or molecular biology. Candidate must also have a record of publication demonstrating ability to undertake independent and creative research.

This position represents a unique opportunity to carry out basic research within an interactive group of neuroscientists and molecular biologists who are working on mechanisms of a number of CNS diseases. These include mechanisms associated with acidic amino acid neurotransmitters and their modulators, the GABA receptor/channel complex, opioid receptors, and neurotrophic factors.

Located in a newly built, modern Life Sciences facility at the St. Louis site, the position is endowed with a highly competitive total compensation package. The appointments are for one year and renewable for up to an additional two years.

To apply, please forward resume and names of references to: **Joan M. Lineberry - PDTHL; G.D. Searle & Co. R&D; c/o Monsanto Company-BB4E; 700 Chesterfield Village Parkway; St. Louis, MO 63198.** An Equal Opportunity Employer.

SEARLE

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ROCKEFELLER FOUNDATION

AFRICAN DISSERTATION INTERNSHIP AWARDS

Doctoral students from sub-Saharan Africa are invited to apply to the Rockefeller Foundation for dissertation research support. The program, implemented with the African Academy of Sciences, Kenya, enables Ph.D. students enrolled in U.S. universities to return to Africa for extensive field research in areas relevant to economic development or poverty alleviation. Priority is given to research topics in the fields of agricultural, health and life sciences, but other proposals are welcome.

Applicants are responsible for arranging affiliation with an African institution able to provide needed research support, such as laboratory facilities, access to study sites, and technical advice. The candidate's U.S. faculty adviser, the hosting institution in Africa, and the funding agency with primary responsibility for financing the student's graduate work must all endorse the application.

Deadlines for applications are October 1, 1988 and March 1, 1989. Preliminary inquiries are encouraged to determine the appropriateness of the research topic and the proposed institutional setting in Africa. Candidates should apply well in advance of the expected field work starting date.

For a full description of the competition and the application requirements, write to **African Dissertation Internship Awards, The Rockefeller Foundation, 1133 Avenue of the Americas, New York, New York 10036.**

Hipple Cancer Research Center

Hematopoietic Growth Factor Laboratory

The Hipple Cancer Research Center is seeking Ph.D. and/or M.D. applicants from outstanding glycoprotein biochemists for an Associate Cancer Center Scientist position. This team leader will play a key role in further developing the Hematopoietic Growth Factor Lab and its focus on megakaryocyte colony-stimulating factor (Meg-CSF). This facility offers an on-going and ample supply of human urinary extract obtained from patients with aplastic anemia; labs fully equipped for the contemporary biochemical purification of glycoproteins and new cell cloning facilities for the cellular assay of novel hematopoietic growth factors.

The successful candidate must have a strong background in biochemistry, growth factor characterization/purification, cell and molecular biology, and/or experimental hematology. Background will include at least three years postdoctoral experience in glycoprotein purification and/or in vitro cell biology along with excellent leadership and communication skills.

Applications are also invited for Postdoctoral Fellows from candidates with experience in protein purification to characterize and purify novel hematopoietic colony-stimulating growth factors.

These positions offer unique opportunities in scientifically exciting, innovative team-approach research. Collaborations include cell receptors (Dr. Sohan L. Gupta), monoclonal antibodies (Dr. J. Peter Fuhrer) and experimental hematopoiesis (Dr. M.J. Murphy). The Center is proud to provide competitive compensation with excellent benefits. Send your current curriculum vitae, statement of research interests and goals, and the names of three references to: **SEARCH COMMITTEE, HIPPLE CANCER RESEARCH CENTER, 4100 S. Kettering Blvd., Dayton, Ohio 45439-8098, USA.**

The Hipple Cancer Research Center is an Equal Opportunity/Affirmative Action Employer.

SAINSBURY LABORATORY JOHN INNES INSTITUTE

POST-DOCTORAL AND RESEARCH ASSISTANT POSTS

Engineering Plant Transposons for the Isolation of Tomato Disease Resistance Genes

The Sainsbury Laboratory has been established at the John Innes Institute, Norwich to undertake basic research in molecular plant pathology with the eventual aim of developing disease resistant crop plants. It has been set up with a grant from David Sainsbury through his Gatsby Charitable Foundation.

Applications are invited for post-doctoral and research assistant positions to engineer and evaluate the use of transposon tagging systems for the isolation of plant disease resistance genes. The research effort will initially consist of (i) characterization and manipulation of engineered transposon behaviour in transformed plants and (ii) molecular genetic analysis of disease resistance genes and mechanisms in tomato with the goal of cloning specific genes by transposon tagging.

Applicants should state their preference. Those interested in area (i) will not be at a disadvantage if they lack prior experience of plants provided they have experience in the molecular genetic analysis of other systems eg., prokaryotes, yeast or *Drosophila*. Applicants for area (ii) would preferably have prior experience in some aspect of plant/microbe interactions. For one of the research assistant positions, experience in plant tissue culture would be an advantage.

Salaries will be in the range £9865 – £15720 for the post-doctoral positions, and £8675 – £11680 for the research assistant posts. Contributory superannuation. Equal Opportunities Employer.

Several positions are available immediately. Further positions will become available in the summer of 1989 when a new laboratory building will be complete.

Applications, including full CV and the names of two referees, should be sent to the Personnel Officer, John Innes Institute, Colney Lane, Norwich, United Kingdom, NR4 7UH, as soon as possible, preferably to have arrived by the end of September 1988. Reference SL/J.

Further details can be obtained from Dr. Jonathan Jones, the Sainsbury Laboratory, John Innes Institute, Colney Lane, Norwich, United Kingdom, NR4 7UH.

POSITIONS OPEN

INSTRUMENT DEVELOPMENT CHEMIST

We have an interesting position available for a person with these qualifications:

- Ph.D. in chemistry or biochemistry
- HPLC and LC experience
- Instrumentation skills
- Demonstrated writing ability
- Outgoing personality

For immediate consideration, call or send résumé to: **Joe Tehrani, Isco, Inc., P.O. Box 5347, Lincoln, NE 68505. Telephone: 402-464-0231.**

Equal Opportunity Employer

JUNIOR OR SENIOR FACULTY POSITION MOLECULAR PATHOGENESIS

The Department of Microbiology and Immunology invites applications for a junior or senior level, tenure-track position focusing on significant problems in bacterial pathogenesis using genetic and molecular approaches. Senior candidates should have strong records of research accomplishment with sustained program growth and development. Junior candidates will be expected to develop high quality, independent research programs with long-term growth potential. Teaching responsibilities, which emphasize quality rather than quantity, include medical, dental and graduate students. A large Center of Excellence grant has resulted in establishment of a Molecular Resource Center within the Department featuring state-of-the-art facilities for: oligonucleotide synthesis, peptide synthesis, hybridoma antibody production, amino acid analysis, protein sequencing, molecular graphics, and flow cytometry. Funds for the initiation of research programs will be available and salaries will be highly competitive. Applications should consist of curriculum vitae, copies of several recent publications, a brief statement of future research goals and three letters of reference to be sent to: **Dr. Terrance G. Cooper, Department of Microbiology and Immunology, The University of Tennessee, Memphis, 858 Madison Avenue, Memphis, TN 38163.** Applications will be received until 1 October 1988 or until the position is filled thereafter. *The University of Tennessee is an Affirmative Action/Equal Opportunity Employer.*

MOLECULAR BIOLOGIST POSTDOCTORAL RESEARCH FELLOW

An individual is needed immediately to assume responsibility for an ongoing research program, the objective of which is to clone and characterize the receptor for interferon-gamma. The work will initially include collaborations with **Dr. Richard Axel, Columbia University.** Experience with molecular cloning is essential, preferably pertaining to a receptor. New laboratory space, technical support, a highly competitive salary and fringe benefits will be provided. Apply with curriculum vitae, bibliography, brief statement of experience and the names of three references to: **Dr. Stephen W. Russell, Wilkinson Laboratory, University of Kansas Cancer Center, 39th and Rainbow, Kansas City, KS 66103.**

MOLECULAR BIOLOGY. The University of Notre Dame has positions available at all levels of appointment, including endowed professorships, for faculty with research interests in the general area of molecular biology. Preference will be given to applicants with demonstrated interest and expertise in research of molecular aspects of eukaryotic membrane structure/function and/or of molecular oncology. This Department offers outstanding opportunities with respect to modern facilities and technical support. Current faculty and staff in the chemical/biochemical/molecular biology areas provide a firm base for interaction and support in the development of vigorous research programs. Interested individuals should submit a current curriculum vitae including bibliography, a statement of research interests, and three letters of reference to: **Molecular Biology Search Committee, Department of Chemistry, University of Notre Dame, Notre Dame, IN 46556.** The deadline for receipt of all materials is 15 November 1988. *The University of Notre Dame is an Affirmative Action/Equal Opportunity Employer.*

Postdoctoral Fellow

**G.D. Searle —
Washington University**

The Department of Central Nervous System Diseases Research at G.D. Searle and Anatomy and Neurobiology at Washington University cosponsor a Neurobiology Postdoctoral Fellowship Program. The program offers post-doctoral fellows a unique opportunity to interact and work with scientists in both industrial and academic setting.

The program has an immediate opening for a scientist to study the biology and pharmacology of the neuronal nicotinic acetylcholine receptor. The position is available at the St. Louis site of G.D. Searle R&D and the laboratories of Drs. Gerald D. Fischback and Jonathan B. Cohen at Washington University. Previous research experience in biochemistry or molecular pharmacology is preferred. The position is renewable on an annual basis with an anticipated duration of two to three years. A highly competitive salary and benefits package will be offered.

For consideration, please send your curriculum vitae and names of three references to: **Joan M. Lineberry - PDDGR; G.D. SEARLE & CO., R&D; c/o Monsanto Company-BB4E; 700 Chesterfield Village Parkway; St. Louis, MO 63198.** An Equal Opportunity Employer.

SEARLE

ASSISTANT PROFESSORSHIPS IN PHYSIOLOGY

The Department of Physiology at the University of North Dakota School of Medicine is currently soliciting applications for two tenure-track positions at the Assistant Professor level. A Ph.D. or M.D. degree, postdoctoral experience, publications, and the ability to obtain extramural support are essential. Some teaching experience is highly desirable. Each individual must have a strong commitment to medical and graduate education and to conducting an independent research program. Preference will be given to applicants in the area of neurophysiology and cardiovascular physiology who apply molecular biological techniques to their research. Special consideration will also be given to those individuals who have a research interest in aerospace medicine. Salary is negotiable based on credentials. Applications should include a current curriculum vita with bibliography and the names of at least three references. Application deadline is September 30 or until positions are filled. Materials should be sent to **Dr. Richard Rose, Chairperson, Department of Physiology, University of North Dakota School of Medicine, Grand Forks, ND 58201.** The University of North Dakota is an Equal Opportunity Affirmative Action employer.

ELECTROPHYSIOLOGIST CARDIOVASCULAR PHARMACOLOGY

The Squibb Institute for Medical Research is recognized internationally as a leader in the research and development of novel therapeutic agents for the treatment of cardiovascular and infectious diseases. We currently have an exceptional opportunity for an experienced research scientist to join our Pharmacology Department.

You will be responsible for conducting both intracellular microelectrode experiments on excitable tissues and patch clamp experiments on isolated cells. Data analysis and report writing will be required.

Qualified candidates should have B.S. (M.S. preferred) and a minimum of 2 years related research experience.

In addition to an excellent starting salary and comprehensive benefits package, we can offer the opportunity to pursue a stimulating and rewarding career. For confidential consideration, please submit your resume to: **The Squibb Institute for Medical Research, Human Resources Department 729, P.O. Box 4000, Princeton, N.J. 08543-4000.** An equal opportunity employer.



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CLINICAL RESEARCH ASSOCIATE

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Teaneck, New Jersey**

As a result of an international expansion, Ajinomoto, a leading Japanese company in oncology/immunology research, is starting clinical development of immune modulators in the United States. Suitably experienced Clinical Research Associates are needed for the clinical investigation program.

The appointed individuals will be expected to make an immediate contribution to the design, initiation, monitoring, interpretation and reporting of clinical trials throughout the U.S. Co-ordination of these trials will involve close liaison with leading physicians, requiring travel through the U.S.

The ideal candidate will be a graduate in a biological science or medicine, with subsequent research experience in oncology or immunology. It is expected that applicants will have extensive experience in clinical research gained within the pharmaceutical industry.

The appropriate individuals will be able to advance to Associate Director of Clinical Research, and an attractive remuneration package is offered.

Apply in writing, with full Curriculum Vitae, to:

Dr. Maxwell Gordon
Lenti-Chemico Pharmaceutical
Laboratory, Inc.
Subsidiary of Ajinomoto Company, Inc.
Glenpointe Centre West
500 Frank W. Burr Blvd.
Teaneck, NJ 07666

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Qualified candidates must have a BS or MS in Chemistry, Biochemistry, Engineering or Physics and 1-2 years' experience with at least one of the following physicochemical techniques of protein analysis: fluorescence, phosphorescence or circular dichroism, FT-IR or analytical ultracentrifugation. Familiarity with PC based computers is essential. Responsibilities for this position will include biochemical and biophysical protein characterization and instrument maintenance.

Amgen offers an exciting and challenging research environment as well as an excellent compensation and benefits package. **Amgen** is located about an hour's drive northwest of Los Angeles in the scenic Conejo Valley.

Qualified applicants should send a resume, including references, in confidence to:

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CELL BIOLOGIST/ ASSISTANT PROFESSOR

University of Pennsylvania

Department of Physiology and the Institute for Environmental Medicine of the University of Pennsylvania Medical Center seek Cell Biologist for a tenure-track appointment as Assistant Professor. Research areas of special interest include lipid-protein interaction, endocytosis, secretion, epithelial cell differentiation, macromolecular synthesis, and lipid peroxidation. Guaranteed salary support and generous start-up funds are available. Deadline for application is December 15th, 1988. Send c.v. and statement of research interest to: **Cell Biology/Asst. Professor, Search Committee, c/o Maureen Doran, Executive Assistant, Institute For Environmental Medicine.**

**University of
Pennsylvania**

1 John Morgan Building
36th & Hamilton Walk
Phila., PA 19104-6068



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EXECUTIVE DIRECTOR NORTH CAROLINA SUPERCOMPUTING CENTER

The Executive Director will be responsible for planning, developing and managing a state supported state-of-the-art Supercomputing Center and Institute in the Research Triangle Park, North Carolina. Responsibilities include stimulating interest in supercomputing to establish North Carolina as a major, nationally recognized R&D center and develop and implement technical programs for advanced information processing on supercomputers. Additional responsibilities include, ensuring the availability of appropriate software in the facility, and the selection of the appropriate staff of the Institute, and the appropriate liaison between the staff and facility users.

The Executive Director will serve as Chairman of the Technical Advisory Council and will secure and maintain the active support of the supercomputing community. Additional responsibilities include developing and coordinating appropriate research affiliates programs and activities. The Executive Director will prepare an annual operating budget, develop appropriate budget reporting and cost-control systems and negotiate with contractors and vendors.

The ideal candidate will have demonstrated managerial and administrative skills and experience within a supercomputing environment. An advanced degree is desirable.

A competitive salary and benefits package will be offered to the Executive Director and staff of the Supercomputing Center. The Search Committee will begin reviewing responses by Oct. 1, 1988. Qualified candidates may apply by sending a resume and cover letter (including salary history) to:

Search Committee

North Carolina Supercomputing Center

P.O. Box 12732
Research Triangle Park, N.C. 27709

POSITIONS OPEN

MOLECULAR BIOLOGY SCIENTIST— PRODUCT DEVELOPMENT

We are seeking a recent Ph.D. or experienced M.S. with training in molecular biology including isolation and hybridization of nucleic acids, RFLP analysis, and familiarity with non-radioactive probes. This individual will be responsible for the development and transfer of the technology for the identification of DNA polymorphisms in parentage testing and related areas in a non-profit service and research organization. Consultation with nationally recognized investigators working in immunology and immunogenetics is readily available.

Send curriculum vitae and other particulars to: **Personnel Department, The Blood Center of Southeastern Wisconsin, 1701 West Wisconsin Avenue, Milwaukee, WI 53233.**

Equal Opportunity Employer

DEPARTMENT OF MICROBIOLOGY AND PUBLIC HEALTH, AND MSU-DOE PLANT RESEARCH LABORATORY MICHIGAN STATE UNIVERSITY MOLECULAR BIOLOGY OF PLANT-MICROBE INTERACTIONS

The Department of Microbiology and Public Health and the MSU-DOE Plant Research Laboratory have available a joint, tenure-track faculty position at the **ASSISTANT PROFESSOR** level. Applications are being sought from individuals who propose to establish a research program that will use molecular approaches in the investigation of plant-microbe interactions.

The Plant Research Laboratory is operated under a contract from the U.S. Department of Energy and provides a stimulating atmosphere and excellent facilities for research. Generous laboratory space and set-up support will be provided. An ongoing allocation of research funding is associated with the position. Initial participation in teaching will be at the graduate level.

Applicants must have postdoctoral research experience with demonstrated productivity and evidence of potential for independent and innovative research. In order to assure consideration, applications should preferably be received by 1 November 1988. Send curriculum vitae, and a description of research to: **Dr. Jonathan Walton, Chairman, Search Committee, MSU-DOE Plant Research Laboratory, Michigan State University, East Lansing, MI 48824. Telephone: 517-353-4885.** *Michigan State University is an Equal Opportunity/Affirmative Action Employer.*

OBSERVATORY PROGRAMMER

A programmer is needed at the Joint Astronomy Centre in Hilo, Hawaii. The centre operates the world's largest submillimetre and infrared telescopes on behalf of the British, Canadian and Dutch governments. The vacancy is for a software expert in the fields of telescope control, data acquisition and data reduction on the many VAX/VMS computers at the telescopes and in the centre. It is essential that applicants have experience with FORTRAN 77 and desirable that they have experience or understanding of real-time systems (ideally of telescope control and of the ADAM environment). An astronomical background would be an advantage as there is the possibility of some front-line research as part of this post. Suitable qualifications would be a Ph.D. in computer science, astronomy or physics, or equivalent work experience. Applicants should submit a full curriculum vitae and three letters of reference to: **M. A. Johnston, Joint Astronomy Centre, 665 Komohana Street, Hilo, HI 96720** to arrive before 30 September 1988.

An Equal Opportunity Employer

The University of Michigan, Department of Pediatrics, Division of Pediatric Hematology/Oncology is seeking a Ph.D. applicant for a position which will be 50% academic and 50% research. Candidates should have a Ph.D. in an applicable basic science background. Please contact: **A. Laurence Boxer, M.D., Director, Pediatric Hematology/Oncology, F6515 Mott Children's Hospital, University of Michigan Medical School, Ann Arbor, MI 48109-0238.** *The University of Michigan is a Non-discriminating Affirmative Action Employer.*

POSITIONS OPEN

NMR FACILITY MANAGER. The College of Basic Sciences at Louisiana State University is seeking applications for the position of Manager of the NMR Facility (Research Associate IV). The position requires a B.S. with 5 years of experience in the maintenance and operation of high field NMR spectrometers or a Ph.D. in chemistry or biochemistry. Duties include scheduling, supervising users and operating a Bruker AM400 and coordinating its use with 200- and 100-MHz instruments. Purchase of a 500-MHz instrument is expected in 1988. Extensive experience in 2D techniques required and a knowledge of RF electronics is preferred. Send a résumé and three letters of recommendation to: **Professor Kathleen Morden, Louisiana State University, Department of Biochemistry, 322 Choppin Hall, Baton Rouge, LA 70803.**

The Anatomy Department of the Medical College of Ohio has openings for **NEUROBIOLOGISTS** who are studying neural organization and/or development at the cellular or molecular levels. Positions may be either tenured or tenure-track with teaching responsibility in either gross anatomy, microanatomy, or neurobiology. Applicants for assistant professorship should have demonstrated the ability to establish an independent and funded research program. Applicants for more senior positions should have ongoing and funded programs. The Medical College of Ohio offers an excellent research environment and very competitive salaries and start-up funds. Faculty hired in the upcoming year will join a growing neuroscience group that will be expanded by subsequent recruitment. Forward your curriculum vitae and the names of three references to: **Dr. Robert W. Rhoades, Chairman, Department of Anatomy, Medical College of Ohio, C.S. 10008, Toledo, OH 43699.** Consideration of applications will begin 1 December 1988. *Equal Opportunity Employer.*

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

Immediate opening for a **PLANT PHYSIOLOGIST** to work in the Space Biology Program at the Kennedy Space Center. Candidates must have a Ph.D. in plant physiology with a strong emphasis in biochemistry and/or cellular biology and at least 5 years of research experience. The candidate will conduct in-house research on the effects of space environment on plant growth and metabolism and act as coordinator of research grants at extramural research institutions sponsored by the NASA Space Biology Program. Submit letter of application and curriculum vitae by 16 September 1988 to:

**J. R. Puleo
BIO-1**

Kennedy Space Center, FL 32899

Equal Opportunity Employer

POSTDOCTORAL FELLOW PLANT MOLECULAR BIOLOGY

A position is available immediately for a postdoctoral fellow to study novel mechanisms regulating of enhanced gene expression in plants through recombinant DNA techniques and genetic transformation of plants. Experience with recombinant DNA techniques is required. Knowledge of plant tissue culture is highly desirable. Send curriculum vitae including a detailed summary of research experience and request that three letters of recommendation be sent to: **Dr. Robert Thornburg, Department of Biochemistry and Biophysics, Iowa State University, Ames, IA 50011.**

ISU is an Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

PHYSICS RESEARCH SCIENTIST, 40 hours per week, 8 a.m. to 5 p.m., \$42,245 per year. Must have Ph.D. in physics theoretical/experimental applications background. Will design, fabricate and operate repetitive flashboards for 120- to 400-nm UV light sources for UV initiated plasma opening switches, gas discharge generated high rep rate switches and plasma lasers. Responsible for design and computer simulation of optical resonators for CO₂ lasers using toroidal geometries, for design of Rogowsky, Chen and Bruce profiled electrodes. Must be skilled in the physics of vacuum breakdown, surface chemistry, non-linear laser self-focusing and its applications, electrolytic solution behavior under high frequency fields, Onsager-Kim theory, glow, corona initiated radial discharges, discharge magnetic stabilization, Penning ionization, Fermi resonance, Boltzmann and Druyvesteyn electron energy distribution functions. Will write contract proposals. Must have obtained contracts through such proposals. Submit résumés to: **New Mexico Department of Labor, 501 Mountain Road, NE, Albuquerque, NM 87103.** Job Order #178141.

POSTDOCTORAL ASSOCIATE—Biologic Research—West Haven, Connecticut. Investigate subcellular mechanisms involved in secretion of macromolecular substances and protons from parietal cells of stomachs of laboratory animals. Isolation of parietal cells requires complex biochemical and cellular biological techniques. Requires skills in measurement of biochemical parameters, complex analysis of secretory data, and the ability to interpret mechanisms of subcellular modulatory processes responsible for parietal cell secretion in both normal and diseased states. Particular expertise required in measurement of concentration changes of intracellular calcium and the interaction of peptide hormones with cell specific receptor sites and utilization of two-dimensional yet electrophoretic chromatography and the usage of FPLC and HPLC systems. Ph.D. or M.D. (biology or medicine) required. Five-day week, 40 hours, salary \$20,000 per year. Applicants send résumé to:

**Job Service Technical Unit
Connecticut Department of Labor
200 Folly Brook Boulevard
Wethersfield, CT 06109
Refer to Job Order #3024821**

POSTDOCTORAL FELLOW

POSTDOCTORAL POSITIONS are available in a comprehensive training program on calcium, sodium and potassium channels, G protein coupling to ionic channels, and glutamate receptors. Methods include cDNA cloning, mRNA expression in oocytes and other eukaryotic cells, genetic engineering of mRNA's, regulation of channel and G protein gene expression, second messenger assays, patch clamping, two electrode voltage clamp, reconstitution in lipid bilayers, affinity chromatography, radioligand binding, computer modelling, imaging, and trace fluxes. Applicants must be citizens or non-citizen nationals of the United States or have been lawfully admitted for permanent residence at the time of appointment, have experience in either electrophysiology or biochemistry, and a commitment to research in excitable membrane proteins. Send résumé and addresses for three letters of reference to: **Arthur M. Brown, M.D., Ph.D., Professor and Chairman, Department of Physiology and Molecular Biophysics, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030.** *We are an Equal Opportunity Employer.*

POSTDOCTORAL FELLOW

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

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

Send curriculum vitae and names of three references

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



University of Pittsburgh

DEAN, SCHOOL OF DENTAL MEDICINE

The University of Pittsburgh seeks applications and nominations for the position of Dean, School of Dental Medicine. The School is one of six schools of the health sciences on the campus of the University and its adjoining affiliated hospitals. The School currently admits an entering class into the DMD program of 78 students. It operates a one-year program in dental assisting and a two-year program in oral hygiene, involving 80 students. The faculty of the School provide instruction in the basic sciences to students of other schools of the health sciences. There are 60 students studying for master's or PhD degrees or certification in Anatomy, Histology, Maxillofacial Reconstruction, Microbiology, Oral Medicine, Oral Pathology, Oral Radiology, Orthodontics, Pediatric Dentistry, Periodontics, Pharmacology, or Prosthodontics. The annual expenditures of the School for instruction, research, and clinical service total more than \$14,000,000.

The new dean will be expected to lead the School toward more intensive research efforts in both the clinical and basic sciences and to closer collaboration with the other health sciences schools in the specialties related to the head and neck.

Candidates must have had substantial experience in at least one of the fields of study at a level equivalent to a full professorship. Experience as an investigator in clinical or basic research will be especially valued.

Nominations or resumes should be sent before October 15, 1988, to: **Beaufort B. Longest, Jr., PhD, Chairman
Search Committee for Dean
School of Dental Medicine
A-635 Crabtree Hall
University of Pittsburgh
Pittsburgh, PA 15261**

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GLAXO INSTITUTE FOR MOLECULAR BIOLOGY S.A.

The Geneva biotechnology research unit of the largest U.K. pharmaceutical group has a vacancy for:

AN ANIMAL-CELL FERMENTATION SCIENTIST

We are looking for a suitable candidate with experience of pilotplant scale animal cell culture to work independently within a group with wide experience of fermentation, particularly of recombinant organisms. A background in animal cell physiology would be an advantage. The ideal candidate would be expected to have research experience at postdoctoral level in a relevant discipline though other candidates with a proven track record in this field are also encouraged to apply.

A MICROBIOLOGIST POST-DOCTORAL POSITION

To work on the biochemical genetics of pathogenic fungi. A strong background in microbiology, biochemical genetics or molecular biology is required.

The Glaxo Institute for Molecular Biology provides a molecular basis for discovering effective new medicines. Projects include viral and fungal therapeutics, inflammatory diseases, and regulation of cell proliferation and differentiation.

The Institute has a staff of over one hundred, grouped in small teams of specialists from several domains of modern biology. We are part of the Glaxo Group – one of the largest pharmaceutical companies in the world – which has an outstanding reputation for the quality of its research and products.

We offer an excellent salary and benefits package, with opportunities for career development in one of the most attractive parts of Europe.

If you are interested in either of these positions, please send your curriculum vitae with a list of publications and the names of three references to: Rita Gloor, Personnel Manager, GLAXO IMB SA, 46, route des Acacias, 1211 Genève 24, Switzerland.

U.S. Department of Energy

POSTGRADUATE RESEARCH PROGRAMS

Toxicology	Engineering
Fossil Energy	Physical Sciences
Hazardous Wastes	Environmental Sciences
Economics/ Energy Policy	Life Sciences
Artificial Intelligence	Computer Sciences

- Research at national laboratories
- Stipends \$19–35,000 depending on degree, program, research area
- Recent graduate degree
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NEW YORK, N.Y. 10036**

RESEARCH SCIENTIST AND RESEARCH ASSOCIATE MOLECULAR & CELLULAR BIOLOGY

Amgen, a recognized leader in the biotechnology industry, has immediate opportunities for a Research Scientist and a Research Associate to participate in the characterization, cloning and expression of hematopoietic growth factors.

Research Scientist Molecular Biology Dept. 333: Qualified candidates for this position must have a Ph.D. and a minimum of 2 years' postdoctoral experience in the expression of recombinant protein in mammalian and prokaryotic systems.

Research Associate Bone Marrow Culture Dept. 334: Candidates for this position must have a BS or MS and a minimum of 1 years' experience in bone marrow and tissue culture. Familiarity with a variety of colony forming assays is essential. Some experience in molecular biology is desirable.

Amgen offers an excellent compensation and benefits package as well as a stimulating and challenging research environment.

Qualified applicants should send a c.v. or resume, including references, in confidence to:

Recruitment (Specify Dept. #)

AMGEN
1900 Oak Terrace Lane
Thousand Oaks
CA 91320

Equal Opportunity Employer



ASSOCIATE DEAN FOR RESEARCH AND BASIC SCIENCES

We seek an individual with proven abilities in biomedical research and administration to compete for the position of Associate Dean for Research and Basic Sciences at the University of Kentucky College of Medicine.

This individual will be responsible for all aspects of research and related training programs for the College and co-ordination of these efforts with related Medical Center and University-wide activities. The Associate Dean also has direct administrative line authority for all basic science programs. Prerequisites include a Ph.D. and/or M.D. degree and a strong record of achievement in research and administration.

Please forward letters of inquiry, c.v./bibliography, and the names of three references from whom recommendations can be solicited no later than September 9, 1988 to:

Dr. Thomas C. Vanaman
Chairman, Search Committee
Department of Biochemistry
University of Kentucky
MS613 Medical Center
Lexington, KY 40536-0084
606-233-5549

Salary range is equivalent to and competitive with other institutions and will depend on prior experience. Position is available immediately.

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Action Employer.*

Research Assistants/ Associates

Protein Therapeutics

Genentech, Inc., a successful pharmaceutical company that utilizes recombinant DNA technology, is currently seeking Research Assistants/Associates in the following areas.

Dosage Forms/ Delivery Systems

The successful candidates will hold a BS/MS or equivalent in Physical Chemistry, Biochemistry, or Pharmaceutical Chemistry with a heavy emphasis on physical and analytical concepts. Experience with proteins and a fundamental knowledge of analytical biochemistry techniques are essential. Requires 1-3 years' industrial experience in pharmaceutical formulation R&D or 1-3 years' industrial/academic experience in physical or analytical biochemistry.

Protein Purification/ Characterization

In this position, you will help develop purification schemes for proteins of interest from various unicellular sources, as well as develop/implement analytical assays to track or characterize these proteins or enzymes. Experiments will be performed at a conceptual level using chromatography, electrophoresis, immunologically based separations and assays, and automated instrumentation. Requirements include a BS in Biochemistry, Biochemical Engineering, Biology or related field, and 2-4 years' academic or industrial protein purification and characterization experience including quantitative and qualitative analytical methods.

Genentech, Inc. offers an excellent salary, benefits and relocation package coupled with the opportunity to make a significant contribution to our organization. For consideration, please send your resume to: Joyce Goulden, Human Resources Dept. 2386, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. We actively support affirmative action and equal employment opportunity. Women and minorities are encouraged to apply.

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RESEARCH SCIENTIST (Neurochemist)

G.D. Searle is a worldwide leader in the pharmaceutical industry. An opportunity now exists for a qualified Research Scientist to join an active research program in the discovery of novel drugs for the treatment of CNS disorders. Principle pharmacological areas supported by this position include drugs interacting with the GABA receptor complex, subtypes of the opioid receptor and eicosanoid receptors.

Responsibilities include:

- Establishing and supervising a biochemical laboratory
- Investigating and defining the mechanism of action of novel compounds using biochemical and pharmacological methodologies
- Participating as an integral member of project teams to determine research direction

The qualified candidate will have experience in radioreceptor binding, receptor autoradiography, and isolated tissue assays as means to pharmacologically characterize drugs. Experience in the measurement of neurotransmitters and intracellular messengers using HPLC and radioimmunoassay methods is desired. Required: Ph.D. in Biochemistry, Pharmacology or Physiology, with minimum 2 years postdoctoral experience. Candidate must have a publication record demonstrating ability to undertake independent and creative research in the neurosciences.

This position offers excellent salary and benefits package and is located in a northern suburb adjacent to Chicago. Our location offers access to a variety of cultural and recreational facilities, several fine universities and an active neuroscience community. Qualified candidates may respond in strict confidence to: **G.D. Searle & Co., R & D, Professional Staffing, HY19, 4901 Searle Parkway, Skokie, Illinois 60077.** An Equal Opportunity Employer.

SEARLE

MICHIGAN STATE UNIVERSITY DEPARTMENT OF BOTANY & PLANT PATHOLOGY 166 Plant Biology Laboratory Michigan State University East Lansing, Michigan 48824-1312

The Department of Botany & Plant Pathology invites applications & nominations, to be submitted by October 15, 1988, for the following positions:

CHAIRPERSON & FULL PROFESSOR. Provides academic and administrative leadership in a diversified department actively involved in research, teaching and extension. Promotes a creative environment for basic and applied research, extension activities, and teaching at the undergraduate and graduate levels. Fosters interdepartment relationships within the University and throughout the State. Maintenance of an active research program is encouraged. Applicants should submit a complete curriculum vitae and brief statement of academic and administrative philosophies and career objectives. Include names, addresses and phone numbers of 5 references. Mail to: **Dr. Dennis Fulbright.** Every effort will be made to maintain confidentiality.

HOST-PARASITE MOLECULAR BIOLOGIST. Major responsibility of this 12-month, tenure-track position (80% research, 20% teaching) will be basic research on the molecular biology of the interaction of plants with eucaryotic or procaryotic pathogens. Academic rank will be assistant/associate level depending on qualifications and experience. Candidate should have a demonstrated commitment to plant pathology with training in plant pathology and molecular or cell biology. Opportunities exist for collaboration with scientists in related disciplines. A Ph.D. is required and postdoctoral experience is desirable. Participation in the teaching program of the department is expected. Submit a curriculum vitae, a thorough statement of research interests and goals, and names and addresses of 3 references to: **Dr. Raymond Hammerschmidt.**

MOLECULAR VIROLOGIST. A 12-month tenure-track position (90% research, 10% teaching) in the area of plant virology. We are seeking an individual at the assistant professor level who will establish a strong, innovative research program on the molecular aspects of plant viruses, viral diseases or virus-host interactions. Major teaching responsibility will include participation in departmental offerings in plant virology. Applicants should have postdoctoral research experience. Submit a curriculum vitae, transcripts, reprints, a 2-3 page outline of research goals and 3 letters of reference to: **Dr. Donald Ramsdell.**

MSU and the Department of Botany & Plant Pathology are Affirmative Action/Equal Opportunity Employers.

POSITIONS OPEN

POSTDOCTORAL ASSOCIATE IN MOLECULAR CARCINOGENESIS to conduct research in regulation of oncogene expression during tumorigenesis. Project will investigate cis- and trans-regulatory elements controlling expression of the Ha-ras oncogene during two-stage skin carcinogenesis. Background desired in molecular biology, or recombinant DNA and cloning, or cell culture, or DNA-binding proteins. Send curriculum vitae and names of three references to: **Dr. Jill C. Pelling, Eppley Cancer Institute, University of Nebraska Medical Center, Omaha, NE 68105. Telephone: 402-559-6304. Equal Opportunity Employer.**

POSTDOCTORAL POSITION immediately available to study the molecular biology of malaria. Projects include drug resistance, gene organization, and vaccine development. Prior training in biochemistry and/or molecular biology preferred. Send résumé and three references to: **Dr. Joseph Inselburg, Department of Microbiology, Dartmouth Medical School, Hanover, NH 03756.**

POSTDOCTORAL POSITION available 1 March 1989 to participate in the identification, isolation, and molecular cloning of neurotransmitter reuptake proteins. A background in membrane biochemistry, protein chemistry, or molecular genetics is desirable, but not essential. Send curriculum vitae and names of three references to: **Dr. Gary Rudnick, Department of Pharmacology, Yale University School of Medicine, P.O. Box 3333, New Haven, CT 06510.**

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

POSTDOCTORAL POSITION available for an individual interested in working on the virology, cellular immunology, or molecular biology of HIV. The approach is aimed at understanding the diversity of AIDS viruses and mechanisms by which the host can ward off disease progression. Send curriculum vitae to: **Dr. Jay Levy, Box 0128, University of California Medical Center, San Francisco, CA 94143.**

POSTDOCTORAL POSITION, available this fall for someone with a background in phospholipid and eicosanoid biochemistry. Studies include signal-receptor transduction events. Radioimmunoassay, radio-ligand binding, HPLC, and other methodologies are employed to investigate cellular mechanisms of altered eicosanoid biosynthesis by endotoxin and related stimuli. Send curriculum vitae and three references to: **Dr. James A. Cook, Department of Physiology, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately in cell biology. Experience in either molecular biology techniques or in cell physiology preferred, to study either the genetic regulation or the electrophysiological roles of cell-specific enzymes in neural retina. Send curriculum vitae and three letters of reference to: **Dr. Paul J. Linser, The Whitney Laboratory, University of Florida, 9505 Ocean Shore Boulevard, St. Augustine, FL 32086. The University of Florida is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN MOLECULAR VIROLOGY. Research on how human adenovirus proteins counteract the anti-viral effect of tumor necrosis factor. Experience in protein and/or recombinant DNA technologies desirable. Submit curriculum vitae and name and addresses of three references to:

**Dr. William Wold
Institute for Molecular Virology
St. Louis University Medical Center
3681 Park Avenue
St. Louis, MO 63110**

POSITIONS OPEN

POSTDOCTORAL POSITION

Position available for research on ion channels in airway smooth muscle cells using patch clamp and fluorometric techniques. Projects include mechanisms of activation of Ca^{2+} and K^{+} channels in single cells. Experience in electrophysiology and/or patch clamp techniques is desirable. Send curriculum vitae to: **Dr. Michael Kotlikoff, University of Pennsylvania, School of Veterinary Medicine, Department of Animal Biology, 3800 Spruce Street, 204E, Philadelphia, PA 19104-6046. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately to study receptors, receptor-coupling, and cellular mediators in the pathogenesis of hypertensive cardiovascular disease. Background in biochemistry and/or molecular biology preferred. Send curriculum vitae and the names of three references to: **Joseph Wiener, M.D., Professor and Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield, Detroit, MI 48201.**

Wayne State University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS available to study the role of growth factors, cell interactions, and extracellular matrix macromolecules and their receptors in embryonic cell differentiation, especially during limb and brain development. Experience in molecular biology or biochemistry essential. Send curriculum vitae and names of references to: **Dr. Bryan Toole, Department of Anatomy and Cellular Biology, Tufts University Health Sciences Center, Boston, MA 02111. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITIONS CANCER PHARMACOLOGY/BIOCHEMISTRY SYNTHETIC ORGANIC CHEMISTRY

Postdoctoral position available for the study of pharmacology, biochemistry, and the mechanism of action of transition-state inhibitors of pyrimidine biosynthetic enzymes and proteases. A strong background in biochemistry or biochemically-oriented pharmacology is necessary for this project. Postdoctoral position available for the design, synthesis and characterization of transition-state inhibitors of pyrimidine biosynthetic enzymes and proteases. A degree in synthetic organic chemistry or medicinal chemistry is necessary for this project. Applications including curriculum vitae, a summary of research interests and experience, and names of three references should be forwarded to: **Dr. Matthew W. Ames, Chairman, Division of Developmental Oncology Research, Department of Oncology, Mayo Clinic/Mayo Foundation, Rochester, MN 55905. An Equal Opportunity/Affirmative Action Institute.**

HOWARD HUGHES MEDICAL INSTITUTE—CHICAGO

POSTDOCTORAL/RESEARCH ASSOCIATE positions available immediately in molecular biology of mammalian cell growth/signal transduction to characterize genes encoding zinc finger proteins [Cell 53, 37-43, (1988)] whose expression is regulated by extracellular ligands. Candidates must have documented prior experience in recombinant DNA work or have proven expertise in protein purification and antibody techniques. Salary commensurate with experience. *Equal Opportunity Employer/Male or Female.* Please send curriculum vitae and three letters of reference to:

**Vikas P. Sukhatme, Ph.D., M.D.
Howard Hughes Medical Institute, Box 391
Department of Medicine
University of Chicago Hospitals
5841 South Maryland Avenue
Chicago, IL 60637
Telephone: 312-702-9781**

POSTDOCTORAL RESEARCH ASSOCIATE to study molecular mechanisms of targeted recombination in mammalian cells. Available immediately. Applicants should have a background in molecular biology or microbiology, with experience in plasmid construction and recombinant DNA techniques. Send curriculum vitae and three references to: **Dr. G. M. Adair, The University of Texas System Cancer Center, Science Park-Research Division, Smithville, TX 78957. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

THE UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The Department of Microbiology and Immunology and the Molecular Immunology Core, recently expanded under the Chairman, **Dr. J. Wayne Streilein**, invite applications for several **POSTDOCTORAL POSITIONS** supported by a NIH training grant on the subject of Molecular and Cellular Mechanisms of Host Defense. Start date: Immediate. Applicants with M.D. or Ph.D. degrees are expected to commit 2 to 3 years to this program. Training includes a course in molecular biology and sponsored research in the area of molecular and cellular immunology. Send curriculum vitae and two letters of reference to:

**Dr. Eckhard R. Podack
Professor and Director
Postdoctoral Training-Track
Microbiology and Immunology Department
University of Miami
School of Medicine
P.O. Box 016960 (R-138)
Miami, FL 33101
Telephone: 305-548-4682**

Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH

Recent Ph.D. needed to study the alterations in proteoglycan structure in osteoarthritic cartilage using tryptic peptide mapping and Western blot techniques. Salary: \$17,500. Send curriculum vitae and names of three references to: **Charles J. Malemud, Ph.D., Department of Medicine/Division of Rheumatic Diseases, Case Western Reserve University, Cleveland, OH 44106.**

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

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

POSTDOCTORAL/RESEARCH ASSOCIATE. TRAINING IN MOLECULAR BASIS OF CARCINOGENESIS. A position is available immediately at Columbia University, College of Physicians and Surgeons to study the molecular basis of chemical carcinogen enhancement of viral transformation. Studies will employ specific genetically engineered mutants of adenovirus which display unique phenotypes when cells are pretreated with a carcinogen prior to viral infection. This position requires experience in molecular biology, nucleic acid biochemistry and/or tumor virology. Salary commensurate with experience. Send curriculum vitae and three letters of reference to: **Dr. P. B. Fisher, Cancer Center/Institute of Cancer Research, Columbia University, College of Physicians and Surgeons, 630 West 168th Street, New York, NY 10032. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH POSITION available for the study of mechanisms of mutagenesis in prokaryotic and eukaryotic cells, mainly by determinations of the changes in DNA base sequence. Applicants should send curriculum vitae and names, addresses and telephone numbers of three referees to: **Franklin Hutchinson, Department of Molecular Biophysics and Biochemistry, Yale University, 260 Whitney Avenue, New Haven, CT 06511, or call: 203-432-5566.**

SENIOR MOLECULAR VIROLOGIST

Wyeth-Ayerst Laboratories, one of the world's largest and most respected pharmaceutical companies, has an immediate opportunity for a Molecular Virologist experienced in molecular biology and viral systems. Join our multidisciplinary team engaged in the development of recombinant human viral vaccines in the Biotechnology & Microbiology Division at our headquarters in Radnor, an exceptional suburb of Philadelphia.

The position requires a Ph.D. in Molecular Biology and 2-3 years of post-doctoral experience with expertise in recombinant DNA technology, cell biology and viral propagation. Experience in viral gene regulation; growth factors and tumorigenesis is desirable.

Wyeth-Ayerst offers a competitive salary and a comprehensive benefit plan. Qualified applicants should send their resume and salary history in confidence to: **Recruitment Manager, Position #299, Wyeth-Ayerst Laboratories, P.O. Box 8299, Philadelphia, PA 19101.**



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

PRESIDENT OF THE ST. LUKE'S/ROOSEVELT INSTITUTE FOR HEALTH SCIENCES AND ASSOCIATE DEAN

St. Luke's/Roosevelt Hospital Center is one of the largest voluntary hospitals in New York and an affiliate of the Columbia University College of Physicians and Surgeons. We currently seek a professional capable of undertaking responsibility as both Chief Executive Officer of the Hospital Center's Research Institute and Associate Dean for the Hospital Center's affiliation with the College of Physicians and Surgeons. Qualifications are M.D. or Ph.D., and a minimum of ten years of research experience and appropriate administrative experience.

We offer a salary fully commensurate with your responsibilities and experience, as well as a comprehensive benefits package. Forward your c.v. to Gary Gambuti, President, St. Luke's/Roosevelt Hospital Center, 114th Street and Amsterdam Avenue, New York, NY 10025. An Equal Opportunity Employer M/F.

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Hospital Center

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1515 BROADWAY
NEW YORK, N.Y. 10036**

POSITIONS OPEN

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

POSTDOCTORAL RESEARCH POSITION funded by 4-year NIMH grant: Functional Mapping of Associative Learning in Rat Brain. Research applies 2-deoxyglucose method with behavioral and electrophysiologic techniques. Seeking neuroscientist familiar with rat neuroanatomy, computers and laboratory instruments. Minorities are encouraged to apply. Send curriculum vitae, names of references, and reprint to: **Dr. F. Gonzalez-Lima, Department of Anatomy, College of Medicine, TX A&M University, College Station, TX 77843.** Equal Opportunity/Affirmative Action Employer.

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE

POSTDOCTORAL RESEARCH POSITION is available in the Insect Pathology Laboratory. Research requires knowledge of expression vectors with a strong background in molecular biology and genetics. Expertise needed in cloning and sequencing as well as optimization of genetic constructs for expression of foreign genes. Experience with baculovirus expression vectors preferred. Salary \$27,172. Immediate availability. Address for application is: **Dr. Edward Dougherty, USDA, Insect Pathology Laboratory, Room 214, Building O1A, BARC-West, Beltsville, MD 20705.** Telephone: 301-344-3692. Applications must be marked 8E017. An Equal Opportunity Employer.

POSTDOCTORAL SURGICAL RESEARCHER

West Haven, Connecticut. Conduct research in cancer causation and development through observation, experimental treatment and surgery on laboratory animals. Establish and maintain colony of laboratory research species, *Praomys natalensis* (*Mastomys*). Perform surgery on these animals to (i) identify and remove tumors of the stomach; and (ii) implant micro-pump systems for injection of pharmacotherapeutic agents. Conduct experimental studies requiring isolation of parietal cells from stomach of *Mastomys* and stimulation with different peptides and amines. Radioimmunoassay measurement of tumor content of peptides (gastrin, somatostatin, PYY) and histamine. Ph.D. or M.D. (biology or medicine) required. Must be experienced in surgical research upon laboratory research species, *Praomys natalensis* (*Mastomys*). Five-day week, 40 hours, salary: \$20,000 per year. Applicants send résumé to:

Job Service Technical Unit
Connecticut Department of Labor
200 Folly Brook Boulevard
Wethersfield, CT 06109
Refer to Job Order #3024820

TWO PROFESSORS (ANY LEVEL): The Department of Chemistry of the Massachusetts Institute of Technology seeks two professors for July 1989. Outstanding candidates in the areas of biological, inorganic, organic, and experimental physical chemistry should send curriculum vitae, publication list, and research plan, and should arrange to have three letters of recommendation sent to: **Professor Mark S. Wrighton, Department of Chemistry, 18-399, Massachusetts Institute of Technology, Cambridge, MA 02139.** MIT is an Equal Opportunity/Affirmative Action Employer and encourages applications from minorities and women. Deadline for applications is 1 October 1988.

POSITIONS OPEN

PROFESSOR AND HEAD DEPARTMENT OF NEUROSURGERY

Applications are being solicited for the position of a tenured Professor and Head of the Department of Neurosurgery, University of Minnesota Medical School, and Chief of the Neurosurgery Service of the University of Minnesota Hospital and Clinic, Minneapolis, Minnesota. The candidate should have outstanding academic credentials and be Board-certified in Neurosurgery or its equivalent. We seek an individual who has demonstrated experience and skill to provide leadership in administration, research, service, and teaching of medical, graduate, and allied health students. This position will be available 1 July 1989. Submit inquiries and curriculum vitae by 31 October 1988 to: **John S. Najarian, M.D., Chairman, Neurosurgery Search Committee, University of Minnesota Hospital, 516 Delaware Street SE, Box 195 UMHC, Minneapolis, MN 55455.** The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

PROTEIN SEQUENCER OPERATOR

HHMI Protein Chemistry Facility at Duke seeks proficient operator for ABI 470A/477A protein sequencers. Prior experience is essential. Expertise in HPLC purification of peptide fragments for sequencing and familiarity with chromatography data systems is helpful. Facility supports research endeavors of eight HHMI groups with protein sequencing, DNA and peptide synthesis, and some HPLC. Competitive salary and benefits. Available 1 September 1988. Contact: **Richard Randall, Howard Hughes Medical Institute, Box 3042 Duke University Medical Center, 321 CARL Building, Durham, NC 27710.** Telephone: 919-684-5749.

RESEARCH ASSOCIATE: Ph.D. in biochemistry with 3 years of experience. Background in cell separation and cell biology. Salary commensurate with experience and training. Send résumé to: **Dr. Wayne L. Ryan, University of Nebraska Medical Center, Department of Obstetrics and Gynecology, 42nd and Dewey Avenue, Omaha, NE 68105.** Application deadline 30 September 1988. Equal Employment Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE AND POSTDOCTORAL POSITIONS. Available to study the biosynthesis and gene structure of mucin glycoproteins in trachea epithelial cells. Studies will include carbohydrate characterization, enzyme and RNA isolation, preparation of antibodies, DNA synthesis and cloning procedures. Background in biochemistry, cell or molecular biology desirable. Salary commensurate with experience. Send résumé to: **Dr. Joseph Mendicino, Department of Biochemistry, University of Georgia, Athens, GA 30602.**

ASSOCIATE IN RESEARCH DEPARTMENT OF SURGERY

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

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

RESEARCH ASSOCIATE position available to study the electrical properties of cells and tissues using intracellular microelectrodes, impedance analysis and single channel recordings. Strong background in electrical circuit theory, statistical mechanics and mathematical methods and a Ph.D. in biophysics or physics are required. Annual salary \$25,000. Send résumé and names of three references to: **Dr. R. T. Mathias, Department of Physiology and Biophysics, HSC, SUNY Stony Brook, Stony Brook, NY 11794-8661.** SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer. AK#231.

POSITIONS OPEN

RESEARCH ASSOCIATE

The Jackson Laboratory, a center for research in mammalian genetics located on the coast of Maine, has an immediate opening for a research associate to conduct basic research experiments aimed at understanding the mechanisms of transforming protein action. Experimental methods will include in vitro mutagenesis, gene transfer, protein biochemistry and cell culture. Applicants should send curriculum vitae and three letters of reference to: **Harold Wheeler, Employment Manager, The Jackson Laboratory, 600 Main Street, Bar Harbor, ME 04609.** Telephone: 207-288-3371. Affirmative Action/Equal Opportunity Employer/M/F.

RESEARCH ASSOCIATE position, available immediately, to develop and apply methods for assessing the bioavailability of Ca from dairy foods. Candidates must have a Ph.D. or equivalent in nutrition, food science/technology, or related area. Postdoctoral experience desirable. Experience with radioisotopes, animal feeding studies, and food analysis is essential. Send letter of application, curriculum vitae, and names of three references to: **Dr. Dennis Miller, Department of Food Science, Stocking Hall, Cornell University, Ithaca, NY 14853.** Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE for site-directed mutagenesis, expression, and structure-function studies of recombinant proteins of blood coagulation and clot-dissolution. Outstanding facilities and excellent colleagues contribute to provide a highly stimulating scientific environment. All required cDNA's and expression systems are present in the laboratory. Address correspondence to: **Dr. F. J. Castellino, Department of Chemistry, University of Notre Dame, Notre Dame, IN 46556.** The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.

RESEARCH CHIEF OTOLARYNGOLOGY

Assistant/associate professor position to develop basic research efforts in sciences related to ear, nose, throat, cranial nerves, and upper airway. Salary commensurate with education and experience. Contact: **Winsor V. Morrison, M.D., Chief, Division of Otolaryngology, Department of Surgery, University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216.** Telephone: 601-984-5162. Equal Opportunity Employer, M/F/H/V.

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RESEARCH OFFICER/RESEARCH FELLOW/ SENIOR RESEARCH FELLOW ELECTRON MICROSCOPE CENTRE

Two positions available for independent scientists with experience in applications of electron microscopy to biological, biomedical or physical problems. The Centre is installing a state-of-the-art 400-kV AEM and reorganizing its service and research functions across all applied EM disciplines within the University. The selection of candidates for these positions will strongly influence the research direction and planned expansion of the Centre. Candidates should indicate the subdiscipline within which they would develop their own research program and should also state the earliest date of availability. Applicants are expected to have a Ph.D. in any field of the biological or physical sciences, a good publication record, well-developed communication skills and considerable experience with current electron microscopy techniques. Evidence of fund-raising ability through grants and/or industrial contracts would be an advantage. Instruction of Centre users in sophisticated EM techniques on an informal basis will be required. For further details please contact: **Dr. Ian D. Mackinnon, Director, Electron Microscope Centre, The University of Queensland, telephone: 07-377-4302; facsimile: 07-371-5896.** Salary range \$A24,846 to \$A44,403 per annum for a fixed term of 3 to 5 years with possibility of renewal; level of appointments depends on experience. Successful applicants are eligible to enroll in the University superannuation scheme and to receive limited removal expenses on employment. Closing date: 26 September 1988. Reference No: 35488.

Applications containing names of three referees should be forwarded directly to: **Dr. Mary Barrett, Personnel Services, J. D. Story Building, The University of Queensland, St. Lucia Queensland 4067, Australia.**

POSITIONS OPEN

RESEARCH ASSOCIATE position to work on tissue specificity and physiological control of respiratory enzymes, including isolation of enzymes from different tissues, separation, purification and characterization of individual subunits using protein chemical and immunological approaches. Ph.D. degree in biochemistry or closely related area and experience in protein chemistry and immunology required. Salary \$19,500 per year. Location; Eugene, Oregon. Apply by 30 September 1988 to: **Employment Division, Attention: Job Order Number 2120443, 875 Union Street NE, Room 201, Salem, OR 97311.** An Equal Opportunity/Affirmative Action Employer.

RESEARCH LABORATORY SUPERVISOR for University of Southern California Department of Ophthalmology morphology laboratory with Ph.D., Master's degree, or equivalent laboratory experience in electron microscopy, immunocytochemistry, darkroom procedures and handling radioactive materials. The duties will include supervising and assisting technicians and six to ten research fellows. Application materials with salary requirement should be sent to: **Carmen Carillo, Personnel Assistant, USC Department of Ophthalmology, 1355 San Pablo Street, Los Angeles, CA 90033.** Equal Opportunity Employer.

RESEARCH MOLECULAR BIOLOGIST

Molecular investigation of the role of homeobox-containing genes in the control of blood cell growth/differentiation. Two years of previous experience required in DNA cloning and sequencing and RNA isolation and Northern blotting. Previous experience in protein purification also required. Ph.D. or equivalent in molecular biology or biochemistry required. Work in an active, modern, well-equipped laboratory with five other Ph.D. molecular biologists in a multi-disciplinary team in the Martinez VA Medical Center, located approximately 20 miles from University of California, Berkeley. Salary is \$27,700 per year, working a minimum 40 hours per week. *Equal Opportunity Employer.* Contact: **Dr. Corey Largman, Ph.D., Research Room 140, Martinez VA Medical Center, 150 Muir Road, Martinez, CA 94553.**



California Institute of Biological Research

RESEARCH PROGRAM DIRECTORS

California Institute of Biological Research (CIBR), a non-profit institute, has recently been established with financial support from Stratagene in La Jolla, CA. The institute is in a beautiful, coastal location in close proximity to the Salk Institute, Research Institute of Scripps Clinic, Medical Biology Institute, La Jolla Cancer Research Center, and the University of California, San Diego. CIBR will consist of laboratories with research interests in eukaryotic gene regulation, oncogenes, cellular and molecular transformation, control of immune responses, molecular biology of differentiation, and mammalian development. CIBR Research Program Directors should demonstrate the ability to obtain funding from extramural granting agencies. Research Program Directors also will be aided by significant core supplementation and may serve as consultants to Stratagene with the opportunity to engage in collaborative projects. Investigators with appropriate research interests are encouraged to apply.

Send curriculum vitae to: **Personnel, California Institute of Biological Research, 11099 North Torrey Pines Road, La Jolla, CA 92037.**

RESEARCH SCIENTIST. Ph.D. with experience in retro-virology or molecular biology required to initiate research projects on HIV. A P3 facility with technical support is available. The successful candidate will be funded for 2 years with a possible 1-year extension while establishing grant support. Please send a full curriculum vitae with the names of three references and salary history to: **D. Stevenson, Virology Laboratory, Huntington Memorial Hospital, 744 Fairmont Avenue, Suite 1, Pasadena, CA 91105.**

SENIOR RESEARCH VIROLOGIST

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Your background should include a Ph.D. in virology or related field (e.g.: microbiology) and five years experience in the retrovirus field. Experience in the molecular biology field and a good understanding of immunology through experience and/or training is required. Experience working with HIV is preferred along with familiarity with gene regulation and/or biochemistry.

If you would like to push at the boundaries of your personal career, we would like to hear from you. We offer competitive salaries and one of the best benefit programs in the industry including a pension plan, health and dental plans, savings plan and more. Qualified minority, female, veteran and handicapped individuals are encouraged to apply. Submit your resume by September 19, 1988 to: **Recruiting and Staffing Administrator, BURROUGHS WELLCOME CO., Pos.#60475-4, 3030 Cornwallis Rd., Research Triangle Park, NC 27709.**



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POSITIONS OPEN

RESEARCH POSITION

Permanent Glycoconjugate Research Position for a Biochemist, Section Leader, at a University hospital for bench-work oriented individual with quantitative working habits for indepth investigation of carbohydrate moieties of human cancer cell membranes. Doctorate required. Technical help available. Starting salary range; \$32,500 to \$45,000, depending upon experience; excellent benefits; significant annual salary increases and paid attendance of meetings, including overseas. Position is not dependent on grants. Please send résumés to: Dr. George F. Springer, Director, Immunochemistry Research Department, Evanston Hospital, 2650 Ridge Avenue, Evanston, IL 60201.

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BioGenex Laboratories

RESEARCH SCIENTIST

A growth-oriented San Francisco Bay Area company is seeking a highly motivated and innovative scientist to join a multidisciplinary team for the development of rapid-immunodiagnostic assays. Candidate will have a Ph.D. (or equivalency) in chemistry, biochemistry, immunology, or other life science and possess excellent communication skills. Previous immunoassay development experience preferred.

BioGenex offers an excellent work environment, competitive salary, stock options, and opportunities for career development. Submit résumé to:

BioGenex Laboratories
4600 Norris Canyon Road
San Ramon, CA 94583

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RESEARCH TECHNOLOGIST FLOW CYTOMETRY—Position available immediately to manage the Fluorescence Laboratory in the Division of Rheumatology and Clinical Immunology dedicated to the use of fluorophore-labeled molecules in flow cytometry and microscopy for the study of lymphocyte cell biology and function. Techniques include phenotyping of cell surface antigens, binding and internalization of extracellular ligands, quantitation of changes in membrane potential and intracellular calcium, energy transfer and cell sorting. The facility is equipped with a dual laser FACS440 interfaced to a microVax and a fluorescence microscope. Salary to \$32,000 depending on training and experience. Please send curriculum vitae and two references (including telephone numbers) to: Dr. Doris B. Tse/Dr. Nicholas Chiorazzi, c/o Personnel North Shore University Hospital, 300 Community Drive, Manhasset, NY 11030. A Teaching Center of Cornell University Medical College. *Equal Opportunity Employer M/F.*

SCIENCE WRITER—Major New York City public relations agency producing material for science writers and broadcasters, seeks an experienced (2 to 4 years) science writer to work on a leading pharmaceutical company account. Advanced science degree and/or extensive science writing experience preferred. Candidate must be capable of writing for lay audiences, and ideally have some experience in central nervous system and cardiovascular diseases.

Send letter, résumé and salary history to:

Manning, Selva & Lee
79 Madison Avenue
Department HR
New York, NY 10016

SENSORY NEUROPHYSIOLOGIST: Tenure-track possibility for position available at assistant professor level. Serious commitment to collaborative work within the Microsurgical Research Center. Expertise required to characterize electrophysiologically the properties of central axons which have regenerated along peripheral nerve implants. Preference given to applicants experienced in spinal cord neurophysiology and tract-tracing and histological techniques. Please send curriculum vitae with three letters of recommendation to: Dr. Julia K. Terzis, Microsurgical Research Center, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.

POSITIONS OPEN

SENIOR TECHNICIAN FOR NEWLY ESTABLISHED PLANT BIOLOGY CENTER, UNIVERSITY OF CALIFORNIA BERKELEY

We are seeking an individual to staff and supervise a facility dedicated to applying and developing modern microscopy techniques to problems in plant development. Applicants should have demonstrated experience in fluorescence, phase and Nomarski microscopy, and an established background in the preparation of tissues for immunolocalization studies and in situ hybridization. Working knowledge of immunochemical techniques and electron microscopy preferred. Incumbent will be expected to work with faculty, postdocs and graduate students in the development and application of microscopy techniques to a variety of plant tissues. We are seeking a highly creative individual adept at devising and modifying techniques and protocols. This is a permanent position (salary \$2,153 to \$2,896 per month). For an application send a letter of intent to: Senior Technician Search, Genetics Department, Mulford Hall, University of California, Berkeley, CA 94720. The closing date will be after 30 August 1988. *Women and minorities are especially encouraged to apply. The University of California is an Equal Opportunity Employer.*

TECHNOLOGY TRANSFER

USET, Inc., an affiliate of the Maxwell Pergamon Publishing Group, and a major technology transfer and patent management organization serving universities, is seeking a senior professional with broad experience in life sciences. Activities include on-site investigator interviewing and technology tracking at client universities, disclosure evaluation, invention presentation and licensing. Patent familiarity a plus. Entrepreneurial proclivities welcome. Candidates from academia and industry will be considered. Salary commensurate with experience. Send curriculum vitae to:

Personnel Director
USET, Inc.
1465 Post Road East
P.O. Box 901
Westport, CT 06881

SYMPOSIUM

IN SITU EVALUATION OF BIOLOGICAL HAZARDS OF ENVIRONMENTAL POLLUTANTS, 5 to 7 December 1988; Hotel Europa, Chapel Hill, North Carolina. Sponsored by: U.S. EPA, NIEHS, NIOSH, U.S. Army, Proctor and Gamble, and the University of Missouri. The meeting will focus on the application of currently available bioassays for in situ environmental assessment and on the evaluation of the utility of integrated chemical and biological data obtained under real world conditions for the assessment of human health effects from exposure to a given environment. Requests for registration materials should be made to: Dr. Shahbeg Sandhu, U.S. EPA, MD-68, Research Triangle Park, NC 27709. Telephone: 919-541-3850.

FELLOWSHIPS

BIOLOGY NSERC UNIVERSITY RESEARCH FELLOWSHIPS. Concordia University invites applications from natural scientists of outstanding potential in research who have obtained their Ph.D. in the past 5 years. *Applicants must be Canadian citizens or permanent residents.* The department is interested in applicants in the following areas: (i) Plant biochemistry with an interest in natural products, (ii) biology of aging, (iii) *E. coli* genetics or physiology, (iv) ecotoxicology, (v) aquatic population ecology, or (vi) studies of structure function relationship as they pertain to DNA-protein interactions, translation fidelity or enzyme function. The successful candidate will have at least one, but preferably 2 years of postdoctoral experience and will be expected to develop a vigorous research program and to participate to some extent in undergraduate instruction. Applications should be sent to: Dr. E. J. Maly, Biology Department, Concordia University, 1455 de Maisonneuve Boulevard West, Montreal, Quebec H3G 1M8. The deadline for receipt of applications is 28 September 1988. Applicants should ask three referees to forward letters of recommendation by 1 September 1988.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP

NIH Staff Fellow and/or Visiting Fellow/Associate positions are available at the National Institute of Alcohol Abuse and Alcoholism (NIAAA). Studies are on metabolic control, NMR and cloning, expression and characterization of peptide growth factors and their interaction with metabolic processes. Salary range is from \$21,000 to \$32,500 depending upon qualifications. *NIH/NIAAA is an Equal Opportunity Employer.*

Send curriculum vitae and two letters of reference to:

Dr. Richard Veech
Laboratory of Metabolism and Molecular Biology
NIAAA
12501 Washington Avenue
Rockville, MD 20852
Telephone: 301-443-3063

TRAINING PROGRAM

A TRAINING PROGRAM IN NUTRITIONAL BIOCHEMISTRY PEW CENTER FOR MOLECULAR NUTRITION PRE- AND POSTDOCTORAL FELLOWSHIPS

A training program in nutrition and metabolism has been established at Case Western Reserve University, as part of a joint effort between the Departments of Nutrition, Biochemistry, Molecular Biology and Microbiology and the Pew Center for Molecular Nutrition. The program will provide postdoctoral fellows with training in the use of molecular biology in metabolic and nutritional studies stressing the use of modern techniques for transferring genes into cells and animals to alter the patterning of metabolic processes. The Pew Center for Molecular Nutrition provides expertise in the use of retroviral vectors and transgenic animals as models for metabolic studies. Formal course work, together with journal clubs, and seminars, are available to provide the trainees with a detailed understanding of both metabolism and molecular biology. A program of graduate education in nutritional biochemistry, leading to a Ph.D., M.D./Ph.D. or M.S. degree, is available through the participating Departments. Send inquiries or curriculum vitae and the names of three references to: Dr. Richard W. Hanson, Department of Biochemistry, Case Western Reserve University School of Medicine, Cleveland, OH 44106. *An Affirmative Action/Equal Opportunity Employer.*

MARKETPLACE

The book *They Threaten Your Health* by Ernest Verhetsel is a telling critique of the antivivisection-animal rights movement. It can be ordered from The Nutrition Information Center, 255 N. Granada, Suite 2058, Tucson, AZ 85701. The postpaid price is \$13.95 (\$18.95 overseas).

The U.S. Environmental Protection Agency is interested in obtaining existing monoclonal or polyclonal antibodies capable of detecting specific pesticides or other potential environmental contaminants. The Agency anticipates cost-sharing the development and evaluation of these antibody-based detection systems. Address interest statements to: Dr. Jeanette Van Emon, US EPA, EMSL-LV, EAD, P.O. 93478, Las Vegas, NV 89193-3478.

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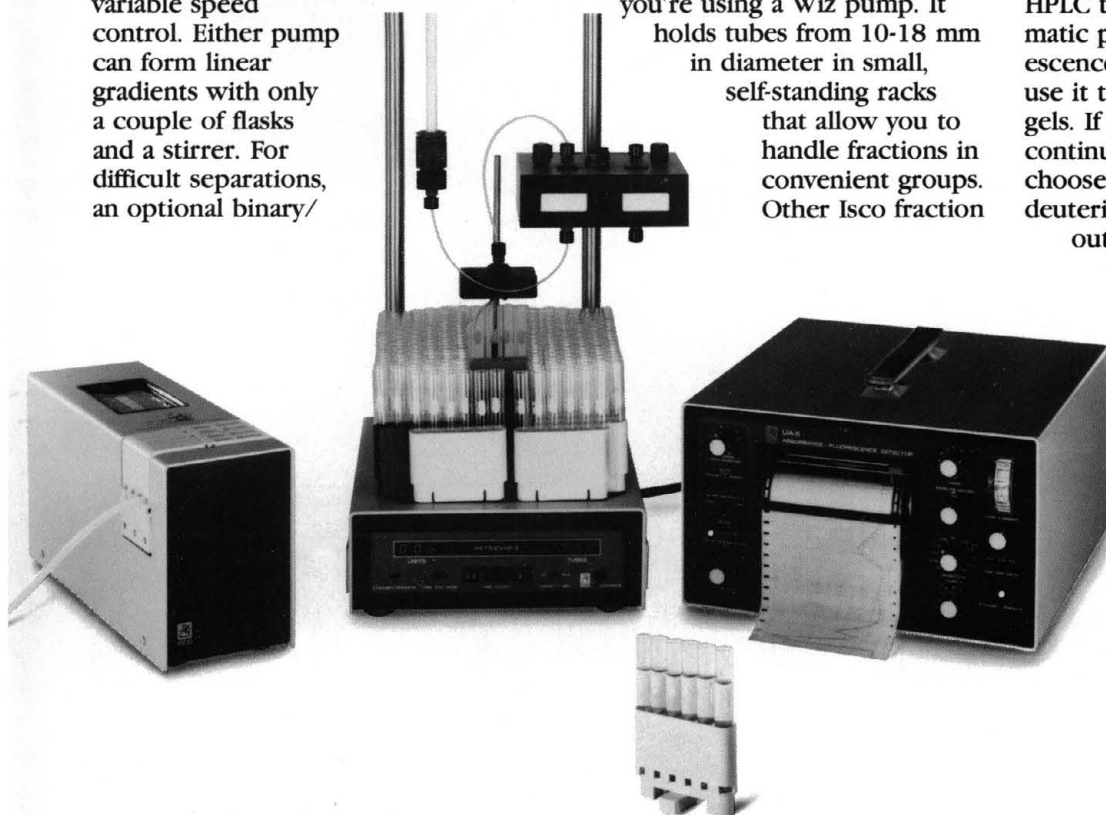
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