

Are sexually selected traits held in equilibrium by opposing natural selection? Are populations perched on adaptive peaks? Is spatial uniformity in selection responsible for the geographic monotony of some species? Selection pressures must be measured to answer these questions, and so Bryan Manly's book will find an attentive audience.

The aim of the book is to summarize statistical methods for analyzing selection. Coverage of topics is broad, ranging from the analysis of ongoing phenotypic selection to estimation of linkage disequilibrium and detection of evolutionary trends. Several chapters treat viability selection acting on discrete polymorphisms and on continuous traits (fertility and sexual selection are barely mentioned). Analysis of clinal variation is discussed as well as tests for parallel clines in two or more species and tests for character displacement. Other chapters treat the analysis of genotypic data, for example, tests for neutrality and selection at two loci.

The book can be recommended on several grounds. The chapters are organized by type of data so that it is often easy to find relevant sections. Numerous examples are used to illustrate statistical approaches and tests. In several contexts Manly illustrates the powerful technique of fitting progressively more complicated models to data. He employs the Rothamsted Experimental Station's general linear modeling program (GLIM), using maximum likelihood ratios to compare fits from successive models, but other statistical packages (such as SAS) could be put to the same use. Manly also illustrates the useful concept of selection surfaces, which permits visualization of multivariate selection, and shows how the surfaces can be computed. Manly pioneered the use of such surfaces; they deserve much wider use.

Manly's book is a compilation rather than a synthesis of the literature. The separate sections stand on their own, but connections between topics are not stressed. For example, the concept of selection opportunity is introduced on three separate occasions, with three different symbols ( $I_O$ ,  $I_R$ ,  $I$ ) used for the same quantity. More important, in the case of continuous traits, no connection is made between statistical measures of selection and the selection coefficients used in equations for evolutionary change. Such a mapping exists, so there is no need for the statistically minded field biologist and the theoretician to speak different languages. Despite such missed opportunities, the book is a fund of useful approaches and examples that will be invaluable to any student of natural selection.

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## Invertebrate Neural Systems

**Model Neural Networks and Behavior.** ALLEN I. SELVERSTON, Ed. Plenum, New York, 1985. xxiv, 458 pp., illus. \$69.50.

If we are to believe higher neurobiological authority, there are on the order of  $10^{12}$  neurons in our brains, and from this incredible number are carved the neural networks that generate our behavior. Given this daunting quantity, it is little wonder that some neurobiologists have taken to the study of invertebrate animals, with numerically simpler nervous systems, in search of insights into the cellular bases of neural function. This volume surveys the simple ("model") neural networks approach to neurobiology. A major advantage of working with invertebrate neural systems is that it is possible to study neural structure and function by means of unique and identified single neurons. In every chapter of this book it will be seen that this advantage has translated into remarkable advances in our understanding of neural function.

This is a big book, with 28 chapters by 60 authors, including many of the leaders in their fields. The title of the book is misleading; only a third of the chapters deal with neural networks and behavior, and even then the subject is limited to such (albeit important) aspects as locomotion and learning. Omitted are more comparative studies of ethologically oriented behaviors such as navigation and biocommunication. The use of invertebrate neural systems has made a ringing impact on neurochemistry, membrane biophysics, neurogenetics, and especially neural development, and these topics are nicely surveyed here.

The book has something for everyone. This reviewer enjoyed the network analysis of the snail brain by Benjamin, Elliott, and Ferguson because it proceeds from the biophysical properties of neurons right on to feeding behavior of the animal. An essay on central pattern generators in *Tritonia* by Getting and Dekin and one on lobsters by Miller and Selverston are provocative. Historically, rhythmic behaviors have been favorites for the model systems approach. Current studies indicate that the idea that there are simple, fixed circuits hierarchically organized to generate central rhythms is due for revision. The reality seems to be that networks of anatomically connected neurons can be subdivided into different pattern-generating circuits, depending on such factors as the behavioral and neurohormonal context of the animal. Four chapters on insect and molluscan development, by Hildebrand, Bastiani *et al.*, Weisblat and Kristan, and Kater, will bring the reader up to

date on developmental neurobiology, especially with respect to studies of axonal growth and regeneration. *Drosophila* has been a model system for geneticists for half a century, and it now promises to illuminate the neurobiological landscape as well, although a chapter on the genetic dissection of potassium channels by Jan and Jan and one on the specificity of neural connectivity by Wyman *et al.* only introduce the reader to the riches of *Drosophila* neurogenetics. The mollusk *Aplysia californica*, like *Drosophila*, has become so celebrated in neurobiology as to nearly transcend its taxonomic status as a "mere" invertebrate. We see in a paper by Abrams that learning in *Aplysia* has become Pavlovian and in one by Scheller and Schaefer that the egg-laying behavior of *Aplysia* can now be examined at the level of gene expression. These brief sketches can only hint at the other treats that await the reader.

The pioneers of invertebrate neurobiology correctly foresaw behavior as being the primary target for the model system approach. Clearly invertebrates are going to be even more important for our understanding of the genetic and developmental controls that operate in the formation of nervous systems. The reader of this nice collection of research essays will learn how the analysis of invertebrate neural systems has provided key insights into major neurobiological problems.

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## Books Received

**ADP-Ribosylation of Proteins.** F. R. Althaus, H. Hilz, and S. Shall, Eds. Springer-Verlag, New York, 1985. xxii, 578 pp., illus. \$89.50. Proceedings in Life Sciences. From a symposium, Vitznau, Switzerland, Sept. 1984.

**Advanced Methods in the Evaluation of Nuclear Scattering Data.** H. J. Krappe and R. Lipperheide, Eds. Springer-Verlag, New York, 1985. vi, 364 pp., illus. Paper, \$23.70. Lecture Notes in Physics, vol. 236. From a workshop, Berlin, June 1985.

**Advances in Plant Pathology.** Vol. 3, Mathematical Modelling of Crop Disease. Christopher A. Gilligan, Ed. Academic Press, Orlando, FL, 1985. xiv, 225 pp., illus. \$69.

**Affinity Chromatography.** Practical and Theoretical Aspects. Peter Mohr and Klaus Pommerening, Dekker, New York, 1985. x, 301 pp., illus. \$69.75. Chromatographic Science Series, vol. 33.

**Ciclosporin in Autoimmune Diseases.** Rosemarie Schindler, Ed. Springer-Verlag, New York, 1985. xii, 386 pp., illus. \$39.50. From a symposium, Basel, March 1985.

**Climate Impact Assessment.** Studies of the Interaction of Climate and Society. Robert W. Kates, Jesse H. Ausubel, and Mimi Berberian, Eds. Published on behalf of the Scientific Committee on Problems of the Environment of the International Council of Scientific Unions by Wiley, New York, 1985. xxiv, 625 pp. \$100. SCOPE 27.

**Clinical Neuroscience.** From Neuroanatomy to Psychodynamics. Jay E. Harris. Human Sciences Press, New York, 1986. 304 pp. \$39.95.

## Products & Materials

### Work Stations

Two UNIX work stations, the Sun-3/50M and the Sun-3/52M, are available. The Sun-3/50M includes a 19-inch display, a 15-MHz 68020 microprocessor, 4 Mbyte of memory, Ethernet, and bundled software. The Sun-3/52M is a full-function, stand-alone system packaged with disk and tape. Both systems are fully compatible with other Sun-3 work stations. These systems offer minicomputer performance with full software and networking capabilities. The Sun Operating System is derived from the Berkeley 4.2 version of UNIX. Enhancements include SunWindows, a display manager; the Network File System for transparent access to files on heterogeneous networks; and SunView and SunPro tools for software development and debugging. There are also the graphics libraries, SunCore and SunCGI, FORTRAN, C, and Pascal compilers. Sun Microsystems. Circle 594.

### Respirometer

The Automatic Respirometer features a side entry port. The organism chamber is a transparent, acrylic, 4-liter enclosure suitable for small animals or insects. The organism's movements within the chamber are unrestricted. The air system is closed to the atmosphere; air is recirculated by a pump. A gas-volume transducer relates respirometric information which is recorded on a strip chart. A water jacket around the chamber provides capability to measure gas changes over a range of temperatures. Accessories include the recorder, automatic vent, heater, and chiller. An optional chamber is available for use with suspended organisms. Tech-Line Instruments/Ar-Tech International. Circle 593.

### Supercritical Fluid Chromatography

The 501 SFC chromatograph utilizes properties of supercritical fluids to obtain chromatograms with high resolution. Supercritical fluids are condensed gases un-

der high pressure that behave partially like liquids and partially like gases. The technique is useful in the analysis of nonvolatile, polar compounds of high molecular weight. Thermally unstable molecules may also be analyzed because these chromatographs use lower temperatures than are typical for gas chromatography. Ultraviolet, fluorescent, flame ionization, nitrogen-phosphorus, electron capture, and thermal conductivity detectors may all be used. The 501 SFC may be interfaced with mass spectrometers, Fourier transform infrared, and inductively coupled plasma spectrometers as well. Lee Scientific. Circle 597.

### Research Microscopes

The Axioplan and Axiophot microscopes incorporate Infinity Color-Corrected System (ICS) optics and System Integrated (SI) architecture. The microscopist may change techniques with ease without compromising image quality, resolution, or full field of view. With the ICS optics, all objectives have an infinite image distance. This permits insertion of optical components into the observation path for techniques such as bright-field, dark-field, phase-contrast, qualitative polarized light, differential interference contrast, and fluorescence microscopy. A large, consistent field of 25 mm (56



percent greater than that of many current systems); a uniform parfocal length of 45 mm for all objectives with all techniques; and a constant magnification factor are maintained. Parcentration among the objectives achieves constant location of specimen image in the field when objectives are changed. The flat intermediate image is fully corrected for chromatic aberration to guarantee high resolution, superb contrast, imaging of scales and reticules without disturbing color fringes, and, for Planapochromats, correction of the secondary spectrum below and above the plane of focus. The SI architecture takes advantage of ICS optics by integrating optical components for reflected- or transmitted-light microscopy into the microscope housing without impairing im-

age quality or field of view. Modules for new techniques may be added. The pyramidal shape of the Axioplan and Axiophot microscopes leads to mechanical and thermal stability. The Axiophot offers photography with two 35-mm cassettes, a 4 by 5 inch camera, and ports for film and video documentation. The microprocessor-controlled camera system is designed with a short light path to ensure image quality. The camera optics retain the features of the ICS optics. A control panel operates functions such as camera selection, automatic exposure sequence in programmable steps, multiple exposure, and data projection into the large-format camera. These microscopes also feature ergonomic design. Eyepiece height, viewing angle, and positioning of controls have been optimized. Carl Zeiss. Circle 590.

### Bacterial Cultivation

The Campy Pouch generates an environment reduced in oxygen content and enriched in carbon dioxide within a transparent trilaminar pouch. Addition of a liquid-activating reagent through a reagent channel produces the appropriate atmosphere for growth of *Campylobacter* species for up to 5 days. Each pouch will accommodate two petri dishes. Gas generation requires no catalysts or time delays prior to incubation. Very little hydrogen is generated in the process. An optional sealing bar may be used instead of a heat sealer. Campy Pouch is provided in cartons of 25 pouches with integral reagent sachets. Liquid activating reagents are also provided. Product has a 1-year shelf life at room temperature. BBL Microbiology Systems. Circle 596.

### Literature

*Scientific Apparatus* includes balances, controllers, hot plate/stirrers, pH meters, chemical test papers, and materials for HPLC, TLC, filtration, and advanced ion-exchange cellulose. Whatman LabSales. Circle 582.

*Data Acquisition System* describes the Spectrographix 8 for processing spectrochemical data from optical emission spectrometers. Labtest Equipment. Circle 583.

*Evaporator/Concentrator/Dryer* is devoted to the Speed Vac line and its accessories. Detailed specifications are included. Savant Instruments. Circle 585.

*Electron Microscopy Equipment and Supplies* introduces a line of high-vacuum components and materials for sample preparation, freeze-drying, embedding, and more. Balzers. Circle 588.

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.

**Coenzyme Q.** Biochemistry, Bioenergetics and Clinical Applications of Ubiquinone. G. Lenaz, Ed. Wiley-Interscience, New York, 1985. xiv, 517 pp., illus. \$89.95.

**Drugs and Aging.** Dieter Platt, Ed. Springer-Verlag, New York, 1986. xiii, 216 pp., illus. \$35. Based on a symposium, Erlangen-Nuremberg, Nov. 1984.

**Drugs and Alcohol.** A. Carmit and S. Schneider, Eds. Springer-Verlag, New York, 1986. xii, 221 pp., illus. Paper, \$59.30. Medicolegal Library 6.

**Dynamics of Comets.** Their Origin and Evolution. Andrea Carusi and Giovanni B. Valsecchi, Eds. Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xii, 439 pp., illus. \$59.50. Astrophysics and Space Science Library, vol. 115. From a colloquium, Rome, June 1984.

**The Formation of Vegetable Mould, through the Action of Worms.** With Observations on Their Habits. Charles Darwin. University of Chicago Press, Chicago, 1985. xxx, 326 pp., illus. Paper, \$11.95. Augmented reprint, 1881 edition.

**Forms of Feeling.** The Heart of Psychotherapy. Robert F. Hobson. Tavistock (Methuen), New York, 1985. xvi, 318 pp., illus. \$19.95.

**Fundamental Neuroanatomy.** Walle J. H. Nauta and Michael Feirtag. Freeman, New York, 1986. xii, 340 pp., illus. \$39.95; paper, \$26.95.

**Hydrothermal Vents of the Eastern Pacific.** An Overview. Meredith L. Jones, Ed. Biological Society of Washington, National Museum of Natural History, Washington, DC, 1985. viii, 547 pp., illus. Paper, \$30. Bulletin of the Biological Society of Washington, no. 6. Based on a symposium, Philadelphia, Dec. 1983.

**Ices in the Solar System.** Jürgen Klinger, Daniel Benet, Audouin Dollfus, and Roman Smoluchowski, Eds. Reidel, Dordrecht, 1985 (U.S. distributor, Kluwer, Hingham, MA). xviii, 954 pp., illus. \$99. NATO Advanced Science Institutes Series C, vol. 156. From a workshop, Nice, Jan. 1984.

**Illustrations.** Graham T. Richardson. Humana, Clifton, NJ, 1985. xiv, 337 pp., illus. \$49.50.

**Images of Science.** Essays on Realism and Empiricism, with a Reply from Bas C. van Fraassen. Paul M. Churchland and Clifford A. Hooker, Eds. University of Chicago Press, Chicago, 1985. viii, 309 pp. \$45; paper \$18.95. Science and Its Conceptual Foundations.

**Immune Regulation.** Marc Feldman and N. A. Mitchison, Eds. Humana, Clifton, NJ, 1985. xvi, 391 pp., illus. \$55. Experimental Biology and Medicine.

**Immunoassay Technology.** Vol. 1. S. B. Pal, Ed. De Gruyter, New York, 1985. viii, 192 pp., illus. Paper, \$53.60.

**Leukocyte Typing II.** Ellis L. Reinherz *et al.*, Eds. Springer-Verlag, New York, 1986. In three volumes. Vol. 1, Human T Lymphocytes, xx, 549 pp., illus. \$72. Vol. 2, Human B Lymphocytes, xx, 560 pp., illus. \$75. Vol. 3, Human Myeloid and Hematopoietic Cells, xvi, 366 pp., illus. \$55. From a workshop, Boston, Sept. 1984.

**Licht und Leben.** Ein Bericht über Max Melbrück, den Wegbereiter der Molekularbiologie. Peter Fischer. Universitätsverlag Konstanz, Konstanz, Germany, 1985. 282 pp., illus. DM 34.80. Konstanzer Bibliothek Band 2.

**Life-Span and Change in a Gerontological Perspective.** Joep M. A. Munnichs *et al.*, Eds. Academic Press, Orlando, FL, 1985. xvi, 290 pp., illus. \$45; paper, \$24.95. From a conference, Nijmegen, Netherlands, July 1981.

**Logic of Discovery and Diagnosis in Medicine.** Kenneth F. Schaffner, Ed. University of California Press, Berkeley, 1985. viii, 249 pp., illus. \$35. Pittsburgh Series in Philosophy and History of Science. From a workshop, Pittsburgh, Oct. 1978.

**The Magic of Minerals.** Text by Harry Wilk. Photographs by Olaf Medenbach. Springer-Verlag, New York, 1986. 204 pp., illus. \$45. Translated from the German edition (Zurich, 1977) by John Sampson White.

**The Management of Productivity and Technology in Manufacturing.** Paul R. Kleindorfer, Ed. Plenum, New York, 1985. xiv, 331 pp., illus. \$49.50. From a conference, Philadelphia, Dec. 1983.

**Mathematical Essays on Growth and the Emergence of Form.** Peter L. Antonelli, Ed. University of Alberta Press, Edmonton, Alberta, Canada, 1985. xxii, 332 pp., \$34.95.

**Mathematics, Science, and Technology Education.** A Research Agenda. National Research Council. National Academy Press, Washington, DC, 1985. viii, 92 pp., Paper, \$3.

**Mechanics of Materials.** An Introduction to the Mechanics of Elastic and Plastic Deformation of Solids and Structural Components. E. J. Hearn. 2nd ed. Pergamon, New York, 1985. xxviii, 914 pp., illus. International Series on Materials Science and Technology, vol. 19. Pergamon International Library of Science, Technology, Engineering and Social Studies.

**Mechanics of the Middle Class.** Work and Politics among American Engineers. Robert Zussman. University of California Press, Berkeley, 1985. viii, 269 pp., \$27.50.

**Portraits of High Schools.** A Supplement to *High School: A Report on Secondary Education in America*. Vito Perrone and associates. Carnegie Foundation for the Advancement of Teaching, Princeton, NJ, 1985. xii, 658 pp., Paper, \$22.50.

**The Positive Sum Strategy.** Harnessing Technology for Economic Growth. Ralph Landau and Nathan Rosenberg, Eds. National Academy Press, Washington, DC, 1986. xvi, 640 pp., illus. \$35.

**Positron Emission Tomography and Autoradiography.** Principles and Applications for the Brain and Heart. Michael E. Phelps, John C. Mizziotta, and Heinrich R. Schelbert, Eds. Raven, New York, 1986. xiv, 690 pp., illus. \$89.50.

**Potato Physiology.** Paul H. Li, Ed. Academic Press, Orlando, FL, 1985. xvi, 586 pp., illus. \$85; paper, \$49.95.

**Practical Ecology for Geography and Biology.** Survey, Mapping and Data Analysis. D. D. Gilbertson, M. Kent, and F. B. Pyatt. Hutchinson, Dover, NH, 1986. 320 pp., illus. Paper, \$11.95.

**A Practical Guide to Enzymology.** Clarence H. Seutler. Wiley-Interscience, New York, 1985. xvi, 288 pp., illus. \$45. Biochemistry.

**Primary and Secondary Metabolism of Plant Cell Cultures.** K.-H. Neumann, W. Barz, and E. Reinhard, Eds. Springer-Verlag, New York, 1985. xii, 377 pp., illus. \$65. Proceedings in Life Sciences. From a symposium, Rauschholzhausen, West Germany, fall 1984.

**Proceedings of the Tenth Annual Tropical and Subtropical Fisheries Conference of the Americas.** (New Orleans, Jan. 1985) Donn R. Ward and Granvil D. Treece, compilers. Marine Information Service, Sea Grant College Program, Texas A&M University, College Station, 1985. vi, 307 pp., illus. Paper, \$15. A/F-4, TAMU-SG-86-102.

**Research on Motivation in Education.** Vol. 2, The Classroom Milieu. Carole Ames and Russell Ames, Eds. Academic Press, Orlando, FL, 1985. xii, 339 pp., illus. \$65.

**Resource Management.** M. Mangel, Ed. Springer-Verlag, New York, 1985. vi, 138 pp., illus. Paper, \$11.40. Lecture Notes in Biomathematics, vol. 61. From a workshop, Ashland, OR, July 1984.

**Respiratory Pigments in Animals.** Relation Structure-Function. J. Lamy, J.-P. Truchot, and R. Gilles, Eds. Springer-Verlag, New York, 1985. xiv, 175 pp., illus. Paper, \$29. From a congress, Liège, Belgium, Aug. 1984.

**Le Système Economique Micmac.** Perspective Ethnohistorique au XVII<sup>e</sup> siècle. Françoise Passchier. Université du Québec à Montréal, Montréal, 1985. 137 pp., illus. \$C72. Paléo-Québec 17.

**Systems Research II.** Methodological Problems. J. M. Gvishiani, Ed. Pergamon, New York, 1985. vii, 306 pp., illus. \$37.50. Advances in Systems Research Series, vol. 2. Translated from the Russian by E. L. Nappelbaum *et al.*

**The Teaching of Thinking.** Raymond S. Nickerson, David N. Perkins, and Edward E. Smith. Erlbaum, Hillsdale, NJ, 1985. xiv, 383 pp. \$39.95.

**Temporal-Pattern Learning in Neural Models.** Carme Torras i Genís. Springer-Verlag, New York, 1985. viii, 227 pp., illus. Paper, \$16.40. Lecture Notes in Biomathematics, vol. 63.

**The Three Mile Island Accident.** Diagnosis and Prognosis. L. M. Toth *et al.*, Eds. American Chemical Society, Washington, DC, 1986. x, 302 pp., illus. \$54.95. ACS Symposium Series 293. Based on a symposium, Miami Beach, FL, April 1985.

**Time, Mind, and Behavior.** John A. Michon and Janet L. Jackson, Eds. Springer-Verlag, New York, 1985. xii, 313 pp., illus. \$36. From a workshop, Groningen, Netherlands, Sept. 1984.

**Time's Arrows.** Scientific Attitudes toward Time. Richard Morris. Simon and Schuster, New York, 1986. 240 pp. Paper, \$8.95. A Touchstone Book. Reprint, 1985 edition.

**Towards a Neurology of Language.** International Christian University Language Sciences Summer Institute, Tokyo, 1985. 239 pp., illus. Paper, \$35. Language Sciences, vol. 7, no. 1.

**Trace Elements in the Terrestrial Environment.** D. C. Adriano. Springer-Verlag, New York, 1986. xx, 533 pp., illus. \$75.

# Personnel Placement

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**ANATOMIST.** The West Virginia (WV) School of Osteopathic Medicine invites applications for a temporary, 1-year position in anatomy at an assistant professor level. Qualified candidate must have Ph.D. degree in anatomy, or related field with teaching experience and willingness to teach histology and neuroanatomy to medical students.

Applicants should submit a letter describing teaching experience, curriculum vitae, and three letters of reference by 30 April 1986 to: **Dr. Michael Cope, Associate Dean, Academic Affairs, WV School of Osteopathic Medicine, 400 North Lee Street, Lewisburg, West Virginia 24901.** WV SOM is an Affirmative Action/Equal Opportunity Employer.

**AQUATIC BOTANIST:** The Department of Botany at North Carolina State University (NCSU) invites applications for a 12-month, tenure-track position at the **assistant professor** level. The department wishes to establish a strong program in aquatic botany which may complement campus and statewide programs in limnology, plant ecology and systematics, water quality, aquatic weed control, or fisheries biology. The successful applicant will be expected to develop an active research program which will attract extramural support, participate in undergraduate teaching, supervise M.S. and Ph.D. students, and develop courses in the area of specialization. Ph.D. required. Send curriculum vitae, statement of research and teaching goals, and three letters of recommendation by 30 April 1986 to: **Dr. Udo Blum, Chair, Aquatic Botanist Search Committee, Department of Botany, Box 7612, NCSU, Raleigh, NC 27695-7612.** NCSU is an Affirmative Action/Equal Opportunity Employer.

The University of Michigan Medical School, Department of Surgery, Section of General Surgery, seeks candidates for an academic position at the **INSTRUCTOR LEVEL** with emphasis in peripheral vascular surgery. This is a 24-month appointment available from 1 July 1986 through 30 June 1988. Candidates should have an M.D. degree, have satisfactorily completed a residency in general surgery, be eligible for A.B.S. certification exam, have demonstrated potential as an academic surgeon and have prior experience in caring for patients with peripheral vascular disease and prior related research experience. Send reply with curriculum vitae to: **James C. Stanley, M.D., Professor, Section of General Surgery, Department of Surgery, University of Michigan Hospitals, 2922F A. Alfred Taubman Health Care Center, Box 0331, 1500 East Medical Center Drive, Ann Arbor, Michigan 48109-0331.** The University of Michigan is a nondiscriminatory, Affirmative Action Employer. PCN 10.

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**PLANT MOLECULAR BIOLOGIST.** Twelve-month, tenure-track, assistant professor position. Ph.D. and at least 1 year of postdoctoral experience required. Applicants must be able to develop a strong research program using contemporaneous molecular techniques and theory that complements present faculty research, as well as participate in undergraduate and graduate teaching. Send résumé, reprints, three letters of recommendation, and description of research interests and goals by 30 April 1986 to: **R. C. Fites, Plant Molecular Biologist Search Committee Chair, Department of Botany, Box 7612, North Carolina State University (NCSU), Raleigh, NC 27695-7612.** NCSU is an Affirmative Action/Equal Opportunity Employer.

**WASHINGTON UNIVERSITY—ST. LOUIS** seeks an **ARCHAEOZOOLOGIST/ARCHAEOLOGIST** for a tenure-track position beginning fall 1986, assistant professor level. In addition to archaeozoology, archaeological specialization must be in Old World prehistory: Africa, Asia, and/or Europe. Ph.D. required, as well as ongoing research program and strong commitment to teaching. Send application letter summarizing qualifications, curriculum vitae, names of three to five referees to: **Search Committee, Department of Anthropology, Washington University, St. Louis, MO 63130,** by 30 April 1986. Affirmative Action/Equal Opportunity Employer.

The Department of Microbiology and Immunology, Bowman Gray School of Medicine, Wake Forest University, invites applications for a tenure-track position at the level of **ASSISTANT OR ASSOCIATE PROFESSOR.** The area of research interest is open. Qualified candidates must (i) hold a Ph.D. or M.D., (ii) have at least 2 years of postdoctoral training in immunology, virology, or molecular biology, and (iii) be capable of establishing an independent research program. Individuals with research interests in the biochemical or molecular aspects of retroviruses, membrane receptors, or the regulation of macrophage, T cell, or B cell activation are especially encouraged to apply. The department, which will add five faculty members during the next 3 years, currently has research programs in areas such as lymphokines, neutrophil biology and biochemistry, bacterial and viral mechanisms of pathogenesis, and tumor immunology. The department is particularly interested in expanding its faculty with research interests in immunology or molecular biology. Bowman Gray School of Medicine, which is also in the midst of a period of rapid growth, has a number of research programs and centers that offer unique opportunities for the development of independent and collaborative research programs. Applicants should submit curriculum vitae, a statement on the direction of their future research, and the names of three references to: **Dr. Steven B. Mizel, Chairman, Department of Microbiology and Immunology, Bowman Gray School of Medicine, Wake Forest University, Winston-Salem, NC 27103.** Wake Forest University is an Equal Opportunity/Affirmative Action Employer.

**ASSISTANT PROFESSOR,** Department of Soil Science, University of Minnesota. Position is tenure-track and has teaching/research components. Requires a Ph.D. in soil science or a related field by date of appointment. Appointee will develop a research program emphasizing nutrient uptake/plant growth relationships. Please send letter of intent, curriculum vitae, transcripts, and three letters of reference to: **Dr. P. Graham, Department of Soil Science, University of Minnesota, St. Paul 55108.** The University of Minnesota is an Equal Opportunity Educator and Employer and specifically encourages applications from women and minorities.

## POSITIONS OPEN

**ASSISTANT PROFESSOR OF ANATOMY AND NEUROSCIENCES—**Recruiting a tenure-track position for an individual who can assist in teaching microscopic anatomy and develop a research program in area related to cell biology, histology, or developmental biology. Two years postdoctoral training required. Applicants should send curriculum vitae, summary of proposed research, and letters of reference to: **Dr. William D. Willis, Chairman, Department of Anatomy and Neurosciences, University of Texas Medical Branch, Galveston, Texas 77550.**

The University is an Equal Opportunity/Affirmative Action Employer.

### ASSISTANT PROFESSOR/TENURE-TRACK ENVIRONMENTAL HEALTH SCIENCE

The University of Alabama at Birmingham (UAB), Department of Environmental Health Sciences. Assistant professor/tenure-track, June to September start. Doctoral degree in environmental health, earth, or natural sciences, or engineering. Responsibilities: (i) Teaching basic EHS courses and advanced courses related to applicant's research. (ii) Instituting a research program. Hiring emphasis on training and/or relevant experience in solving hazardous waste management problems. Salary and fringe benefits at UAB are excellent. Send résumés, three letters of recommendation to: **Dr. Jimmy L. Perkins, UAB School of Public Health, Birmingham, AL 35294,** before 22 April 1986. University of Alabama is an Equal Opportunity, Affirmative Action Employer.

### EASTERN VIRGINIA MEDICAL SCHOOL (EVMS) TENURE-TRACK APPOINTMENT IN ANATOMY AND CELL BIOLOGY

The Department of Anatomy and Cell Biology is seeking two qualified applicants for tenure-track appointments at the **ASSISTANT PROFESSOR** level. Candidates should possess a Ph.D. or M.D. degree (or equivalent) and at least 2 years of postdoctoral training experience. Successful candidates will have demonstrated excellence in the teaching of the anatomical disciplines, as well as active research experience in neuroendocrinology, reproductive biology, or developmental neurobiology. Candidates for this position will be expected to pursue vigorous research programs supported by extramural funding. Interested individuals should send curriculum vitae, a complete bibliography, three letters of recommendation, and a brief description of their current and future research activities to:

**David E. Scott, Ph.D.  
Professor and Chairman  
Department of Anatomy  
and Cell Biology  
Eastern Virginia Medical School  
P.O. Box 1980, Norfolk, Virginia 23501**

### ASSISTANT PROFESSOR OF ANATOMY

Medical school, full-time, 12-month, tenure-track position. Teach entire medical histology course and establish an independent research program. A doctoral degree, adequate research and teaching experience to meet position requirements. Send curriculum vitae and names of three references by 16 May 1986 to: **Dr. G. Keith Matheson, Indiana University School of Medicine, Evansville Center, 1800 Lincoln Avenue, Evansville, IN 47714.** Indiana University is an Equal Opportunity/Affirmative Action Employer.

### ASSISTANT PROFESSOR BIOLOGICAL SCIENCE

Husson College, an independent, accredited college of business and health-related programs in Bangor, Maine, is seeking a full-time, assistant professor in the Arts and Sciences Department. Major emphasis is on teaching: general biology, anatomy, and physiology for non-majors; ecology; and appropriate electives. Candidate should have a Ph.D., broad interests in biological science, and a commitment to undergraduate education. **Appointment date:** 1 September 1986. Submit curriculum vitae, three letters of recommendation, and a statement of teaching philosophy by 25 April 1986 to: **Dr. Kathleen Wall, Husson College, Bangor, ME 04401.** Husson College is an Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

Applications are invited for full-time, tenure-track position at the ASSISTANT PROFESSOR level in the Department of Anatomy, College of Medicine, University of South Florida. Applicants should have a Ph.D. or M.D. degree and a minimum of 2 years of postdoctoral research experience. The successful candidate will be expected to pursue a vigorous research program capable of attracting extramural funding and to participate in the teaching of gross anatomy to freshmen medical students. Experience in the latter is required. Send curriculum vitae, statement of research interests, and the names of three references by 13 June 1986 to: J. Rhodin, M.D., Ph.D., Chairman, Department of Anatomy, College of Medicine, University of South Florida, 12901 North 30 Street, Tampa, FL 33612. An Equal Opportunity/Affirmative Action Employer.

**ASSISTANT/ASSOCIATE PROFESSOR OF WILDLIFE BIOLOGY (Ph.D.)** Tennessee Technological University is seeking a highly qualified wildlife biologist to fill a tenure-track position in the Department of Biology beginning September 1986. The individual will be expected to teach several graduate and undergraduate level courses in wildlife biology, direct the research of graduate students in the program, and carry out an extensive program of research and scholarly activity. Candidates should have the Ph.D., have a demonstrated record of research activity, and be committed to teaching excellence. Salary will be commensurate with experience and qualifications. Closing date is 1 May 1986, or until filled. Tennessee Technological University is an Affirmative Action/Equal Opportunity Employer. Interested persons should send letter of application, complete résumé, names, addresses, and telephone numbers of four references to: Dr. Frank J. Bulow, Wildlife Biologist Search Committee, Department of Biology, Box 5063, Tennessee Technological University, Cookeville, TN 38505.

**ASSISTANT PROFESSOR OF MICROBIOLOGY (Ph.D.)** Tennessee Technological University is seeking a highly qualified microbiologist to fill a tenure-track position in the Department of Biology beginning September 1986. The individual will be expected to teach undergraduate and graduate level courses in microbiology, virology, immunology, and microtechniques. The individual will also be expected to direct the research of graduate students in the program and to develop an extensive program of research and scholarly activity. Candidates should have the Ph.D., have a demonstrated record of research activity, and be committed to excellence in teaching. Salary will be commensurate with experience and qualifications. Closing date is 1 May 1986, or until filled. Tennessee Technological University is an Affirmative Action/Equal Opportunity Employer. Interested persons should send letter of application, complete résumé, and the names, addresses, and telephone numbers of four references to: Dr. John W. Harris, Microbiologist Search Committee, Department of Biology, Box 5063, Tennessee Technological University, Cookeville, TN 38505.

## ASSOCIATE/FULL PROFESSOR OF LIMNOLOGY

Tennessee Technological University is seeking a highly qualified person to fill a newly created academic position in the Center for the Management, Utilization, and Protection of Water Resources and Department of Biology. The position is a 9-month, tenure-track position at the associate/professor level and available immediately. An individual is sought who is interested in developing an excellent research program in limnology. The individual will be expected to teach graduate and undergraduate courses related to limnology. Applicants should have a demonstrated record of leadership in research and scholarship. Candidates should hold the Ph.D. or equivalent. Salary will be commensurate with qualifications and experience of applicant. Interested persons should send complete résumés with name, address, and telephone numbers of four references to:

Dr. Dennis B. George, Chairman  
Limnologist Search Committee  
Tennessee Technological University  
P.O. Box 5082  
Cookeville, TN 38505

Closing date is 1 May 1986. Tennessee Technological University is an Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

### ASSISTANT PROFESSOR PROKARYOTIC MOLECULAR GENETICIST

The Department of Plant Pathology and the Agricultural Research Service, U.S. Department of Agriculture (USDA), have a position to study the molecular genetics of prokaryotes in relationship to their interaction with plants or other microorganisms that affect plants. Experience beyond a Ph.D. in molecular genetics preferred. Applicant must be a U.S. citizen. Send statement of research interests, résumé, transcripts, and three letters of reference by 30 May 1986 to: Dr. D. P. Maxwell, Department of Plant Pathology, University of Wisconsin, Madison, WI 53706. Telephone: 608-262-0928. The University of Wisconsin and USDA are an Affirmative Action Employer.

**SOIL GENESIS AND CLASSIFICATION, DEPARTMENT OF SOIL SCIENCE, UNIVERSITY OF MINNESOTA. ASSISTANT PROFESSOR, 12-month, tenure-track, available 1 July 1986.** A Ph.D. in soil science or closely related field by date of appointment is required. Duties include research/teaching in basic and applied soil genesis, classification, and use. Application, curriculum vitae, relevant transcripts, and names of three references by 15 May 1986 to: Dr. D. F. Grigal, Department of Soil Science, University of Minnesota, St. Paul, MN 55108. The University of Minnesota is an Equal Opportunity Educator and Employer and specifically encourages applications from women and minorities.

### ASSOCIATE/ FULL PROFESSOR OF GEOHYDROLOGY

Tennessee Technological University is seeking a highly qualified person to fill a newly created academic position in the Center for the Management, Utilization, and Protection of Water Resources and the Civil Engineering Department. The position is a 9-month, tenure-track position at the associate/professor level and available immediately. An individual is sought who is interested in developing an excellent research program in geohydrology. The individual will be expected to teach graduate and undergraduate courses related to hydrology, transport of pollutants in ground water, and ground-water monitoring. Applicants should have a demonstrated record of leadership in research and scholarship. Candidates should hold the Ph.D. or equivalent. Applicants with engineering backgrounds should have the ability to obtain a Tennessee professional engineer's license in a period of 1 year from the date of appointment. Salary will be commensurate with qualifications and experience of applicant. Interested persons should send complete résumés with name, address, and telephone number of four references to:

Dr. Dennis George, Chairman  
Geohydrologist Search Committee  
Tennessee Technological University  
P.O. Box 5082  
Cookeville, TN 38505

Closing date is 1 May 1986. Tennessee Technological University is an Affirmative Action/Equal Opportunity Employer.

The Department of Neurosciences, University of California, San Diego, is seeking candidates for a full-time position at the level of either ASSOCIATE OR FULL PROFESSOR-IN-RESIDENCE. The position is available 1 July 1986, and would be a desirable post for someone having an opportunity for 12 to 18 months leave of absence from his or her primary institution. There is the potential opportunity for the candidate selected to have a longer term participation in a national brain mapping project. Salary is dependent upon level of experience and qualifications. Applications received before 1 June 1986 will be considered. We are seeking an established investigator with proven talents and leadership abilities in defining 3-D structure-function relations in brain tissue using computer systems for data acquisition. Candidates will be favored whose qualifications include familiarity with state-of-the-art neuroanatomical techniques and computer image acquisition, editing, and analysis for purposes of creating three-dimensional maps of animal and human brains in microscopic detail. Send curriculum vitae, bibliography, and names/addresses of five references to: Department of Neurosciences, University of California, San Diego, La Jolla, CA 92093 (Attention: Shirley Sherula). The University of California is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### ASSISTANT PROFESSOR—TOXICOLOGY

The Division of Pharmacology and Toxicology of the College of Pharmacy at the University of Texas at Austin seeks candidates with 1 or 2 years of postdoctoral experience for an available assistant professor position. We are primarily interested in individuals who have a strong research background in molecular or biochemical toxicology. The successful candidate will work closely with the toxicology faculty in developing a strong graduate and research program in toxicology. Anticipated starting date is fall 1986. Send curriculum vitae, statement of research interests, and names of three references to: Daniel Acosta, Burroughs Wellcome Scholar in Toxicology, College of Pharmacy, University of Texas, Austin, TX 78712.

### ASSOCIATE/FULL PROFESSOR OF MICROBIAL TOXICOLOGY

Tennessee Technological University is seeking a highly qualified person to fill a newly created academic position in the Center for the Management, Utilization, and Protection of Water Resources and Department of Biology. The position is a 9-month, tenure-track position at the associate/professor level and available immediately. An individual is sought who is interested in developing an excellent research program in environmental, microbial toxicology. The individual will be expected to teach graduate and undergraduate courses related to aquatic microbiology and microbial toxicology. Applicants should have a demonstrated record of leadership in research and scholarship. Candidates should hold the Ph.D. or equivalent. Salary will be commensurate with qualifications and experience of applicant. Interested persons should send complete résumés with name, address, and telephone number of four references to:

Dr. Dennis B. George, Chairman  
Microbiologist Search Committee  
Tennessee Technological University  
P.O. Box 5082  
Cookeville, TN 38505

Closing date is 1 May 1986. Tennessee Technological University is an Affirmative Action/Equal Opportunity Employer.

### ASSOCIATE RESEARCH SCIENTIST

The Department of Pharmacology, Columbia University, College of Physicians and Surgeons, seeks applications for a research scientist position. Applicants must have a relevant Ph.D. or M.D. degree, 2 to 3 years of postdoctoral training, and show evidence of firm commitment to a career in research. We are particularly interested in considering individuals with an appropriate background in computer programming, patch-clamp recording, cell-perfusion techniques, and culture of invertebrate neurons. The successful candidate will apply these techniques to the molecular mechanisms of modulation of ion channels. A broad experience in conventional electrophysiological techniques (extracellular and intracellular recording, dye, and drug injection into identified cells) will also be considered relevant. Since responsibilities also will include teaching of graduate students, the successful candidate is expected to have previous experience in teaching. Send curriculum vitae and three letters of reference to:

Dr. Steven A. Siegelbaum  
Department of Pharmacology  
Columbia University  
630 West 168 Street  
New York, New York 10032

Columbia University is an Equal Opportunity/Affirmative Action Employer.

### Position Title: CHEMISTRY

**Description:** Two tenure-track positions are available for fall 1986. The positions involve teaching of undergraduate and graduate classes and developing active research programs in analytical chemistry, biochemistry, or physical chemistry. Doctoral work completed or nearly completed. Teaching and/or postdoctoral experience desirable. Send résumé, official transcripts, and three letters of reference to: Dr. Bruce N. Storhoff, Chairman, Search and Screen Committee, Department of Chemistry, Ball State University, Muncie, IN 47306. Positions will be open until filled; the selection process will begin on 15 April 1986.

Ball State University Practices Equal Opportunity in Education and Employment.



At the Swiss Federal Institute of Technology in Zurich a new chair of

## PLANT GENETICS

is to be filled.

The successful applicant will have to participate in teaching basic biology to students of biology, forestry and agronomy and will be responsible for advanced courses in genetics and developmental biology. For the advanced biology students the new professor will teach the field of his own research.

Research should concentrate on developmental plant biology. Close collaboration is expected with the colleagues of the Institute for Plant Sciences and with the groups working in plant pathology and microbiology.

The applicants should have a Ph.D. and several years of independent research experience. They should be talented and willing to teach at all university levels.

**Applications with curriculum vitae and list of publications should be submitted not later than May 31, 1986, to the President of the ETH Zurich, Prof. H. Ursprung, ETH-Zentrum, CH-8092 Zurich.**



Mycogen corporation is an agricultural pesticide company that specializes in the development of safe, effective, biological control agents. We are presently expanding our research staff and have positions vacant for persons with the following skills:

- Protein chemistry
- Gene cloning and expression
- Yeast molecular biology
- Insect tissue culture
- Insect virology

Positions are available at both the Ph.D. and technical levels. Applications, which should include the names of three references, should be sent to:

**David L. Edwards  
Mycogen Corporation  
5451 Oberlin Drive  
San Diego, CA 92121**

Mycogen offers competitive salaries and benefits, a stock incentive program, and a stimulating working environment. All applications are received in confidence.



## NATIONAL UNIVERSITY OF SINGAPORE INSTITUTE OF MOLECULAR AND CELL BIOLOGY

Applications are invited from suitably qualified scientists to join the Institute of Molecular and Cell Biology. Candidates without a PhD degree but with at least a good Honours degree in relevant disciplines are also invited to apply for appointment as Junior Research Fellows.

The Institute, which is expected to be operational from early 1987, will consist of the Cell Regulation and the Infectious and Genetic Diseases sections. It will provide comprehensive support facilities including capital equipment, substantial operating and conference expenses, technical personnel and laboratory space ranging from 500 to 2000 sq. ft.

Applicants should have experience in one of the following fields: prokaryotic or eukaryotic genetics, molecular virology, molecular basis of genetic disorders, gene transfection and cell transformation, plant tissue culture and plant molecular biology as well as biochemical and cellular basis of cell regulation. Candidates appointed at senior levels may be granted tenure immediately.

Salaries will be competitive and commensurate with experience, including excellent fringe benefits. Applicants should send their curriculum vitae and names and addresses of 3 referees to the University's recruitment office at the following address:

Department TLC  
c/o Director, North America Office  
National University of Singapore  
780 Third Avenue, Suite 2403  
New York, N.Y. 10017  
U.S.A.

Expanding staff at Long Island, NY research facilities to pursue recent developments in Oncogene and growth factor research.

## BIOCHEMISTS

Two positions to be filled in the areas of protein purification and biochemical characterization. Expertise in protein chemistry including sequencing is desirable. Ph.D. in Biochemistry or related discipline.

Send resume and personal data to:

**Scientific Director  
Oncogene Science, Inc.  
222 Station Plaza North, Suite 330  
Mineola, NY 11501**

**ONCOGENE  
SCIENCE, INC.**

Equal Opportunity Employer

## Postdoctoral Scientist Respiratory Pharmacology

The Pharmacology Department of Smith Kline & French Laboratories, located in suburban Philadelphia, Pennsylvania, is seeking an outstanding individual to fill a challenging postdoctoral scientist position in its Respiratory Section.

The successful candidate will:

- conduct research on the regulation of airway smooth muscle tone.
- integrate biochemical and physiological methodologies to develop a better understanding of the fundamental mechanisms involved in airway smooth muscle contraction and relaxation.
- work collaboratively with intra- and extramural pharmacologists and biochemists interested in post-receptor transduction mechanisms of contractile and relaxant agents.
- publish results in scientific journals; present data at internal, local and national meetings.

Candidates are required to have:

- a Ph.D. in Pharmacology, Physiology or Biochemistry with experience in biochemical mechanisms of post-receptor signal transduction.
- an understanding of the physiological and biochemical processes underlying smooth muscle contraction and relaxation.
- the ability to assess smooth muscle contractility using *in vitro* systems (desirable).
- experience conducting biochemical assays relevant to smooth muscle function (e.g., cyclic nucleotides, cyclic nucleotide-dependent protein kinases, phosphatidylinositol metabolism, intracellular  $Ca^{2+}$ , myosin light chain phosphorylation) (desirable).
- a record of publication in major scientific journals.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your CV and the names of three references to: Walter B. Flagg, Senior Employment Consultant, SmithKline Beckman Corporation, 1590 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

**SK&F**  
A SmithKline Beckman Company

## POSITIONS OPEN

### BIOCHEMIST

Career position as biochemist with the Northern Regional Research Center, Agricultural Research Service (ARS), U.S. Department of Agriculture (USDA). Research entails isolation and characterization of legume seed/root proteins and study of their interactions with rhizobial polysaccharides and their degradation products. Graduate training and postdoctoral or equivalent experience in protein chemistry and polysaccharide structural analysis are desirable. Some background in plant biochemistry and microbiology is considered helpful. The center employs about 150 scientists engaged in diverse programs of basic and applied research and provides a stimulating professional environment. The center provides relocation expense assistance. U.S. citizenship is required. Salary is commensurate with experience (GS 11/12, \$26,381 to \$41,105 per annum). For information on the research program, contact: M. E. Slodki, Telephone: 309-685-4011. For application procedures and forms, contact: Helen Sweeney, Telephone: 309-685-4011 Extension 632. Applications in response to this advertisement should be marked NO5 and must be received by 1 June 1986. Mail to Helen Sweeney, Northern Regional Research Center, ARS, U.S. Department of Agriculture, 1815 North University, Peoria, IL 61604.

### CARDIOVASCULAR MOLECULAR BIOLOGISTS

The Departments of Pathology and Pharmacology are establishing a laboratory of molecular cardiovascular research and wish to recruit at least two molecular biologists to perform their research in this laboratory. The College of Physicians and Surgeons has many strong research groups in both molecular biology and basic cardiovascular research, thus providing a rich climate in which to develop a major research group bridging these two disciplines. The individuals involved in this laboratory would pursue independent research, and collaboration with existing programs would be encouraged strongly. Areas of interest relating to cardiac muscle are actin/myosin regulation, GTP regulatory proteins, and cloning of Na<sup>+</sup>/K<sup>+</sup> channels and possibly Ca<sup>2+</sup> channels. All qualified candidates willing to direct themselves to problems related to cardiovascular diseases will be considered. Salary and rank depend on the applicant's qualifications. Send curriculum vitae and names of at least three referees to: John J. Fenoglio, Jr., M.D., Department of Pathology, 630 West 168 Street, New York, NY 10032. *Columbia University is an Equal Opportunity Employer.*

### CELL PHYSIOLOGIST: ASSISTANT PROFESSOR

The Department of Physiology at Jefferson Medical College, Philadelphia, Pennsylvania, seeks a full-time, 12-month faculty position for a cellular physiologist at the assistant professor level starting 1 September 1986. Excellent space and working conditions are available. Candidates should have a Ph.D. or M.D. degree and 2 to 3 years of relevant postdoctoral experience. Investigators in the area of platelet secretion, eicosanoid receptors, lipid metabolism in atherosclerosis, or some other area compatible with ischemia-shock research are preferred. Evidence of independent research and ability to develop grant applications is important. Applicants should send their curriculum vitae, including a statement of their research interests and experience, and arrange to have three letters of recommendation sent to: Dr. Allan M. Lefer, Chairman, Department of Physiology, Jefferson Medical College, Thomas Jefferson University, 1020 Locust Street, Philadelphia, PA 19107. *An Equal Opportunity/Affirmative Action Employer.*

### CHIEF OF HUMAN GENETICS

The Department of Pediatrics, University of Pennsylvania, is seeking applicants as a tenured-full professor to lead the Division of Human Genetics at Children's Hospital. Individual must be a leader in molecular genetics who is equally competent to run a clinical genetics unit. M.D. with specialty training in pediatrics or internal medicine required. Send curriculum vitae and names of three referees to: Dr. Charles Scher, Chairman, Search Committee, Children's Hospital of Philadelphia, 34th and Civic Center Boulevard, Philadelphia, PA 19104. *The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### CHAIRMAN OF ANATOMY NEW YORK MEDICAL COLLEGE A MEDICAL UNIVERSITY VALHALLA, NEW YORK

Nominations and applications are invited for the position of **CHAIRMAN AND PROFESSOR OF ANATOMY**. Candidates must have an M.D. and/or Ph.D. degree, a distinguished research record in anatomical science or cell biology, experience in teaching students of medicine, an interest in graduate education, and demonstrated leadership and administrative abilities. Applications with curriculum vitae and names of three references, or nominations, should be sent to:

John C. McGiff, M.D.,  
Chairman of the Search Committee,  
Department of Pharmacology,  
New York Medical College,  
Valhalla, New York 10595

*New York Medical College is an Affirmative Action/Equal Opportunity Employer.*

**CHAIRPERSON, DEPARTMENT OF VETERINARY ANATOMY**, The Ohio State University, College of Veterinary Medicine, invites nominations and applications for the position of chair for the Department of Veterinary Anatomy. A doctoral degree is required. Active participation in research and supervision of graduate students will be expected of the successful applicant. Applicants must demonstrate an established record in research, teaching, and leadership. Salary is negotiable and commensurate with qualifications and experience. The closing date is 9 May 1986, or thereafter until a suitable candidate is found. Nominations and applications should be accompanied by curriculum vitae and the names and addresses of three references we may contact. Contact: **Veterinary Anatomy Search Committee, College of Veterinary Medicine, 1900 Coffey Road, Columbus, OH 43210-1092.** *The Ohio State University is an Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITIONS IN BIOMEDICAL ENGINEERING, BOSTON UNIVERSITY COLLEGE OF ENGINEERING**, at the assistant/associate/full professor levels in expanding Department of Biomedical Engineering for September 1986 or January 1987. Applicants should have an earned doctorate, be committed to quality teaching at both undergraduate and graduate levels, and have the desire to develop strong research programs. Collaboration with the Boston University School of Medicine or other engineering departments may be facilitated through a joint faculty appointment. Candidates with backgrounds in image processing, computer science, chemical engineering, mechanical design, electronics, computer engineering, biomechanics and materials, or robotics are especially welcome. Opportunities for part-time (adjunct) faculty positions and for collaborative arrangements with nearby institutions involved in biomedical research and development are also available. Candidates should send résumé, list of publications, names and addresses of five references, and a brief statement of teaching and research interests to: Dr. Eugene Smithberg, Chairman Engineering Search Committee, College of Engineering, 110 Cunningham Street, Boston, MA 02215. *Boston University is an Equal Opportunity/Affirmative Action Employer.*

### FACULTY POSITION IN COGNITIVE SCIENCE

The Department of Brain and Cognitive Sciences (formerly, Department of Psychology) of the Massachusetts Institute of Technology, announces a rank-unspecified opening in the area of cognitive science. Candidates must have a distinguished record of teaching and research in one or more of the following areas: psycholinguistics, reasoning, knowledge representation, and visual cognition. Especially sought are applicants with research interests combining human experimentation with computational modeling or formal analysis.

Interested applicants should send curriculum vitae, a short statement of their research interests, and the names of three references by 15 May 1986 to:

Cognitive Science Search Committee,  
E10-012  
MIT  
Cambridge, MA 02139

*MIT is an Equal Opportunity/Affirmative Action Employer. Qualified women and minority candidates are encouraged to apply.*

## POSITIONS OPEN

**COMPARATIVE PHYSIOLOGIST OR NEUROBIOLOGIST**. Tenure-track, 9-month position, assistant professor, effective 16 September 1986. Teaching duties in vertebrate physiology. Emphasis of both research and teaching. Ph.D. and postdoctoral experience required. Salary range, \$22,000 to \$25,000, dependent upon qualifications. Submit curriculum vitae, description of future research plans, and have four letters of recommendation postmarked by 1 May to: **Dr. Richard Petersen, Head, Department of Biology, Portland State University, P.O. Box 751, Portland, OR 97207.** *Portland State University is an Equal Opportunity/Affirmative Action Employer, qualified minorities, women, and other protected groups are encouraged to apply.*

### ENVIRONMENTAL TOXICOLOGIST

The National Wildlife Federation (NWF) seeks an experienced toxicologist to serve as senior scientist on pollution and toxics matters. Ph.D. in toxicology required, postdoctoral experience desirable. Expertise in human health toxicology, including risk assessment, preferred. Training in epidemiology, biochemistry, or related field; MPH, and Board certification desirable. Send résumé, salary requirements, and one or two selected publications (nonreturnable) by 2 May to:

National Wildlife Federation  
Attention: Personnel Administrator  
Department PE-16  
1412 Sixteenth Street, NW  
Washington, DC 20036

*NWF is an Equal Opportunity Employer. Women and minorities are encouraged to apply. No telephone calls, please*

### FACULTY POSITIONS DEPARTMENT OF ANATOMY AND CELL BIOLOGY

The Department of Anatomy and Cell Biology at the Medical University of South Carolina seeks to fill several positions between now and July 1987. Candidates are welcome at all levels: instructor, assistant professor, tenured associate professor, and full professor. The department's goals are to establish clusters of expertise in neurobiology, molecular cell biology, and membrane biology. Of particular interest are applicants who might project future involvement in marine biomedical research and/or those who will profit from the availability of sophisticated equipment for electron microscopy, modern optical microscopy (fluorescence, polarization, differential interference-contrast, video), and computer-assisted image processing/analysis/enhancement. Candidates with teaching skills in gross anatomy, neuroanatomy, histology, embryology, or cell biology will receive special consideration. Interested individuals should send current curriculum vitae, a history of recent grant support, and have three letters of recommendation forwarded to:

D.R. DiBona, Ph.D.  
Chairman, Department of Anatomy and Cell Biology  
Medical University of South Carolina  
171 Ashley Avenue  
Charleston, SC 29425

**SCRIPPS INSTITUTION OF OCEANOGRAPHY/GEOCHEMISTRY**. Applications are invited for a **FACULTY POSITION** in the general fields of geochemistry and petrology of sedimentary, metamorphic, and igneous rocks, fluid-rock interactions, theoretical and experimental petrology, organic geochemistry, and inorganic/physical marine chemistry. The position will involve graduate level teaching and the supervision of graduate student research. The level of the appointment and salary commensurate with qualifications and experience. Applicants must hold the Ph.D. degree and have demonstrated excellence and independence in research. Assistant professor level candidates are preferred and will be expected to show evidence of their potential through a publication record appropriate for their experience and letters of recommendation. Associate professor or professorial level candidates who have demonstrated an unusually strong research record in their area of specialization will also be considered. There is a possibility that more than one appointment can be made. Send letter of application and curriculum vitae, including description of research interests, and names of three references to: **LeRoy M. Dorman, Chair, Graduate Department, A-008, Scripps Institution of Oceanography, University of California, San Diego, La Jolla, CA 92093.** Closing date for applications is 30 May 1986. *An Equal Opportunity/Affirmative Action Employer.*

## IMMUNOLOGY

Otsuka, Pharmaceutical Co., Ltd., one of Japan's largest pharmaceutical companies, has recently finished construction of its Maryland Research Laboratories a short distance from the NIH. We are seeking to staff our Immunology Department with individuals interested in developing an understanding of the molecular bases of autoimmune disease.

Scientists at the B.S. and postdoctoral levels are being sought; the latter are expected to have a significant publication record in peer-reviewed journals.

Experience in any of the following areas would be desirable:

- Macrophage activation
- B-cell differentiation
- Molecular biology of lymphokines
- Lymphokine receptors

Candidates will be expected to interact closely with members of the Molecular and Cell Biology departments. Please submit a C.V. and the names of several references to:

Dr. Walter Newman  
Immunology Department  
Otsuka Pharmaceutical Co., Ltd.  
Maryland Research Laboratories  
P.O. Box 4165  
Rockville, MD 20850



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## MANAGER plant sciences

FMC, a Fortune 200 corporation, located in Princeton, NJ has an excellent opportunity available within the Biotechnology department of our Agricultural Chemical Group.

Candidates selected will secure and manage the resources required to develop and apply concepts and techniques in plant biochemistry, tissue culture, and biotechnology toward the advancement of programs in herbicide and plant growth regulator discovery efforts and toward recognition and development of new products or market opportunities.

Position requires a PhD in Plant Sciences or Biochemistry with a minimum of 7 years of industrial research experience. This experience should be in the application of concepts and techniques in plant sciences to research in agricultural chemicals or agricultural biotechnology.

FMC offers an excellent salary and benefits package. Qualified applicants should forward resume with salary history/requirements to: **Employment Manager, FMC CORPORATION, Chemical R & D Center, Box 8, Princeton, NJ 08543.** An Equal Opportunity Employer, M/F.

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## SCIENTISTS/ ASSISTANT SCIENTISTS

### Medical Diagnostic Product Development

Ortho Diagnostic Systems, Inc, a Johnson & Johnson Company in Central New Jersey, is seeking individuals to fill current and planned scientific openings requiring the following disciplines:

- Immunochemistry
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- Protein Chemistry/Biochemistry
- Bio-Organic Chemistry

Scientist level positions require a Ph.D or MS degree or equivalent. Assistant Scientist level positions require an MS or BS degree or equivalent. Both levels require related experience in one or more of the above disciplines. Additional experience specific to the development of diagnostic products is desirable.

Ortho Diagnostic Systems, Inc is a leader in medical diagnostics, and offers a professional environment, a competitive salary and an attractive benefits package including a dental plan and tuition reimbursement. Qualified candidates are encouraged to send their resumes and salary history in confidence to: **Employment Office, Box K**



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Systems Inc**  
Route 202 Raritan, N.J. 08869  
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Equal Opportunity Employer M/F/H/V



## POSITIONS OPEN

### FACULTY POSITION SYSTEMS PHYSIOLOGIST

The Department of Physiology of the New York State College of Veterinary Medicine, Cornell University, invites applicants for a tenure-track faculty position in physiology. The primary teaching responsibility will be in the systems physiology sequence of the veterinary curriculum and the successful applicant will be expected to develop a strong, independent research and graduate program, using modern physiological approaches. Further, he/she will be expected to offer an advanced course in his/her specialty in alternate years.

Preference will be given to applicants with a veterinary medical degree, in addition to the Ph.D., and to candidates with research experience in cardiovascular, respiratory, exercise, or gastrointestinal physiology. Salary and professorial rank are dependent on the qualifications and experience of the successful applicant.

Submit curriculum vitae, list of publications, and a brief one- or two-page outline of future research interests by 1 June 1986, and have three letters of recommendation sent to: Dr. R. H. Wasserman, Chairman, Department of Physiology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.

*Cornell University is an Affirmative Action/Equal Opportunity Employer/Educator.*

The Department of Biology seeks to fill a **TEMPORARY POSITION**, beginning September 1986. Rank and salary are negotiable. This opening is for a sabbatical leave replacement and the term will be limited to 1 year. Primary teaching responsibilities will be in the areas of **GENETICS** and **CELL/MOLECULAR BIOLOGY**. The College of St. Thomas is a coeducational, Catholic liberal arts college committed to the total development of the individual student. The successful applicant will have a Ph.D., or substantial progress toward the degree, and a strong commitment to teaching at the undergraduate level. Send letter of application, curriculum vitae, and three letters of reference directly to: Mrs. Kathy Fell, Box 4208, College of St. Thomas, 2115 Summit Avenue, St. Paul, MN 55105. All materials must be received by 2 May 1986. *An Equal Opportunity/Affirmative Action Employer.*

**FACULTY POSITION IN MOLECULAR GENETICS.** The Oklahoma Agricultural Experiment Station is seeking an experienced scientist with proven research qualifications in one or more areas of genetic engineering including gene transfer, gene expression, and protein engineering. Responsibilities will include development of high-quality research programs in genetic engineering relevant to, and cooperative with, ongoing biotechnology programs at Oklahoma State University. Rank, salary, and department of residence are flexible and commensurate with qualifications. Evidence of innovative research capabilities and ability to attract extramural research support are critical. Start-up funds are available. Letters of application and curriculum vitae should be sent to: Dr. R. R. Johnson, Associate Director, 139 Ag Hall, Oklahoma State University, Stillwater, OK 74078-0500. *OSU is an Equal Opportunity/Affirmative Action Employer.*

**EDUCATION-FACULTY POSITIONS—ANATOMY AND PHYSIOLOGY—2 positions.** MILLERSVILLE UNIVERSITY'S Biology Department invites applicants to apply for a 1-year, temporary position starting August 1986. These positions may later become regular tenure-track positions, following a second national search. Principal responsibility will be teaching a two-semester, integrated human anatomy and physiology course taken primarily by nursing students. Demonstrated competence in teaching is required and research is strongly encouraged. Millersville University, located near Lancaster, Pennsylvania, enrolls 6000 students of which 500 are biology majors. The successful candidate will work with 18 colleagues in a department that offers a wide variety of baccalaureate and master-level programs. Send curriculum vitae, official transcripts, three letters of recommendation and evidence of teaching and research effectiveness. We will begin reviewing applications on 15 April 1986 and continue to accept applications until the position is filled. Send to: A & P Search Committee, Department of Biology, MILLERSVILLE UNIVERSITY, Millersville, PA 17551. *Millersville University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**FACULTY POSITION IN HEALTH POLICY AND ADMINISTRATION:** Applications are invited for appointment as associate/full professor of health and medical care systems in the School of Public Health, University of California, Berkeley, available January 1987. Responsibilities include teaching and research with expertise in health planning and policy, as well as the development of innovative health care systems. Qualifications include a degree in medicine or a doctorate in an area such as public health, general systems theory, political science, planning or psychology, and relevant experience in research on the organization of health and medical care systems. Preference for an individual with 5 years of experience either in direct administrative or policy experience or in research on innovative programs concerning health and medical care organization and administration. A full position description is available upon request. Salary negotiable within the professorial series. Send curriculum vitae and names of references to: Z. I. Sabry, Ph.D., Search Committee, Room 421 Warren Hall, School of Public Health, University of California, Berkeley, CA 94720, by 16 August 1986.

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

**DEPARTMENT HEAD.** Applications are invited for the position of professor and head of the Department of Agriculture Chemistry, Oregon State University. The department has 16 faculty, who undertake research primarily in the disciplines of biochemistry, chemistry, molecular biology, and toxicology relating to agriculture. The department head will be expected to carry on a research program consistent with the interests of the department and to provide leadership in instructional and research programs consonant with the changing needs of agriculture. Applicants should have a doctorate in biochemistry, chemistry, molecular biology, toxicology or a closely related discipline, a distinguished record in research, and administrative skills appropriate for management of a diversified faculty. Please submit, by 2 June 1986, curriculum vitae (which should include a summary of qualifications and experience, current research activities, administrative philosophy, and career goals) and the names and addresses of five references to: Dr. Donald R. Buhler, Chairman, Search Committee, Department of Agricultural Chemistry, Oregon State University, Corvallis, OR 97331. Telephone: 503-754-3791. *An Affirmative Action/Equal Opportunity Employer complying with section 504 of the Rehabilitation Act of 1974.*

### FOREST ECOSYSTEM ANALYSIS / FOREST BIOLOGY (TWO)

Applications are invited for two half-time, 12-month, tenure-track appointments beginning 1 October 1986. Successful applicants will be expected to generate further salary through research programs. A Ph.D. degree is required for both positions.

The first position is offered at the full professor level. Candidates must have a strong background in team research efforts in forest ecosystem analysis. The second position is at assistant or associate professor level and candidates should have experience in belowground processes, particularly plant-soil interactions. Successful applicants at both levels will teach graduate courses in ecosystem analysis.

Please send curriculum vitae, statement of research and teaching interests, and the names of three or more references by 1 May 1986 to: Dr. Robert L. Edmonds, College of Forest Resources AR-10, University of Washington, Seattle, WA 98195. *The University of Washington is an Equal Opportunity Employer. Women and minorities are urged to apply.*

**HEAD OF PSYCHIATRY:** Buffalo General Hospital (BGH), a major State University of New York (SUNY) at Buffalo-affiliated, 850-bed hospital, serving a population of approximately 200,000. Modern community mental health center facility has 60 inpatient beds, day treatment center, and active outpatient department. Applicants must qualify for appointment at Associated Professor or Professor level, have experience in administration of clinical services, university teaching program, and have demonstrated research expertise. Salary is competitive. BGH/SUNY *an Equal Opportunity/Affirmative Action Employer.* Contact: Robert Scheig, M.D., Head, Department of Medicine, Buffalo General Hospital, 100 High Street, Buffalo, NY 14203.

## POSITIONS OPEN

### FACULTY POSITION: PHARMACOLOGY

Applications are invited for a faculty position in the Department of Pharmacology. Responsibilities will include the teaching of pharmacology to veterinary and graduate students, research, and participation in the development of a strong graduate research training program, and student advising. The position can be filled at any level, although preference will be given to the appointment of an assistant professor. Applicants must have the D.V.M., or equivalent veterinary qualifications, should be firmly committed to a career in teaching, and have strong or potentially strong research programs. Current interests in the department include structure and function of receptors and ion channels, the understanding of membrane bound enzyme and signalling systems, neuropeptides, transepithelial electrolyte transport, the control of hormone secretion and the mechanism of exocytosis, the role of calcium in cell activation, seizure disorders and pharmacokinetics. Applications and three letters of recommendation should be sent to: Dr. Geoffrey W. G. Sharp, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853-6401.

*Cornell University is an Equal Opportunity/Affirmative Action Employer/Educator.*

### FISHERIES BIOLOGIST Michigan State University

The Department of Fisheries and Wildlife seeks applicants for a position at the **assistant professor** rank beginning 1 July 1986 specializing in fisheries and aquatic habitat analysis and management. The position is a 12-month, tenure-track appointment. Major responsibilities include teaching an introductory department course, and courses in fisheries management and quantitative fish habitat analysis; research in area of specialization and participation in faculty committees, public service programs and advising of undergraduate and graduate students. Ph.D. required, with a specialization in fisheries science. Evidence of ability to obtain research grants, conduct research, and publish findings is desirable. Salary is competitive for rank. Interested persons should submit a letter of application stating professional goals and objectives, a résumé with supporting materials including transcripts, and three letters of reference by 30 April 1986 to:

Dr. William W. Taylor  
Search Committee Chairperson  
Department of Fisheries and Wildlife  
Michigan State University  
East Lansing, Michigan 48824-1222  
Telephone: 517-355-4477

*Michigan State University is an Equal Opportunity/Affirmative Action Employer. Minority and female candidates are encouraged to apply for this position.*

Applications are invited for a position of **INSTRUCTOR** in the Department of Pathology at the Medical College of Georgia to coordinate an associate degree program in histotechnology. Applicants should have at least a B.S. degree, experience in histologic techniques including preparation of undecalcified bone sections, and 5 years of experience in research and teaching. The appointment is expected to begin 1 July 1986. Please send curriculum vitae to: R. N. Rao, M.D., Chief, Anatomic Pathology, Medical College of Georgia, Augusta, GA 30912. *Equal Opportunity/Affirmative Action Employer.*

### OPEN POSITION IN MOLECULAR BIOLOGY

**ASSOCIATE RESEARCH SCIENTIST AND/OR POSTDOCTORAL POSITIONS** in plant and/or animal molecular biology at the Institute of Evolution, University of Haifa, Israel, are available immediately for 1 to 2 years with possible extension, to participate in research programs on DNA polymorphisms in wild populations of plants and animals using molecular biological techniques. A background in molecular biology and genetic engineering, as well as independence in molecular work is mandatory. The Institute of Evolution conducts theoretical and applied research in evolutionary biology, primarily population genetics and ecology of plants and animals. Send applications including curriculum vitae, reprints, and addresses of three references to: Professor Eviatar Nevo, Institute of Evolution, University of Haifa, Mount Carmel, Haifa 31999, Israel.

# Vice Chancellor of Research/ Dean of Graduate Studies

The University of California, Irvine, located just 40 miles south of Los Angeles and a few miles from the coast, is recognized as one of the top academic research institutions in the nation. More than 13,000 students are enrolled at UCI, including 2,400 students enrolled in graduate and professional programs. UCI offers undergraduate and graduate degrees in more than 40 areas.

This newly created position is responsible for fostering the highest quality scholarship and research of faculty and graduate students at UCI. Promotes and facilitates opportunities for research and creative activities and provides leadership in the continued development of excellence in the graduate program. Serves as UCI's institutional official responsible for policy development and oversight, allocation of campus research and graduate fellowship funds, and management of central administrative functions supporting research and graduate studies. Works with faculty and industry to help establish research initiatives of mutual interest. The incumbent will be responsible for \$50 million annually in extramural funding and administering an annual operating budget of \$4.5 million.

**Qualifications:** A distinguished record of research and scholarly achievement appropriate for a professorial appointment in one of the departments on campus; understanding of the role of a university in a growing urban setting and the relationship of graduate-level education to the community; proven ability in securing external support for research and program development; substantial experience in administration and graduate education and effective interpersonal qualities essential to the leadership and management of a complex system.

Letters of application should be accompanied by a current curriculum vitae, names of references acquainted with your academic and administrative accomplishments and any additional information you feel would be helpful to the Search Committee. All materials will be treated in a confidential manner. Nominations and applications should be addressed to:

**Patricia Hill**  
**Executive Management Recruiter**  
**University of California, Irvine**  
**152 Administration Building - S**  
**Irvine, CA 92717**

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## PLANT TISSUE CULTURE

The Asgrow Seed Company, a subsidiary of The Upjohn Company, is seeking an experienced research associate for its newly established Tissue Culture Laboratory in San Juan Bautista, CA.

The appointee will be responsible for overseeing the daily operations of the laboratory, for developing tissue culture systems for major vegetable species, and for interacting directly with plant breeders on collaborative projects. Applicants should have a B.S. in plant science with six (6) years experience in tissue culture, or an M.S. with three (3) years experience. Broad experience with a variety of vegetable species is highly desirable.

This challenging position offers the opportunity for considerable independence and significant responsibility. Applicants should send resume, college or university transcripts, and the names and telephone numbers of three references to:

**Dr. John C. Sorenson, Ph.D.**  
**Head, Experimental Plant Genetics**  
**9612-18-2**

**The Upjohn Company**  
**Kalamazoo, MI 49001**  
**Phone: (616) 385-4582**



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## CSIRO AUSTRALIA

### SIR FREDERICK McMASTER BEQUEST

#### SENIOR FELLOWSHIPS IN VETERINARY SCIENCE AND AGRICULTURE

The late Sir Frederick McMaster, a prominent Australian grazier, made a bequest to CSIRO to further research in veterinary science and agriculture. CSIRO has accordingly created a number of Fellowships to support research in the fields of veterinary science, agriculture and related fields of biology of relevance to the Organization's work.

The Executive of CSIRO has determined that the Fellowships should be awarded to "very senior and distinguished scientists located outside Australia".

The Fellowships are tenable in Australia in the following CSIRO Divisions/Units: Animal Health, Animal Production, the Australian Animal Health Laboratory, the Centre for Irrigation Research, Entomology, Environmental Mechanics, Food Research, Horticultural Research, Human Nutrition, Molecular Biology, Plant Industry, Soils, Tropical Animal Science, Tropical Crops and Pastures, Water and Land Resources, the Wheat Research Unit and Wildlife and Rangelands Research. These Divisions/Units have laboratories located throughout Australia and employ some 2800 staff of whom about 1000 are professional scientists. All Division/Units are well equipped to undertake research in their particular areas of interest.

It is expected that Fellowships will range in duration from 3 to 12 months. The length will be the subject of negotiation and will be largely dependent on the nature of the proposal.

The support available to cover airfares, living allowance and honorarium will depend on individual circumstances and is expected to average \$A20,000-\$A25,000 per Fellow. Successful applicants will be encouraged to obtain supplementary support from other sources.

Applications for Sir Frederick McMaster Fellowships or expressions of interest are invited from very senior overseas scientists. These should include relevant personal particulars, qualifications and experience, a research/activities proposal, the names of any CSIRO collaborators and a preferred Division or location, the proposed duration of the Fellowship and an estimate of the financial and other support that would be required.

Applications or expressions of interest should be directed to:

**The Secretary**  
**Sir Frederick McMaster Fellowship Selection Committee**  
**CSIRO**  
**PO Box 225**  
**DICKSON ACT 2602**  
**AUSTRALIA**

Closing date 4 weeks from date of issue of this advertisement.

A brochure setting out the conditions applying to the Fellowships is available on application to the Secretary, Sir Frederick McMaster Fellowship Selection Committee.

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## POSITIONS OPEN

The Division of Burn Surgery of the University of Michigan Medical School, Department of Surgery, Section of General Surgery, seeks candidates for an academic position at the INSTRUCTOR level. The individual will work full-time for 1 year in patient care, teaching, and research. Candidates must be a graduate of an American or Canadian medical school, Board-certified by the American Board of Surgery or equivalent board, have special interest and skills in critical care and have an interest in medical research related to burn surgery. This position is available from 1 July 1986 through 30 June 1987. Reply to: **Dr. Irving Feller, Chief, Division of Burn Surgery, University of Michigan Medical Center, 200 North Ingalls, Ann Arbor, Michigan 48104.** The University of Michigan is a nondiscriminatory/Affirmative Action Employer. PCN 52.

### MAGNETIC RESONANCE SCIENTIST

The Kettering/Scott Magnetic Resonance (MR) Laboratory of the Wright State University School of Medicine and the Charles F. Kettering Medical Center seek an MR scientist to develop a research program centered on physical and/or engineering aspects of instrumentation and/or technique development. Candidates must have a Ph.D. and postdoctoral training in an appropriate related field, and evidence of productivity in a field of magnetic resonance research such as, but not limited to, pulse sequence development, signal/image processing, software development, or probe/coil development. The successful applicant will establish a vigorous research program involving magnetic resonance imaging and/or spectroscopy. He/she will be able to collaborate with MR laboratory users on the design, implementation, and interpretation of MR experiments. The successful candidate will be recommended for appointment to the faculty of the Wright State University School of Medicine as an assistant professor in a suitable department or program.

The Kettering/Scott MR Laboratory currently has a whole-animal spectrometer-imager with a 40-cm bore 2.3T magnet, a 9-cm bore 360-MHz spectrometer equipped for solution and solid-state spectroscopy, a human-body imager with a 1.5T magnet, computer facilities, and electronic/machine shop facilities.

Applicants should send curriculum vitae, as well as the names and addresses of three references to: **Dr. Gerald M. Alter, Chair, Kettering/Scott Magnetic Resonance Center Search Committee, Biological Chemistry, Wright State University School of Medicine, Dayton, OH 45435.** Applications must be postmarked prior to 15 June 1986 to be considered. *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

### MATHEMATICAL GEOSCIENTIST WRIGHT STATE UNIVERSITY

The Department of Geological Sciences invites applications for a tenure-track position at the level of **assistant or associate professor** from individuals with primary expertise within the broad field of quantitative geology. The individual should have a strong mathematical and computer background and an interest in the application of numerical modeling to geophysical and/or geohydrological problems. The individual should also anticipate the development of courses dealing with the application of mathematics and mathematical modeling to geoscience problems. The applicant's specific field of research interest is open; however, he or she would be welcome to participate in current research programs. The position will be available September 1986 and will be filled as soon as possible after that date. Candidates are expected to have completed all requirements for the Ph.D. at the time of initial employment.

The department currently has 12 full-time faculty and strong M.S. program in geology, with concentration on exploration geophysics and applied geohydrology. Departmental computer facilities, analytical instrumentation, and field equipment to support research are outstanding. The new position is funded by an academic challenge grant that recognizes the excellence of our graduate program.

Send résumé and three letters of reference to: **Dr. Byron Kulander, Chairman, Search Committee, Department of Geological Sciences, 260 Brehm Laboratory, Wright State University, Dayton, Ohio 45435.** Closing date for applications is 7 May 1986. *Wright State University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### MATHEMATICS EDITOR

Cambridge-based international scientific publisher has an opening for Mathematics Editor. This job entails the development and expansion of an already existing strong graduate-level program in pure and applied mathematics. Applicants are expected to be able to assume responsibility for the development of such a program, to work, under initial guidance, independently and to maintain good personal and professional ties with members of the mathematical community. Prior publishing experience is desirable but not essential; substantial exposure to graduate-level mathematics is required. Salary commensurate with educational background/experience. Excellent benefit package. Send résumé and salary history to: **P.O. Box 65.**

### MICROBIOLOGIST

**TENURE-TRACK POSITION**, assistant professor level, beginning August 1986; to teach undergraduate courses in microbiology, related areas (immunology or parasitology), and/or in general biology. Conduct research working with students. Ph.D., bilingual candidate (Spanish/English). Submit curriculum vitae, statement of teaching and research interests, and three letters of recommendation by 25 April 1986 to: **Dr. Carmen Umpierre, Chairperson, Biology Department, University of Puerto Rico (UPR), Cayey, Puerto Rico 00633.** UPR is an Equal Opportunity/Affirmative Action Employer.

**MOLECULAR BIOLOGY OPPORTUNITIES.** Positions are available in a molecular biology laboratory devoted to the study of gene expression and oncogenicity. Expertise is required in cloning and Northern and Southern blotting. Some experience with DNA sequencing is preferred. Salaries are generous. Please apply to: **Shalom Z. Hirschman, M.D., THE MOUNT SINAI SCHOOL OF MEDICINE, Atrium 622, One Gustave L. Levy Place, New York, NY 10029.** Telephone: 212-650-6741. *An Equal Opportunity Employer.*

**NEUROBIOLOGY OF EMOTIONAL LEARNING:** Position available at **postdoctoral, research associate, or instructor** level for individual interested in neurobiological and behavioral studies of fear conditioning. Candidates should have a strong background in neurophysiology, neuroanatomy, and animal behavior. Competence in computer programming is also desirable. Send letter describing research interests to: **Dr. Joseph LeDoux, Laboratory of Neurobiology, Cornell University Medical College, 411 East 69 Street, New York, NY 10021.** CUMC is an Equal Opportunity/Affirmative Action Employer.

**University of California, Los Angeles Mental Retardation Research Center, Neurophysiology and Neuroanatomy Group.** There will be a vacancy in the Mental Retardation Research Center for a **NEUROPHYSIOLOGIST** and/or **NEUROANATOMIST** at the **Full Professor** level. The individual selected should have a first-rate research record, strong current extramural competitive grant funding, and the ability to interact with scientific colleagues at a senior level. We are looking for a scientist whose main interests are in development of the mammalian central nervous system. Laboratory space, setup funds, and excellent university salary and benefits are available. The successful candidate must assume the position by 1 July 1987. Write with names of three references to:

**Dr. N. Buchwald  
Mental Retardation Research Center  
Neuropsychiatric Institute, UCLA  
760 Westwood Plaza, Los Angeles, CA 90024**  
*UCLA is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOW.** Ph.D. in biological sciences to study the molecular biology and biochemistry of a human chromosome 21 encoded cell surface antigen. Requires the production of monoclonal antibodies against the antigen, molecular cloning of the gene, biochemical characterization of the protein, and gene dosage studies in trisomic cells and different tissues. 40 hours per week, \$17,004 per year. Application by résumé. Apply to: **Job Service Center, 251 East 12 Avenue, Denver, CO 80203,** referring to J.O. number CO2660627.

## POSITIONS OPEN

### The University of Calgary NEUROCHEMIST/MOLECULAR NEUROBIOLOGIST

Applications are invited for several neurobiologists to be associated with the newly established program in Aging of the Nervous System in the Faculty of Medicine, University of Calgary. This program has clinical, neuropathological, and basic research components. The basic research component stresses the molecular approaches to the investigation of neurodegenerative disorders associated with aging. Applicants are expected to conduct independent research within the framework of the overall program objectives and should have specific expertise in one of these areas: (i) recombinant DNA technology and/or protein chemistry; (ii) neurotransmitter and/or receptor chemistry. The positions will be funded following successful competition for scholarship, from the Alberta Heritage Foundation for Medical Research. The candidates will be eligible to apply to the AHFMR for an Establishment Grant to cover the cost of setting up a new laboratory with major/minor equipment, and operating funds for an initial 2-year period. Applicants require an M.D. and/or Ph.D. and research training at the postdoctoral level. The applicants will be associated with the Neurosciences Research Group and the Department of Pathology. The level of appointment and salary will be commensurate with experience and qualifications. The applicants are expected to devote approximately 75 percent of their time to research and the remaining 25 percent to activity related to the research field, including teaching. All qualified individuals are encouraged to apply, but preference will be given to Canadian citizens and permanent residents. Please submit current curriculum vitae, statement of research interests, and the names and addresses of three referees prior to 1 June 1986 to: **Dr. N. B. Rewcastle, Head, Department of Pathology, Faculty of Medicine, The University of Calgary, Calgary, Alberta, Canada T2N 2T9.**

### POSTDOCTORAL FELLOW

Ph.D. in biochemistry or organic chemistry to work on fundamental relationships between amino acids and nucleic acids. Studies include: synthesis and study of aminoacyl mono- and polyribonucleotides (reaction kinetics and molecular conformations using NMR); synthesis of peptides and oligonucleotides and study of their interactions using NMR and other physical methods. Salary competitive. Those interested should contact: **Dr. James Lacey, Department of Biochemistry, CHSB 509, University of Alabama at Birmingham, Birmingham, AL 35294;** telephone: 205-934-4842. *UAB is an Affirmative Action/Equal Opportunity Employer.*

### POSTDOCTORAL FELLOW Research Associate Position

Available July 1986 in an active research group with a program project in atherogenesis. Research will involve a study of the regulation of transport of lipoproteins across endothelial monolayers grown in cell culture. Candidate should have experience in cell culture and a good background in biochemistry and cell biology. This is a funded position with salary range \$16,000 to \$22,000, depending on experience. Later starting date also possible. Send curriculum vitae and names of three references to: **Dr. Alan Fogelman, University of California, Los Angeles (UCLA) School of Medicine, Division of Cardiology, 47-123 CHS, Los Angeles, CA 90024.**

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE.** The applicant must have a Ph.D. degree in cell biology, molecular biology, biochemistry, or immunology and a minimum of 1 year of research experience at the postdoctoral level. The fellow/associate would work with Winship Cancer Center faculty in projects involving production of melanoma specific cytotoxic lymphocytes for therapy. The fellow/associate would be responsible for experimental design, supervision, and coordination of research activities with tissue culture specialists and participating faculty. Experience in establishing melanoma and lymphocyte cultures, cell growth assays, growth of cells in defined culture medium and cellular immunology procedures. Salary: \$18,500 to \$21,000, depending upon qualifications and experience. *Emory University is an Affirmative Action/Equal Opportunity Employer.* Send curriculum vitae and names of three references to: **Kenneth W. Sell, M.D., Ph.D., Emory University School of Medicine, Winship Cancer Center, 1327 Clifton Road, NE, Atlanta, GA 30322.**



**American Red Cross**

BIOMEDICAL RESEARCH + DEVELOPMENT

## LABORATORY HEADS IMMUNOLOGY AND VIROLOGY

In a major expansion of its biomedical research program, the American Red Cross seeks distinguished investigators to head new immunology and virology laboratories. These individuals will have the opportunity to establish 6-8 scientist groups in a new facility being constructed for research and development programs that support Red Cross blood and transplantation services. Candidates should have a distinguished research record as evidenced by publications and grant awards, and they must have leadership and administrative ability necessary to build nationally recognized departments. It is anticipated that the positions will be filled by January 1, 1987.

Applications, including curriculum vitae, bibliography, and the names and addresses of at least 3 references should be sent to:

**Leon W. Hoyer, M.D.**  
American Red Cross Laboratories  
9312 Old Georgetown Road  
Bethesda, MD 20814

## BROWN UNIVERSITY ALAN SHAWN FEINSTEIN WORLD HUNGER PROGRAM

The World Hunger Program addresses the long-term persistence of hunger in a world of plenty, through research and education, as an information source, and through the public recognition generated by the annual Feinstein Awards.

The four-year research program, which will emphasize fundamental understanding of the prevalence, persistence, and prevention of hunger, will focus particularly on long-term trends in climatology, demography, economics, technology, and values. Research is carried out collaboratively with other institutions that share its concerns and among a small (3-5) resident group.

The World Hunger Program invites applications for appointments to the resident group (beginning September 1986 or earlier, with terms negotiable) in either of two categories:

1. Post-doctoral Research Fellow
2. Research or Visiting Assistant or Associate Professor (primarily research appointments, but may include participation in the Program's course offerings)

In addition, the Program welcomes inquiries for appointment as Visiting Scientists and Scholars (with some independent support) desiring to utilize the research collection and to participate with the research group in this and subsequent years.

Appointments will be made beginning May 1, 1986 or as required by research program.

For consideration, please submit a statement of interest, a vitae, and names of three references to:

**Robert W. Kates**  
Director  
Alan Shawn Feinstein World Hunger Program  
Brown University  
Box 1831  
Providence, R.I. 02912

## GENETIC TOXICOLOGIST

Rohm and Haas Company, a leading multinational chemical firm, has an immediate opening for an experienced Ph.D. scientist to head our genetic toxicology testing laboratory and research program. This position is in our Toxicology Department at the Corporate Research Center in Spring House, PA — amidst pleasant countryside near Philadelphia.

Your primary responsibilities will include:

- developing and directing research programs
- supervising the technical staff of the testing laboratory and evaluating test results
- collaborating in testing decisions during product development

The emphasis will be on providing technical leadership at the state-of-the-art level.

You should have a Ph.D. degree in Toxicology, Genetics, Biochemistry or a related life science, preferably with three to six years of experience after the Ph.D. A strong background in basic science and solid laboratory experience in gene mutation, cytogenetics and/or DNA damage assays are essential, as are superior oral and written communications skills.

Rohm and Haas offers an excellent salary and benefits program, including relocation assistance. We enjoy an active research environment conducive to professional development. Whenever possible, we promote from within.

Candidates should have U.S. citizenship or permanent residency. Please send a detailed resume, listing references, to:

Recruiting and Placement #686



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## THE NEXT DIMENSION IN DIAGNOSTIC TESTING

*Just eighteen months  
from concept to market.*

Microgenics is the biotechnology company that has advanced the diagnostic testing process. Our test system is based on protein engineering by recombinant DNA techniques. Exciting opportunities are available for exceptional research scientists.

### *Synthetic Peptide Chemist*

Supervise a research group in the preparation, purification and characterization of peptides and peptide conjugates. The ideal candidate will have acquired a PhD, recent experience with the operation of an Applied Biosystems peptide synthesizer, and is familiar with non-HF cleavage protocols.

### *Serologist/Immunochemist*

Establish and direct the activities of our animal research facility. We require a minimum of 2 years prior experience in the care and immunization of rabbits and mice. Familiarity with Hybridoma-monoclonal antibody production, purification and characterization is highly desirable.

Advance your career to the next dimension. Our professionals realize the benefits of scientific challenge, equity participation and a location that is conveniently located twenty miles east of San Francisco. To learn more, please forward a resume for consideration to: Personnel Dept., Microgenics Corporation, 2341 Stanwell Drive, Concord, CA 94520. We are an equal opportunity employer.



**MICROGENICS**

## POSITIONS OPEN

**NEUROPHYSIOLOGY FACULTY POSITIONS AT HAHNEMANN UNIVERSITY IN PHILADELPHIA, PENNSYLVANIA.** Applications are invited for two faculty positions in neurophysiology at the associate professor and/or professor level. Requirements are an M.D. and/or Ph.D. degree; an established record of research; active participation in the neuroscience field as evidenced by extensive publications and both prior and current extramural research support. Applicants will be expected to engage actively in the education and training of graduate students, postdoctoral fellows, and medical students. The filling of these senior positions is regarded as the initial step in establishing a broad-based neurophysiology program at Hahnemann University, encompassing both clinical and basic science investigators. Research teams are encouraged to apply.

Interested applicants should send curriculum vitae, bibliography, and names of three references to: **Gian Carlo Salmoiraghi, M.D., Ph.D., Chairman, Department of Physiology and Biophysics, Mail Stop Number 409, HAHNEMANN UNIVERSITY, Broad and Vine Streets, Philadelphia, PA 19102.** *Affirmative Action Employer.* All applications must be submitted by 1 July 1986.

**POSTDOCTORAL POSITION** available summer 1986 for well-established studies of cellular morphology and function in the hippocampal formation following long-term ethanol exposure. Laboratory utilizes an interdisciplinary approach involving morphological, physiological, and biochemical techniques. Preference will be accorded applicants with a Ph.D. in neurosciences and a strong background in electrophysiology, the in vitro hippocampal slice, and laboratory computer instrumentation. Curriculum vitae and names of three references should be sent to: **Drs. Don W. Walker/Bruce E. Hunter, Department of Neuroscience, JHMH Box J-244, University of Florida, Gainesville, FL 32610.** *An Equal Opportunity/Affirmative Action Employer.*

## POSTDOCTORAL POSITIONS

Two postdoctoral (research associate) positions are available 1 June 1986 for individuals with experience in protein purification to investigate hormonal regulation of gene expression in normal and neoplastic cells. Opportunity to gain experience with monoclonal antibodies, molecular cloning, hybridization, sequencing, or gene transfection into cultured eukaryotic cells. Salary commensurate with experience. Applicants should send curriculum vitae and names of three references to: **Craig W. Beattie, Ph.D., Division of Surgical Oncology, University of Illinois, 840 South Wood Street, Chicago, IL 60612.** *The University of Illinois is an Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITIONS IN CANCER RESEARCH.** Successful candidates will join an interdisciplinary research program emphasizing mechanisms of carcinogenesis by radiation, chemicals, and retroviruses and related areas such as molecular genetics, DNA repair, membranes, tumor immunology, and regulation of gene expression. Beginning salary is \$22,000; U.S. citizenship or permanent residency is required. Persons soon to be awarded or holding recent Ph.D., M.D., or D.V.M. degrees are invited to write for information to: **Training Office, University of Tennessee Oak Ridge Graduate School of Biomedical Sciences, Biology Division, P.O. Box Y, Oak Ridge National Laboratory, Oak Ridge, TN 37831.** *An Equal Opportunity/Affirmative Action Employer.*

## POSTDOCTORAL POSITIONS

Available to work on the biochemistry and molecular biology of adrenergic receptors. Studies are in two areas: (i) biochemical mechanisms of regulation of responsiveness and receptor-transducing protein-effector interactions in reconstituted systems and (ii) molecular biology of adrenergic receptors: cloning, expression, gene structure, site-directed mutagenesis. Applicants should have strong background in biochemistry and/or recombinant DNA technology. Send curriculum vitae and two to three letters of reference to: **Dr. Robert J. Lefkowitz and Dr. Marc G. Caron, Howard Hughes Medical Institute, Box 3821, Department of Medicine, Duke University Medical Center, Durham, NC 27710.**

## POSITIONS OPEN

### POSTDOCTORAL POSITION

Research position available 1 July 1986 to study the regulation of the renal circulation and the interaction of the microcirculation with tubular transport processes. Degree in physiology or biophysics with some experience using laboratory computers. Send curriculum vitae and names of three references to: **Dr. Donald J. Marsh, Department of Physiology and Biophysics, University of Southern California (USC) School of Medicine, 1333 San Pablo Street, Los Angeles, CA 90033.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately in protein chemistry and affinity labeling of active and regulatory sites in enzymes. Recent Ph.D. in biochemistry. Salary competitive. Send résumé and three references to: **Dr. Roberta F. Colman, Chemistry Department, University of Delaware, Newark, DE 19716.** *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately for molecular genetic studies on cyclic AMP-dependent protein kinase from mutant mouse lymphoma cells. Background in biochemistry or molecular biology required. Recombinant DNA experience desirable. Send curriculum vitae, statement of goals, and three references to: **Dr. Robert A. Steinberg, Department of Biochemistry and Molecular Biology, The University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190.**

**POSTDOCTORAL POSITION:** Biochemistry, molecular biology available to study expression of leukemia cell surface antigens, glycosyl transferases, and multi-drug-resistant phenotypes using lectins and monoclonal antibodies; and to characterize and clone the genes involved. Writing and communication skills essential. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae to: **Robert N. Taub, M.D., Ph.D., Division of Oncology, Columbia College of Physicians and Surgeons, 630 West 168 Street, New York, NY 10032.**

**POSTDOCTORAL POSITION** to study the transcriptional control of heat shock genes in mammalian cells. The project will involve the cloning of mammalian heat shock genes, isolation of protein factors involved in transcriptional initiation, and investigation of regulation of transcriptional factor function. Participation in collaborative projects with other members of the department will be expected. Knowledge of mechanisms of DNA repair desirable. Send curriculum vitae and names of three references to: **Dr. Stuart Calderwood, Joint Center for Radiation Therapy, Division of Cancer Biology, Harvard Medical School, 50 Binney Street, Boston, MA 02115.**

**POSTDOCTORAL POSITION AVAILABLE** immediately to study molecular, catalytic, and regulatory properties of phosphoprotein phosphatases and their roles in regulation of biological processes. Background in enzymology and cell biology would be helpful. Send curriculum vitae and names and addresses of three references to: **Dr. Heng-Chun Li, Department of Biochemistry, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, NY 10029.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITIONS** available fall 1986. Project areas include: (i) the mechanisms of DNA photorepair as catalyzed by yeast DNA photolyase; (ii) structure/function studies on bacterial sarcosine oxidase, an unusual multisubunit enzyme containing both covalent and noncovalent flavin. Please send curriculum vitae and names of three references to: **Dr. Marilyn Jorns, Department of Biochemistry, Hahnemann University, Broad and Vine, Philadelphia, PA 19102.**

**POSTDOCTORAL POSITIONS** in molecular biology/biochemistry currently available. Research on enzymic replication and transcription of mitochondrial DNA with emphasis on role of DNA superhelicity. Recombinant DNA and/or enzymology experience helpful. Long-term funding available. Highly active and pleasant department. Send curriculum vitae, listing three references. **Dr. M. V. Simpson, Department of Biochemistry, State University of New York (SUNY), Stony Brook, Stony Brook, NY 11794.** *SUNY Stony Brook is an Affirmative Action/Equal Opportunity Educator and Employer.* AK Number 64-85.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** is available immediately to study insulin action and the insulin receptor in states of insulin resistance. Background in membrane biochemistry and reconstitution systems for membrane proteins is desired. Applicants must be U.S. citizens or permanent residents. Send curriculum vitae and names of three references to: **Dr. James N. Livingston, Department of Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY 14642.**

**POSTDOCTORAL RESEARCH ASSOCIATE** position available to investigate the actions of excitatory amino acid transmitters in the hippocampal slice. Experience with electrophysiological techniques is required. Salary will be commensurate with experience. Send curriculum vitae and at least two reference names to: **Dr. J. Victor Nadler, Department of Pharmacology, Duke University Medical Center, Box 3813, Durham, NC 27710.**

**POSTDOCTORAL RESEARCH ASSOCIATE—YEAST MOLECULAR BIOLOGY.** Position available to study regulation in *Saccharomyces* of genes vital for meiosis and ascosporeogenesis or to study genomic organization and recombination as related to pathogenesis in *Candida albicans*. Applicants should have training in recombinant DNA technology and microbial genetics. Send curriculum vitae and three reference letters to: **P. T. Magee, Department of Microbiology, Michigan State University, East Lansing, MI 48824-1101.**

**POSTDOCTORAL TRAINING (M.D. or Ph.D.)** for 1 to 3 years in basic vision research. Preceptors: **Bernard Becker, Joel Brown, Ronald Burde, Adolph Cohen, Nigel Daw, Robert Miller, Alan Pearlman.** NIH supported stipends. U.S. citizens or permanent resident status. July 1986. See any preceptor at ARVO or write for details: **A. I. Cohen, Ophthalmology, Box 8096, Washington University Medical School, 660 South Euclid Avenue, St. Louis, MO 63110.** *An Affirmative Action/Equal Opportunity Employer.*

## PHARMACOLOGY TEMPLE MEDICAL SCHOOL

The Department of Pharmacology at Temple Medical School is seeking an individual for a research assistant professor position. Applicants should have a strong background in cell biology and in the use of fluorescent indicators to measure changes in cytosolic free calcium concentrations, as well as have some experience in fluorescence anisotropy. Prior experience using metallochromatic indicators to monitor changes in intracellular compartmentation and distribution is desirable. Candidates should be skilled in the isolation of blood cells. Some experience in conventional protein purification and enzymological studies is desirable. Preference will be given to individuals with a demonstrated interest in inter- and intracellular signalling. Send application to: **Department of Pharmacology, Temple University School of Medicine, 3401 North Broad Street, Philadelphia, PA 19140.** *An Equal Opportunity/Affirmative Action Employer.*

## RESEARCH ASSOCIATE—MOLECULAR BIOLOGY U.S. DEPARTMENT OF AGRICULTURE— AGRICULTURAL RESEARCH SERVICE Plum Island Animal Disease Center Greenport, New York 11944

A postdoctoral research associate position in molecular biology is available immediately involving either bluetongue virus cloning and sequencing or study of the organization and function of bluetongue virus structural proteins. Expertise in molecular cloning and/or molecular virology is required.

The position, available immediately, is for up to 2 years and is funded at \$26,381 to \$31,619, depending on qualifications. Successful candidates must have a Ph.D. and U.S. citizenship is desired. Interested individuals should send curriculum vitae and include names and addresses of three references to: **Dr. M. Grubman, USDA-ARS-NAA, Plum Island Animal Disease Center, P.O. Box 848, Greenport, NY 11944.** For information, telephone: 516-323-2500. Applications must be received before 31 May 1986 and should be marked 6E032.

*USDA is an Equal Opportunity Employer. Women and minorities are urged to apply.*



**CSIRO**  
**AUSTRALIA**  
**CHIEF OF DIVISION**

**CSIRO INSTITUTE OF ANIMAL AND FOOD SCIENCES**

**DIVISION OF FOOD RESEARCH**

**SYDNEY NSW**

Applications are invited for the position of Chief, Division of Food Research, from scientists with established records of personal research achievement and leadership in food science or related disciplines. The position will become vacant when the present Chief, Dr J H B Christian, completes his term of appointment on 31 December 1986.

CSIRO's charter covers research into problems of primary and secondary industries and also such fields of community interest as human nutrition, the environment, and the development and use of natural resources.

CSIRO's research activities are grouped in five Institutes. At present the Division of Food Research is a member of the Institute of Animal and Food Sciences, which comprises the Divisions of Animal Health, Animal Production, Fisheries Research, Food Research, Human Nutrition, Molecular Biology, Tropical Animal Science; the Australian Animal Health Laboratory; and the Wheat Research Unit. Regrouping of Divisions into more sectorally-based Institutes is under consideration.

The Division of Food Research has three main laboratories: the Food Research Laboratory in Sydney, NSW; the Meat Research Laboratory in Brisbane, Queensland; and the Dairy Research Laboratory in Melbourne, Victoria. The headquarters of the Division are located in the Food Research Laboratory. The total staff of 324 includes 147 professional scientists.

The Division of Food Research conducts research programs in food science and technology directed generally towards improving the quality and safety of fresh and processed foods both for Australian consumers and for export markets. The processed food industry is the largest in output and one of the most dynamic of Australia's manufacturing industries. Processed food is a high-priority product for expanding export trade, and the Division has an important role in providing research back-up for this expansion.

The Chief of the Division will be responsible to the Director of the Institute of Animal and Food Sciences for the leadership, development, scientific direction and integration of the research programs of the Division, and will be encouraged to promote active collaboration with other Divisions, industry and research bodies working in associated areas. A recent review of the work of the Division of Food Research recommended that the Division become more interactive with industry and more entrepreneurial in its approach, and the Chief will be expected to take a lead in this respect.

The salary will be not less than \$62,252 pa plus an expenses of office allowance of \$1,355 pa.

Appointment to CSIRO is for an indefinite period and carries Australian Government superannuation benefits, subject to normal conditions. The position of Chief of Division is offered for a negotiable term of the order of five to seven years, with subsequent options for a further term, if mutually desired, or for a senior position in the Organisation.

The Executive of CSIRO has appointed a Search Committee to seek suitable candidates for this position. Dr K A Ferguson, Director of the Institute of Animal and Food Sciences, would be pleased to provide further information about the Division, to discuss the position with potential applicants, and to receive advice about the appointment from people with a particular interest in it. Dr Ferguson may be contacted at the address below, or by telephone at Canberra (062) 484637.

Persons with suitably outstanding qualifications, including research leadership experience, are invited to apply. Applications stating full personal and professional details, the names of at least three professional referees and quoting reference A2431 should be directed to:

**The Director**  
**CSIRO Institute of Animal and Food Sciences**  
**PO Box 225**  
**DICKSON ACT 2602**  
**AUSTRALIA**

by 4 weeks from date of publication.

CSIRO IS AN EQUAL OPPORTUNITY EMPLOYER

## Scientists

T Cell Sciences, Inc. is a leading biotechnology company located in Cambridge, MA with opportunities for qualified scientists with the following expertise:

**Cellular Immunologists** — Ph.D./MS/BS with background in cell mediated immunity. Experience with T cell functional assays and T cell cloning preferred.

**Molecular Biologists** — Ph.D./MS/BS with background in recombinant DNA technology. Experience should include genomic DNA/RNA preparation and manipulation; DNA sequencing; cDNA library construction; cell culture and/or gene expression.

T Cell Sciences, Inc., an equal opportunity employer, offers comprehensive medical/dental plans and competitive salaries. Please send your resume in confidence to: **Personnel Manager, T Cell Sciences, Inc., 840 Memorial Drive, Cambridge, MA 02139.**

 **T CELL  
SCIENCES**

**QUIDEL, a rapidly growing pharmaceutical company in La Jolla, California, invites applicants for the position of**  
**SENIOR RESEARCH SCIENTIST/PROJECT LEADER DIAGNOSTICS**

Highly qualified scientist sought to be project leader in development of advanced rapid enzyme immunodiagnostic products. Successful candidate will be talented, well-trained Ph.D. or M.D. with background in monoclonal antibody technology, immunochemistry and biochemistry and a desire to perform bench research. Individual will have demonstrated ability to develop state-of-the-art rapid enzyme immunoassays and bring product through research into development.

### TECHNICIANS

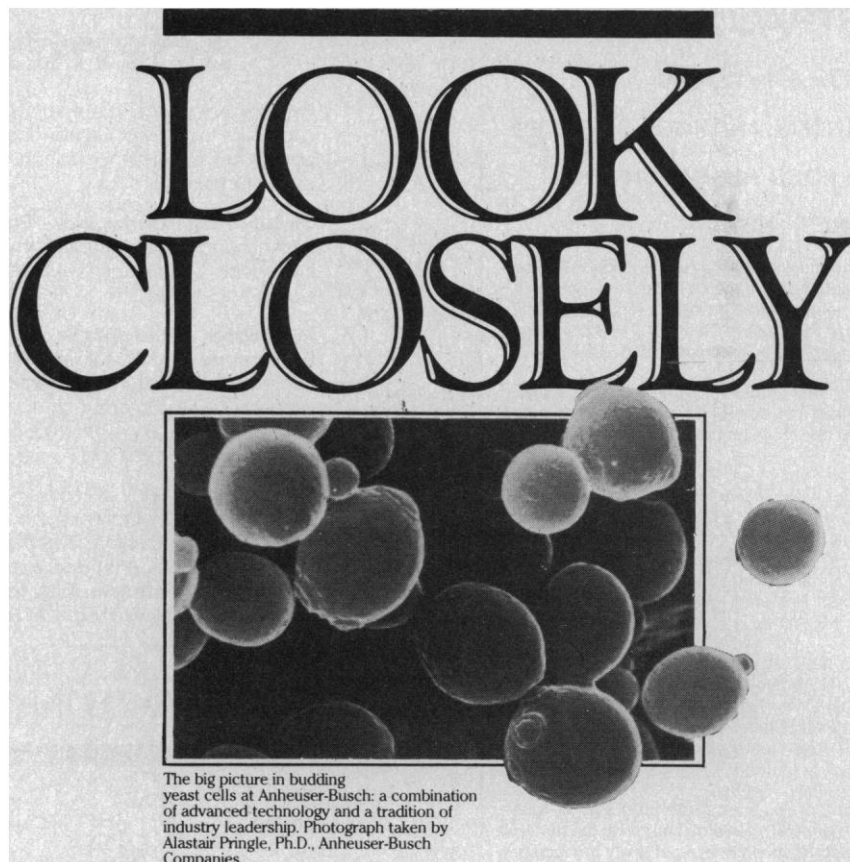
**Research Technicians:** Require a bachelors degree in science. For some positions, tissue culture and animal handling experience desired; others require knowledge of routine biochemistry.

Salary is commensurate with background and experience. Excellent benefits package which includes employee incentive stock option program. Send your resume to:

**QUIDEL**  
**Attn: David H. Katz, M.D.**  
**Equal Opportunity Employer**



11077 North Torrey Pines Rd., La Jolla, CA 92037



## ... At A Chance To Work With One Of The Nation's Finest Yeast Research Teams

The tradition of excellence and innovation in superior quality yeast fermentation products at Anheuser-Busch began with Budweiser, in 1876. In 1927, we augmented our yeast product line with baker's yeast. Today, we are the market leader in both, with 36.6% of the beer market and close to 50% of the baker's yeast market. Our commitment to ongoing research and development in yeast has been a key element to this success. And, as we continue to grow and diversify, our need for professionals to help improve quality, increase productivity, and develop new fermentation-based products and businesses—especially in baker's yeast—also grows. We seek yeast specialists in the following key areas:

### Fermentation Technology

- The research focus is to optimize yeast composition, physiology, and yield through precise control of the growth environment
- We have the best equipment available including computer-coupled fermentators with real-time data analysis and a new fermentation pilot plant
- Additional responsibilities include the identification and evaluation of new fermentation technologies, including the management of university grants on mixing and downstream processing

### Yeast Genetics

- The objective is to apply the latest yeast genetic techniques,

both recombinant and non-recombinant, to develop superior industrial yeast strains

- Other responsibilities include establishing and managing research contracts with outside genetic engineering firms

### Yeast Physiology/Biochemistry

- The goals of this research are to first define the molecular basis of yeast baking activity and then to apply these results by optimizing yeast performance in commercial baking systems
- Responsibilities also include the development of rapid tests to predict yeast baking performance

We seek both junior and senior level science and engineering professionals with a Bachelor, Master, or Ph.D. degree. Five or more years of yeast research experience, preferably in industry, is required. Our policy of innovative research programs aimed at industrial applications demands energetic, independent thinkers who enjoy the excitement of a challenging workplace. We provide excellent opportunities for career development; our salaries and benefits are competitive with the best in the industry. For consideration, please send a letter of interest and outline of your qualifications to: ANHEUSER-BUSCH COMPANIES; Corporate Employment; Department S-3-L; One Busch Place; St. Louis, MO 63118. Equal Opportunity Employer M/F.



**ANHEUSER-BUSCH  
COMPANIES**

## Scientists & Chemists

Beckman Instruments, Inc. a leader in the clinical diagnostics field has an immediate need for a **Staff Scientist**. The individual will lead a group of 4-5 people and must possess strong leadership qualities and supervisory experience, as well as an ability to work independently. You should have a Ph.D. in biochemistry, immunochemistry, or equivalent with 4-5 years industrial experience in the area of immunodiagnostic reagent development. Applied knowledge of non-isotopic immunoassay development, especially in the area of enzymeimmunoassays is required.

Additionally, we have positions available for a **Scientist**, working with electrophoresis reagents and related products, and as an **Applications Chemist** providing technical support in the development and maintenance of immunochemistry and EP products. Both require at minimum a BS degree and 2 years of applicable industrial experience.

For further information, please send resume and salary history to: **BECKMAN INSTRUMENTS, INC., Employment Dept. MH, 200 S. Kraemer Blvd., Brea, CA 92621.** An Affirmative Action Employer.

**DIAGNOSTIC SYSTEMS GROUP**

# BECKMAN

A SmithKline Beckman Company

## Section Head *Biological Chemistry*

This senior position requires a highly motivated Ph.D. in Biochemistry, Molecular Biology or related field. Primary responsibility involves development and improvement of biological chemistry products and coordination with manufacturing, marketing and sales. Extensive experience in molecular biology, including nucleic acid chemistry and DNA enzymology required. Will be responsible for staff of 7-10 scientists.

## Hybridization Technology

This is a research position requiring a Ph.D. with several years experience in hybridization technology, nucleic acid chemistry, gene cloning or DNA enzymology. Must have proven capability to perform independent and creative research.

These positions offer an opportunity to play an important part in our success. For consideration, send your resume, in confidence, to:

Mr. Wayne E. Fowler

**GIBCO/BRL DIVISION**

Life Technologies, Inc.  
Box 6009, 8717 Grovemont Circle  
Gaithersburg, MD 20877  
(A suburb of Washington, D.C.)

*An equal opportunity employer, M/F/H.*

## Molecular Genetics Medical Staff Fellowship National Institutes of Health

The Molecular Genetics Section of the Genetics and Biochemistry Branch, National Institute of Arthritis, Diabetes, and Digestive and Kidney Diseases, National Institutes of Health, is offering a Medical Staff Fellowship in Molecular Genetics. Applications are invited from individuals of the highest caliber with the M.D. or M.D., Ph.D. degrees. Applicants should have two years of clinical experience and research experience is preferred. Applications are being accepted now for appointments which begin July 1987 or earlier. The appointment is for two years and there is a possibility of extension of the appointment for a third year. Medical Staff Fellows receive an initial salary of \$30,000, with increments of \$2,000 per year.

The Medical Staff Fellow may participate in the NIH Interinstitute Medical Genetics Program as well as carry out research in basic molecular genetics involving recombinant DNA

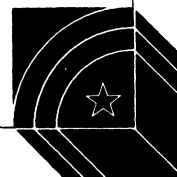
techniques and DNA-mediated gene transfer into eukaryotic cells. The research in the Section includes work on a human and other eukaryotic recombinases and the study of immunoglobulin rearrangements.

Interested candidates should submit their curriculum vitae and the name of three references to:

Dr. R. Daniel Camerini-Otero  
Chief, Genetics and Biochemistry Branch  
National Institute of Arthritis, Diabetes,  
and Digestive and Kidney Diseases  
Building 10, Room 9D-15  
National Institutes of Health  
Bethesda, Maryland 20892



NIH is an Equal  
Opportunity  
Employer



## POSITIONS OPEN

### AGRIGENETICS ADVANCED SCIENCE COMPANY

The Research Laboratory of Agrigenetics Advanced Science Company at Madison, Wisconsin, has a **POSTDOCTORAL OR CAREER POSITION** (Ph.D. level) currently available for a **PROTEIN/ANALYTICAL BIOCHEMIST** and a **LIPID BIOCHEMIST**.

The protein biochemist would undertake research on the isolation, characterization, structure, activity, or stability of proteins relevant to one or more of the in-house research programs, which are primarily involved with the expression of foreign genes in plants. This position would also have responsibility for the existing service facility for oligonucleotide synthesis and protein sequencing.

The lipid biochemist would primarily work on the synthesis, regulation, and enzymology of fatty acids and lipids, with the aim of qualitative and quantitative manipulation of oil seeds.

Relevant experience in these areas is essential. Each position would be part of a multidisciplinary group exploiting various aspects of plant biotechnology. The salary will be commensurate with background and experience.

Send résumé and names of three references by 30 April 1986 to: **Dr. John Ingle, Director, Agrigenetics Advanced Science Company, 5649 East Buckeye Road, Box S, Madison, WI 53716.**

### RESEARCH VIROLOGIST

**Beecham Laboratories**, a leading manufacturer of veterinary biologicals, has the following position available: research virologist, M.S. or Ph.D. with experience in veterinary and industrial research desirable. To apply send résumé, plus salary requirements to: **Hans Draayer, Manager Biological Research and Development, Beecham Laboratories, East Lincoln Road, White Hall, IL 62092. An Equal Opportunity Employer.**

We began with research in steroid hormones. Today, our work focuses on a dozen therapeutic areas, including cardiovascular and gastrointestinal medicine, virology, immunology and cancer diagnosis and treatment — providing high quality health care and medical diagnostic products worldwide. At the same time, we've developed a premier working environment based on a strong, positive relationship between management and staff.

### Neurochemical Pharmacologist.

You'll be responsible for setting up methods to evaluate compounds on a neurochemical basis for agonistic

and/or antagonistic properties of neurotransmitters in brain tissue, cell cultures and related systems. Neurotransmitters under evaluation include norepinephrine, acetylcholine and serotonin.

To qualify, you must have a Ph.D. in Pharmacology or Biochemistry and up to 2 years of industrial research experience. A strong pharmacology neurochemistry background required, as well as the ability to work with colleagues involved in receptor binding techniques and behavioral measures of memory dysfunction.

### Pharmacologist.

Design, implement and interpret studies in humans and laboratory

animals to define the absorption, distribution, metabolism and excretion of new drug candidates. You'll also serve as a team member on projects to acquire information necessary for IND and NDA approvals.

Requires Ph.D. in Pharmacology/Toxicology, Pharmaceutical Chemistry, Medicinal Chemistry or Biochemistry and up to 2 years' experience with quantitative drug metabolism studies involving disposition in whole animals; isolation, purification and identification of metabolites; and enzyme kinetics. Hands-on experience with analytical procedures, including radioisotopes, HPLC, GC and TLC is essential.

## POSITIONS OPEN

**RESEARCH ASSOCIATE.** Tropical Medicine, Department of Internal Medicine and Yale MacArthur Center for Molecular Parasitology, Yale University.

We seek an established molecular biologist who can take charge of a program to isolate and characterize ribonucleoprotein particles and the genes coding for their components in the African trypanosomes. Candidates' résumés must provide a detailed, rational plan for their approach to the problem. A Ph.D. or equivalent degree in biology or molecular biology is required. A minimum of 2 years of postdoctoral experience in molecular biology of RNA and eukaryotic gene expression, as well as evidence of productive research in this field is needed. This is a full-time position with a salary of \$25,800 per annum.

Interested applicants should submit their résumés to: **Mrs. Charlene Sullivan, Administrator, Yale MacArthur Center, Department of Medicine, 333 Cedar Street, New Haven, CT 06510.**

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

### RESEARCH SCIENTIST IN TUMOR IMMUNOLOGY OR TUMOR BIOLOGY

The Dana-Farber Cancer Institute, affiliated with Harvard Medical School announces an opening for a research scientist with experience in performing experiments in small animals. Applicants should have a Ph.D. (or equivalent degree) and some postgraduate training in one or more of the following areas: immunology, pharmacology, toxicology, in vivo drug testing. The successful candidate will join a team involved in research and development of immunotoxins as reagents for treatment of human cancer. The individual will be responsible for establishing appropriate tumor models in mice, including nude mice, and will use these models for the in vivo testing of the immunotoxins. Applicants should arrange for curriculum vitae and three letters of recommendation to be sent to: **Dr. W. Blättler, Division of Tumor Immunology, Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

### RESEARCH ASSOCIATE

Position available immediately for a **molecular biologist** with a Ph.D. degree or equivalent training in biochemistry, molecular biology or microbiology, and at least 3 years of postdoctoral research training. Qualified candidate needs to have considerable experience in the modern molecular biology techniques for gene cloning and analysis, both analytical and preparative, and have a proven record of high-quality research publications. Responsibilities involve gene cloning and analysis in animal and plant systems and participation in training graduate and undergraduate students. Salary negotiable. Send curriculum vitae, at least two representative refereed publications, and two letters of recommendation by 20 April 1986 to:

**Dr. C.-P. David Tu**  
Department of Molecular and Cell Biology  
Althouse Laboratory  
The Pennsylvania State University  
University Park, PA 16802  
*Equal Opportunity/Affirmative Action Employer*

**RESEARCH ASSOCIATE IV.** Conduct and develop research projects in marine food technology, especially those related to post-harvest losses in fishery products. Organize and coordinate international symposium in postharvest losses in fishery products. Conduct training program at University of Rhode Island (URI) and in developing countries and develop materials. Provide technical assistance in developing countries. Master's degree with at least 4 years of experience or doctorate in food science and technology. Strong background in sea foods. International training or exposure and foreign language proficiency in Spanish preferred; French or Arabic desirable. Submit a letter of application and résumé by 21 April 1986 to: **Dr. Tung-Ching Lee, Search Committee Chair, Research Associate IV (190166) Position, THE UNIVERSITY OF RHODE ISLAND, P.O. Box 357, Kingston, RI 02881-0357. An Affirmative Action/Equal Opportunity Employer, M/F.**

# Good Chemistry.

## IMMUNOLOGIST

(Cytokines-Immune Regulation)

THE LILLY RESEARCH LABORATORIES, a division of Eli Lilly and Company, is seeking candidates for a Senior Scientist position in the area of cytokine research and immune regulation.

Applicants must have a doctoral degree with postdoctoral training. *In vitro* and *in vivo* experience in immune regulation and cytokine action on T and/or B cells is desirable. The Immunologist will establish his/her own laboratory in a new state-of-the-art research facility located at our Corporate Center. The Senior Scientist will join a group of scientists investigating immunoregulatory cytokine biology and chemistry and developing therapeutic agents that modulate immune related disease conditions.

Qualified candidates should send their curriculum vitae to:



John W. Crooks  
Manager, College Relations (SI<sup>2</sup>)  
Eli Lilly and Company  
Lilly Corporate Center  
Indianapolis, Indiana 46285

An Equal Opportunity Employer M/F

## CLINICAL PHARMACOLOGIST

Merck Sharp and Dohme Research Laboratories, a world leader in the development of ethical pharmaceuticals for human and animal health, has an opening for a Clinical Pharmacologist.

The incumbent will support development of clinical pharmacology programs for new human health drugs. Incumbent is expected to provide critical evaluation of preclinical studies and work with staff physicians to conduct clinical trials assessing the safety, tolerability; pharmacokinetics, and pharmacodynamics of new entities in the areas of inflammation, immunology, ophthalmology, gastroenterology, and pulmonary medicine.

Candidate must have a Ph.D. or equivalent in pharmacology or toxicology; 1-2 years post-doctoral experience is desirable. Knowledge or experience in the area of clinical research would be an advantage.

We offer excellent salary and benefits. Our location is in Woodbridge, New Jersey, 30 miles from New York City. Interested applicants should submit a curriculum vitae to **Mr. Luis F. Ballester, Merck Sharp and Dohme Research Laboratories, P.O. Box 2000, WBD-214, Rahway, NJ 07065.**

EEO/AA/MF/VH/Employer



**Merck & Co., Inc.**

As a world leader in the life sciences and health care industry, we offer you a variety of opportunities to push ahead...To develop your innovative ideas using the most advanced equipment available, while benefiting from interdisciplinary collaboration within Syntex and the scientific community at large.

### Staff Researcher and Post-Doctoral Fellow.

We have openings in the following research areas:

- Receptor-Ligand systems (structure-activity relationships, post-receptor triggering and mechanisms encompassing polypeptide hormones and growth/growth-inhibitory factors)

- Mammalian viral receptor systems (RNA, DNA and retroviruses, viral attachment and mechanism of cellular entry and liposome models with novel systems)

- Cellular and biochemical processes involved in cancer development, invasion and metastasis (hormonal and growth factor regulation, oncogene products, lipid metabolism and specific enzyme mechanisms)

The staff researcher must have Ph.D and 2-6 years' related experience.

A Ph.D and up to 2 years' experience are required for the post-doctoral position.

We offer nationally competitive salaries and a comprehensive benefits package. Please send your resume with salary history to: Syntex, Professional Employment, Dept. PS/S, 3401 Hillview Avenue, Palo Alto, CA 94304. We are an equal opportunity employer.



*Expect more from Syntex.*

# Good Opportunities.



**MINISTRY FOR THE ARTS – VICTORIA – AUSTRALIA**

**MUSEUM OF VICTORIA**

**DEPUTY DIRECTOR, SCIENCE & TECHNOLOGY**

Salary negotiable up to A\$50,466 p.a.

The Ministry for the Arts is seeking applications from suitably qualified and motivated men and women for the Senior Executive position of—

**Deputy Director, Science & Technology**

The Museum of Victoria is the state's major repository for heritage collections which are unique both in their scope and value.

To better realise its community service role in education and in establishing itself as a major contributor to Victoria's further cultural and economic development, the Museum is embarking upon a new and exciting change of direction aimed at facilitating and stimulating public access and involvement through dynamic and varied exhibition programmes. Concurrent with these new developments, there is the need to maintain the high standards of curation and research activity central to the preservation, use and enhancement of the unique state collections.

*The Challenge*

The Museum's Science & Technology Division incorporates State Collections covering all facets of Man's technological activities. A major new area of emphasis concerns the integration of the Division's activities within the Museum's planned new multi campus development. The successful applicant will have the opportunity to make a significant contribution towards implementation of this new development and will be an innovative thinker capable of formulating the necessary policies to achieve this goal. The Deputy Director will be responsible for managing the development and ongoing operation of the Science & Technology Division to ensure the maintenance of effective and efficient curatorial and research practices and the provision of reliable information and expert advice at all levels.

*The Successful Person Should Have*

- A record of leadership, innovation and achievement at a senior level.
- Demonstrated high level ability to develop, research, maintain and expand public interest and awareness of the Museum's collection in science and technology.
- Ability to develop appropriate strategies for and oversee the establishment and successful implementation of the Museum's multi campus facilities.
- Demonstrated high level communication skills and the ability to represent the Museum in scientific and other forums.
- Significant experience in policy development and analysis preferably in the fields of science and technology.
- Appropriate tertiary qualifications and the ability to provide leadership in the co-ordination of the division's research activities.
- Demonstrated ability to operate as an effective member of a senior management team.

Conditions of employment are consistent with those in the Victorian Public Service. Salary will be negotiated up to \$50,466 p.a. Expense of office allowance of \$2,313 p.a. is also payable. Partial reimbursement of relocation expenses is negotiable.

**Further information may be obtained from Mr. G. Jephcott on 669 8618, Melbourne, Australia.**

**Applications from men or women should be forwarded to the Personnel Manager, Ministry for the Arts, 168 Exhibition Street, Melbourne, 3000 Australia by 30th April 1986.**

## DNAX Research Institute

### Postdoctoral Fellowships In Molecular Immunology

DNAX Research Institute has two postdoctoral fellowships available immediately. One is with Dr. Gerard Zurawski for the molecular study of proteins secreted from stimulated cloned mouse T-helper cells. The aim is to uncover and characterize novel proteins of immunological relevance. The second is with Dr. Frank Lee to study the expression and regulation of genes involved in the differentiation of hemopoietic cells, including genes for lymphokines and growth factors.

Candidates should have a PhD and have competence in the basic techniques of molecular biology.

DNAX is supported by Schering-Plough Corp. as a separate institute committed to basic research in immunology and molecular biology and to productive collaborative efforts between the two groups in an open academic-like atmosphere.

DNAX two-year postdoctoral fellowships have generous stipends and benefits. Applicants should send a curriculum vitae, a concise statement of research interests, and the names of three references to the Human Resources Dept., DNAX Research Institute of Molecular and Cellular Biology, 901 California Ave., Palo Alto, CA 94304-1104. An equal opportunity employer.

### MOLECULAR BIOLOGIST/BIOCHEMIST SCIENTIFIC PROJECT LEADER

A member of the InterMed Group and part of British Tire and Rubber, InterLab participates in the development of products with applications in human diagnostics, cell culture and immunology.

We are seeking a scientist to provide technical and scientific contact between our R & D effort and the scientific community. The purpose of contact is to describe and evaluate trends in the diagnostic field, prepare suggestions for new products and product improvements, and provide technical/scientific support to customers and sales/marketing department.

To qualify, candidate must have Ph.D. and experience with emphasis in cell biology/cell culture and immunology and particular interest in structure of biologically active molecules, their physical/chemical properties and their interaction with solid matrices.

We offer a competitive salary, a comprehensive benefits package, and advancement opportunity.

If you can document ability to conduct research on the basis of your own thesis and are willing to travel in the U.S. and internationally 35% please submit a detailed curriculum vitae, list of publications, letter of recommendation, salary requirements and history to:

Human Resources Department  
InterLab  
187 East Wilbur Road, Suite 10  
Thousand Oaks, CA 91360



An equal opportunity employer

United States Department of Agriculture

### Postdoctoral Research Associates

The Agricultural Research Service as the principal scientific research agency of USDA, conducts research to produce more and better food and fiber; to control insect pests and weeds safely; to get food to consumers in better condition; to help protect soil, water, and air, and to find new uses for agricultural commodities. Much of the work is on the cutting edge of each discipline—biotechnology (including molecular biology, genetic engineering, and membrane research), application of theories of artificial intelligence to computer technology, and innovative approaches to pest control through insect neurochemistry and the use of pheromones.

**ARS is currently recruiting 100 postdoctoral positions throughout the country. Opportunities exist in the following research areas:**

- Genetics
- Biochemistry
- Chemistry
- Microbiology
- Animal Science
- Veterinary Science
- Physiology
- Entomology
- Plant Physiology
- Plant Pathology
- Agronomy
- Soil Science



Successful candidates will be hired under excepted appointments up to 2 years in duration. Salary for these GS-11/12 positions (\$26,381 to \$31,619) will be based on qualifications and experience. Candidates must be U.S. citizens.

*For information on positions available and application procedures, write to:*

N.L. BAKES  
Personnel Division (S)  
USDA/ARS  
Building 003, BARC-W  
Beltsville, MD 20705

ARS is an Equal Opportunity Employer. Women and Minorities are Encouraged to Apply.

## POSITIONS OPEN

**RESEARCH ASSOCIATE** position available to synthesize and test the biological activity of  $\beta$ -lactam antibiotics and pretazettine analogues. Applicant must have Ph.D. in organic chemistry and 2 years of postdoctoral experience. Familiarity with cycloadditions and knowledge of biological screenings preferred. Candidate should have skills to isolate regio- and stereoisomers using flash chromatography. Salary \$15,000. Send résumé by 15 April 1986 to: **Dr. S. W. Baldwin, Department of Chemistry, Duke University, Durham, NC 27706.** *Duke is an Affirmative Action/Equal Opportunity Employer.*

### RESEARCH DIRECTOR MIAMI CHILDREN'S HOSPITAL RESEARCH INSTITUTE

Applications are invited for the position of director of the newly created Miami Children's Hospital Research Institute. The institute will be broadly focused, but with an emphasis on nutrition. The institute is seeking an individual with academic distinction and a proven record of administrative abilities to be involved with all aspects of the development of the institute. Please send résumé to: **Stanley B. Smith, M.D., Chairman of the Research Institute Search Committee, Miami Children's Hospital, 6125 SW 31 Street, Miami, Florida 33155.** *Equal Opportunity Employer.*

**RESEARCH SCIENTIST.** To do research in the synthesis of antiviral and anticancer agents. Must have Ph.D. degree in chemistry and 4 years of postdoctoral research experience in related field. Must have demonstrated abilities and achievements in the synthesis of nitrogen-tellurium heterocycles, nucleosides, nucleotides, aminoacids, and cyclic peptide antibiotics. Salary: \$35,000 per year. Send résumé to: **Dr. Roland K. Robins, Nucleic Acid Research Institute, 3300 Highland Avenue, Costa Mesa, CA 92626.**

### SENIOR RESEARCH ASSOCIATE

Protein biochemist holding Ph.D. degree and at least 2 years of postdoctoral training to be an active participant in well-developed but innovative study of biologically relevant protein-lipid interactions. Problem area deals primarily with separation, isolation and characterization of unique human liver secretory proteins having a variety of biological functions. Co-workers consist of an interactive group already of critical size for productivity. Candidates should have appropriate biochemistry, cell biology, and possibly applied immunochemistry experience. Submit complete résumé and names of three references to: **G.I. Research Unit, Cleveland Clinic Foundation Research Institute, 9500 Euclid Avenue, Cleveland, 0410-44106.** *An Equal Opportunity Employer.*

### SENIOR SCIENTIST

The **W. ALTON JONES CELL SCIENCE CENTER**, Lake Placid, New York, is seeking innovative and experienced molecular biologist to direct independent research in the field of molecular and cellular biology.

We are seeking dedicated and talented scientific professionals with interest in cell biology and growth factors. The successful candidate will have a doctorate in molecular and cellular biology with at least 3 years of postdoctoral experience. Candidates must have the ability to supervise others. Liberal benefits. Salary will be commensurate with experience.

Applicants are requested to submit curriculum vitae with list of publications and three letters of academic references by 15 May 1986 to:

**Personnel Manager  
W. ALTON JONES CELL SCIENCE CENTER  
10 Old Barn Road  
Lake Placid, New York 12946**

Please refer to Job Order SA-606

*An Affirmative Action/Equal Opportunity Employer*

**TECHNICIAN—Microbiologist/Biochemist.** Dynamic biotechnology firm seeks motivated, intelligent person for R&D project in virology. Background in nucleic acids, cell cultures, and enzyme assays desirable. Excellent salary, benefits depending on experience and education—B.S., M.S., or Ph.D. MBT, Inc., 3508 Market Street, Philadelphia, PA 19104. Telephone: 215-386-9800.

## POSITIONS OPEN

### VISITING SCIENTIST

Visiting scientist position available starting May 1986 for 2 years to study the hormonal control of differentiation of teratoma cell lines at the cellular and molecular levels. Work will involve protein purification and DNA recombinant technologies. The position requires experience in molecular biology or protein biochemistry. Postdoctoral candidates with a Ph.D. should send curriculum vitae and three names of references, statement outlining research interest, and career goals to:

**Lorraine L. G. Tyler  
Personnel Manager  
W. ALTON JONES CELL SCIENCE CENTER  
10 Old Barn Road  
Lake Placid, New York 12946  
Please refer to Job Order SE-605  
*An Affirmative Action/Equal Opportunity Employer***

A **MEDICAL WRITER/EDITOR** is needed to research, write, edit, and direct the development of a new, national newsletter devoted to environmental health issues. The editor will work with scientists of national stature, preparing articles for medical and allied health professionals. Send résumé to: **Health and Environment Digest, Box 90, Navarre, MN 55392.**

## SYMPOSIUM

### SHORT-TERM GENETIC BIOASSAYS IN THE EVALUATION OF COMPLEX ENVIRONMENTAL MIXTURES

The fifth edition of this biennial symposium will be held 20 to 23 October 1986 at the Sheraton University Center, Durham, North Carolina under the sponsorship of the Genetic Toxicology Division, U.S. Environmental Protection Agency, Research Triangle Park, North Carolina.

Topics to be discussed include: new chemical and biological methods in complex mixtures research; indoor air pollution; hazardous wastes; genetic toxicity in aquatic organisms; integrated *in-situ* monitoring; chemical transformation of atmospheric genotoxins; exposure assessment, molecular dosimeters and risk assessment for complex mixtures. **Abstracts must be submitted by 1 July 1986.**

For further details and registration forms, write or telephone: **Dr. Shahbeg Sandhu, Scientific Coordinator, U.S. Environmental Protection Agency, MD-68, Research Triangle Park, NC 27711. Telephone: 919-541-3850.**



### MODERN BIOLOGICAL THEORIES OF AGING

(Sponsored by Brookdale Foundation and NIA)  
3 to 6 June 1986

**Daytime location:** Mount Sinai Medical Center,  
New York, NY

**Evening:** American Museum of Natural History

This major symposium brings together outstanding leaders both in aging and in biomedical research to re-examine the theories of aging. Among those presenting are **Dr. Caleb Finch, Dr. Leonard Hayflick, Dr. George Martin, Dr. Irwin Fridovich and Dr. David Gershon.** Topics include free radical damage, error catastrophe, DNA damage and repair, developmentally programmed aging, evolution of life-span and organ systems as pacemakers of aging.

**Fee (including luncheon):** \$200.00, Student: \$25.00  
Registration limited to 1000

For further information, contact: **Dr. Kenneth Smith, Director, The Page and William Black Post-Graduate School of Medicine, Mount Sinai School of Medicine, One Gustave Levy Place, New York, NY 10029. Telephone: 212-650-6737.**

## COURSES

**TRANSMISSION ELECTRON MICROSCOPY—**Preparative Techniques for Biological Samples. An intensive hands-on course teaching the basic skills required for electron microscopy. Approved for CMLC credits through ASCP. Registration: \$325. Dates: 9 to 12 June 1986. For information and registration form, contact: **Dr. Marcelle Gillott, Center for Electron Microscopy, 74 Bevier Hall, 905 South Goodwin Avenue, Urbana, IL 61801; telephone: 217-333-2108.**

## CONFERENCE

**The New York Academy of Sciences  
Conference On:  
PHYSIOLOGICAL NMR SPECTROSCOPY:  
FROM ISOLATED CELLS TO MAN  
24–26 September 1986  
Vista International Hotel, New York City**

NMR spectroscopy is rapidly emerging as a probe of metabolism *in vivo*, in both physiological and pathological contexts. This interdisciplinary meeting of an international group of researchers will disseminate recent advances in methodology and clinical and basic research applications of physiological NMR, and will consolidate recent results from NMR studies of cerebral, cardiac, hepatic, renal, and tumor metabolism; ion transport; and spatial localization of signals.

There will be contributed poster sessions. The deadline for submission of abstracts is 1 June 1986. A 200-word summary of work to be presented should be sent to: **Dr. Sheila M. Cohen, Department of Biophysics, Merck Institute for Therapeutic Research, P.O. Box 2000, Rahway, NJ 07065.**

Chairs: **Sheila M. Cohen**, Merck Institute for Therapeutic Research and **Jeffrey R. Agler**, Yale School of Medicine, New Haven, CT.

Inquiries should be addressed to: **Conference Department, The New York Academy of Sciences, 2 East 63 Street, New York, NY 10021.**

## CONFERENCE

**OCCUPATIONAL AND ENVIRONMENTAL HAZARDS TO REPRODUCTION:** 28–30 April 1986, Hyatt Regency Bethesda, Bethesda, Maryland. Session Topics: Effects on Male Reproductive Function; Laboratory and Methodologic Approaches; Industries and Occupations; Epidemiology; Surveillance; Ethical, Policy, and Regulatory Issues. For information contact: **Society for Occupational and Environmental Health, 2021 K Street, NW, Suite 305, Washington, DC 20006. Telephone: 202-737-5045.**

## GRANTS

### RESEARCH GRANTS

The Board on Science and Technology for International Development (BOSTID) of the National Research Council offers grants to developing country investigators on selected topics of interest for international development. These topics are grain amaranth, biological nitrogen fixation, tropical trees, mosquito vector field studies, development of methodologies for rapid epidemiologic assessment, and acute respiratory infections in children. Grants are available to developing country institutions for research in developing countries only. The grants program is supported with funds from the Office of the Science Advisor, U.S. Agency for International Development.

For further information and guidelines for proposal submission, please write:

**Dr. Michael P. Greene  
Associate Director/Research  
Board on Science and Technology  
for International Development  
National Academy of Sciences  
2101 Constitution Avenue, NW  
Washington, DC 20418**

# CONGRESS ON RESEARCH IN LYMPHOKINES AND OTHER CYTOKINES BASIC BIOLOGY AND STRATEGIES FOR CLINICAL APPLICATION

AUGUST 10-13, 1986

BOSTON MARRIOTT COPLEY PLACE, BOSTON

Organized by

Mary Ann Liebert, Inc. and Scherago Associates, Inc.

This meeting will focus mainly on interleukins, interferons, and cytotoxic cytokines, highlighting their potential importance in human disease. This meeting is timely because many of these agents are available in pure form as a result of advances in conventional protein purifications and molecular biologic techniques. An attempt will be made to integrate studies of the mechanism of actions of these agents and their application in the treatment of disease.

The symposium will take place Monday and Tuesday from 8:30 am – 6:00 pm and Wednesday until 12 noon. Discussion groups based on poster sessions will be held Monday and Tuesday evenings. Table top exhibits will also be presented.

## CO-CHAIRMEN

*Stanley Cohen*, Professor of Pathology, University of Connecticut Health Center, Farmington

*Jan T. Vilcek*, Professor of Microbiology, New York University Medical Center, New York

## TENTATIVE PROGRAM

### SUNDAY EVENING, AUGUST 10

#### KEYNOTE ADDRESS: MECHANISMS OF CELL PROLIFERATION

Speaker: *Renato Baserga*

### MONDAY, AUGUST 11

#### TUMOR NECROSIS FACTOR AND OTHER CYTOTOXIC MEDIATORS

Chairman: *P. Henkart*

Comparison of TNF and Lymphotoxin: *B.B. Aggarwal*

Cachetin: *B. Beutler*

Soluble Factors in Cell-Mediated Cytotoxicity: *P. Henkart*

Regulation of Hematopoietic Cells by Cytotoxins: *G. Trinchieri*

#### INTERFERONS AS REGULATORY AGENTS

Chairman: *M. Revel*

Beta<sub>2</sub> Interferon: *M. Revel*

Growth Factors as Interferon Inducers: *J. Vilcek*

Interferon Receptors: *S. Pestka*

Regulations of Oncogenes Expression by Interferons:

*R.M. Friedman*

### TUESDAY, AUGUST 12

#### INTERLEUKIN 2 AND OTHER GROWTH FACTORS

Chairman: *T.A. Waldmann*

The Nature of IL 2 Receptor: *T.A. Waldmann*

IL 2 Ligand-Receptor Interactions: *K.A. Smith*

Intracellular Transduction Pathways in IL 2 Stimulation: *S. Cohen*

Protein Kinase C in IL 2 Action: *W.L. Farrar*

B Cell Growth Factor: *A.L. Maizel*

#### INTERLEUKIN 1, COLONY STIMULATING FACTORS

Chairman: *C.A. Dinarello*

Structural Studies of IL 1: *C.A. Dinarello*

The Role of IL 1 in the Central Nervous System:

*L.B. Lachman*

IL 1 and Rheumatoid Arthritis: *E. Amento*

Biologic Effects of Colony Stimulating Factors: *M. Moore*

### WEDNESDAY MORNING, AUGUST 13

#### POTENTIAL CLINICAL APPLICATIONS

Chairman: *C.F. Nathan*

Interferon in Malaria: *V. Nussenzweig*

LAK and IL 2 in Cancer Therapy: *M.T. Lotze*

Adoptive Transfer of Interferon-Activated Macrophages:

*H.C. Stevenson*

Gamma Interferon in Leprosy and AIDS: *C.F. Nathan*

CONCLUDING REMARKS: *S. Cohen, J. Vilcek*

#### REGISTRATION FORM

\$350 – Registration Fee

\$175 – Student fee, undergraduates & graduates only (status must be confirmed in writing)

Attendance will be limited. Make checks payable to: Scherago Assoc., Inc., L & C Congress

Please reserve \_\_\_\_\_ space(s): Registration Fee must be included. ☐ Request Poster Session Abstract Form  
Cancellations must be received in writing by July 1, 1986.

Name \_\_\_\_\_

Dept. \_\_\_\_\_

Organization \_\_\_\_\_

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Return to: CONGRESS ON RESEARCH IN LYMPHOKINES AND CYTOKINES

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## GRANT

### HERBAL MEDICINE RESEARCH GRANTS

Research grants are being offered by Tsumura Juntendo, a leading producer of Kampo (oriental herbal) medicines. Financial support of up to \$25,000 annually for a 2-year period will be awarded for basic and clinical research which seeks to provide deeper insight into the chemistry, pharmacology, and clinical effects of traditional herbal medicines. Especially encouraged are original ideas for scientific studies of Oriental medicines which may not have the preliminary data needed to attract other support. Annual application deadlines are 1 January and 1 July. For details, write: Tsumura Juntendo, Inc., c/o Michael Solomon, Ph.D., 509 Madison Avenue, Suite 1708, New York, NY 10022. Telephone: 212-223-3340.

## PROGRAMS

### MONTREAL DEVELOPMENTAL ONCOGENETICS BRANCH LUDWIG INSTITUTE FOR CANCER RESEARCH DEVELOPMENTAL BIOLOGY GROUP

The Montreal Branch of the Ludwig Institute is initiating a research program directed towards understanding the molecular nature of genetic lesions that predispose to human cancer and the relationship of these mutations to normal organismal development.

An established individual or group with recognized accomplishments and expertise in mammalian development is required to provide an integral section within a large interdisciplinary cancer research group. We are particularly interested in individuals studying the development of the nervous system and the relationship between embryogenesis and neoplasia using molecular and cellular approaches including mouse chimeras, transgenic mice, in situ hybridization, and immunocytochemistry. Fluency in the English language is a necessity; fluency in French is desirable.

Applications, including curriculum vitae, names and addresses of three internationally known referees, and a synopsis of skills and past accomplishments should be sent by 30 April 1986 to: The Director, Montreal Branch, Ludwig Institute for Cancer Research, Royal Victoria Hospital, 687 Pine Avenue, West, Montreal, P.Q., Canada H3A 1A1.

Priority consideration will be given to Canadian citizens and permanent residents.

### CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: Ph.D.-O.D. Program Director, Admissions Office, The New England College of Optometry, Room 15, 424 Beacon Street, Boston, MA 02115.

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP** to study production and regulation of secondary metabolites in normal and transformed plant tissue cultures. Work involves preparation of cultures and analysis of compounds by HPLC and related techniques. Prior experience in this field nonessential. Salary \$1700 Canadian per month. Appointment starting 15 May 1986. Send complete curriculum vitae and three letters of reference to: Dr. Joan McPherson, Botany Department, The University of British Columbia, Vancouver, British Columbia, Canada V6T 2B1.

**POSTDOCTORAL FELLOWSHIP** is available beginning 1 May 1986 to study hematological features of adaptation to cold and hypoxia and the effect on mechanisms involved in erythropoiesis. The fellowship is for 1 year, but it can be renewed. Annual stipend is \$27,000. Candidates must have 3 years of experience in hematology or closely related discipline. Send curriculum vitae and three references to: Natalio Banchemo, M.D., Department of Physiology, C240, University of Colorado School of Medicine, Denver, CO 80262. *Equal Opportunity/Affirmative Action Employer*

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIP IN SYSTEMATIC ICHTHYOLOGY

Position will consist of using museum collections to conduct independent research in fish systematics and to assist with collection management and public program activities. One year with possibility of renewal. Stipend \$22,517.40 per year. Starting date negotiable. Send curriculum vitae, brief outline of proposed research, and names of three referees to: Dr. Camm C. Swift, Division of Life Sciences, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007. Telephone: 213-744-3375. Applications received before 1 May will receive special consideration. *An Equal Opportunity Employer.*

**POSTDOCTORAL FELLOWSHIPS IN IMMUNOLOGY**—NIH training grant for M.D.'s or Ph.D.'s starting 1 July 1987, in combined Clinical Immunology/Allergy/Rheumatology Unit. Research training emphasizes human immunology in either bench or patient-oriented research, including IgGfC receptor structure and function, genetic regulation and molecular biology of autoantibodies and cryoglobulins, and complement biology, plus opportunities for broad clinical experience toward board certification in either allergy-immunology or rheumatology in a referral center drawing from a ten-county region. U.S. citizen or immigrant visa (green card). MSMP deadline 9 May. Contact: Dr. Clark Anderson, University of Rochester Medical Center, Box 695, Rochester, NY 14642. Telephone: 716-275-2891.

**BIOLOGICAL CONTROL FELLOWSHIP**—The Division of Biological Control, Department of Entomology, at the University of California, Riverside, announces the availability of the Professor Harry Scott Smith Predoctoral Fellowship in Biological Control. The fellowship provides a stipend of \$9000 per year for 2 years, plus tuition and fees, and will be awarded to a highly qualified Ph.D. candidate interested in pursuing research on the use of natural enemies to control arthropod pests or vectors. For further information, contact: Head, Division of Biological Control, University of California, Riverside, California 92521.

### FELLOWSHIPS IN REPRODUCTIVE BIOLOGY VANDERBILT UNIVERSITY

Predocctoral and postdoctoral fellowships are available in reproductive biology, biochemistry, and endocrinology. Training includes testicular biochemistry and physiology, epididymal, endometrial and luteal function, fertilization, peptide and steroid hormone receptors, steroid chemistry, and male reproductive behavior. Participating faculty includes: Frank Chytil (mechanism of vitamin A in reproductive tissues), John G. Coniglio (role of lipids in reproductive tissues), Benjamin J. Danzo (hormonal regulation of male reproductive function), David L. Garbers (physiology of sperm), Loren H. Hoffman (structural and functional aspects of mammalian implantation), Lee E. Limbird (adrenergic receptors), Gary E. Olson (post testicular sperm development), Marie Claire Orgebin-Crist (male reproductive physiology), J. Bradley Powers (neuroendocrine regulation of male reproductive behavior), Howard E. Smith (affinity labeling of steroid receptors and binding proteins). Only U.S. citizens and permanent residents are eligible for appointment. For further information, please write: Dr. Frank Chytil, Program Director, Department of Biochemistry, Vanderbilt University, Nashville, Tennessee 37232.

*An Equal Opportunity Employer*

### POSTDOCTORAL FELLOWSHIP CONTRAST AGENTS

Department of Radiology at Harvard Medical School and The Brigham and Women's Hospital has an NIH-NRSA postdoctoral position available in the Contrast Agent Laboratory, 1 July 1986. Active projects include paramagnetic NMR imaging agents and liposome delivery of computed tomography contrast materials. Chemist with some experience in NMR, liposomes, radioactivity, metal ligands, or biodistribution studies desired. For more information, write to: Monte Blau, Ph.D., Radiology Department, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115. *The Brigham and Women's Hospital is an Equal Opportunity/Affirmative Action Employer.*

## FELLOWSHIPS

**DOCTORAL AND POSTDOCTORAL FELLOWSHIPS** for studies of problems in international peace and security. Especially interested in problems of command, control, and communications. Send résumé and statement of interest to: M. Granger Morgan, Carnegie-Mellon University, Pittsburgh, PA 15213. Telephone: 412-268-2672.

**POSTDOCTORAL FELLOWSHIP** position available to study the biogenesis and membrane insertion of lipid synthesizing enzymes in liver. A strong background in molecular biology and/or lipid biochemistry and protein isolation is required. Salary \$17,000 to 19,000, depending on experience. Starting date—summer. Send curriculum vitae to

Dr. Dominick Cinti  
Pharmacology Department  
University of Connecticut  
Health Center  
Farmington, CT 06032

*An Affirmative Action/Equal Opportunity Employer, M/W/H*

New York University's **ADVANCED MANAGEMENT PROGRAM FOR CLINICIANS** invites applications from outstanding health care professionals interested in the development of management skills. **KELLOGG FELLOWSHIPS** covering tuition are available. Fellows may pursue full-time or part-time study leading to an M.S. in management or an advanced professional certificate. Contact: Professor Rodwin, Graduate School of Public Administration, New York University, 738 Tisch Hall, New York, NY 10003. Telephone: 212-598-7520 or 598-3246.

## MARKETPLACE

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### STATISTICAL SYSTEM FOR MICROS—\$79

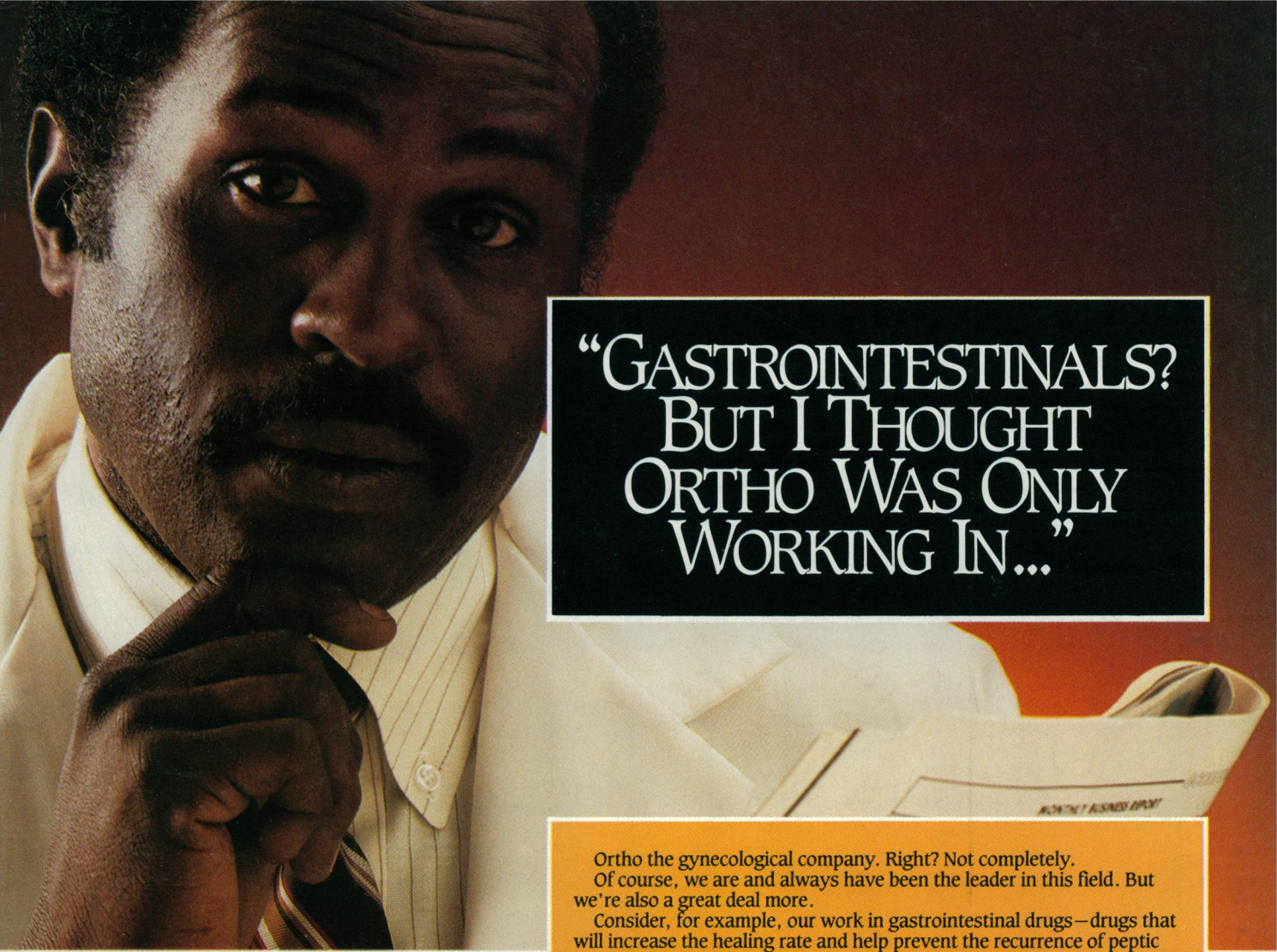
Easy-to-use menus; spreadsheet. Includes mult, stepwise, & robust regression. Time series. T-tests. Up to fourway ANOVA. Repeated measures. Nonparametrics. Cross-tabulation. Factor, principal component, discriminant, and cluster analysis. Scatter & Box plots. Histograms. Sort, join, subset. Phone 801-546-0445. VISA/MC. IBM-PC, Macintosh. NCSS, 865 E. 400 N., Kaysville, Ut. 84037.

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## CP/M: ALPHABETIZE

**Linesort.Com** for 8080/Z80 processors reads input from text file for alpha-numeric sequencing of lines. Output to printer or editable file on disk. Send \$13, specifying 5.25 in. format required, or send \$1 for a printout of **Linesort.Doc** Biolit Inc., P.O. Box 2037, Corvallis OR 97339





**"GASTROINTESTINALS?  
BUT I THOUGHT  
ORTHO WAS ONLY  
WORKING IN..."**

Ortho the gynecological company. Right? Not completely. Of course, we are and always have been the leader in this field. But we're also a great deal more.

Consider, for example, our work in gastrointestinal drugs—drugs that will increase the healing rate and help prevent the recurrence of peptic ulcer disease.

We are currently involved in clinical trials with a prostaglandin with antisecretory and cytoprotective activity. And that's just the beginning.

We're also investigating monoclonal antibodies for therapeutic uses as well as anti-infective and cardiovascular drugs. And we're the foremost dermatological company.

In short, we're a diversified leader—an ideal place for scientists who want to work in an environment where their creativity, their opinions and their judgments are valued and rewarded.

Add all this to the fact that we're part of the Johnson & Johnson family of companies, and you'd be hard pressed to find a better place to work.

Right now we're looking for pharmacologists, analytical chemists, organic chemists and biochemists with a PhD and 5–7 years' experience.

So, whether or not you have considered Ortho in the past, perhaps you should now. We're a lot more than you think. We invite you to forward your resume and salary requirements in confidence to: Manager Selection, Dept. C-3, Ortho Pharmaceutical Corporation, Route 202, Raritan, NJ 08869-0602. An equal opportunity employer.

**ORTHO**



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Corporation**

*A Johnson & Johnson Company*

**A LOT MORE THAN YOU THINK.**



# "Where's Mike's Poster?"



Mike didn't get his results in time to present his paper. He got stuck doing methods development for amino acid analysis. If only he'd known that Waters had already dedicated years of research to perfecting the Pico•Tag™ method of analysis for primary and secondary amino acids.

If you're concerned about doing amino acid analysis quickly, without investing your own valuable time, then let Waters get you up and running in less time. And with faster analysis times: a complete compositional analysis in 12 minutes—with 1 picomole sensitivity. Or physiologic amino acids from 10  $\mu$ l of plasma in 90 minutes. And we're dedicated to keeping you up

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"Application support has been excellent." – University Researcher

"Thanks to Waters Application Specialists for the success of our program." – Pharmaceutical Research Manager

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