

medieval social and economic changes with which these came to be associated. In fact, the Church's construal of the providential design in the later Middle Ages contributed significantly to the social and attitudinal configurations that accelerated technological development.

What the medieval idea of progress did not contribute to that development is as central a concern of Ovitt's book as what it did contribute, and this strikes directly at some widely influential (although not previously unchallenged) scholarship that has undertaken not only to trace major roots of Western technological attitudes and developments back to the medieval centuries (a lineage Ovitt does not deny) but also to show that medieval theology and religious institutions provided the requisite "cultural climate" that nurtured technological growth in the first place (which Ovitt contests). Ernst Benz and Lynn White, for example, have seen medieval man's special relationship with God—God the Creator, Architect, and Craftsman, the continuance of Whose work is a form of prayer—as a license for the dominance, even exploitation, of nature for man's benefit, using technology to expedite that sanctified labor. For Jacques Le Goff, Christian doctrine did not create the conditions for the technological growth that occurred (these were social and economic), but it did respond, before the end of the medieval period, with a new theology generally cordial to man's dominance over the physical world and his utilization of technology to that end. Max Weber and Lewis Mumford (echoed by Herbert Workman and Lynn White) have argued that from the outset Benedictine monastic ideology and practices provided an effective institutional context for the pursuit of a dynamic ethic of work, invention, dominance, and exploitation.

Ovitt, essentially on the basis of his reading of Christian hexaemeral literature (dealing with the six days of creation) and of some of the formative theology and rules relating to Benedictine monasticism, does not find the license for an exploitative dominance of nature, with or without technology, in the medieval perception of God as Craftsman, of man as custodian, or of monasticism as a social instrument of God's doing. Quite to the contrary, the relevant theology exalts a morally ordered, mutually sustaining and non-exploitative relationship between man and nature before the Fall, associates such exploitative attitudes and conduct with postlapsarian sin, and by implication (indeed by regulation within the monastic community) counsels a moral and practical ordering of labor compatible with spiritual values and priorities. Nor, incidentally,

does Ovitt view the inclusion of the mechanical arts within the Christian classification of knowledge (as articulated by the mid-12th century) as a sanctification of technology (discernible, according to Lynn White, in other medieval artifacts); as reflected in the theological sources examined here, the mechanical arts remained inferior and subsidiary to theological disciplines and spiritual exercises.

In Ovitt's view, the conditions that nurtured the gradual technological, economic, and social changes that did occur in medieval Europe, the accumulative effects of which were profoundly evident by the 12th century (as is reliably documented here), were formatively energized by secular forces and not by theology (in any direct or formal way). Official theological and ecclesiastical dispositions of the 12th and 13th centuries, viewed as consonant with providential design, did, however, contribute decisively to the new dynamism of medieval civilization. These did not amount to the elevation at last (compare Le Goff) of technology and its associated activities (production, profit, and so on) to a higher theological status, much less to a doctrinal sanction of Church involvement in secular affairs (early experiences of that sort quickly revealed their spiritually compromising impact). To preserve its spiritual integrity and superiority, and with the effect of demonstrating its moral and social force, the Church (including its great monastic institutions) withdrew from the mundane world and, in its major doctrinal formulations, assigned that world and its activities to a providentially structured secular society. A significant element in this, for Ovitt, was what he calls "the secularization of labor." Nor did the Church thereby condemn all the world except itself to Hell. Secular life, even when successful, did not necessarily preclude salvation; indeed, newly constituted mendicant orders dispatched friars bearing salvatory assurances and remedies.

The implications for labor and technology thus consigned to the secular realm and increasingly free of moral restraint (a morality still valued by the Church but largely in terms of its own internal life) were enormous. One might rejoice in the new impetus to technological inventiveness and industrial expansion provided from then onward by secular entrepreneurial forces, but Ovitt himself is not inclined to do so. His overriding concern—a grave one, which pervades the book from its title to its conclusion—is what he perceives to be, concurrent with Western technological and economic developments ever since the later Middle Ages, the persistent failure to restore a lost perfection. This perfection refers to that harmony

among man, labor, and nature and to that balance of physical, intellectual, and spiritual work which Genesis describes, which medieval theology prescribes (although at the end largely for the Church itself), and which, to some degree, our early medieval ancestors may have possessed, or at least valued. The secularizing processes, clearly evident by the later Middle Ages, have extended to subject the majority of men and women (Ovitt is expansive in his inclusion of women and the special effects of change upon them) to impersonal political and economic forces; to separate people from the products of their labor; to vitiate the power of labor to restore and sustain spiritual and moral vigor; and to unleash upon nature a relentless and destructive technological assault.

Whether one prefers to detect and value Judeo-Christian, or Marxian, or purely idiosyncratic overtones in Ovitt's plaint, it deserves to be taken seriously by anyone who recognizes something less than perfect, and yet perhaps not irremediable, in the social and ecological realities of our world. With respect to medieval technology itself, Ovitt, with his own battery of cultural evidence, mounts an intriguing rebuttal of the argument of Lynn White and others that cultural factors constituted the primary causal or catalytic conditions for growth. He does not appreciably describe or account for the specific secular ingredients which must, then, have nurtured the original energy, inventiveness, and initiatives, but he does not claim to do so. Ovitt's perception of a theologically sanctioned assignment of the conduct and control of labor and technology to the secular realm, with all its implications, is a masterful intellectual achievement and, subject to inevitable scholarly testing, an important contribution to an understanding of our medieval heritage.

BRADFORD B. BLAINE
Department of History,
Scripps College,
Claremont, CA 91711

Books Received

Accretion Processes in Astrophysics. J. Audouze and J. Trân Thanh Vân, Eds. Editions Frontières, Gif sur Yvette, France, 1986. x, 215 pp., illus. \$30. From a meeting, Les Arcs, France, March 1986.

Acromegaly. A Century of Scientific and Clinical Progress. Richard J. Robbins and Shlomo Melmed, Eds. Plenum, New York, 1987. xii, 290 pp., illus. \$59.50. Sero Symposium, USA (San Francisco, CA, July 1986).

Alice Hamilton. A Life in Letters. Barbara Sicherman. Harvard University Press, Cambridge, MA, 1987. xvi, 460 pp. + plates. Paper, \$9.95. Reprint, 1984 edition.

Aquatic Plants for Water Treatment and Resource Recovery. K. R. Reddy and W. H. Smith, Eds. Magnolia, Orlando, FL, 1987. xxiv, 1032 pp., illus. \$120. From a conference, Orlando, FL, July 1986.

(Continued on page 1044)

Products & Materials

System for Rapid Filtration

The RFS-4 performs filtration experiments in as little as 10 msec. A motorized, microprocessor-controlled injection syringe forces filtration buffer through any standard 25-mm filter at a flow rate between 10 μ l/sec and 7.5 ml/sec. Automatic experiments can last as long as 10 seconds, and longer experiments may be performed manually. Mechanical parts are constructed of medical-grade stainless steel. A digital display shows filtration time, flow rate, and volume. CosmoLogic, Rapid Kinetics Division. Circle 614.

Electronic Pipette

An electronic pipette that can be programmed with a series of different liquid-handling steps is available. The operator need only press one button to initiate the entire sequence. Functions that can be programmed include dispensing volumes of 10 to 1000 μ l, performing serial dilutions, and repetitively dispensing or performing a titration sequence. The pipette accepts nozzles of 50, 200, or 1000 μ l. The operator can vary the speed of delivery, reverse dispense, or automatically calibrate the unit. Precisions of 0.2% are possible. Medical Laboratory Automation. Circle 621.

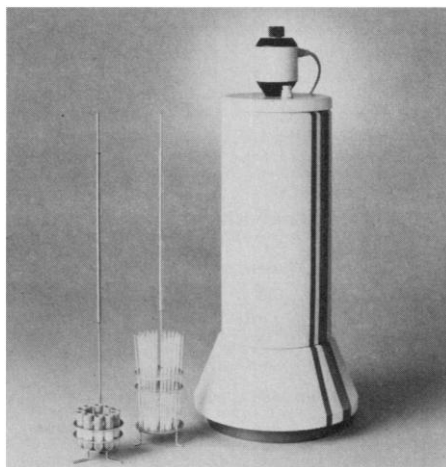
Plasmid with Multiple Cloning Region

The Riboprobe System pSP64 polyadenylated [poly(A)] vector is identical to pSP64 with the exception that a length of 30 dA:dT residues have been inserted between the Sac I and the Eco RI sites. Therefore, when foreign DNA is cloned into any site other than Eco RI, linearization of the recombinant with Eco RI allows SP6 RNA polymerase to be used in vitro to prepare RNA copies of the inserted sequences that contain a synthetic 3' poly(A) tail of 30 residues. Promega. Circle 620.

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.

Biological Specimen Freezer

The model 2195 Biological Mini-Freezer freezes culture cells, parasites, bacteria, sperm, and other specimens that are packed in cryotubes or straws. The samples are placed above liquid nitrogen, and a variable-speed fan creates convection currents. Cool-



ing rates are proportional to the rotation speed of the fan. Specimens may be plunged into the liquid nitrogen without the chamber being opened. The 2195 holds ten 2-ml cryotubes or one hundred 0.25- or 0.5-ml straws. Nautilus Scientific. Circle 612.

Large-Capacity Disk Drive

The Storage Module Device is a hard disk that stores 892 megabytes of data. The 9-inch drive can support one expansion disk drive, and as many as four disk drives may be linked and stored in a single cabinet. Access time averages 15 msec, and the transfer rate is 2.4 Mbyte/sec. Mean time before failure (MTBF) is 50,000 hours. Sun Microsystems. Circle 615.

Diffraction Database

PLUS^{3 7} is an indexed and searchable database on compact disk that contains every diffraction parameter in the 1987 Joint Committee on Powder Diffraction Standards' PDF-2 database (formerly level III). Each of the nearly 50,000 compounds has more than 200 data fields. Multiple-field data searches may be performed with Boolean and relational logic. Patterns satisfying the search criteria may be displayed as card images or in line format. The user can find patterns by PDF reference number, color, optical data, elemental content, single *d*-

spacing, or space group, among other criteria. Hanawalt search-matches may be performed interactively. PLUS^{3 7} operates with IBM PC AT and compatible computers and DEC MicroVAX computers. Philips Electronic Instruments. Circle 624.

Electrophoresis Power Supply

The model 595 constant-wattage power supply is controlled by a microprocessor and may be programmed. It provides constant power with automatic crossover at voltage and current limits. These limits may be changed during the experiment; the user can program the unit for three consecutive sets of power, current, and voltage limits. A ground fault detector warns of dangerous conditions even when voltage output is zero. Isco. Circle 619.

Medium for HIC

MX-Superflow medium for high-performance hydrophobic interaction chromatography has been developed for large-scale purification of monoclonal antibodies from culture medium containing serum or from ascitic fluid. The product-bearing fractions typically contain 75 to 80% antibody at a mass yield of 90 to 95%. MX-Superflow contains a beaded macroporous support with weak hydrophobic ligands attached and can withstand linear flow rates faster than 300 cm/hour. The resin permits antibody binding at a low concentration of the precipitating salt. MX-Superflow may be sterilized by steam or sodium hydroxide. Sterogene Biochemicals. Circle 618.

Literature

Electrophoresis Systems, Equipment, and Supplies is a set of 17 specification sheets describing a line of electrophoresis products, including a Western blotting system, an isoelectric focusing system, an O'Farrell two-dimensional system, and DNA agarose system. HBI, Haake Buchler Instruments. Circle 626.

Specialty Gases is a 280-page catalog of gases, gas mixtures, and equipment for special gas applications. Scott Specialty Gases. Circle 627.

Biotechnology Services describes contract gene expression, protein biochemistry, fermentation, downstream processing, and other biotechnological research, development, and production services. Celltech. Circle 635.

The Complexity of Boolean Functions. Ingo Wegener. Teubner, Stuttgart, and Wiley, New York, 1987. xii, 457 pp., illus. \$44.95. Wiley-Teubner Series in Computer Science.

Confronting Creationism. Defending Darwin. D. R. Selkirk and F. J. Burrows, Eds. New South Wales University Press, Kensington, Australia, 1987. xii, 158 pp., illus. Paper, \$A14.95. Australian Studies in Biological Sciences, vol. 1.

Consciousness and the Computational Mind. Ray Jackendoff. Bradford (MIT Press), Cambridge, MA, 1987. xvi, 356 pp., illus. \$27.50. Explorations in Cognitive Sciences, vol. 3.

Datawars. The Politics of Modeling in Federal Policy-making. Kenneth L. Kraemer *et al.* Columbia University Press, New York, 1987. xviii, 326 pp. \$35. CORPS (Computing, Organizations, Policy, and Society) Series.

Drug Discovery and Development. Michael Williams and Jeffrey B. Malick, Eds. Humana, Clifton, NJ, 1987. xviii, 447 pp., illus. \$69.50. Contemporary Biomedicine.

Economics of the Environment. Theory and Policy. Horst Siebert. 2nd ed. Springer-Verlag, New York, 1987. xiv, 273 pp., illus. \$75.50.

Education and Health. P. J. Kelly and J. L. Lewis, Eds. Published for ICSU Press by Pergamon, Elmsford, NY, 1987. xii, 296 pp., illus. \$38; paper, \$19. Science and Technology Education and Future Human Needs, vol. 5. Based on a conference, Bangalore, India, Aug. 1985.

Electron Diffraction and High-Resolution Electron Microscopy of Mineral Structures. Victor A. Drits. Springer-Verlag, New York, 1987. xii, 304 pp., illus. \$138. Translated from the Russian edition (Moscow, 1981).

Fluid Mechanics. L. D. Landau and E. M. Lifshitz. 2nd ed. Pergamon, New York, 1987. xiv, 539 pp., illus. \$68; paper, \$29.50. Course of Theoretical Physics, vol. 6. Translated from the Russian edition (Moscow, 1986) by J. B. Sykes and W. H. Reid.

From Children to Citizens. Vol. 1, The Mandate for Juvenile Justice. Mark Harrison Moore. Springer-Verlag, New York, 1987. xvi, 109 pp., illus. \$39.95.

From Genes to Clones. Introduction to Gene Technology. Ernst-L. Winnacker. VCH, New York, 1987. xiv, 634 pp., illus. \$68. Translated from the German edition (1984) by Horst Ibelgauf.

Low-Dimensional Conductors and Superconductors. D. Jérôme and L. G. Caron, Eds. Plenum, New York, 1987. x, 530 pp., illus. \$89.50. NATO Advanced Science Institute Series B, vol. 155. From an institute, Magog, Quebec, Aug.-Sept. 1986.

Mathematical Models in Medicine. Diseases and Epidemics. Vol. 1. Matthew Witten, Ed. Pergamon, New York, 1987. xvi, pp. 653-1674, illus. \$215. Modern Applied Mathematics and Computer Science, vol. 13. Special issue of *Mathematical Modelling*.

Mechanisms of Signal Transduction by Hormones and Growth Factors. Myles C. Cabot and Wallace L. McKeehan, Eds. Liss, New York, 1987. xxiv, 321 pp., illus. \$65. Progress in Clinical and Biological Research, vol. 249. From a symposium, Lake Placid, NY, Sept. 1986.

The Psychology of the Chinese People. Michael Harris Bond, Ed. Oxford University Press, New York, 1986. xii, 354 pp., \$29.95.

Quantum Monte Carlo Methods in Equilibrium and Nonequilibrium Systems. M. Suzuki, Ed. Springer-Verlag, New York, 1987. x, 241 pp., illus. \$49.50. Springer Series in Solid-State Sciences, 74. From a symposium, Susono, Japan, Nov. 1986.

Recent Advances in the Study of Bats. M. Brock Fenton, Paul Racey, and Jeremy M. V. Rayner, Eds. Cambridge University Press, New York, 1987. xii, 470 pp., illus. \$69.50. From a meeting, Aberdeen, Scotland, Aug. 1985.

Restriction Endonucleases and Methylases. Jack G. Chirikjian, Ed. Elsevier, New York, 1987. xii, 303 pp., illus. \$65. Gene Amplification and Analysis, vol. 5.

Retardation in Young Children. A Developmental Study of Cognitive Deficit. Sarah Broman. Erlbaum, Hillsdale, NJ, 1987. xii, 358 pp., illus. \$39.95.

Stephan Körner. Philosophical Analysis and Reconstruction. Jan T. J. Szrednicki, Ed. Nijhoff, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xii, 171 pp., \$49.50. Nijhoff International Philosophy Series, vol. 28.

The Structure of the Planets. John Elder. Academic Press, Orlando, FL, 1987. xx, 210 pp., illus. \$49.50. Academic Press Geology Series.

Personnel Placement

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

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Washington, DC 20005

POSITIONS WANTED

Biochemist/Molecular Biologist, Ph.D. Broad experience in various techniques: Gene isolation, Southern, Northern, and Western analyses, restriction mapping, protein and nucleic acid sequencing, expression of cloned genes, soluble and membrane-bound protein purification and enzyme kinetics. Worked with plant, bacterial and yeast systems. Many publications in reputed journals. Enjoys teaching and group interaction. Permanent resident in U.S. Seeking challenging research position in industries located near big cities. Box 33, SCIENCE.

Molecular Biologist, B.A., 8 years of experience with recombinant DNA, cloning, tissue culture, and more. Seeking position in physiological psychology. Box 28, SCIENCE.

Physiologist, M.D. Research experience in nephrophysiology (hemodynamics, endocrinology). Clinical experience in general internal medicine. Teaching experience in medical physiology. Box 31.

POSITIONS WANTED

Ph.D. in Phosphoinositide Metabolism: Well experienced in all aspects of PI cycle including enzyme assays and HPLC of isomers of inositol phosphates. Also experienced in leading a group of researchers. Seeks challenging research/postdoctoral position in PI cycle, preferably in BRAIN: metabolism of the newer isomers of inositol phosphates/IP₄, IP₃, IP₂ metabolism, calcium mobilization, PKC, PI cycle in brain cell cultures, fatty acid, arachidonic acid metabolites, oncogene products, receptor studies. Available immediately. Box 30, SCIENCE.

Physiology/Pathology Lab Assistant. Canadian-trained surgeon, Eastern-bloc refugee, seeks U.S. employment. POB 29, Deerfield, MO 64741.

Plant Cell Biologist (Ph.D., 1986) seeks postdoctoral position. TEM, SEM, AVEC-microscopy, microinjection, hybridomas, tissue culture, protein isolation. Cyto-skeleton, development. Box 32, SCIENCE.

Science Writer/Editor: Zoology/physiology Ph.D., biochemical research publications, anatomy textbooks, author of free-lance magazine and newspaper articles. Seeking writing/editing, ghostwriting, collaborative, consulting projects, any biomedical field. Write: Master Wordworks, Route 2, Box 332, Fulton, MO 65251. Telephone: 314-642-9749.

POSITIONS OPEN

ASSISTANT PROFESSOR, Cell/molecular biology 2-year term appointment, Ph.D., fall 1988; to teach cell and molecular biology, microbiology, possibly physiology and advanced courses in area of specialty with commitment to research participation in master's program. Send résumé, transcripts, brief statement of research interests, and three letters of recommendation to: **Dr. Thomas G. Froiland, Chairman, Department of Biology, Northern Michigan University, Marquette, MI 49855-5341.** Northern Michigan University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF BIOLOGY. Applications invited for anticipated tenure-track position (pending budgetary approval) to provide biotechnology emphasis in department beginning fall 1988. Ph.D. required. Teaching responsibilities include courses in molecular biology, biochemistry, virology, microbial genetics, and participation in senior research program, cooperative education program and general biology courses. New science building which includes molecular biology/biochemistry laboratory to be completed by September, 1988. Foundation award of \$150,000 available for instrumentation to support biotechnology emphasis. Knowledge of computer applications in teaching and research helpful. Applicants should send curriculum vitae, statement of teaching philosophy and arrange for three letters of reference to be sent by 25 March 1988 to: **Dr. Michael A. Kolitsky, Chair, Department of Biological Sciences, California Lutheran University, 60 West Olsen Road, Thousand Oaks, CA 91360.**

ASSISTANT PROFESSOR EUKARYOTIC GENETICS/ MOLECULAR GENETICS

The Division of Biology at Kansas State University has a tenure-track position available at the assistant professor level effective September, 1988. Applications are invited from investigators with postdoctoral experience in eukaryotic genetics and/or molecular genetics. The Division has a strong program in biological research, excellent facilities and a distinguished faculty with several millions of dollars in extramural grants. The successful candidate will be expected to establish a vigorous and creative research program and to participate in graduate and undergraduate instruction. Candidates should apply by 21 March 1988 by submitting curriculum vitae, a brief description of future research plans, and having three letters of reference sent to:

Dr. Terry C. Johnson, Director
Division of Biology
Ackert Hall
Kansas State University
Manhattan, KS 66506

KSU is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT PROFESSOR

The Institute for Advanced Studies in Biological Process Technology (BPTI) in the College of Biological Sciences of the University of Minnesota invites applications for a tenure-track position at the rank of assistant professor of genetics and cell biology or microbiology.

Applicants must have a Ph.D. in either microbiology, genetics, biochemistry or a related field. We are seeking an individual whose research interests are directly related to the genetics, physiology or metabolism of Gram-positive microorganisms preferably the *Streptomyces*. Applicants must have a minimum of 2 years of postdoctoral training, demonstrated research ability and the potential to develop an active independent research program. Preference will be given to individuals who have an interest in application of their research to biotechnology.

Tenure and teaching responsibilities for this position will reside in the Department of Genetics and Cell Biology or the Department of Microbiology. This position is available beginning in the fall of 1988. Salary is negotiable based upon applicants previous experience.

Applicants should send a letter summarizing their research interests, experience, and goals; curriculum vitae; relevant reprints of recent research; and have three letters of recommendation sent to: **Dr. Michael C. Flickinger, Director, BPTI, 240 Gortner Laboratory, 1479 Gortner Avenue, University of Minnesota, St. Paul, MN 55108.**

Applications should be postmarked no later than 15 April 1988.

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

ASSISTANT PROFESSOR OF BIOLOGY. August 1988 tenure-track position for broadly-trained microbiologist to teach in nursing program at Clarion University's Venango Campus in Oil City, Pennsylvania. Courses include microbiology, pathophysiology (exogenous agents), a general biology lecture course, and periodic special topics courses and graduate seminars. Teaching is emphasized. Active professional development expected. Ph.D. required. Deadline for application material is 5 April 1988. Send letter of application, curriculum vitae, transcripts and three letters of recommendation to: **Dr. William Belzer, Chairman, Biology Search Committee, Venango Campus, Oil City, Pennsylvania 16301. Telephone: 814-676-6591.** *Clarion University of Pennsylvania is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF MICROBIOLOGY

The Department of Microbiology invites applications for positions as assistant professor at Jefferson Medical College of Thomas Jefferson University. Candidates are expected to possess a Ph.D. or M.D., at least 2 years of postdoctoral experience and a strong record of research achievement in virology, or pathogenesis of bacterial diseases at the molecular level. The successful candidate will be expected to develop an independent research program, to obtain extramural support and participate in the medical and graduate programs offered by the department. Candidates should submit curriculum vitae, the names of three references, and a brief statement of research interests to:

Russell W. Schaedler, M.D.
Chairman, Department of Microbiology
Thomas Jefferson University
1020 Locust Street
Philadelphia, PA 19107
Thomas Jefferson University is an Equal Opportunity Employer

Tulane University School of Medicine is seeking two full-time **ASSISTANT PROFESSORS** of Medicine in the Endocrine Section of the Department of Medicine. The individuals selected must be Internal Medicine Board-certified or Board-eligible with Endocrine/Metabolic Board or eligibility. The positions involve teaching, patient care, and research responsibilities. Apply to: **C. Y. Bowers, M.D., Tulane School of Medicine, 1430 Tulane Avenue, New Orleans, LA 70112.** Include updated curriculum vitae. Deadline is 18 March 1988. *Tulane University is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

Applications are invited for the position of **ASSISTANT PROFESSOR** (tenure-track) in the Division of Allergy and Clinical Immunology at the University of Colorado Health Sciences Center. The successful applicant (M.D. or Ph.D.) should have interests and demonstrated skills in the use of current molecular techniques for studying the function and/or development of the immune system. Interested persons should send curriculum vitae, a description of research plans, and names of three references to: **John W. Moorhead, Ph.D., Division of Allergy and Clinical Immunology, Box B-164, University of Colorado Health Sciences Center, Denver, CO 80262.** *An Equal Opportunity/Affirmative Action Employer.* Closing date: 1 June 1988.

ASSISTANT PROFESSOR OF BIOCHEMISTRY

Twelve-month tenure-track position. To teach biochemistry at the Indiana University School of Medicine. Applicant must possess an earned doctorate degree in biochemistry with at least 2 years of postdoctoral experience. The successful candidate is expected to develop independent/collaborative research and graduate education programs. Academic duties include shared lecture and laboratory responsibility in the freshman Medical Biochemistry Program. Submit curriculum vitae and three letters of recommendation to: **Dr. Walter X. Balcavage, Chairman, Biochemistry Search Committee, Terre Haute Center for Medical Education, Indiana University School of Medicine, 135 Holmstedt Hall, Terre Haute, IN 47809.** *Indiana University is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR—PLANT MOLECULAR BIOLOGY

The Food Science Department and the Biotechnology Institute at Penn State University seek to fill a tenure-track, assistant professor level position. This position has a 100% research responsibility in plant molecular biology. One-half of the individual's efforts will involve molecular biology research related to *Theobroma cacao* and this plant's resistance to disease, the ability of its cells to regenerate plant tissue, and the improvement of the quality characteristics of the cocoa beans it produces. The second half of the individual's efforts are open to basic plant molecular biology with the desire that this basic plant research could also yield data beneficial to the cocoa research effort. Experience in plant lipid synthesis is desirable, but not a requirement for the position. The individual hired will be housed in the newly constructed biotechnology institute and have the opportunity to interact with a group of plant molecular biologists, as well as biochemists in the institute and department. Candidates should have a Ph.D. in plant science or closely related area. Experience in molecular biology preferred. The salary will be competitive commensurate with background and experience. An attractive fringe benefits package is available. Applicants should submit a letter of application, résumé, academic transcripts, and the names and addresses of three references to: **Dr. Lowell D. Satterlee, Room 111a Borland Laboratory, The Pennsylvania State University, University Park, PA 16802.** Deadline: 1 April 1988.

ASSISTANT/ASSOCIATE PROFESSORS

The Harvard School of Public Health expects to have one or more faculty positions available within the Division of Biological Sciences during the next year. Applicants should have a doctoral degree, 2 or more years of relevant postdoctoral experience, and demonstrated evidence of innovative research capability. Applicants should have an interest in the development of a high quality laboratory research program to concentrate on medical/biological problems of public health importance. The successful candidate will also be expected to teach a graduate level course and to supervise doctoral candidates.

Individuals interested in applying for such a position should send curriculum vitae with a complete bibliography, representative recent reprints, a description of future research and teaching interests, and the names and addresses of three references to:

Dean Ann Oliver
Harvard School of Public Health
677 Huntington Avenue
Boston, MA 02115

Harvard University is committed to increasing representation of women and minority members among its faculty and particularly encourages applications from such candidates.

POSITIONS OPEN

ASSISTANT PROFESSORS BIOPHYSICS/BIOCHEMISTRY

Two tenure-track appointments in an expanding life science program. Applications are sought from individuals employing biophysical and biochemical approaches to macromolecular structure, assembly and function. Candidates working in areas of virus assembly, DNA-protein interactions and protein folding are especially encouraged to apply. Successful candidates must have demonstrated research potential through postdoctoral experience and recent publications, and are expected to maintain a vigorous research program through extramural funding and to participate in training of health science professionals. Applicants should send curriculum vitae and a statement of research goals, and arrange to have three letters of recommendations sent to:

Dr. George J. Thomas, Jr., Head
Division of Cell Biology and Biophysics
School of Basic Life Sciences
University of Missouri-Kansas City
Kansas City, MO 64110

Screening of applicants will begin 1 April and continue until positions are filled.

UMKC is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT/ASSOCIATE PROFESSOR LABORATORY OF TOXICOLOGY HARVARD SCHOOL OF PUBLIC HEALTH

The Laboratory of Toxicology is searching for a junior faculty member to establish an independent research program on molecular and/or cellular mechanisms of toxicity and to complement the existing faculty whose interests include molecular mechanisms of mutagenesis, DNA repair genes, receptor-mediated toxicity, chemical carcinogenesis and tumor promotion, molecular events regulating the mammalian cell cycle, and biochemical and molecular regulation of epithelial cell differentiation. The position includes the opportunity and responsibility for doctoral and postdoctoral teaching and training. Send curriculum vitae, a statement of research interests, and the names of three references to: **Professor A. H. Tashjian, Jr., Laboratory of Toxicology, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115.** *Harvard University is committed to increasing representation of women and minority members among its faculty and particularly encourages applications from such candidates.*

ASSISTANT/ASSOCIATE MEMBER

The Center for Molecular Medicine and Immunology, University of Medicine and Dentistry of New Jersey, has a vacancy to be filled at the assistant/associate level for an investigator with demonstrated experience in hybridoma technology. The successful applicant is expected to develop and maintain an independent research program within the area of molecular immunology and in addition will be responsible for the operation of a shared hybridoma laboratory. Applicants having a Ph.D. or M.D. and appropriate experience, preferably with grant support, should send curriculum vitae, bibliography, a description of research interest and names of three references to:

David M. Goldenberg, Sc.D., M.D.
President
Center for Molecular Medicine and Immunology
at the University of Medicine and Dentistry
of New Jersey
1 Bruce Street
Newark, NJ 07103
An Equal Opportunity Employer

ASSISTANT OR ASSOCIATE BIOLOGY PROFESSOR

Nine-month, tenure-track position starting fall semester 1988. Prefer Ph.D. Teaching undergraduate general education life science, anatomy, botany, ecology, and related areas. Small, ELCA church-related liberal arts college located 25 miles north of Omaha. Send application letter, curriculum vitae, and letters from three references, by 10 March 1988 to: **Dr. Kathleen O'Connor, Vice President for Academic Affairs, Dana College, Blair, NE 68008.** Telephone: 402-426-7202. *Equal Opportunity Employment and Affirmative Action Employer.*

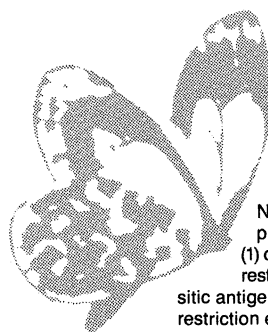
SENIOR RESEARCH SCIENTIST

ACQUIRED IMMUNODEFICIENCY SYNDROME (AIDS) PROGRAM, National Institute of Allergy and Infectious Diseases (NIH) is seeking a senior level scientist in microbiology, virology, or immunology, to serve as Chief of the Prevention Branch.

Responsibilities of the position include planning and directing major extramural research efforts in the areas of: development of vaccines and chemoprophylactic agents for the prevention of HIV infection and its sequelae; preclinical development of safe and effective AIDS vaccines; evaluation of AIDS vaccines in Phase I, Phase II and Phase III clinical trials; management of government-industry-academic cooperative vaccine development groups; and management of international collaborative efforts in AIDS vaccine development and clinical testing. Applicants should have a Ph.D or M.D.; a broad background in microbiology, virology or immunology; postdoctoral laboratory research experience; experience in research program administration; publications in recognized referred journals in the field of scientific expertise; and knowledge of Federal Government extramural research program administration.

Salary range is \$54,907 to \$71,377. (Medical Officers are paid at a slightly higher rate, and may be eligible for a Physician's Comparability Allowance (PCA) up to \$7,000 per year). U.S. citizenship is required. Send curriculum vitae to: Daniel F. Hoth, M.D., Acting Director, AIDS Program, National Institute of Allergy and Infectious Diseases, NIH, 9000 Rockville Pike, Building 31, Room 7A48, Bethesda, Maryland 20892.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER



Molecular Biologist/Biochemist

New England Biolabs is seeking qualified professionals to join these active groups: (1) cloning, sequencing and overexpressing restriction and modification genes and parasitic antigens; and (2) purifying and characterizing restriction endonucleases.

You should have a BS or equivalent degree, and familiarity with recombinant DNA procedures or protein purification techniques. We encourage attendance at meetings, publication of research results and open communication with others.

Microbiologist/Fermentation Specialist

We are also in need of an experienced individual to work with 25-100 litre fermentations in a variety of microorganisms. Cell disruption and protein purification experience are helpful; a BS in Microbiology or a related field and good mechanical skills are essential.

New England Biolabs offers a generous salary and benefits package, as well as the opportunity to learn and grow in an exciting and growing professional environment. Please submit your curriculum vitae and three references to:

New England Biolabs, Inc.
Human Resources
32 Tozer Road
Beverly, MA 01915-5510



RESEARCH ASSOCIATES DRUG METABOLISM

The Squibb Institute for Medical Research is recognized internationally as a leader in the research and development of novel therapeutic agents for the treatment of cardiovascular and infectious diseases. Due to our continued growth, we have several new opportunities available for research scientists to join our Drug Metabolism Department.

Your responsibilities will include, but not be limited to, assisting in studies of the metabolism of drug candidates both in vivo and in vitro. This work will include the application of modern analytical techniques and biochemical methodology to drug metabolic studies.

Qualified candidates must have a B.S. degree (M.S. preferred) in Biology, Chemistry, Pharmacy (or related) discipline and a minimum of 1 year applicable research experience, to include the use of modern analytical methods (HPLC, TLC, etc.) and radiolabeled compounds. Animal handling experience is required.

We can offer an excellent salary and comprehensive benefits package as well as the opportunity to pursue a stimulating and rewarding career. For confidential consideration, please submit your resume to: **The Squibb Institute for Medical Research, Human Resources Department 745, P.O. Box 4000, Princeton, New Jersey 08540.** An equal opportunity employer.



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ATTACH
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HUMAN GENOMICS

Los Alamos National Laboratory has challenging opportunities available for outstanding professionals. The Laboratory is one of two Centers designated by the Department of Energy to study the human genome and has developed a comprehensive, multidisciplinary program in human genomics.

DIRECTOR

Center for Human Genome Studies

This is a senior level management position. The Director will be responsible for the administrative and technical management of a long term program whose activities include physical mapping of human chromosomes; nucleotide sequencing; information/computation efforts; and new technology research, development and application together with technology transfer for commercial applications. Ability to initiate programs and foster productive interactions among program sponsors, Laboratory staff and institutions participating in development of the Center's biological, engineering and computational capabilities is crucial. Requirements include proven technical achievements in R & D with demonstrated expertise in biological and physical sciences; demonstrated leadership skills in managing a multidisciplinary team; PhD or MD or equivalent training and experience. Refer to Job #70518RG.

MOLECULAR BIOLOGISTS & COMPUTER SCIENTISTS

Molecular Geneticists

Will be responsible for conduct of research programs on human genome organization by constructing physical maps of individual human chromosomes. These positions require relevant training or experience in one of the following areas: cloning vector systems (yeast artificial chromosomes, cosmids, phage), specialized recombinant linking libraries, macrorestriction analysis using pulsed field gel electrophoresis, rapid chromosome walking or random clone ordering techniques using automation and process modification. Refer to Job #70029RG.

DNA Enzymologist

Will be responsible for developing new DNA sequencing technologies. Requires relevant training or experience in a combination of the follow-

ing areas: DNA synthesis, DNA degradation, DNA labeling with novel tracers, DNA hybridization and fluorescence detection and associated techniques. Refer to Job #70031RG.

The previous two positions require a PhD or equivalent training and experience plus outstanding research records in one or more of the following disciplines: molecular biology, molecular genetics or biochemistry.

Computer Scientists

Will be responsible for developing system tools for assembling and managing a comprehensive database and network of DNA mapping and sequence information. A PhD in Computer Science plus research experience in database management, expert systems or networking are desired. Refer to Job #80008RG.

For preceding positions, applicants should send curriculum vitae, salary history and names of three references in confidence to Richard O. Garcia, Personnel Services Division (MS P282), Los Alamos National Laboratory, Los Alamos, NM 87545.

POSTDOCTORAL RESEARCH APPOINTMENTS

Postdoctoral appointments are available for those with a PhD in Molecular Biology, Molecular Genetics, Biochemistry, or Computer Science. Appointments are for one year, renewable for a second year. Eligibility is limited to candidates who have received a doctoral degree within the past three years.

For postdoctoral positions, submit your curriculum vitae, employment application, three letters of reference, graduate and undergraduate transcript and research interests to Carol M. Rich (MS P290), Human Resources Development Division PD-88-011, Los Alamos National Laboratory, Los Alamos, NM 87545.

Affirmative Action/Equal Opportunity Employer

University of California

Los Alamos

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR IN THE RESEARCH ASSOCIATE TRACK for an individual with a strong background in molecular biology and an interest in cancer genetics, oncogenes, viral oncology or related areas, to assume scientific responsibility for a program studying gastrointestinal malignancy. This individual will be expected to contribute to, and collaborate with, ongoing programs in tumor collection, immunohistologic analysis and molecular genetics, and to develop new areas of research. Renewable term appointment with full fringe benefits. Salary commensurate with experience. Immediately available. Send curriculum vitae, statement of interests, and relevant reprints to: **Fabrizio Michelassi, M.D., The University of Chicago Medical Center, Department of Surgery, 5841 South Maryland Avenue, Chicago, IL 60637. Telephone: 312-702-6237.**

The Department of Cancer Biology at the Harvard School of Public Health is seeking applications for a position of **ASSISTANT OR ASSOCIATE PROFESSOR OF IMMUNOLOGY**. The position will be in the section of virology, immunology, and molecular biology. The successful candidates should have training in molecular genetic technology, preferably as it applies to the immune system, and an interest in pursuing molecular immunology research.

Each candidate would be expected to develop a strong research program and assume teaching responsibilities in one or more graduate level courses. Supervision of doctoral candidates will also be expected. A doctoral degree with 2 to 3 years of postdoctoral research experience is required with demonstrated evidence of innovative research capability.

Interested candidates should send curriculum vitae with a complete bibliography, representative reprints, a description of research and teaching interests, and the names and addresses of three references to: **Dr. Laurie H. Glimcher, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115.**

Harvard University is committed to increasing representation of women and minority members among its faculty and particularly encourages applications from such candidates.

KANSAS STATE UNIVERSITY

The College of Arts and Sciences invites applications and nominations for the position of **ASSOCIATE DEAN**. Responsibilities will include: stimulating faculty involvement in research funding, and other creative and scholarly activities; assisting faculty investigators in both pre- and post-award phases, including identification of potential sources of support and interpretation of guidelines and regulations; supporting and reviewing graduate programs; and the planning for the development of research facilities. Additional duties will be assigned by the dean as appropriate.

Applicants should have credentials appropriate for appointment as full professor in a department of the College, success in securing research funding, and experience directing graduate research.

We are seeking an outstanding individual who will participate in the creative development of scholarship in the College. Submit letter of application and curriculum vitae plus names and addresses of at least three references to:

Dr. William E. Carpenter
Associate Dean
College of Arts and Sciences
Eisenhower Hall
Kansas State University
Manhattan, KS 66506

We will begin reviewing applications 1 March 1988. *Kansas State University is an Equal Opportunity Employer.*

BEHAVIORAL PHARMACOLOGIST—A grant-supported faculty position at the rank of instructor or assistant professor is available in pharmacology and toxicology to conduct studies on the effects of drugs of abuse in operant behavior of laboratory animals. Two years of postdoctoral experience in behavioral pharmacology is required. Submit curriculum vitae and the names of three references by 26 March 1988 to: **Dr. Robert L. Balster, Medical College of Virginia, Box 613, Richmond, VA 23298-0613.**

Virginia Commonwealth University is an Equal Opportunity Affirmative Action Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

BIOCHEMICAL ENGINEER: The Water Engineering Research Laboratory, EPA, invites applications for a research position planning and managing the toxics control program. Duties include development and evaluation of innovative or alternative wastewater treatment processes and evaluation of the fate and impact of conventional and toxic pollutants in wastewater treatment systems. Knowledge of biochemical reactor engineering and design is essential. Expertise in biochemistry, molecular genetics, and biodegradation pathways is highly desirable. A Ph.D. is highly desirable. Salary is commensurate with experience (\$29,783 to \$51,353). This is a permanent full-time Federal Civil Service position. Submit curriculum vitae, list of publications, and three letters of recommendation not later than 18 March 1988 to: **Ms. Vicki A. Horsley, Personnel Management Division, U.S. Environmental Protection Agency, Cincinnati, OH 45268. Telephone: 513-569-7804. An Equal Employment/Affirmative Action Employer.**

BIOCHEMICAL ENGINEERING UNIVERSITY OF MARYLAND

Applications are invited for an **ASSISTANT PROFESSOR** position (tenure-track) to be jointly held in the chemical engineering program and an interdisciplinary biotechnology research center established by the State of Maryland. Applicants should have an earned Ph.D. and a strong research interest in bioconversion and/or bioprocesses. Candidates should submit curriculum vitae and three references to: **Dr. Ted Smith, Director, Chemical Engineering Program, Department of Chemical and Nuclear Engineering, University of Maryland, College Park, MD 20742-2111.** Applications will be accepted until the position is filled. For best consideration, applications should be submitted before 1 June 1988. *The University of Maryland is an Equal Opportunity/Affirmative Action Employer and welcomes applications for qualified minorities and women.*

BIOLOGIST: The Department of Biological Sciences at East Stroudsburg University invites applications for a tenure-track position at the assistant professor rank beginning September 1988. Applicant should hold a doctorate and evidence of teaching experience with expertise in human anatomy and physiology, reproductive biology and endocrinology. Primary responsibilities include: teaching laboratories in human anatomy and physiology and lectures in introductory biology. Additional responsibilities may include teaching of reproductive physiology, endocrinology or human genetics. Salary range: \$24,200 to \$34,052 based on experience. Teaching load is 24 credit hours per year. Send résumé, transcripts and three letters of recommendation by 21 March 1988 to: **Dr. Raymond G. Milewski, Chairperson, Search and Screen Committee, Department of Biological Sciences, East Stroudsburg University, East Stroudsburg, PA 18301. East Stroudsburg University is an Affirmative Action/Equal Opportunity Employer complying with federal and state laws. Women and minorities are strongly encouraged to apply.**

BIOLOGY, DEPARTMENT CHAIRER, Wright State University (WSU). Department with 22 full-time faculty, 350 undergraduate majors and 25 graduate students seeks applications and nominations for Chair. The starting date is July 1988, but may be negotiated. Department offers bachelor's degrees in biological sciences, medical technology and environmental health as well as M.S. in biological sciences. In addition, many faculty participate significantly in the interdisciplinary Biomedical Sciences Ph.D. Program. Candidates must have: earned doctorate, capability of providing strong leadership in research and undergraduate/graduate education, qualifications for appointment at the professor level. Administrative experience is desirable. Research and teaching areas are open but molecular/cellular biology, environmental/organismic biology, medical technology, toxicology, and environmental health, as well as cross-disciplinary areas, are preferred. Opportunities for collaboration with four other life science departments (anatomy, biochemistry, microbiology/immunology, and physiology/biophysics) as well as with the WSU School of Medicine are plentiful. Salary and teaching load competitive. Send letter, résumé, and three letters of reference to: **Dr. Wayne Carmichael, Chair, Biological Sciences Chair Search Committee, Department of Biological Sciences, Wright State University, Dayton, OH 45435.** Deadline for application: 25 March 1988 or until position is filled. *Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

BIOCHEMIST/MOLECULAR BIOLOGIST

The Hypertension Program of the Division of Cardiovascular Disease at The University of Alabama at Birmingham invites applications for assistant professor to work with Hypertension Research Group. Must be fully trained in biochemistry and molecular biology. Apply to: **Hypertension Program, Division of Cardiovascular Disease, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294. Attention: Charlene Walker. An Equal Opportunity/Affirmative Action Employer.**

BIOCHEMISTRY—FACULTY POSITIONS.

Applications are invited for tenure-track appointment to the rank of assistant or associate professor of biochemistry at the Albany Medical College. Preference will be given to candidates with research experience in contemporary molecular biology, especially recombinant DNA techniques, although scientists qualified in other areas of biochemistry will also be given serious consideration. Current major foci of research interests in the Department include molecular endocrinology, complex carbohydrates and glycolipids, protein chemistry, and neurochemistry. A commitment to excellence in teaching medical and graduate students as well as evidence of accomplishment or scientific potential is required. The Albany area offers the advantages of a cosmopolitan life-style in a suburban-rural setting. Starting date is open. If interested, please forward curriculum vitae, outline of research interests, names of three references, and indication of when available to: **Dr. Leo E. Reichert, Jr., Professor and Chairman, Department of Biochemistry, Albany Medical College, Albany, NY 12208.**

An Equal Opportunity/Affirmative Action Employer.

BOTANIST/GENETICIST. Assistant professor for September 1988. Tenure-track. Ph.D. and appropriate faculty-level teaching experience required. Teach required sophomore-level genetics, introductory botany, develop upper-level botany, team-teach in first-year course for majors. Student advising and research are expected. Send curriculum vitae, statement of teaching experience, and three current letters of reference by 18 March 1988 to: **Dr. Bruce McLean, Chairperson, Biology Department, John Carroll University, Cleveland, OH 44118. Equal Opportunity Employer.**

UNIVERSITY OF TORONTO CHAIRMAN OF MICROBIOLOGY

Applications are invited for the position of Professor and Chairman, Department of Microbiology, University of Toronto.

The successful candidate will possess an active research program and a strong record of scholarly achievement; the leadership qualities and administrative skills necessary to develop the diverse academic programs of the Department and a broad appreciation of the needs of microbiology in all its facets from basic molecular studies to clinical services. Expertise in virus research would be an advantage.

The University of Toronto encourages both men and women to apply for positions.

Inquiries and curriculum vitae should be directed to: **The Dean, Dr. John H. Dirks, Faculty of Medicine, University of Toronto, 1 King's College Circle, Medical Sciences Building, Toronto, Ontario, M5S 1A8, Canada.**

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

CHIEF ELECTRON MICROSCOPE TECHNICIAN

Chief EM Technician, Ph.D. or equivalent experience. Must be experienced in electron microscopy to carry out transmission and scanning electron microscopy of human tissues and cell culture specimens from normal and cystic fibrosis patients. Applicants should be experienced in EM instrumentation, specimen preparation, including fixations, embedding, microtomy, staining techniques and darkroom procedures. Experience in immuno EM techniques desired. Salary commensurate with experience. Excellent fringe benefits package. Respond in writing only by sending current curriculum vitae with three letters of reference to: **Dr. Bill R. Brinkley, Chairman, Department of Cell Biology and Anatomy, University of Alabama at Birmingham, UAB Station, Birmingham, AL 35294. We are an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

CHAIRPERSON DEPARTMENT OF RADIATION HEALTH

The Graduate School of Public Health, University of Pittsburgh, invites applications/nominations for the position of chairperson of its Department of Radiation Health which will be vacant at the end of the current academic year. The department prepares graduate students for careers in radiation health-related fields in industrial, educational, hospital, or governmental regulatory organizations. Subspecialty teaching and research areas include health physics, radiobiology, environmental radiation chemistry, radiological physics/engineering, and radiation medicine. The department also oversees the University's Radiation Safety program and has close working relationships with its Occupational Health and Occupational Medicine programs and Physics, Diagnostic Radiology and Radiation Therapy departments.

Candidates must possess an M.D. or a doctoral degree in a radiation health-related field. Professional Board certification is desired if appropriate. Research, teaching, and professional operational experience will be given major consideration. Tenure appointment at the full professor level is anticipated with salary commensurate with qualifications.

Please send curriculum vitae; publication list; description of research, teaching and operational experience; and names and addresses of three references to: **Chairperson, Radiation Health Search Committee, A-533 GSPH, University of Pittsburgh, Pittsburgh, PA 15261. An Affirmative Action/Equal Opportunity Employer.**

THE COLEMAN CHAIR IN CANCER RESEARCH UNIVERSITY OF NOTRE DAME DEPARTMENT OF BIOLOGICAL SCIENCES

The University of Notre Dame announces a search for a tenure appointment to the Coleman Chair in the Department of Biological Sciences. Candidates for this position must have an established scholarly record in the area of molecular biology/genetics specifically pertaining to cancer research. The successful applicant will be appointed to the regular teaching and research faculty of the Department.

We hope to make this appointment effective academic year 1988-1989. A letter of interest accompanied by a complete curriculum vitae should be submitted by 15 April 1988 to: **Dr. Morton S. Fuchs, Department of Biological Sciences, University of Notre Dame, Notre Dame, IN 46556. Notre Dame is an Affirmative Action/Equal Opportunity Employer.**

DIAGNOSTIC MOLECULAR BIOLOGY LABORATORY SUPERVISOR

The Department of Pathology, Northwestern Memorial Hospital, is seeking a person to supervise a Diagnostic Molecular Biology Laboratory involved in carrier and prenatal testing for genetic diseases and gene rearrangement studies in human malignancies. An M.S. degree with a background in human genetics is required and experience in a molecular genetics laboratory is preferred. To apply, send curriculum vitae and three references no later than 25 March 1988 to: **Dr. D. G. Scarpelli, Department of Pathology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611.**

Northwestern Memorial Hospital is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR OF CLINICAL IMMUNOLOGY LABORATORY. Northwestern University Medical School invites applications for a tenure-track faculty position in the Department of Pathology, rank will be commensurate with training, experience, and record of scholarly productivity. Preference will be given to individuals with an established research program in basic immunology and experience in graduate education. Send curriculum vitae, a brief statement of research accomplishments and future plans, and names and addresses of at least three references no later than 25 March 1988 to: **Dr. D. G. Scarpelli, Department of Pathology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611.**

Northwestern University Medical School is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS IN GENETICS

The Department of Genetics at the Southwest Foundation for Biomedical Research has postdoctoral positions available in several areas of genetic research. Our multidisciplinary research programs utilize human subjects, unique pedigreed colonies of baboons ($n = 3000$) and marsupials ($n = 1000$), and laboratory mice and rats.

MOLECULAR AND BIOCHEMICAL GENETICS

Several postdoctoral positions are available for individuals with molecular, biochemical, or cell culture expertise to collaborate with Drs. James Hixson and John VandeBerg. Ongoing projects include studies of the structure, function, regulation, and linkage relationships of specific genes involved in cholesterol metabolism and atherosclerosis, hypertension and cardiac hypertrophy, alcoholism and alcohol metabolism, and X-chromosome inactivation.

QUANTITATIVE GENETICS OR GENETIC EPIDEMIOLOGY

One position is available for an individual with a strong background in quantitative genetics, human population genetics, or genetic epidemiology to collaborate with Drs. Candace Kammerer, Jean MacCluer, and Bennett Dyke. Ongoing projects include evaluations of methods of genetic analyses using computer simulated data and investigations of genetic factors contributing to atherosclerosis (using data from our pedigreed baboon and marsupial populations) and Long QT Syndrome (using data from human subjects).

Applicants must have a Ph.D. or M.D. degree or expect to obtain one by the end of 1988. Send curriculum vitae, and names, addresses, and telephone numbers of at least three references to: **Personnel Manager, Southwest Foundation for Biomedical Research, P.O. Box 28147, San Antonio, Texas 78284-2500. Equal Opportunity Employer, M/F.**



IDEON CORPORATION is a new biotechnology research and development company located in Redwood City, CA. IDEON's research focuses on the development of products using anti-idiotypic monoclonal antibodies and novel immunomodulators. Ideon is rapidly expanding and seeking experienced scientists to play key roles in building this exciting new enterprise.

MOLECULAR BIOLOGIST—Several positions exist at the Ph.D. and BS/MS level. Expertise in the molecular biology of immunoglobulins and/or immunoregulatory molecules is desired.

Qualified candidates will have an opportunity to join a start-up company with the added strength of pharmaceutical manufacturing capability provided by IDEON's affiliation with INVITRON CORP. IDEON CORPORATION offers excellent salary, equity participation, and other benefits. An equal opportunity employer.



For confidential consideration, please forward your C.V. and a list of three references to IDEON CORPORATION, Attn: R & D Department, 301 Penobscot Drive, Redwood City, CA 94063.

Biochemist/ Physiologist



An equal opportunity employer

Pfizer Central Research has immediate openings for scientists in its general pharmacology and cardiovascular drug discovery project teams.

The general pharmacology openings (2 positions) involve the biochemical and physiological characterization of potential new drug candidates. Research areas include the endocrine, CNS, gastrointestinal, cardiovascular, renal and pulmonary systems. You should have a BS or MS degree and 1-3 years of experience with physiological techniques and/or biochemical techniques applicable to one or more of these systems.

If you are interested in the cardiovascular position, you should have a background in cardiovascular or renal pharmacology/physiology with a Master's degree or equivalent experience. You should also have experience with the hypertension/renin-angiotensin system, with a knowledge of relevant *in vivo* cardiovascular and renal measurement techniques. A working knowledge of basic biochemical techniques, such as experience with radioimmunoassays, would be helpful.

In addition to a stimulating scientific environment, we offer a competitive compensation/benefit package and relocation assistance to an attractive southeastern Connecticut shore community. Please send a resume, description of research experience and names of three references to: **Mrs. Lorraine C. Corr, Personnel Associate, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.**

POSITIONS OPEN

DIRECTOR, BIOMEDICAL AND HEALTH CARE ETHICS

The Director will report to the Provost, and will provide leadership in biomedical and health care ethics for the Health Sciences Center and to some extent, Statewide. He or she is to develop effective interactions among the faculty and students of the colleges of medicine, nursing, dentistry, pharmacy, allied health and public health, and in the clinical setting of the affiliated hospitals; is expected to be active in scholarly work and research concerned with biomedical and health care ethics, and to develop conferences and elective curricula in ethics for medical and other health professional students.

Qualifications include a Ph.D. or equivalent degree in philosophy or extensive relevant scholarly achievement, successful experience in the clinical setting, established scholarship and teaching effectiveness, and the seniority which would be desirable for one who is to develop a new program on a health sciences campus. The appointment will be as an associate professor with an adjunct or joint appointment in the Department of Philosophy. Salary is dependent upon qualifications. Preferred starting date will be fall of 1988.

Applicants should send a cover letter and curriculum vitae to: **Ethics Search Committee, Office of the Provost, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, OK 73190**, on or preferably before 30 March 1988. *The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer.*

DIRECTOR INFORMATION TRANSFER CENTER

The Industrial Technology Institute is a not-for-profit organization that develops and deploys advancement of manufacturing processes through innovative research and development programs in industrial automation.

The Institute is pleased to announce that applications of qualified candidates are being accepted for the position of Director, Information Transfer Center. One of the four lab/centers that exist in the organization, the Information Transfer Center offers a spectrum of information services and products including database development, online search services, publications, computer conferencing, and documents retrieval, as well as maintaining an extensive library collection focused on the manufacturing sciences and industry issues. With a staff of fourteen positions, ITC is involved in a variety of projects either in conjunction with other labs in the Institute or dealing directly with external private and public sector clients.

We are seeking an individual with a rare combination of skills, background, and qualities. Educational requirements include an advanced degree in a discipline relevant to information services and products such as an M.B.A., M.A./M.S. in Library/Information Science, Communications, Computer Science, or an appropriate behavioral science discipline. A Ph.D. level of training is preferable; however, a greater emphasis will be placed on experience and personal qualities.

The ideal candidate will possess 10+ years of progressive responsibility in the information area, with solid knowledge of the manufacturing sector and familiarity with the clientele therein. The individual should be well "connected," both with peers in the information field, as well as potential major clients in the public and private sectors. Additionally, a background in contract research and development organization including facets such as program marketing, proposal generation, and project management would be highly desirable.

Most importantly, we are looking for an articulate leader, effective manager, and excellent communicator who is able to inspire, motivate, and provide day-to-day direction to a very talented staff. The individual should be able to translate the mission of the Institute into an ongoing strategic process for the Center, and play an important role as a member of the management team of ITC.

The Industrial Technology Institute offers a stimulating work environment, competitive salary and benefits package including pension, and the opportunity to become part of a dynamic, growing organization. Please send résumé and salary history to:



Industrial Technology Institute
Human Resources
P.O. Box 1485
Ann Arbor, MI 48106
Equal Opportunity Employer

POSITIONS OPEN

DIRECTOR, PROGRAM DEVELOPMENT AND COORDINATION STAFF. The Office of Oceanic and Atmospheric Research, NOAA, DOC in Rockville, Maryland is seeking applicants for a scientific manager to serve as Director, Program Development and Coordination Staff. As Director, incumbent is responsible for administering an integrated oceanic and atmospheric research and development program consisting of laboratory and extramural research projects. Incumbent serves as consultant to the leadership of NOAA's Office of Oceanic and Atmospheric Research on scientific matters relating to geophysical and environmental sciences. Salary is negotiable from \$65,994, based on experience, scientific achievements, and technical/managerial qualifications. Qualifications: Broad background in oceanographic, meteorological, environmental, physical and/or engineering sciences. Includes: a bachelor's degree or equivalent in physical science and/or closely related engineering science; plus at least 3 years of directly related professional experience. Experience in planning, organizing and coordinating research programs involving multiple investigators and institutions. Scope should demonstrate scientific insight to recognize opportunities for advancing the science through innovative use of technologies, computers and new knowledges necessary to integrate projects. Knowledge of international environmental programs and agreements. Competence in broad areas of administration such as program planning and evaluation, multigroup coordination, resource acquisition and administration, organizational representation, and human resource utilization including Equal Employment Opportunity. To apply, contact: **Evelyn Fritz, 301-443-8834** for application forms. Ref. Vac. #NOAA88-01EF. Applications must be received prior to closing date of 31 March 1988. *An Equal Opportunity Employer.*

EMBRYOLOGISTS IN VITRO FERTILIZATION (IVF) IN BOSTON

IVF Australia's proven team of professionals is establishing a new IVF program in Metropolitan Boston. This creates a unique opportunity for infertility specialists to participate at the leading edge of their fields. We are immediately recruiting for the following positions:

SENIOR EMBRYOLOGIST/ LABORATORY DIRECTOR

Ph.D. or equivalent qualification in human or animal reproductive physiology, endocrinology, anatomy or embryology. Primary responsibility is to maintain a high and consistent pregnancy rate.

EMBRYOLOGIST

B.S. or master's degree in biological science or related field. Experience in area of reproductive physiology or anatomy, as well as some laboratory experience preferred.

We are offering competitive salaries, a comprehensive benefits package, and unique opportunity to be part of a highly professional team. Send résumé with salary history and requirements, in confidence to: **IVF Australia Program in Boston, c/o Beverly Freeman, Executive Director, 2 Avon Road, Watertown, MA 02172.** *Equal Opportunity Employer M/F.*

OREGON—FACULTY POSITION

Department of Biochemistry, School of Dentistry, Oregon Health Sciences University, invites applicants for a fixed-term (0.8 FTE), tenure-track position. Assistant professor level. Interest is in candidates actively engaged in research in areas of mammalian protein biochemistry and molecular biology. Teaching experience desirable.

Applicants should have a Ph.D. in biochemistry or a closely related field. Applicant is expected to carry out an independent and productive research program, including procurement of external funding, some of which can supplement base salary (currently up to \$30,000 per year, depending upon experience). Teaching includes approximately 40 biochemistry lectures per year to dental and dental hygiene students.

Send curriculum vitae, bibliography, reprints of research papers, summary of career goals and research plans, and three references to:

Biochemistry Search Committee
Department of Biochemistry
School of Dentistry
Oregon Health Sciences University
611 S. W. Campus Drive
Portland, Oregon 97201

Applications due 20 March 1988, but will be accepted until search is completed. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

DIRECTOR, CLINICAL CHEMISTRY—The Division of Laboratory Services at the Albany Medical Center, a 620-bed tertiary care facility and medical school, has a position for a Director of Clinical Chemistry. Candidates should hold a Ph.D. or M.D. degree and be Board-certified or -eligible in clinical chemistry (ABCC) or clinical pathology. Service responsibilities include directing a large computerized clinical chemistry laboratory with a full range of special chemistry, toxicology and immunodiagnostic services. A strong commitment to teaching and research is required and the successful candidate will hold appointments in the Departments of Biochemistry and Pathology, commensurate with experience. Please submit curriculum vitae and three letters of recommendation to: **Thomas G. Rosano, Ph.D., Laboratory Services, Albany Medical Center, 43 New Scotland Avenue, Albany, NY 12208.** *An Equal Opportunity/Affirmative Action Employer M/F/H.*

ELECTRON MICROSCOPY

DIRECTOR of modern multi-instrument central electron microscopy laboratory. Major equipment includes Hitachi H-7000 TV-TEM, Hitachi H-600 STEM, Hitachi S-450 SEM with Kevex EDS, and image processing laboratory with Zeiss Axiophot. The director will be expected to manage and develop the EMC, direct technicians and graduate students, teach courses in EM science, and maintain an active research program. Ph.D. required. Position now vacant. Applications should be completed by 15 April 1988 to assure full consideration. Send a letter of application, curriculum vitae, detailed description of experience with electron microscopes, research and teaching plans, and three letters of recommendation to: **Dr. Roy C. Brown, Department of Biology, University of Southwestern Louisiana, Lafayette, LA 70504-2451.** *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION IN FISHERIES SCIENCE WEST VIRGINIA UNIVERSITY

There is a full-time, 9-month, tenure-track position open at the assistant professor rank at West Virginia University. Responsibilities include teaching fisheries courses and developing a research program in fish biology, aquatic ecology, or fisheries management. Summer salary will be available initially to assist with the establishment of an externally funded research program. Qualifications include an earned doctorate in fisheries science and demonstrated ability to carry on independent research and teaching. Applications will be accepted until 1 May 1988. Send a letter of application, résumé, college transcripts, and three reference names to: **Dr. Jack E. Coster, Director, Division of Forestry, West Virginia University, P.O. Box 6125, Morgantown, WV 26506-6125.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS IN EVOLUTIONARY MOLECULAR BIOLOGY DALHOUSIE UNIVERSITY AND THE CANADIAN INSTITUTE FOR ADVANCED RESEARCH

The Canadian Institute for Advanced Research has opened a program in genome evolution which funds junior and senior faculty research positions at a number of Canadian universities. Initial support is for a 5-year period. The Institute also provides for costs of interaction between members of the program. Department affiliation, level of appointment, salary, duties (generally reduced) outside of research, and tenure considerations will be separately negotiated for each position. Two positions are currently available at Dalhousie University. The first is for a molecular geneticist working on the evolution of mitochondrial or plasmid genome structure and function, with particular emphasis on higher plants or algae. The second is for a molecular geneticist/biochemist interested either in early eukaryote evolution or in genetics and gene expression in archaeobacteria. Successful candidates must meet criteria for appointment as Scholars or Fellows of the Canadian Institute for Advanced Research. *Dalhousie University has a policy of Affirmative Action in hiring qualified women academic staff.*

Send curriculum vitae, selected reprints and names and addresses of referees (at least three) to: **W. F. Doolittle, Department of Biochemistry, Dalhousie University, Halifax, Nova Scotia, Canada. Telephone: 902-424-3569.**

DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF DIABETES AND DIGESTIVE AND KIDNEY DISEASES
OPENING DATE: January 18, 1988 CLOSING DATE: March 4, 1988
(All applications must be postmarked before closing date)

Position: Director, Division of Digestive Diseases and Nutrition

The National Institute of Diabetes and Digestive and Kidney Diseases invites nominations and applications for the position of Director, Division of Digestive Diseases and Nutrition (DDN). The candidate must be internationally recognized within the scientific community as an authority in digestive diseases. In addition, the candidate should demonstrate an interest and a commitment to nutrition research. This Institute conducts, fosters, and supports research and research training in the prevention, management, and cure of diabetes and related endocrine and metabolic diseases; kidney, urologic and hematologic diseases, and digestive diseases and nutrition. Programs encompass intramural laboratory research and extramural (grants and contracts) activities in fundamental diabetes digestive and kidney disorders.

The incumbent serves as the primary official with responsibility for planning and executing the Institute's digestive diseases and nutrition extramural programs. This includes basic and applied research, training fellowships, institutional training awards, multipurpose research centers, clinical trials, and data collection. Advises and participates with the outside voluntary health organizations and the National Advisory Council in identifying and accessing the needs and requirements for research and manpower development in the digestive diseases and nutrition disorders. Additionally, the incumbent serves as principal advisor to the Institute Director on matters and policies pertaining to these areas. Also, the incumbent will conduct intramural research projects in the areas of digestive related diseases and nutrition.

This is a Civil Service position in the Senior Executive Service (SES), with a salary range from \$64,760 to \$73,400 per annum, depending on qualifications. Currently the payable salary is limited to \$73,400. Physicians may be eligible for an additional comparability allowance up to \$10,000 per year. (Alternatively, candidates may be eligible for appointment in the Commissioned

Corps of the U.S. Public Health Service). Mandatory professional/technical qualifications are a medical degree and research program administration and/or clinical experience in digestive diseases and nutrition. Further information on these qualifications are available by contacting Mr. Syd Carter, Personnel Management Specialist, National Institute of Diabetes and Digestive and Kidney Diseases, 9000 Rockville Pike, Building 31, Room 9A30, Bethesda, Maryland 20892, (301) 496-4231.

Mandatory managerial/executive qualifications include evidence of management of a basic or clinical research program, demonstrating ability to assume leadership responsibilities in developing program goals; representing the program to outside groups; directing program planning, execution, and evaluation; and conducting a fair and equitable employment program, including the attainment of EEO objectives.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the degree to which they exceed the mandatory managerial/executive qualifications, and on the following desirable qualifications: scientific reputation/peer recognition, training and education, leadership of a basic or clinical research or research administration program, and honors and awards.

APPLICATIONS (APPLICATION FOR FEDERAL EMPLOYMENT SF-171) should be sent to Mr. Clifford Moss, Executive Secretary, Search Committee for Director, DDN, Building 31, Room 9A30, National Institute of Diabetes and Digestive and Kidney Diseases, Bethesda, Maryland 20892, telephone (301) 496-4231.

A current curriculum vitae and bibliography must accompany all applications. Applications from women and/or minority group members are especially solicited.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

Scientists

The Agricultural Division of CIBA-GEIGY, one of the world's foremost agricultural and specialty chemical companies, is respected for both the quality of its research and the highly accomplished scientists it attracts. We are currently recruiting for two RESEARCH SCIENTISTS to join our Biochemistry Department at our Agricultural Biotechnology Research Unit in Research Triangle Park, North Carolina.

The first position involves the genetic engineering of various insecticidal materials. Specifically, the individual will be rearing test insects, performing various insect bioassays and performing statistical evaluations of the test results.

This position requires a BS or MS degree in a biological science or chemistry plus experience rearing corn root worms and/or European corn borers. Three to five years experience with insect bioassays and statistical analysis is essential. Experience in biochemical separations, protein chemistry, enzyme kinetics, insect neurophysiology, and/or recombinant DNA technology would be advantageous.

The second position involves production of monoclonal antibodies and development of immunoassays for detection and quantitation of proteins and haptens in plants.

This position requires a BS or MS in a biological science with 3-5 years experience in animal cell culture, monoclonal antibody technology and immunochemistry. Basic biochemical techniques such as gel electrophoresis, western blotting and affinity purification are required. Additional experience in biochemical separation and protein chemistry would be helpful.

Our state-of-the-art facilities in Research Triangle Park are conveniently located, with access to several outstanding universities. We offer an excellent salary and benefits package, and the opportunity to contribute to an innovative research program. For prompt and confidential consideration, forward a curriculum vitae and 3 letters of professional recommendation, to: Dr. Mary-Dell Chilton, CIBA-GEIGY Biotechnology Research, P.O. Box 23357, Research Triangle Park, NC 27709. Equal opportunity employer m/f/h/v.

Science Serving Mankind

CIBA-GEIGY

POSITIONS OPEN

FACULTY POSITION. The Department of Pharmacology, University of South Alabama, College of Medicine, invites applications for a tenure-track position at the level of assistant or associate professor. Applicants should have a Ph.D. or equivalent degree and 2 or more years of postdoctoral experience, as well as a commitment to the development of an excellent research program and an interest in teaching medical and graduate students. Applications are encouraged from individuals interested in the regulation of biological processes at the molecular and/or cellular level as broadly related to pharmacology. Interested individuals should send an outline of future research plans, curriculum vitae, including a bibliography, and the names of three references to: **Dr. Samuel J. Strada, Faculty Search Committee, Department of Pharmacology, University of South Alabama, College of Medicine, 3130 Medical Sciences Building, Mobile, AL 36688.** The deadline for the receipt of applications is 31 March 1988. *The University of South Alabama is an Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT OF RADIATION ONCOLOGY FACULTY POSITION ASSISTANT PROFESSOR (M.D. OR Ph.D.)

Molecular biologist with experience in mammalian cell growth regulation to join an established research team with expertise ranging from physical biochemistry to molecular immunology. Research will focus on altered growth regulation of neoplastic cells exposed to ionizing irradiation, cytotoxic drugs and growth factors. Program director: **R. Schmidt-Ullrich, M.D.,** Chairman, Department of Radiation Oncology. Send inquiries to: **I. David Goldman, M.D., Scientific Director, Medical College of Virginia Massey Cancer Center, MCV Box 230, Richmond, VA 23298.** *An Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

GENETICIST. Applications are invited for a tenure-track position at the assistant professor level in the Department of Biology at Southwest Missouri State University. This person must have a Ph.D. and expertise in genetics and botany. The individual must be able to teach and develop advanced courses in genetics and general botany and will be expected to initiate a research program in these areas. A strong potential for fundable research is essential. Send by 15 March 1988, letter of intent, copies of transcripts, and a list of three potential referees to: **Dr. Russell G. Rhodes, Chairperson of Search Committee, Box 148, Department of Biology, Southwest Missouri State University, Springfield, MO 65804-0095.** *SMSU is an Equal Opportunity/Affirmative Action Employer.*

DAKOTA STATE COLLEGE HEAD OF DIVISION OF SCIENCE AND MATHEMATICS AND PROFESSOR OF CHEMISTRY

Applications are invited for this full-time position in the Division of Science and Mathematics. Starting date is 1 July 1988.

Responsibilities include the administrative and leadership duties associated with the position of division head as well as teaching undergraduate chemistry courses, including general chemistry and analytical and physical chemistry. The development of an undergraduate research program and a commitment to the use of computers in teaching and research is essential.

The Ph.D. and college teaching experience are required. Rank and salary will be commensurate with qualifications.

Dakota State College is a nationally recognized leader in innovation in the use of computer technology and supports an excellent computer environment for teaching, research and service.

Applications will be accepted until 25 March 1988, or until the position is filled.

Letters of application, résumé, transcripts, and three current letters of reference should be sent to:

**Dr. David E. Cook
Vice President
Dakota State College
Madison, SD 57042**

An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

Pohang Institute of Science and Technology (POSTECH) invites candidates to apply for **FACULTY POSITIONS** (assistant to full professor) with start dates in 1988 and 1989. Outstanding candidates with a Ph.D. and postdoctoral experience in all areas of life science will receive full consideration. The specific areas of interest are: biochemistry, cell biology, genetics, immunology, microbiology, pharmacology, and virology.

These positions are part of an initiative to establish a strong research-oriented life science department. Individuals will be expected to develop/maintain a vigorous independent or collaborative research program that utilizes modern techniques to address a significant problem in modern biology and to develop graduate and undergraduate courses. All lectures are given in Korean. Send curriculum vitae, copies of recent publications, brief outline of research plans, and three letters of recommendation to: **Dr. S. Chang, POSTECH, P.O. Box 125, Pohang 680, Korea.** Screening of applicants will begin May 1988.

TWO FACULTY POSITIONS MCGILL UNIVERSITY DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS

The Department of Pharmacology and Therapeutics is undergoing a phase of growth and expansion and is now actively searching for candidates with expertise in the area of molecular biology (familiarity with recombinant DNA and other molecular genetic techniques), for two newly created academic tenure-track positions. The level of the positions will be either assistant or associate professor commensurate with the qualifications and experience of the selected candidates. The Department is searching for outstanding candidates involved in leading edge research with the ability to organize and develop independent research groups. The Department has a broad-based group of investigators in neuropharmacology and is also very active in the areas of cardiovascular, receptor, developmental, bronchopulmonary and reproductive pharmacology, as well as toxicology. Specialized facilities available include EM, tissue culture, electronics, photography, and advanced image analysis. Financial assistance to establish laboratories and to purchase equipment as well as statutory relocation assistance will be provided. Applicants should apply in writing, enclosing curriculum vitae, the names and addresses of three referees and a brief outline of proposed research to: **Dr. A. Claudio Cuello, Chairman, Department of Pharmacology and Therapeutics, McGill University, 3655 Drummond Street, Room 1325, Montreal, Quebec, H3G 1Y6** by 15 April 1988, as the Department is anxious to implement the positions as soon as possible.

FACULTY POSITIONS IN PHYSIOLOGY AND BIOPHYSICS CASE WESTERN RESERVE UNIVERSITY

The Department of Physiology and Biophysics invites applications for tenure-track junior and senior positions. Candidates with strong credentials in membrane protein structure and function and biophysical approaches are especially encouraged to apply; however, outstanding candidates in all areas of cell physiology and biophysics will be given serious consideration.

Terms are highly competitive and appointments provide excellent opportunities to develop strong, independent research programs in newly built state-of-the-art facilities in an expanding department and research community.

Submit curriculum vitae, brief statement of present and proposed research interests, representative reprints, and names of four references to: **Dr. Antonio Scarpa, Department of Physiology and Biophysics, Case Western Reserve University, 2119 Abington Road, Cleveland, OH 44106.** *The University is an Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGY/CELL CULTURE TECHNOLOGISTS, INFECTIOUS DISEASES: Beth Israel Medical Center, a major Manhattan teaching hospital affiliated with Mount Sinai School of Medicine, seeks two immunology/cell culture technologists for research laboratory. EIA, RIA, IFA, and cell culture. Excellent salary and benefits. Send résumé to: **Human Resources Department, Beth Israel Medical Center, First Avenue at East 16th Street, New York, NY 10003.** *An Equal Opportunity Employer.*

POSITIONS OPEN

FACULTY POSITION IN BIOCHEMISTRY

Tenure-track position in the Department of Chemistry. Applicants will be considered at all ranks. Ph.D. and postdoctoral or equivalent experience required. Specialization may be in any area of biochemistry or molecular biology. The successful applicant will be expected to establish or continue a vigorous, externally funded research program and participate in undergraduate and graduate (M.S. and Ph.D.) programs. Opportunities available for collaboration with other departments, major area hospitals and biotechnology companies. Submit curriculum vitae, an outline of research plans and arrange for three letters of recommendation to be sent. All applications should be received by 21 March 1988. Send to: **Professor Denis Callewaert, Department of Chemistry, Oakland University, Rochester, MI 48309-4401.** *Oakland University is an Equal Opportunity/Affirmative Action Employer.*

THE UNIVERSITY OF CALGARY FACULTY POSITIONS IN CANCER RESEARCH

The University of Calgary, The Metastasis Research Group, invites applications for faculty positions dedicated primarily to research activities in the area of cellular metastasis. Individuals at any professional rank, who have a Ph.D. and/or M.D. and demonstrated ability for independent research in the area of tumor biology and/or metastasis are encouraged to apply. Up to four positions in the following areas are available: extracellular matrix, growth factors and proteases. Individuals with training in cell biology, molecular biology, or protein chemistry are particularly encouraged to apply.

Candidates must have research accomplishments that would merit scholarship support from granting agencies such as the Medical Research Council of Canada, National Cancer Institute of Canada or the Alberta Heritage Foundation for Medical Research. Academic rank and salary are commensurate with experience and qualifications.

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

The deadline for receipt of applications is 30 June 1988.

Applicants should apply in writing, enclosing curriculum vitae, the names of three referees and a research program summary to:

**Dr. E. A. Turley
Head, Metastasis Research Group
The University of Calgary
Health Sciences Centre
3330 Hospital Drive N.W.
Calgary, Alberta T2N 4N1**

IMMUNOLOGY POSTDOCTORALS

Two-year postdoctoral positions are available at highly competitive stipends for qualified candidates: Program opportunities include basic and clinical research in AIDS, macrophage activation, T-cell development, immunotoxicology, autoimmune disease, retroviral disease mechanisms, biological response modifiers, radio-immunoimaging, immunohematologic diagnosis, cancer immunotherapy, regulation of the immune response, applications of monoclonal antibodies, and radiation-induced leukemia. Submit curriculum vitae, letter(s) of recommendation, and a description of research interests to: **Dr. A. Silverstone, Immunology Initiative, SUNY Health Science Center, 766 Irving Avenue, Syracuse, NY 13210.**

SUNY Health Science Center is an Equal Opportunity Affirmative Action Employer.

MALARIA RESEARCH; PROGRAM ANALYST

Major malaria vaccine development program needs program analyst to monitor contract compliance and analyze nontechnical aspects of malaria research network. Requirements: at least 5 years of training and/or experience in business and fiscal management (including program management); good writing ability essential. Familiarity with government contracting procedures and computer database use highly desirable. Some knowledge of biological terms desirable. Some travel required. Non-profit institution. Reply with curriculum vitae to: **AIBS, Attention: Dr. Winter, 1800 North Kent, #930, Arlington, VA 22209.**

Opportunities in Immunology, Molecular Biology and Protein Biochemistry

SECTION HEAD— CARTILAGE BIOLOGY (IAA)

The candidate should have an MD or PhD with at least 10 years of post-doctoral experience. Scientific productivity, the ability to collaborate, and management skill should be demonstrable through publications, the achievement of substantial grant support, and/or group leadership. An international reputation for work in the areas of osteoarthritis or cartilage degradation is essential, with experience in drug development preferred. The candidate will be expected to staff the section and initiate a basic research program designed to elucidate new approaches to drug development. Salary is negotiable commensurate with qualifications.

SECTION HEAD—SUPPRESSOR T-CELL REGULATION (IAA)

Qualifications consistent with the above description are sought. The candidate's scientific reputation should lie in the areas of T-cell suppressor circuits or suppressor factor biochemistry with knowledge and interest in the study of autoimmune disease, esp. rheumatoid arthritis.

SENIOR SCIENTISTS— MOLECULAR BIOLOGY (MTI)

Minimum requirements are a PhD and 2 years of post-doctoral training. Experience in molecular biology, molecular genetics of mammalian cells, or protein biochemistry is preferred. Candidates will be expected to work independently on projects involving isolation and analysis of mammalian genes at all levels, including cloning and sequencing, analysis of expression, and gene transfer.

Molecular Diagnostics Inc. (MDI), Molecular Therapeutics Inc. (MTI), the Institute for Arthritis and Autoimmunity (IAA), and Miles Institute for Preclinical Pharmacology (MIPP) are advanced research institutes which collectively comprise the newly-formed Miles Research Center in West Haven, CT. The Center functions as a major-research resource of Bayer AG of West Germany and its subsidiary, Miles Inc. It is located in a newly-constructed facility which is the first of several such facilities to be built at the West Haven site.

MDI and MTI are engaged in biotechnology research; the newly-formed IAA is dedicated to the discovery of new targets for drug therapy. Areas of interest include molecular and cellular genetics, nucleic acid chemistry, cell biology, immunology and protein chemistry. The individual institutes function collaboratively with each other, and with other research entities of the Bayer group.

The Center is engaged in a major expansion of its staff and offers outstanding opportunities to candidates with appropriate credentials, as described below:

JUNIOR SCIENTIST— BIO-ORGANIC CHEMISTRY (MDI)

We are also seeking a postdoctoral-level research scientist with a PhD degree in organic chemistry or biochemistry. Experience in the area of nucleic acid chemistry and/or heterogeneous phase reaction is desirable.

RESEARCH ASSOCIATES (MDI and MTI)

Applicants must have BS or MS degree and at least 1 year experience. Proficiency in recombinant DNA techniques, tissue culture, protein chemistry, or assay development is desirable.

Applicants should be able to function in an informal but challenging research environment with strong academic ties. The positions offer attractive compensation, generous benefits, and excellence opportunities for personal growth. Resumes should be forwarded to Research Director at the appropriate institute, at: Miles Research Center, 400 Morgan Lane, West Haven, CT 06516.

An Equal Opportunity Employer M/F/H/V

MILES RESEARCH CENTER

POSITIONS OPEN

IMMUNOLOGIST

St. Luke's Medical Center located in Milwaukee, Wisconsin has a full-time opportunity to join our transplant program.

The immunologist we seek will become an integral part of our transplant team and function as a resource, clinical manager and researcher.

A Ph.D. in immunology, with a minimum of 3 years of postdoctoral immunology experience, is strongly preferred. The ideal background will include solid research background, knowledge of UNOS/ASHI guidelines as well as NIH experience. Previous clinical transplant immunology experience would be considered a definite asset.

We offer a competitive salary structure, benefit package, and support of further independent immunological research with an adjunct appointment at Marquette University. For confidential consideration please send your curriculum vitae to: **D. Brutus, St. Luke's Medical Center, 2900 West Oklahoma Avenue, Milwaukee, WI 53215. An Equal Opportunity Employer, M/F/H/V.**

PHARMATEC INC. GAINESVILLE, FLORIDA AREA MANAGER OF QUALITY ASSURANCE/ QUALITY CONTROL

Applicants should have bachelor's or master's degrees and should be experienced in analytical chemistry, quality assurance and quality control of compound synthesis and/or formulation preparation. Applicants should be able to set up and run a Quality Assurance unit for pharmaceutical raw materials to GMP specifications and work well with the analytical group to develop the Quality Control procedures necessary. Applicants should have several years of experience in the U.S. pharmaceutical industry. Send letters of interest and curriculum vitae to: **John F. Howes, Ph.D., P.O. Box 730, Alachua, FL 32615. Pharmatec is an Equal Opportunity Employer.**

The Department of Biological Sciences, University of Southern Mississippi, invites applications for two tenure-track positions at the assistant/associate level:

1) **MICROBIAL PHYSIOLOGIST:** Research interests may be in any area of microbial physiology. Teaching responsibilities include microbial physiology, food microbiology, and participation in teaching of general microbiology; other advanced courses may be developed.

2) **MICROBIAL GENETICIST:** Research interests in any area of microbial genetics or molecular biology of microorganisms are welcome. Teaching responsibilities include microbial genetics, molecular biology, and participation in teaching of general and/or medical genetics.

In addition to teaching responsibilities, each successful candidate must develop a vigorous, externally-funded research program. Letter of application must include a statement of research and teaching interests, curriculum vitae, and names of at least three references. Applications for position 1 should be directed to **Dr. R. D. Ellender, Microbial Physiologist Search Committee**; for position 2 to: **Dr. B. L. Middlebrooks, Microbial Geneticist Search Committee**, both at the following address: **Department of Biological Sciences, University of Southern Mississippi, Hattiesburg, MS 39406-5153.** Deadline for receipt of applications is 15 April 1988. *Affirmative Action/Equal Opportunity Employer.*

MOLECULAR GENETICIST (M.D. or M.D.-Ph.D.) wanted as Chief of new Genetics Division in the Department of Pediatrics of Case Western Reserve University School of Medicine at Rainbow Babies and Childrens Hospital. Incumbent will be expected to develop and recruit additional faculty for independent research program to complement present strength in epithelial cell biology, cystic fibrosis, immunology and neonatal metabolism and to interface with science department. Preference will be given to a clinically trained physician-scientist who will develop research training opportunities in molecular genetics within the Department of Pediatrics. Faculty rank/salary commensurate with experience. *Qualified women and minority group members are encouraged to apply.* Contact: **M. Berger, M.D., Ph.D., Department of Pediatrics, Case Western Reserve University School of Medicine, 2074 Abington Road, Cleveland, OH 44106. Telephone: 216-844-3237. CWRU is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

MICROBIOLOGIST

The Division of Urology of the Department of Surgery of the University of Cincinnati Medical Center invites applications for Ph.D. for the position of assistant professor to study the host defense mechanism of urinary tract infections in humans. Join appointment will be through the appropriate basic science department and the Department of Surgery. Position will be supported for a period of 2 to 3 years, then will be maintained through self-sufficient grant funding. Applicant should send curriculum vitae with bibliography to: **R. Bruce Bracken, M.D., Professor and Director, Division of Urology, Department of Surgery, University of Cincinnati Medical Center, 231 Bethesda Avenue, M.L. 589, Cincinnati, OH 45267-0589.**

MICROBIOLOGIST: The Department of Biology, Memphis State University invites applications for an anticipated tenure-track position. Applicants should have a Ph.D. in microbiology, postdoctoral or related experience preferred. Rank and salary are negotiable. The successful applicant is expected to teach courses in introductory and applied microbiology and to establish an externally funded research program. Send curriculum vitae and three letters of recommendation to: **Joseph S. Layne, Department of Biology, Memphis State University, Memphis, TN 38152.** Application deadline: 31 March 1988. *Memphis State University is an Equal Opportunity/Affirmative Action Employer. Successful candidate must meet Immigration Reform Act criteria.*

MOLECULAR BIOLOGY. Assistant or associate professor, tenure-track, Ph.D. position in the Department of Pathology, Eastern Virginia Medical School. Preference for research interests in nutrition, obesity, energy metabolism, diabetes, or gut hormones, but general molecular biology acceptable. Laboratory and office to be located at Hampton VA Medical Center. Applicants must have a good publication record and potential for funding; will be eligible to apply for VA funding. Send curriculum vitae and names of three references to: **Richard L. Atkinson, M.D., Research Service, VA Medical Center, Hampton, VA 23667.** *An Affirmative Action/Equal Opportunity Employer.*

MOLECULAR BIOLOGY RESEARCH POSITION, Ph.D. Academic research position with immunology research group. Assistant research molecular biologist. Demonstrated research accomplishments, 2 years of postgraduate work and established bibliography required. Reply to: **Dr. Martin Kagnoff, Department of Medicine, M-023D, University of California, San Diego (UCSD), La Jolla, CA 92093, by 1 June 1988.** Salary set within UCSD research series salary scale. *Affirmative Action/Equal Opportunity Employer.*

MOLECULAR TUMOR BIOLOGISTS/IMMUNOLOGISTS: Tenure-track faculty positions (two), at the assistant and associate professor rank, are available for Ph.D. molecular biologists with two or more years of postdoctoral experience in recombinant DNA technology. Candidates should have interests in gene structure/function and expression in cancer cells, and have demonstrated skills in constructing cDNA and genomic DNA libraries, molecular cloning, DNA sequencing, preparing prokaryotic and eukaryotic expression vectors, restriction enzyme mapping and oncogenes. Major responsibilities will be to develop an independent research program and to collaborate on research projects with other faculty members. The department is undergoing a major growth phase, with a focus on cancer research, offering the successful candidates excellent incentives, including competitive salaries, research space, and state-of-the-art equipment. Please send curriculum vitae, three letters of reference, and a description of your cancer research interests to: **George L. Wright, Jr., Ph.D., Professor and Chairman, Department of Microbiology and Immunology, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501.** *An Affirmative Action/Equal Opportunity Employer.*

The Department of Pediatrics at the University of Michigan is seeking Board-eligible/certified **PEDIATRIC HEMATOLOGIST/ONCOLOGIST.** Duties include patient care, teaching and research activities. *The University of Michigan is an Equal Opportunity/Affirmative Action Employer.* If interested, please send curriculum vitae to: **Laurence A. Boxer, M.D., Director, Pediatrics Hematology/Oncology Division, F6515 C. S. Mott Children's Hospital, 1500 East Medical Center Drive, Ann Arbor, MI 48109-0238.**

POSITIONS OPEN

University of Florida. The Department of Chemistry seeks a **PHYSICAL CHEMIST** with research interests in the experimental and/or theoretical polymer chemistry of synthetic or biological macromolecules. Teaching at all levels is expected. Rank is open, including the assistant professor level. Send a detailed curriculum vitae, a list of publications, and a clear statement of research plans (less than six pages), and arrange to have three letters of recommendation sent to: **K. B. Wagener, Department of Chemistry, University of Florida, Gainesville, FL 32611.** Closing date is 1 April 1988. *The University of Florida is an Equal Opportunity/Affirmative Action Employer.*

PLANT ECOPHYSIOLOGY

The Department of Biological Sciences of l'Université du Québec à Montréal is seeking candidates for a **TENURE-TRACK POSITION** in plant ecophysiology. Candidates must have a Ph.D. in this field. Postdoctoral experience is desirable. Proven ability in research, preferably on the ecophysiology of trees, and teaching is required. Teaching responsibilities (in French) will be in some of the following fields: plant ecology, forest ecology, plant ecophysiology, population, and/or community ecology, plant physiology. The position is to be filled by 1 June 1988. Send curriculum vitae (in French) and have three letters of reference sent directly, before 26 March 1988, to:

Dr. Jean Gingras, directeur, Département des Sciences biologiques, Université du Québec à Montréal, C.P. 8888, Succursale A, Montréal, Québec, H3C 3P8, Canada.

POSTDOCTORAL ASSOCIATE in gastrointestinal neuropharmacology. The successful applicant will investigate the role of enteric neuropeptides in regulating intestinal ion transport processes through the use of contemporary pharmacological, physiological and neuro-anatomical techniques. Candidate will work closely with **Drs. D. R. Brown** (veterinary biology) and **V. S. Seybold** (cell biology and neuroanatomy). Ph.D. and at least 1 year of research experience in pharmacology or other biomedical discipline is required. Send curriculum vitae by 15 January 1989 to: **David R. Brown, Ph.D., Department of Veterinary Biology, University of Minnesota, 1988 Fitch Avenue, St. Paul, MN 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

POSTDOCTORAL FELLOW. The McGill University Research Centre has two openings in limnology. Area of expertise is open but applications in sediment chemistry, environmental toxicology/acidification, macrophyte or microbial ecology are especially welcome. Send curriculum vitae, statement of research interests, and at least three references names to: **Dr. J. Kalff, Department of Biology, McGill University, 1205 Dr. Penfield Avenue, Montreal, Quebec, H3A 1B1.**

POSTDOCTORAL FELLOW—Henry Ford Hospital announces an immediate opening for the position of postdoctoral fellow in its Molecular Biology Research Laboratory. The individual selected will study gene expression and simian virus 40. [See e.g. *Cell* 48, 289; *JBC* 262, 15527]. Experience in biochemistry/molecular biology and mammalian cell culture is preferred. Competitive salary and outstanding benefits are available. For consideration send curriculum vitae and the names of three references to: **Dr. L. C. Lutter, c/o Deloris Hunt, Henry Ford Hospital, Employment Center, 2921 West Grand Boulevard, Detroit, MI 48202.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately for qualified recent Ph.D. with experience in biochemistry/cell biology to study signal transduction pathways in platelets and other cells. A background in membrane biochemistry or receptor biology is desirable. Strong collaborative relationship exists with the Alcohol Research Center of Thomas Jefferson University. Salary is commensurate with experience. Interested candidates should send curriculum vitae, summary of research experience, and the names of two references to: **Dr. Raphael Rubin, Department of Pathology and Cell Biology, Thomas Jefferson University, 203A Mail Building, 10th and Sansom Streets, Philadelphia, PA 19107.** Telephone: 215-928-5031. *Thomas Jefferson University is an Equal Opportunity Employer.*

POSITIONS OPEN

POSTDOCTORAL FELLOW POSITION. We are seeking a candidate (M.D. and/or Ph.D.) to participate in a federally funded project studying signal transduction mechanisms in HIV-infected lymphocytes. For further information, please write or call: W. L. Stroble, Department of Pharmacology and Toxicology, Box 613, MCV Station, Virginia Commonwealth University, Richmond, VA 23298-0613. Telephone: 804-786-8416. *Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.*

TWO POSTDOCTORAL FELLOWSHIPS will be available 1 June 1988 for research training in respiratory physiology. Applicants must have doctoral degrees and meet residence requirements for support by NIH training grant. Send curriculum vitae and names of three references to: Donald Bartlett, Jr., M.D., Department of Physiology, Dartmouth Medical School, Hanover, NH 03756. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION to study ion channels and synaptic receptors in cultured cells and oocytes using patch clamp techniques. Send curriculum vitae, names, addresses, and telephone numbers of three references, and reprints or manuscripts if available to:

Dr. Meyer Jackson
Department of Biology
University of California, Los Angeles
405 Hilgard Avenue
Los Angeles, CA 90024

A POSTDOCTORAL POSITION is available immediately at the Dana-Farber Cancer Institute, Division of Cancer Pharmacology, to study mechanism, kinetics and biological efficacy on antiretroviral therapy in vitro and in vivo in murine systems, including prevention or therapy of nervous system infections or in utero transmission of retroviruses. A background in virology, cell biology or pharmacology is desirable. Please send curriculum vitae, bibliography and a list of three references to: Ruth M. Ruprecht, M.D., Ph.D., Dana-Farber Cancer Institute, 44 Binney Street, Boston, MA 02115. The applicant will be recommended for a concurrent appointment at an appropriate department at Harvard Medical School. *The Dana-Farber Cancer Institute is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION in immunology/molecular biology at Case Western Reserve University School of Medicine for candidate with Ph.D. and an interest in studying virus/host cell interactions. Projects include examination of cytokine effects on HIV gene activation and lymphocyte-mediated cytotoxicity directed against HIV-derived antigens. Program is multidisciplinary and involves active participation of immunologists, biochemists, retrovirologists and molecular biologists. Please send statement of research interests, a detailed résumé, and the names, addresses, and telephone numbers of three references to: Dr. Michael M. Lederman, Director, Special Immunology Unit, University Hospitals of Cleveland, 2074 Abington Road, Cleveland, OH 44106. *Case Western Reserve University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION IN IMMUNOLOGY available to study the regulation of the immune response at the molecular level. Research will involve studies on the regulation of certain lymphokines using recombinant DNA technology. Experience in virology and membrane biochemistry desirable. Please send application to: Dr. Nancy Magnuson, Department of Microbiology, Washington State University, Pullman, WA 99164-4340. We hope to fill this position starting 1 April 1988. *WSU is an Equal Opportunity/Affirmative Action Employer.*

TWO POSTDOCTORAL POSITIONS available immediately, one to examine protein secretion and the signal recognition particle, the other to investigate the proteins involved in stimulating or limiting blood coagulation. Experience with proteins, nucleic acids, membranes, and/or fluorescence spectroscopy preferred. Send résumé, names of three references, and brief summary of research experience to: Dr. Arthur E. Johnson, Department of Chemistry, University of Oklahoma, Norman, OK 73019.

Postdocs/Research Associates Pharmacological Sciences

Genentech, Inc., a leader in the field of biotechnology, currently has the following openings:

Postdoctoral Scientist

Our Pharmacological Sciences Department seeks an individual to participate in Research projects examining the molecular mechanisms of the effects of cytokines, immunosuppressive and anti-inflammatory agents, and recombinant proteins on cell function.

The successful candidate will have 1-3 years' training with experience in one or more of the following areas: cell biology, protein chemistry, or signal transduction. Experience in working with animal model systems helpful.

Research Associate

In this position you'll perform in vitro testing of cytokines, immunosuppressive peptides, and anti-inflammatory proteins using a variety of assay systems. In addition, the

position requires maintenance of cell cultures and characterization of protein samples.

The qualified candidate will have experience with cell culture, polyacrylamide gel electrophoresis and preparation of human leukocytes for in vitro testing. B.S. with 3-5 years' experience, or M.S. with 2 years' experience in related areas required.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. Please send resume to George Cianciolo, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. An equal opportunity employer.

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Associate Director Biomolecular Discovery

Smith Kline & French Laboratories has launched a significant research program to identify natural product leads by the use of state-of-the-art mechanism-based screens. These efforts are directed at targets relevant to cardiovascular, immunologic, gastrointestinal, neoplastic, viral and other diseases.

The newly created Department of Biomolecular Discovery is seeking a highly talented scientist to direct the development of bioassays amenable for high-throughput screening, provide expertise in screen automation, oversee the performance of large scale screening of natural products for activity against high-priority targets and work closely with natural product chemists in isolating and defining novel compounds. The individual will interact with scientists involved in cloning, expression and purification of specific ligands, receptors and enzymes which will serve as the basis for selective bioassays. This is an exceptional career opportunity for an individual who seeks the challenge of program development within an established pharmaceutical company.

The successful candidate should possess:

- Ph.D. in Pharmacology, Biochemistry or a related field.
- At least 7 years of postdoctoral experience which must include experience in the pharmaceutical industry involved in devising and implementing high-throughput bioassays.
- expertise in bioassay automation desirable.
- record of scientific accomplishment as exemplified by patents and publications.
- strong supervisory skills.
- ability to effectively communicate and interact in a highly collaborative environment.

We offer an excellent compensation, benefits and relocation package as well as a work environment that offers considerable opportunity for personal and professional growth. Publication of research results is strongly encouraged and supported. For confidential review, please forward your C.V. and names of three references to: Robert F. Obst, Manager, Personnel Relations, R0124, Smith Kline & French Laboratories, Research and Development Division, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an Equal Opportunity Employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

GRADUATE OPPORTUNITIES

In Space Biology



The DIVISION OF BIOLOGY at KANSAS STATE UNIVERSITY is offering an exciting opportunity for you in BIOSERVE SPACE TECHNOLOGIES, a NASA CENTER FOR THE COMMERCIAL DEVELOPMENT OF SPACE. Graduate assistantships, with an annual stipend of \$10,200, are being awarded to qualified students for studies that combine interests in SPACE with research careers in BIOLOGY.

Applications are invited for graduate studies in:

- virology & oncology
- microbiology & immunology
- cell & developmental biology
- molecular biology & genetics
- physiology & ecology

For further information write:

BIOSERVE SPACE TECHNOLOGIES
DIVISION OF BIOLOGY—ACKERT HALL
KANSAS STATE UNIVERSITY
MANHATTAN, KS 66506

KSU is an equal opportunity/affirmative action employer

**PUBLIC HEALTH SERVICE
NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF ENVIRONMENTAL
HEALTH SCIENCES
RESEARCH TRIANGLE PARK, NORTH CAROLINA
STUDY TOXICOLOGIST**

GS-11/12/13

SALARY RANGE \$27,716 - \$51,354

The Division of Toxicology Research and Testing (DTRT), an operating component of the National Toxicology Program (NTP), is seeking applicants for the position of Study Toxicologist to serve as a Chemical Manager and/or Project Officer in the Carcinogenesis and Toxicologic Evaluation Branch (CTEB). The selectee will serve under a three-year postdoctoral training program for toxicologists and will design, monitor and report the toxicological effects from exposure of laboratory animals to chemicals being tested at laboratories under contract to the NTP. In addition, CTET maintains in-house research laboratories for developing, validating and evaluating methods for toxicologic characterization of chemicals and other environmental agents. DTRT is responsible for short-term and long-term toxicology and carcinogenesis studies in collaboration with other government agencies and for the dissemination of results to the scientific community and regulatory agencies. Incumbent must possess a Ph.D., D.V.M. or Sc.D. degree (including research) in toxicology or a directly related field. U.S. citizenship required.

For additional information, contact Johnny McLean or Emily Starnes at 919-541-7811. To apply, submit curriculum vitae and the names of three references by April 1, 1988 to:

Johnny L. McLean (HNV55)
NIEHS Personnel Office
P.O. Box 12233
Research Triangle Park, NC 27709

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

VACANCY ANNOUNCEMENT NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE Department of Health and Human Services

The National Institute on Aging (NIA) invites nominations and applications for the position of DEPUTY DIRECTOR. This is a Civil Service position in the Senior Executive Service with a salary range of \$65,994 - \$73,400 per annum. The person selected may be eligible for Physician's Comparability pay up to \$20,000 per year. A one-year probationary period must be served by the individual selected if not currently in the Senior Executive Service.

The Deputy Director assists the Director in the policy development and coordination of all Institute activities, which include: conducting, fostering and supporting biomedical, social and behavioral research and training pertaining to the aging process and common problems of older people.

Further information about the position and qualifications requirements may be obtained by contacting Mr. Michael P. Lockard at (301) 496-5347. An Application for Federal Employment (SF-171) accompanied by a current curriculum vitae and bibliography should be submitted to: NIA Personnel, Building 31, Room 2C07, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland 20892.

Applications Must Be Postmarked No Later Than March 31, 1988.

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

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

LOOKING FOR A CAREER CHANGE?

Editorial position at *Science* available for a PhD biochemist or molecular biologist with two or three years of research experience and specific capability in one or more of the following areas: protein structure and function, enzymology, cell biology, or immunology. We are seeking someone with wide general interest in quantitative aspects of the life sciences and publications in the refereed literature. Editors have wide responsibilities in manuscript selection ranging from solicitation to editing for clarity. Previous editorial experience is not required. This is a full-time position in our Washington offices.

Please send resume with cover letter including salary requirements to:

**Ms. Carolyn Bell
AAAS
1333 H Street, NW
Washington, DC 20005**

EOE

Post-doctoral Fellowships

The Imperial Cancer Research Fund is one of the largest independent cancer research institutes in Europe employing approximately 320 scientists and clinicians. It has a wide ranging programme in fundamental, applied and clinical cancer research.

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

Each research group works independently. All have access to centralised services including cell production, oligonucleotide and peptide synthesis, amino acid and

DNA sequencing, a library of DNA probes and somatic cell hybrids for gene mapping, experimental animal breeding and maintenance including transgenic mice, electron microscopy and a large computer facility.

Approximately 40 post-doctoral fellowships are available each year to scientists of any nationality. Most of these are three year fellowships, but visiting fellowships for a period of one or two years are also offered. Salaries for postdoctoral fellows are in the range of £12,500-£16,000, dependent on age and experience.

Further information on the research interests of the groups and details of projects currently available may be obtained from:-

Mrs. P. Harwood, Personnel Department, Imperial Cancer Research Fund, PO BOX 123, London WC2A 3PX. Quoting ref no. 82/R. Closing date for applications: 25th March 1988.

Staff Scientists: Sir Walter Bodmer (Director of Research), J. Armstrong, F. Balkwill, D. Bentley, J. Bodmer, D. Cantrell, L. Crawford, A. Creighton, M. Crumpton, J. Cuzick, P. Darbre, N. Deshpande, C. Dickson, J. Fox, M. Fried, A-M. Frischauf, S. Gendler, S. Goodbourn, P. Goodfellow, R. Hallows, I. Hart, B. Hill, G. Hodges, N. Hogg, M. Horton, N. Jones, P. Karran, J. Kemshead, I. Kerr, R. King, H. Land, B. Lane, D. Lane, A. Lee, H. Lehrach, T. Lindahl, M. Meuth, C. O'Neill, M. Owen, M. Parker, G. Peters, J. Rothbard, C. Rowlatt, E. Rozengurt, D. Sheer, E. Solomon, G. Stark, J. Taylor-Papadimitriou, N. Teich, A. Thomson, P. Thorpe, J. Trowsdale, D. Tucker, D. Wang, R. Watson, F. Watt, S. West, J. Williams, R. Wolf, N. Wright, B. Young.

I M P E R I A L CANCER RESEARCH FUND

DEPUTY DIRECTOR NATIONAL INSTITUTE OF MENTAL HEALTH ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION PUBLIC HEALTH SERVICE DEPARTMENT OF HEALTH AND HUMAN SERVICES

The Alcohol, Drug Abuse, and Mental Health Administration invites nominations and applications for the position of Deputy Director, National Institute of Mental Health (NIMH).

This is a Senior Executive Service position in the career Civil Service with an annual salary range of \$65,994 to \$73,400. Physicians may also be eligible for a Physicians' Comparability Allowance of up to \$10,000 per year. The position is located in Rockville, Maryland.

NIMH provides leadership for the Federal effort in the promotion of mental health, and its programs include intramural and extramural research, the administration of training programs to meet national mental health manpower needs, and the provision of technical services to States and communities. The Deputy Director participates fully with the Director, NIMH, in managing a staff of 1,000 and a budget of \$342 million.

Minimum qualification requirements include a degree of Doctor of Medicine, Doctor of Osteopathy, or a bachelor's or higher degree in an academic field relating to the health sciences, and progressively responsible experience in developing, administering, and evaluating mental health programs. Candidates must also have experience in the

management of mental health programs, demonstrating competence to assume leadership in planning, staffing, directing, coordinating and allocating resources, and other responsibilities associated with executive leadership of a major national program.

Further information about the position and qualification requirements may be obtained by contacting Ms. Lois Mercer, (301)443-5030. Application for Federal Employment, SF-171, accompanied by a current curriculum vitae and bibliography should be submitted to Ms. Lois Mercer at the Division of Personnel Management, Alcohol, Drug Abuse, and Mental Health Administration, 5600 Fishers Lane, Rockville, Maryland 20857, Room 15C-26. Applications will be accepted without the SF-171 provided that the SF-171 is submitted upon request. Complete application material (including the SF-171) must be postmarked by March 31, 1988.

Applications from women and minority group members are especially solicited.

THE ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION IS AN EQUAL OPPORTUNITY EMPLOYER.

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately for a Ph.D. in biochemistry, immunology, cell biology, pharmacology, or related areas to study the cellular and biochemical mechanisms of multidrug resistance in cancer cells. Experience in monoclonal antibody production and membrane/receptor biochemistry desirable. The position renewable up to 3 years. Applicants should send curriculum vitae, recent publications, and three letters of reference to: **Dr. Ahmad R. Safa, Joint Section of Hematology/Oncology, University of Chicago and Michael Reese Medical Centers, L231 Blood Center, Lake Shore Drive at 31st Street, Chicago, IL 60616.**

POSTDOCTORAL POSITION available for an organic, medicinal, or biochemistry Ph.D. to develop techniques to sequence acidic polysaccharides. Background in carbohydrate chemistry, electrophoresis/biopolymer sequencing, enzymology, NMR, and HPLC desirable. Ability to work across disciplines essential. Salary \$19,000 plus fringe benefits. Send résumé and two letters of reference to: **Professor Robert J. Linhardt, Division of Medicinal and Natural Products Chemistry, College of Pharmacy, University of Iowa, Iowa City, IA 52242. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION, NIH/NRSA-funded, available immediately to study the molecular genetics of lipoprotein metabolism. The studies will center on the creation and analysis of transgenic mice as part of an established lipoprotein research program. The position needs to be filled by 1 July 1988 with a U.S. citizen or permanent resident. Send curriculum vitae and the names of three references to: **Dr. Edward Rubin, Cell and Molecular Biology Division, Lawrence Berkeley Laboratory, M.S. 74-157, #1 Cyclotron Road, Berkeley, CA 94720. Lawrence Berkeley Laboratory is an Equal Opportunity Employer. Minority and women candidates are encouraged to apply.**

POSTDOCTORAL POSITION is available immediately to collaborate on studies examining the molecular mechanics of oxidant-induced alterations in pulmonary endothelial cell membrane structure and function. Position is for 1 to 2 years, and involves isolation and purification of cell plasma membranes, identification and quantitation of membrane lipids, preparation of vesicles and reconstituted membrane systems, and measurements of transmembrane transport and membrane biophysical properties. Background in membrane protein biochemistry, membrane physiology and biophysics, or lipid biochemistry is desired. Send curriculum vitae and names and telephone numbers of three references to: **Dr. Edward R. Block, J. Hillis Miller Health Center, Box J-225, University of Florida, Gainesville, FL 32610. Telephone: 904-374-6069.**

POSTDOCTORAL POSITIONS at the National Heart, Lung, and Blood Institute, National Institutes of Health, Public Health Service are available starting 1 July 1988 to study the biochemistry and physiology of the 70-kD class of heat-shock proteins in yeast. The focus of the laboratory is on the function of these proteins in the heat shock phenomenon, in translocating newly synthesized proteins through the endoplasmic reticulum, and in the uncoating of clathrin from coated vesicles during endocytosis. These positions have a salary range of \$20,000 to \$37,997 per annum depending on experience, and are located on the National Institutes of Health (NIH) campus in Bethesda, Maryland. Please send curriculum vitae and three letters of recommendation to: **Dr. Lois Greene, Laboratory of Cell Biology, National Heart, Lung, and Blood Institute, 9000 Rockville Pike, Building 3, Room 81-22, Bethesda, MD 20892. An Equal Opportunity Employer.**

POSTDOCTORAL POSITIONS—IMMUNOLOGY

Positions are available immediately to study the immunoregulatory functions of murine alveolar macrophages at the cellular and molecular level. Recent Ph.D. with experience in cellular immunology, biochemistry, and/or molecular biology desirable. Send curriculum vitae and names of three references to: **Dr. H. B. Herscovitz, Department of Microbiology, Georgetown University Medical Center, Washington, DC 20007.**

POSITIONS OPEN

POSTDOCTORAL POSITION FOR THE STUDY OF CROSSBRIDGE MECHANISMS UCLA DEPARTMENT OF PHYSIOLOGY

A postdoctoral position is available to recent doctorates in physiology, biochemistry, or biophysics beginning September 1988. Studies will focus on the cross-bridge reaction mechanism in single muscle fibers during isometric and shortening contractions using measurement of ATP hydrolysis (msec time scale) and mechanical transients accompanying step changes in substrates and products initiated by laser flash photolysis of a variety of "caged" compounds. Submit curriculum vitae and names and addresses of three references to: **Dr. Earl Homsher, Department of Physiology, School of Medicine, Center for the Health Sciences, University of California, Los Angeles, CA 90024-1751.**

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

POSTDOCTORAL POSITION: MAMMALIAN DEVELOPMENT

Two postdoctoral positions open immediately to study growth control during limb development in mice. Approaches include immunochemistry, retroviral lineage marking, cell culture and ex utero embryo surgery. Interested candidates are invited to send curriculum vitae, names of three references and a description of research goals to:

**Dr. Ken Muneoka
Department of Biology
Tulane University
New Orleans, LA 70118**

Tulane University is an Affirmative Action/Equal Opportunity Employer

POSTDOCTORAL POSITION IN VASCULAR PHARMACOLOGY available immediately for at least 2 years, to study the influence of age on vascular adrenergic reactivity, including smooth muscle response and control of transmitter release. Send curriculum vitae and three references to: **S. P. Duckles, Ph.D., Department of Pharmacology, College of Medicine, University of California, Irvine, CA 92717.**

POSTDOCTORAL POSITION in cardiovascular pharmacology available immediately for a recent Ph.D. in pharmacology, physiology, or biochemistry. The project is related to identification of purine receptors and the involvement of second messenger systems. Salary NIH level. Experience in receptor biochemistry or pharmacology preferred. Send curriculum vitae and three letters of recommendation to: **Dr. S. Jamal Mustafa, Department of Pharmacology, East Carolina University, Greenville, NC 27834. Federal law requires proper documentation of identity and employability prior to final consideration for this position. Affirmative Action/Equal Employment Opportunity.**

POSTDOCTORAL RESEARCH ASSOCIATE. A research position is available for July 1988 to develop protein design approaches for the production of agonists and antagonists to lymphokines. Applicant will participate in an established investigation within a group whose focus is immunobiology and cell growth. Experience in protein design and engineering, expression of recombinant DNA-derived proteins, site-directed mutagenesis, or computer-assisted macromolecular modeling is desirable. Send curriculum vitae and three references to: **Dr. T. L. Ciardelli, Department of Pharmacology, Dartmouth Medical School, Hanover, NH 03756.**

POSTDOCTORAL RESEARCH ASSOCIATE in molecular biophysics. Join an NIH-funded program to investigate mechanisms of translocation and self-assembly of proteins in ordered cellular systems. Focus on interactions of diffusible proteins in single muscle cells. Experience in protein chemistry and model simulation desirable. Please send résumé and three letters of recommendation to: **Dr. David Maughan, Department of Physiology and Biophysics, University of Vermont, Burlington, VT 05405. Equal Employment/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL OR RESEARCH ASSOCIATE (with Ph.D. or equivalent) for ongoing project on nerve growth factor gene expression. Experience with EIA, transcription assays, and transgenic mice required. Salary to \$20,000. Send curriculum vitae and two letters of recommendation by 15 April 1988 to: **Box 29, SCIENCE.**

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to participate in NIH-funded project on respiratory, acid-base and cardiovascular effects of exercise in a rat model of simulated high altitude. M.D., Ph.D., or D.V.M. required. Send curriculum vitae and names of three references to: **Norberto C. Gonzalez, M.D., Department of Physiology, University of Kansas Medical Center, Kansas City, KS 66103. Telephone: 913-588-7400.**

POSTDOCTORAL RESEARCH ASSOCIATE position available: University of Southern California Plastic and Microsurgical Research Laboratory. Ph.D. in physiology, bioengineering, biochemistry, or pharmacology preferred with statistical analysis skills. Flexibility, varied interests and desire to obtain new areas of expertise a prerequisite. Job involves running active laboratory (three to four postdoctoral fellows), grant writing, and varied directed research. Current projects include flap physiology, wound management, and microvascular perfusion. Salary/benefits commensurate with experience. Send curriculum vitae and letters of reference to:

**Larry S. Nichter, M.D.
Division of Plastic Surgery
University of Southern California
Childrens Hospital Los Angeles
P.O. Box 54700
Los Angeles, CA 90054-0700**

OLD DOMINION UNIVERSITY

POSTDOCTORAL RESEARCH ASSOCIATE. Study pheromones of ticks, primarily sex pheromones, including behavioral investigations, extraction and characterization of pheromones, pheromone perception and pheromone biosynthesis. Successful candidate will be a Ph.D. with strong background in insect or invertebrate physiology and biochemistry, with proficiency in advanced HPLC, GC, gel electrophoresis and other separation techniques. Full-time position with annual salary starting at \$21,000, renewable for up to 3 years. Assist in teaching undergraduate parasitology, fall semester only. Available 1 July 1988. Interested applicants submit curriculum vitae and names of referees by 1 May 1988 to: **Dr. Daniel E. Sonenshine, Office of Research, New Administration Building, Old Dominion University, Norfolk, VA 23529-0013. Telephone: 804-440-3460.**

Old Dominion University is an Affirmative Action/Equal Opportunity Institution.

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION available to study mechanisms of chemically-induced lungs and liver injury and the role of blood cells (neutrophils, platelets) in mediating injury. Background in cell biology/biochemistry desirable. Submit résumé, research interest, graduate transcripts, and names of three references to: **Dr. Robert A. Roth, Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824.**

MSU is an Affirmative Action/Equal Opportunity Employer

PROFESSOR/ASSOCIATE PROFESSOR—WATER CHEMISTRY

To develop graduate research and training program relating to chemical contamination of water and its control, including hazardous wastes. Tenure-track. Send curriculum vitae to: **Dr. Morton Corn, Department of Environmental Health Sciences, School of Hygiene and Public Health, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, MD 21205.**

PROTEIN BIOCHEMIST/MOLECULAR BIOLOGIST: Postdoctoral position available for research on the structure-function relation of fibrinogen and congenital abnormal fibrinogens. Experience with HPLC, peptide analysis, and/or molecular biology with DNA sequencing work desirable. Opportunities for advancement to faculty are available. Send curriculum vitae and three references to: **Dr. William R. Bell, Johns Hopkins University Hospital, Department of Medicine, 600 North Wolfe Street, Baltimore, MD 21205.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH TRAINING in controlled release therapy of cardiovascular disease: Positions available for investigations of controlled release polymer implants for cardiovascular calcification and cardiac arrhythmias. Candidates with a Ph.D. or M.D. with backgrounds in pharmaceuticals, chemical engineering, pharmacology, or physiology are invited to apply. This position will be jointly at the University of Michigan Medical School and College of Pharmacy. Please send curriculum vitae and the names of three references to: **Dr. Robert Levy, Associate Professor, The University of Michigan, Kresge II, R-5014, Box 0576, Ann Arbor, MI 48109-0576. Telephone: 313-936-2850. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL, VISITING AND SENIOR SCIENTIST RESEARCH PROGRAM (Ph.D. OR M.D.)

Specialty Laboratories, Inc., a research-driven, high tech clinical laboratory announces several openings in its visiting scientist and postdoctoral research programs.

Candidates qualified for this program will show a strong interest and proved capabilities in:

Working in an intellectually intense and stimulating, cutting edge environment.

Creating, developing and implementing new diagnostic tests with a high degree of clinical utility.

Publishing their research findings in peer-reviewed journals.

Collaborating with a strong team of motivated researchers of many disciplines in a high tech, ultramodern research facility. Visiting scientists and postdoctoral fellows who demonstrate outstanding capabilities will be given an opportunity to join the team as associate or senior scientist.

Interested candidates should send their curriculum vitae, list of publications and addresses of three references to:

James B. Peter, M.D., Ph.D.
2211 Michigan Avenue
Santa Monica, CA 90404

RADIOPHARMACIST. Director of Radiopharmacy at University of Connecticut Health Center. Academic appointment at Assistant Professor or Associate Professor level. Responsible for radiopharmaceuticals for clinic operations, teaching and research. Will define most appropriate suppliers, formulations and quality control. Draw up and maintain IND applications. Background in pharmacy or medicinal chemistry preferred. Must have strong capabilities in teaching at graduate level and in research. Contact: **Dr. Richard P. Spencer, Department of Nuclear Medicine, University of Connecticut Health Center, Farmington, CT 06032. Telephone: 203-679-3120. An Affirmative Action/Equal Opportunity Employer M/W/H.**

A RESEARCH ASSISTANT PROFESSOR position is available immediately for a Ph.D. in biomedical engineering to conduct an independent research program in modeling and computer simulation of electric behavior of the heart. Responsibilities also include developing related application software and assisting medical personnel in use of models and numerical procedures in processing experimental data. Applicant should have a strong background in applied mathematics and cardiac electrophysiology and experience in mathematical modeling. Salary \$25,625 per year. Contact: **The Job Service at 516 North Mangum Street, Durham, NC 27701**, or the Job Service Office nearest you. Refer to Job Order Number NC7101906.

RESEARCH ASSOCIATE UNIVERSITY OF MARYLAND CENTER OF MARINE BIOTECHNOLOGY

Postdoctoral positions available immediately to study bacterial adhesion and colonization of solid surfaces and physiology of surface-attached bacteria. Background in bacterial physiology, molecular biology, or polymer chemistry preferred. Salary is commensurate with experience. For best consideration, please apply before 1 April 1988. Please send curriculum vitae with names of three references to: **Dr. Madilyn Fletcher, Center of Marine Biotechnology, University of Maryland, 600 East Lombard Street, Baltimore, MD 21202. Equal Opportunity Employer/Affirmative Action.**

Manager

Animal Health Formulation Research

Schering-Plough is a recognized worldwide leader in the development, manufacture and marketing of pharmaceutical products. Much of the success of our \$2.7-billion business is attributed to the efforts of our Pharmaceutical Development department where innovative compounds result in breakthrough pharmaceuticals for both humans and animals.

In this highly visible role, you will oversee Formulation Research activities that contribute to the development of animal health pharmaceuticals. Your professional qualifications should include a PhD in Pharmaceutical Sciences with a minimum 5 years experience in animal health formulation research, including 2 years at the Principal Scientist/Supervisory level. Requires familiarity with CGMP/CGLP regulations consistent with Veterinary Bureau and FDA guidelines. Excellent verbal/written communications skills also necessary.

We offer a competitive salary and benefits package. For confidential consideration, send resume with salary history to: Box PH88-1, c/o Ms. I. Brennenman, Schering-Plough Corporation, 2000 Gallop-Hill Road, K-6-1, E-17, Kenilworth, NJ 07033. We are an equal opportunity employer.



Schering-Plough

PHARMACEUTICAL CHEMIST DRUG METABOLISM

The Squibb Institute for Medical Research is recognized internationally as a leader in the research and development of novel therapeutic agents for the treatment of cardiovascular and infectious diseases. Due to continued growth, we currently have available an exceptional opportunity for a research scientist to join our Drug Metabolism Department.

You will be responsible for the development and validation of an animal model for predicting the oral absorption potential of investigative Squibb compounds, the conduct of animal and human pharmacokinetic studies, and studies to evaluate biopharmaceutical properties of new formulations.

Qualified candidates must have a Ph.D. in Pharmaceuticals or Pharmaceutical Chemistry (or related field) and experience with analytical techniques such as LSC, HPLC and TLC. You must be knowledgeable in the area of biopharmaceuticals that relate to physical-chemical properties of drugs to their absorption and bioavailability profiles.

In addition to an excellent salary and comprehensive benefits package, we offer the opportunity to pursue a stimulating and rewarding career with an industry leader. For confidential consideration, please submit your resume to: **The Squibb Institute for Medical Research, Human Resources Department 753, P.O. Box 4000, Princeton, NJ 08543-4000. An equal opportunity employer.**



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**TENURE TRACK STAFF
POSITIONS AT THE
BIOLOGICAL RESPONSE
MODIFIERS PROGRAM, NCI**

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

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

Staff Fellows will be assigned to Civil Service positions with an annual salary between \$24,000 and \$49,266 (based upon experience) and an increase up to \$1,500 for each additional year up to a maximum of \$49,266. Staff Fellows are eligible for all benefits including health insurance, life insurance options, vacation, and sick leave. In addition, travel expenses for the Fellow to his duty station are available.

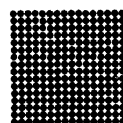
For further information and application procedures, please contact:

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

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CHIRON
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**POSTDOCTORAL
POSITIONS
Protein Chemistry**

CHIRON CORPORATION, a recognized leader in the biotechnology industry has several openings for postdoctoral investigators in the following areas:

- Isolation of growth factor and growth factor receptor genes. Production of the proteins by recombinant DNA technology and their purification. Analysis of their structure and of the nature of growth factor-receptor interactions.
- Protein engineering of growth factors, their receptors and enzymes with therapeutic potential. Synthesis and screening of growth factor agonist and antagonist molecules as well as enzyme activators and inhibitors.
- Studies on the biological activities of growth factors and receptors and their potential application in the development of new therapeutic agents.

Fellowships are tenable for a period of two years with possible renewal for a third year. We are especially interested in candidates with experience in protein purification and with a strong background in enzymology and protein structure/function relationships.

Qualified candidates should submit their curriculum vitae, and the names of two references to Chiron Postdoctoral Program in Protein Chemistry. Chiron Corporation 4560 Horton Street, Emeryville, CA 94608.

RESEARCH SCIENTIST INFLAMMATORY DISEASES

A vacancy exists for an individual with a Ph.D. in immunology, physiology, pharmacology or a related discipline, plus one or more years of post-doctoral experience. This individual would be involved in the investigation of novel therapeutic approaches to inflammation, arthritis and connective tissue destruction. A variety of *IN VITRO* and *IN VIVO* techniques will be used, and expertise in immunohistology and immunochemistry would be advantageous.

Merrell Dow Research Institute, located in suburban Cincinnati, is headquarters of a rapidly expanding pharmaceutical research and development organization. We offer excellent compensation, comprehensive benefits and relocation assistance. Please send your curriculum vitae, salary expectations, and names of three references in confidence to:

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Pharmacology/Toxicology

The opportunity to do important research — work that really makes a difference. At Cetus, you'll have that opportunity, because we are committed to pioneering work in pharmaceuticals and biotechnology. We offer you the resources to do that work in a stimulating environment with the support of other dedicated, knowledgeable professionals.

We currently seek two scientists to join a growing and dynamic pre-clinical group, working on pharmacokinetic properties of its proprietary biologics and its generic anti-cancer, anti-inflammatory, and anti-infective drugs.

Each position requires a Ph.D. in Pharmacology with excellent communication skills. The senior position requires a minimum of 5 years' postdoctoral experience and supervisory skills. Research interests for both should be in one or more of the following areas: novel delivery systems, controlled release dosage forms, biodistribution, metabolism of proteins or xenobiotics, and mechanisms of drug activity. Please send C.V. in confidence to:

CETUS CORPORATION
Box JYP
1400 Fifty-Third Street
Emeryville, CA 94608



We are an equal opportunity/affirmative action employer.

The Abbott Research Pharmacist Helps Create State-of-The-Art Drug Delivery

With success in a broad number of worldwide scientific markets, Abbott Laboratories has won recognition for significant advancements. Today we're furthering this success through the expansion of drug delivery technology, backed by a \$4.4 billion corporation consistently recognized for management strength.

We are seeking candidates for research and development of unique and novel drug delivery systems. The position involves all phases of development and evaluation including dosage form development, pharmacokinetic modeling, stability testing, drug screening, as well as leadership in assigned projects. We require a Ph.D. in Pharmaceutics or equivalent, with general knowledge of analytical chemistry and biopharmaceutics. Experience in research and development of classical and unique dosage forms plus hands-on experience with preparation methodology is required.

Located in an attractive suburban area just 30 miles north of Chicago, Abbott provides an excellent salary and benefits package that includes profit sharing and stock retirement plans. For consideration, please send a resume with salary history in confidence to: **Peggy Taylor/Corporate Placement Dept. S/2-22.** Abbott is an Affirmative Action Employer.

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TWO NEW OPEN RANK FACULTY POSITIONS ONE AS PROGRAM CHAIR ENVIRONMENTAL TOXICOLOGY GRADUATE PROGRAM UNIVERSITY OF CALIFORNIA, RIVERSIDE

The University of California at Riverside has initiated a new Interdepartmental Graduate Program in Environmental Toxicology. As part of this program two new faculty positions are available in the Division of Toxicology and Physiology, Department of Entomology. These two positions will be in the areas of: 1) **Genetic Toxicology/Molecular Biology**; and 2) **Immunotoxicology**. The current research strength of faculty in the Graduate Environmental Toxicology Group at the University of California, Riverside is with agricultural chemicals and other environmental toxicants. To further enhance this faculty group the appointees will be encouraged to develop vigorous research programs in this area.

One appointment will be at the Full Professor level and will serve as Chair of the Graduate Environmental Toxicology Group. Candidates for the Chair must have demonstrated research and teaching excellence, administrative ability, and enthusiasm to administer an interdepartmental program while continuing an active research program. The Chair is expected to provide leadership for the 30 participating faculty members in the Graduate Environmental Toxicology Group. The other appointment is open with some preference for the Assistant Professor level.

The primary commitment of both appointees will be to the Environmental Toxicology Program with respect to their research and teaching. The Program will be administered from the Division of Toxicology and Physiology, Department of Entomology but also includes participating faculty from the Departments of Biochemistry, Botany and Plant Sciences, Chemistry, Nematology, Plant Pathology, Soil and Environmental Sciences, the Division of Biomedical Sciences and the Statewide Air Pollution Research Center.

GENETIC TOXICOLOGIST/MOLECULAR BIOLOGIST. The appointee will develop a research program emphasizing molecular genetic approaches to studying the interaction of environmental toxicants with the genome. A Ph.D. in Molecular Biology, Toxicology, or related field is required.

IMMUNOTOXICOLOGIST. The appointee will develop a research program characterizing the effects of environmental toxicants on the mammalian immune system at the cellular and molecular level. A Ph.D. in Toxicology, Biochemistry, Immunology, or related field is required.

Teaching responsibilities will include graduate-level instruction and supervision of graduate students in the Environmental Toxicology program. The appointees will also have the opportunity to be involved in the Entomology Graduate Program and in other Interdepartmental Programs on campus.

Submit curriculum vitae, recent reprints, a statement of research interests, graduate transcripts (for an Assistant Professor), and names and addresses of four referees to: **T. C. Baker, Search Committee Chairman, Division of Toxicology and Physiology, Department of Entomology, University of California, Riverside, CA 92521.** We welcome nominations for the Chair. For an Assistant Professor, relevant postdoctoral experience demonstrating productivity is desirable. Applications and nominations accepted until April 15, 1988 or until a suitable candidate is selected. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RESEARCH ASSOCIATE

Seeking a candidate with at least 7 years of postdoctoral experience and a strong record of scientific achievement, to develop an independent research program within our 15,000-square-foot research facility. Applicants with M.D. and/or Ph.D. degree and current federal research support are encouraged to apply. We offer a stimulating, friendly, scientific environment; biochemistry, molecular biology, and cell biology equipment; excellent compensation and benefits; combined with a desirable geographic location. Qualified candidates please forward your application to: **Children's Hospital Oakland, Human Resources Department, R100, 747 52nd Street, Oakland, CA 94609. Equal Opportunity Employer.**

RESEARCH ASSOCIATE: to direct a cardiovascular cell culture facility for isolating and growing mammalian vascular and endothelial cells. Candidate must prepare and maintain primary cell cultures and cell lines, and provide morphometric, genotypic and analytical data from the preparations. Applicant must perform biochemical analysis of cell cycle intermediates, such as RNA analysis. Must have at least 1 year of training in electron microscopy and be skilled in all areas of electron microscopy, including immunofluorescence localization techniques. Knowledge, gained through completion of B.S. in microbiology, of bacterial taxonomy and identification and molecular biology as it relates to cell division required. Applicant will instruct fellows and graduate students in tissue culture and electron microscopy protocols and procedures. Two years of experience in a cell culture facility and an M.S. degree in biochemistry required. \$21,878 per year; 40 hours per week. Send résumé to: **Otto Petersen, Milwaukee Job Service, 819 North 6th Street, Milwaukee, WI 53203.** Employer paid ad. *Equal Opportunity Employer.*

RESEARCH ASSOCIATE—Research and mathematical modeling in metabolism of normal and injured subjects. Ph.D. in nutritional biochemistry or M.D. required. Demonstrated experience in designing and carrying out studies with tracer methodology using stable and radioactive isotopes and mass spectroscopic and gas chromatographic analysis in the area of protein, amino acid and other substrate analysis. Needs experience in conducting in vivo studies in human and non-human subjects, in vitro studies and experience in computer assisted mathematical modeling and the design and testing of new experimental models of metabolic processes in different body compartments. Salary range \$18,000 to \$26,000. Please send curriculum vitae to: **John F. Burke, M.D., Chief Trauma Services, Bigelow 12, Massachusetts General Hospital, Boston, MA 02114.** Replies must be received within 30 days.

RESEARCH ASSOCIATE in reproductive endocrinology: Immediate opening available for a Ph.D. scientist to work in a multidisciplinary group investigating molecular mechanism(s) of gonadotropin and eicosanoid action in reproductive tissues. Some previous experience in subcellular fractionation, organelle purification, enzyme assays, RNA synthesis, extraction and hybridization are required. Minimum salary, \$17,000 per year. If interested contact: **Dr. Ch.V. Rao, Department of Obstetrics/Gynecology, 438 MDR Building, University of Louisville, Louisville, KY 40292,** with curriculum vitae and arrange to send three letters of recommendation.

RESEARCH ASSOCIATE: For research in endocrinological manipulation of metabolism of eicosanoids and nucleotides in organ transplantation. HPLC, RIA, and cell culture experience desirable. Salary according to experience. Address inquiries to: **Dr. Peter W. Ramwell, Department of Physiology and Biophysics, Georgetown University Medical Center, 3900 Reservoir Road, N.W., Washington, D.C. 20007.**

RESEARCH ASSOCIATE POSITION available to investigate biochemistry of coagulation factors. Ph.D. in biochemistry, chemistry, or related field. Three years of postdoctoral experience in protein chemistry, molecular biology, cell biology, immunology or biochemistry of coagulation factors. Send curriculum vitae and three letters of recommendation to: **Harold Roberts, Center for Thrombosis/Hemostasis, CB #7015, 435 Burnett Womack, Chapel Hill, NC 27599. Equal Opportunity/Affirmative Action Employer.** Application should be received within 30 days.

POSITIONS OPEN

RESEARCH INDIVIDUAL for Department of Anesthesiology. Must have doctorate in physiology or pharmacology. Experience related to anesthesia research preferred. Midwest college town. Contact: **G. W. N. Eggers, Jr., M.D., Professor and Chairman, Department of Anesthesiology, University of Missouri Health Sciences Center, Columbia, MO 65212.**

RESEARCH INVESTIGATOR to perform research on the physiology and molecular biology of corticosteroids and their metabolites. Must hold Ph.D. or equivalent degree. A background in organic chemistry or enzymology is desired. Salary is commensurate with qualifications and experience. Send curriculum vitae and the names and addresses of three persons who can be contacted for reference purposes. *An Equal Opportunity Employer.*

Send résumés to: **Dr. Carl Monder, The Population Council, Center for Biomedical Research, Tower Building, 1230 York Avenue, New York, NY 10021.**

RESEARCH POSITION. Opportunity to participate in research and extensive clinical electrophysiology assessment, with emphasis on compressive neuropathies of the upper extremities. Candidate will develop study design, collect and analyze data, and prepare material for publication. Expertise in electrophysiology testing and interpretation required. Please send curriculum vitae and salary requirements to: **Peter A. Nathan, M.D., Portland Heart Surgery and Rehabilitation Center, 2455 N.W. Marshall Street, Suite 1, Portland, OR 97210.**

RESEARCH PROGRAM MANAGER/RESEARCH ASSISTANT PROFESSOR for 5-year study of EEG biomarkers for Alzheimer's disease. Ph.D.'s in electro/psychophysiology with microcomputer data management experience. Apply: **Research Search, Psychiatry and Behavioral Sciences, University of Washington, RP-10, Seattle, WA 98195. Affirmative Action/Equal Opportunity Employer.**

RESEARCH SCIENTIST: Position available for research on chemical carcinogenesis. Research areas include in vitro and in vivo metabolism of polynuclear aromatic hydrocarbons in rats and fish, and characterization of DNA-carcinogen adducts. Ph.D. in biochemistry, biochemical pharmacology or toxicology required; experience in metabolite isolation by HPLC preferable. Position provides opportunity for developing program of candidate's interest. Submit résumé and names of three references to: **Dr. H. Sikka, Director, Great Lakes Laboratory, State University of New York College at Buffalo, 1300 Elmwood Avenue, Buffalo, NY 14222. Telephone: 716-878-5422.**

RESEARCH TECHNICIANS

Immediate opportunities for bright, motivated individuals with B.S. and/or M.S. degree. Entry level and advanced positions include areas of cell and molecular biology, biochemistry, pharmacology, and in vitro fertilization. We offer excellent salary, benefit program, career opportunities and location. Send résumé with salary history to: **S. M. Brown, Cornell University Medical College, 445 East 69th Street, New York, NY 10021. Equal Opportunity Employer/Affirmative Action M/F/H/V.**

The Vitreo-Retina Biochemistry Unit of the Eye Research Institute seeks an innovative **SCIENTIST** to develop an independent research program in biochemistry and biophysics of retinal and vitreous disorders. Applicants must have a Ph.D. with at least 3 years of postdoctoral experience in this area of research. Experience in physical biochemistry techniques, namely, column chromatography, HPLC, gel electrophoresis, circular dichroism, fluorometry and computer analysis are required. Salary commensurate with experience. Send curriculum vitae to: **Dr. Bireswar Chakrabarti, Search Committee, Eye Research Institute of Retina Foundation, 20 Staniford Street, Boston, MA 02114.**

POSITIONS OPEN

SCIENTIFIC OPPORTUNITIES REPLIGEN-SANDOZ RESEARCH CORPORATION

Repligen-Sandoz Research Corporation, a joint venture between Sandoz Ltd., a multi-national company based in Basel, Switzerland, Sandoz Chemical Corporation, its U.S. based division and Repligen Corporation, a biotechnology company located in Cambridge, Massachusetts, needs molecular biologists, microbiologists, and biochemists, all levels (bachelor's, master's, Ph.D. degrees). We are an exciting new company with fantastic opportunities. Objectives are research enzymes in the chemical field (mainly for paper, textiles and waste water treatment) and for crop protection. Excellent comprehensive benefits program. Very competitive salary.

Please send inquiries and curriculum vitae to: **Dr. Roberta L. Farrell, Repligen-Sandoz Research Corporation, 128 Spring Street, Lexington, MA 02173.**

An Equal Opportunity Employer

SENIOR AND JUNIOR FACULTY DEPARTMENT OF MOLECULAR AND CELLULAR PHYSIOLOGY STANFORD UNIVERSITY SCHOOL OF MEDICINE

Stanford University is seeking applicants for senior and junior positions within the Department of Molecular and Cellular Physiology, to be activated beginning November 1988 and thereafter. This Department is one of four interrelated academic units to be located within the Beckman Center for Molecular and Genetic Medicine. The research interests of faculty would include aspects of intracellular, intercellular, and interorgan signaling, with special focus on molecular mechanisms controlling excitability, contraction, secretion, neurotransmission, membrane or axonal transport, or other key physiological processes. It is expected that the research programs will draw upon a wide range of techniques including molecular genetics, biochemistry, electrophysiology and imaging with light or electron microscopy. The responsibilities of this department will include teaching of cell physiology, circulation and endocrinology to medical students, and advanced graduate courses for graduate students and medical students which will reflect the interests of the faculty.

Applications should include curriculum vitae, a brief statement of research objectives, and names, addresses, and telephone numbers of three references. Please send applications to: **The Molecular and Cellular Physiology Search Committee, c/o Assistant Dean Marian Knox, Stanford University Medical Center, Room M-121, Stanford University, Stanford, CA 94305.**

Stanford University is committed to increasing representation of women and members of minority groups on its faculty and particularly encourages applications from such candidates.

Four-year-old, rapidly growing, commercial research and development biomedical company located in a dynamic growth area of the Southeast has two exceptional opportunities:

SENIOR SCIENTIST— VASCULAR PHYSIOLOGY

Ph.D. in physiology with postdoctoral experience in cell culture growth viability assays and biochemical responses of vascular endothelium and smooth muscle. Further work in connective tissue or organ preservation techniques beneficial. A strong record of academic accomplishment and the demonstrated ability to be a team player required.

PROJECT MANAGER—VEINS AND ARTERIES Ph.D. in bioengineering, cell biology, or related cardiovascular areas. Hands-on experience in lab research, familiarity with conducting clinical trials and the writing of protocols important. The candidate will come from a vascular prosthesis company or an academic environment where vascular research is of primary importance. Responsibilities will include supervision of company funded, ongoing research projects at various universities, product packaging, and data coordination and communication with surgeons and researchers involved in current animal and human clinicals. Send curriculum vitae, copies of publications, salary history and the names of three references to:

**Philo and Associates
Corporate Search Recruiters
Suite 1, 2024 Eagle Glen Road
Alpharetta, GA 30201**

CHAIRPERSON Department of Pharmacology

The State University of New York Health Science Center at Brooklyn is seeking a Chair for the Department of Pharmacology. The Health Science Center (formerly Downstate Medical Center), includes one of the largest medical schools in the nation. The department has 11 state-funded, tenure-track faculty lines, of which 4 are vacant, and 10 state-funded support staff. The department is well-funded with current faculty having research interests especially in the general area of neuropharmacology. Considerable space and resources are available within the department and the institution is prepared to make a major investment in recruitment of new faculty and development of the department. In addition, the institution has recently established centerwide core facilities for research such as DNA sequencing/analysis, a protein sequencing laboratory, a micro-injection facility and a monoclonal antibody/hybridoma center. This is a unique opportunity to develop and lead a department of excellence. Submit nominations or applications to: **Dr. Harold Lebovitz, Chairman, Pharmacology Search Committee, Box 29, SUNY Health Science Center at Brooklyn, 450 Clarkson Ave, Brooklyn, New York 11203**



State University of New York
**HEALTH SCIENCE CENTER
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GROUP LEADER

This position requires a Ph.D. in Biochemistry and ten or more years experience. Additional requirements include experience in enzymology with emphasis on proteases, protein purification, analytical techniques, HPLC of proteins and peptides, enzyme mechanism analyses and assay design and the supervision of senior scientific staff and programs.

This NEWLY created position will be in our Biochemistry Department and will report to the Director, Biochemistry. The incumbent will be responsible for the coordination and assignment of projects and research goals, the establishment of priorities and effective utilization of resources, assist with the development of research plans and contributing to multi-disciplinary meetings and projects.

BOEHRINGER INGELHEIM PHARMACEUTICALS, Inc. offers a competitive compensation and benefits package, relocation assistance and the opportunity to have your contributions recognized.

For confidential consideration please send your curriculum vitae to: Dept. JC-1S, BOEHRINGER INGELHEIM PHARMACEUTICALS, Inc., 90 East Ridge, P.O. Box 368, Ridgefield, CT 06877. We are an equal opportunity employer m/f/h/v.



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Research Management

Tumor / Cell Biology & Immunology

Triton Biosciences Inc. has an opening for a Research Manager to take charge of our tumor/cell biology and immunology groups. These groups are engaged in a variety of projects in the areas of tumor biology, growth factors, growth factor receptors, lymphokines, and oncogenes.

We desire an individual with an established record of research in one or more of the above fields. It is anticipated that the successful candidate will have 5-8 years experience beyond the postdoctoral level and preference will be given to those having industrial experience, including responsibility for a research group.

Triton Biosciences Inc., a subsidiary of Shell Oil Company, is an emerging fully integrated pharmaceutical and diagnostics company located in the San Francisco Bay Area. We offer competitive salaries and benefits including a full relocation package. For consideration, please send your CV and names of three references to: Triton Biosciences Inc., Box JJM, 1501 Harbor Bay Parkway, Alameda, CA 94501. Triton is an Equal Opportunity Employer.



Triton Biosciences Inc.

POSITIONS OPEN

SENIOR TECHNICIAN PROTEIN ELECTROPHORESIS MOLECULAR EVOLUTION PROGRAM

The Smithsonian Tropical Research Institute, located in the Republic of Panama, seeks a senior technician to manage a protein electrophoresis laboratory. Duties include set-up of facility and responsibility for all aspects of its operation. M.S. degree in molecular biology or equivalent with substantial experience in protein electrophoresis required. Must work effectively with scientists varying widely in biochemical training. Interest in natural history and/or familiarity with Spanish desirable. The successful candidate will be part of a growing program whose goal is to bring modern biochemical methods to the study of diverse tropical biotas. Curriculum vitae and two confidential letters of recommendation should be received by 1 April 1988. Send to: **Nancy Knowlton, Smithsonian Tropical Research Institute, APO Miami 34002-0011. Equal Opportunity Employer; employment not limited by nationality.**

SOCIAL/NATURAL SCIENTISTS. Two visiting scholars from industry or government to join interdisciplinary department during 1988 and 1989 to work on problems of interest to the University and the home institution concerning coastal/estuarine systems, emphasizing urban harbors and developed coastlines. Terminal degree in field or equivalent experience required. Research experience in harbor/coastline planning and development, environmental law, public health microbiology, phytoplankton biology or aquatic chemistry desirable; other areas acceptable. University provides 50% of appointee's salary; home institution provides 50%. Proposed projects may vary from 1 month to 1 year. Send curriculum vitae and letter outlining proposed project and its probable length to: **Chairperson, Search Committee, Environmental Sciences Program, University of Massachusetts at Boston, Boston, MA 02125-3393.** Screening begins 18 March 1988; applications accepted throughout 1988. *An Affirmative Action/Equal Opportunity/Title IX Employer.*

STAFF PHYSICIST—THEORETICAL PHYSICS—Computations for the design of RF structures and for the evaluation of wake-fields of machine components. Includes effects of propagating modes and modeling of 3-D higher order-mode coupling. Both numerical and analytic methods required. Beam stability, energy deposition, and beam quality are to be derived from estimates. Responsible for maintaining electromagnetic code library on VAX cluster and providing access for other users to MFE Cray System. This work proceeds at a pace with turnaround time driven by an ongoing construction project. Forty hours per week, 8:00 a.m. to 5:00 p.m., \$34,600 per year. Prior experience must include computer simulation of physical system, mathematical analysis using Maxwell's electromagnetic equations, perturbation theory, and Hamiltonian analysis. Demonstrated ability in compilers, operating system, graphics, and algorithms. Ph.D. in physics and 2 years of experience in job or 2 years of experience conducting research in theoretical physics. Mail or hand carry résumé with copy of ad attached to: **M. J. Hotchkiss, VEC 5145 East Virginia Beach Boulevard, Norfolk, VA 23502. JO #VA 7012041.**

SUPERINTENDENT OF D.C. PUBLIC SCHOOLS

The District of Columbia Board of Education announces a vacancy in the position of Superintendent of the D.C. Public Schools. The Superintendent is responsible for daily operation and management of the D.C. Public School System. Candidate must be an effective educator and administrator with demonstrated skill and experience in management, knowledge of and sensitivity to the needs of a diverse multicultural, special education and at-risk urban student population. Formal education: Master's degree or advanced degree in related field. Salary: Competitive and commensurate with experience. Duties to commence on or after 1 June 1988.

Closing date: 15 March 1988. Send résumé to: **Superintendent Search Committee, D.C. Board of Education, P.O. Box 90594, Washington, DC 20090.**

The D.C. Board of Education is an Equal Opportunity Employer. Candidate selected for this position must be a resident or become a resident of the District of Columbia within 180 days of the effective date of appointment. Such residency must be maintained for the duration of employment.

POSITIONS OPEN

The California Department of Food and Agriculture is seeking **STAFF TOXICOLOGISTS** for positions in Sacramento. Ph.D. in toxicology or related science followed by 3 years of recent, related experience is required. The work is primarily review of animal toxicology studies submitted in support of risk assessments. Salary: \$3,990 to \$4,826 per month. Submit résumés to: **Department of Food and Agriculture, 1220 N Street, Room 154, Sacramento, CA 95814, by 6 May 1988.**

TEACHING POSITION—EVOLUTIONARY BIOLOGIST. The Department of Biology, Emory University, invites applications for a teaching position at the assistant professor rank for a non-tenure-track, 1-year term, renewable for up to 3 years. Responsibilities include teaching courses in introductory biology and courses at an advanced level, which may include: evolution, plant population biology, and plant physiology. The successful candidate may become involved in supervising students in project laboratories and independent research and is expected to help in efforts to strengthen the undergraduate curriculum. Send curriculum vitae, a statement on your experience and interests in teaching, and have three letters of recommendation sent to: **Dr. Gray F. Crouse, Chairman, Department of Biology, Emory University, Atlanta, GA 30322.** Closing date for receipt of applications is 15 March 1988. *Emory is an Equal Opportunity/Affirmative Action Employer.*

TECHNICAL STAFF: The Department of Molecular Biology at Princeton University is looking for a full-time manager of a new flow cytometry facility. This facility will serve a faculty community of 24 with diverse interests in cell, developmental and molecular biology. The manager must have previous experience with the operation of flow cytometers and advanced data analysis software.

Interested individuals should send their résumé to:

**Technical Staff Search
Department of Molecular Biology
Lewis Thomas Laboratory
Princeton University
Princeton, NJ 08544**

Princeton University is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF VERMONT VASCULAR SMOOTH MUSCLE MOLECULAR BIOLOGY

POSTDOCTORAL ASSOCIATE position available immediately to study the structure and expression of contractile and cytoskeletal proteins in vascular smooth muscle cells using recombinant DNA techniques. The project includes cDNA cloning, gene isolation, and gene transfer in an effort to characterize modulation of cell phenotype in cultured cells. Previous experience in recombinant DNA techniques is desired but not essential. Candidates with background in cell biology, biochemistry, and molecular biology are encouraged to apply. Send curriculum vitae and names of three references to: **Dr. D. Warshaw or Dr. M. Periasamy, Department of Physiology and Biophysics, University of Vermont, Burlington, VT 05405.** *The University of Vermont is an Equal Opportunity Employer.*

WEATHER DATA TECHNICIAN

to quality control data from near real-time weather networks, provide customer support and build climate database. Position is available 1 April 1988 and requires M.S. or Ph.D. related to micrometeorology with experience in developing routines to spot errors in real-time data and estimate missing data, computer programming and operation skills. Specific understanding of desert and arid land ET estimation is required. Position is contract supported and requires some proposal preparation and report writing. Salary range is \$17,000 to \$25,000 per year. Contact: **Dr. Gail Bingham. Telephone: 801-750-2191, Utah State Climatologist, Utah State University, Logan, UT 84322-4825** with résumé and three references by 15 March 1988.

POSITIONS OPEN

VICE PRESIDENT FOR SCIENCE

The New York Botanical Garden in the Bronx, New York, is soliciting applications for the position of Vice President for Science. The Garden seeks a scientist with an active research program, who is a recognized leader in systematic botany, with strong interests in tropical botany and in economic botany, to head a science department on the Bronx campus of about sixty, including twenty Ph.D. scientists.

Interested candidates should submit a letter of application to: **The Office of the President, The New York Botanical Garden, Bronx, NY 10458-5126**, including names of three references, by 21 March 1988.

The New York Botanical Garden is an Equal Opportunity/Affirmative Action Employer.

VIROLOGIST

The Department of Microbiology and Immunology, School of Medicine, University of North Carolina (UNC) at Chapel Hill invites applications from outstanding individuals for a tenure-track position in the area of virology. Rank is open, depending on qualifications. Our department consists of twenty primary faculty members with strong research programs in prokaryotic and eukaryotic gene expression, molecular immunogenetics, molecular pathogenesis and molecular virology. We seek an individual of demonstrated research productivity and teaching ability with a research program in molecular and biochemical aspects of virology, preferably related to pathogenesis. Position available July 1988. *The University of North Carolina at Chapel Hill is an Equal Opportunity/Affirmative Action Employer. We encourage applications from and nominations of minority and female candidates; such persons may identify themselves voluntarily.* Reply by 1 April 1988 with curriculum vitae and names and addresses of three references to: **P. Frederick Sparling, M.D., CB#7290, 804 FLOB, UNC, Chapel Hill, NC 27599.**

WEED SCIENTIST: A tenure-track assistant professor position, 25% teaching and 75% research, will be available 1 July 1988. Research emphasis will be on the molecular, biochemical, or physiological processes affecting weed control. Teaching responsibilities will include instruction of graduate level weed science courses and participation in seminars and graduate student training. Candidates must have a Ph.D. in weed science or closely related field with laboratory experience or training in the physiology, biochemistry or molecular biology of weeds. Demonstrated research performance and an aptitude for teaching graduate level courses are also required. Preference will be given to individuals interested in the application of biochemical and molecular technologies to the solution of applied problems. Salary will be commensurate with training and experience. Application deadline is 18 March 1988. Applicants should send a formal application letter, curriculum vitae, transcripts, and arrange for three letters of recommendation to be sent to: **Dr. Dwane G. Miller, Chair, Department of Agronomy and Soils, Washington State University, Pullman, WA 99164-6420. Telephone: 509-335-3475.**

WSU is an Equal Opportunity/Affirmative Action Educator and Employer. Protected group members are encouraged to apply and to identify their status.

REQUEST FOR PROPOSALS

CALL FOR RESEARCH PROPOSALS

The Center for Alternatives to Animal Testing of The Johns Hopkins School of Public Health is soliciting proposals. These research proposals should provide the fundamental knowledge base to develop alternative methods to whole animals for the safety evaluation of commercial products.

The CAAT encourages the development of methods using human cells/cell lines in addition to other in vitro approaches to toxicity evaluation. At present, funds are unavailable for mutagenicity and carcinogenicity.

Guidelines for preparation of proposals can be obtained from: **Mrs. Joan Poling, The Johns Hopkins Center for Alternatives to Animal Testing, 615 North Wolfe Street, Baltimore, MD 21205. Telephone: 301-955-3343.**

Deadline for submission of research proposals—27 May 1988.

INTERNATIONAL RESEARCH FELLOWSHIP OPPORTUNITIES

for U.S. and Foreign Postdoctoral Scientists

*Senior International Fellowships

These fellowships offer opportunities to U.S. biomedical, behavioral, or health scientists to conduct research in a foreign institution. The program is for scientists who have established themselves in their chosen career in the United States and whose professional stature is well-recognized by their peers and institutional officials.

The purpose of this program is to enhance the exchange of ideas and information about the latest advances in the health sciences, basic, clinical, and public health and to permit U.S. scientists to participate abroad in ongoing study or research in foreign institutions.

Fellowships are awarded for a period of 3 to 12 months and provide stipend, travel, and living allowance.

*International Research Fellowships

These fellowships offer opportunities to foreign scientists in the formative stage of their research career to extend their research experience in a U.S. laboratory. Selections are first made by the Nominating Committee in a participating country, region or area. Over 50 countries or regions in the Americas, Africa, Asia and the Far East, Australia, Europe, and New Zealand participate in the program.

The purpose of this program is to forge relationships between distinguished scientists in the United States and qualified scientists in other countries in order to study health-related problems of mutual interest.

Fellowships are awarded for a minimum of 12 months and provide stipend, travel, and institutional allowance.

*Foreign-supported Fellowships

These fellowships for U.S. scientists are supported by specific foreign countries and areas. They provide opportunities for scientists to conduct collaborative research in the country that provides funding.

The purpose of this program is to enhance the exchange of research experience and information in the biomedical, behavioral, and health sciences. The maximum period of support for all programs is 1 year and the minimum period of support varies with each program.

Participating countries and areas are: FINLAND, FRANCE (CNRS and INSERM), FEDERAL REPUBLIC OF GERMANY, IRELAND, ISRAEL, JAPAN, NORWAY, SWEDEN, SWITZERLAND, and TAIWAN.

**Health Scientist Exchanges

These programs for U.S. scientists support short- and long-term visits to AUSTRIA, BULGARIA, HUNGARY, POLAND, ROMANIA, YUGOSLAVIA, and the SOVIET UNION.

The purpose of these programs is to conduct collaborative activities in one of the health sciences or the health-related fields that are of mutual benefit to the United States and the participating country. Priority is given to visits designed to strengthen or expand ongoing collaborative relationships or to explore prospects for long-term cooperation.

The financial provisions include round-trip travel and in-country costs.



*Requests for additional information on Senior International, International Research and Foreign-Supported Fellowships should be sent to: International Research and Awards Branch, John E. Fogarty International Center, National Institutes of Health, Bethesda, MD 20892.

**Request for additional information on Health Scientist Exchanges should be sent to: International Coordination and Liaison Branch (ICLB), John E. Fogarty International Center, National Institutes of Health, Bethesda, MD 20892

CONFERENCES

THE HEALTH EFFECTS INSTITUTE FIFTH ANNUAL CONFERENCE

The Health Effects Institute's Fifth Annual Conference will be held in Colorado Springs, Colorado, on 17 to 20 April 1988. The purpose of the meeting is to foster communication between scientists, government officials, and automotive industry representatives. The meeting will have three poster sessions on the effects of automotive exhaust components on carcinogenesis, lung injury, and pulmonary function and infections. A fourth session will focus exclusively on the health effects of carbon monoxide.

Several internationally recognized scientists will present lectures in these areas and will discuss findings relevant to setting the National Ambient Air Quality Standards.

Registration fee for the meeting is \$50. Participation is limited and by pre-registration only. For further information please contact:

Dr. Jane Warren
Health Effects Institute
215 First Street
Cambridge, MA 02142
Telephone: 617-491-2926

COURSE

WORKSHOP ON PLANT AND ANIMAL CELL MICROINJECTION TECHNIQUES, 20 to 22 May 1988. This workshop is designed to promote the use of microinjection of plant and animal cells. Limited financial assistance will be available. Co-Directors: E. Tucker (Baruch College, New York) and R. Silver (University of Wisconsin). Registration Fees: \$100 for full participation (labs, lectures, demonstrations); \$50 for lectures and demonstrations only. Application deadline: 1 April 1988. Contact: Marine Biological Laboratory, Woods Hole, MA 02543. Telephone: 617-548-3705; extension 216.

TRAINING PROGRAM

TRAINING PROGRAMS

POSTDOCTORAL TRAINING OPPORTUNITIES are regularly available with the College of Biological Sciences at the University of Minnesota. Inquiries may be directed to the departments of biochemistry, botany, ecology and behavioral biology, and genetics and cell biology, as well as the following research programs: Bell Museum of Natural History, Biological Process Technology Institute, Cedar Creek Natural History Area, Gray Freshwater Biological Institute, the Lake Itasca Forestry and Biological Station, and the Plant Molecular Genetics Institute.

For information about possible openings in these programs, please write to (include curriculum vitae and specify departments of interest): **University of Minnesota, College of Biological Sciences, 123 Snyder Hall, 1475 Gortner Avenue, St. Paul, MN 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

WORKSHOP

ANNOUNCING: QSAR 88 3RD INTERNATIONAL WORKSHOP ON QUANTITATIVE STRUCTURE-ACTIVITY RELATIONSHIPS IN ENVIRONMENTAL TOXICOLOGY

QSAR 88 is to be held at the Holiday Inn on the World's Fair Site, Knoxville, Tennessee on 22 to 26 May 1988. The Workshop will consist of invited speakers on topics such as: Statistical Considerations, Molecular Descriptors, Modes of Action, Metals and Predicting Toxicity of Organic Chemicals. One session will be devoted to contributed posters. Plenty of time is scheduled for both formal and informal discussion.

For further information contact:

Dr. Wendy England
Health and Safety Research Division
45005, MS-123
Oak Ridge National Laboratory, P.O. Box X
Oak Ridge, TN 37831

FELLOWSHIPS

GRADUATE TRAINING IN PHARMACOLOGY. The Department of Pharmacology of Wayne State University is seeking six talented students interested in biomedical research careers. Full stipend/tuition support for the doctoral program will start in July/September 1988. Major research areas include carcinogenesis, regulation of protein expression in mitochondria and peroxisomes, control of protein degradation, CNS and cancer pharmacology and biochemical toxicology. Application materials may be obtained from: **Graduate Program, Department of Pharmacology, WSU School of Medicine, Detroit, MI 48201.**

POSTDOCTORAL FELLOWSHIP to study human lipoprotein biochemistry and metabolism and the relationship of lipoproteins to atherosclerosis. Studies will include characterization of subclasses of lipoproteins, including both in vitro and in vivo metabolic studies. Applicant should have a Ph.D. or M.D. Sponsor's laboratory is part of a SCOR Arteriosclerosis program with several laboratories involved in studies of arteriosclerosis, lipoprotein metabolism, growth factors and retinoids. Support available for 2 to 3 years. Send curriculum vitae and list of references to:

Henry Ginsberg, M.D.
Department of Medicine
P&S 9-501
College of Physicians and Surgeons
630 West 168th Street
New York, NY 10032

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POSTDOCTORAL FELLOWSHIP

A position is available to study ion transport processes in membranes isolated from cardiac muscle. We have been extensively studying the properties of the sodium-calcium exchange system in cardiac sarcolemmal vesicles, and these experiments will be continued. In addition, we have had recent success in purification of the sodium-calcium exchange protein, in production of antibodies, and in expressing sodium-calcium exchange activity in oocytes after mRNA injection. We now plan to begin applying molecular biological approaches.

My laboratory is part of the Cardiovascular Research Laboratories at UCLA providing an excellent environment for multi-disciplinary interaction with other investigators with common interests. Applicants should send curriculum vitae including the names of three references to:

Dr. Kenneth D. Philipson
Cardiovascular Research Laboratories
A3-381 Center for the Health Sciences
UCLA School of Medicine
Los Angeles, CA 90024-1760

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

POSTDOCTORAL TRAINING IN ENVIRONMENTAL TOXICOLOGY—Two research associate postdoctoral fellowships in environmental toxicology, supported by the National Institute of Environmental Health Sciences (NIEHS), are available at Oregon State University (OSU) through the Toxicology Program and the Environmental Health Sciences Center. Research associates will engage in research with an emphasis on basic mechanisms for toxicity of environmental agents. Fellowships are available on a competitive basis to applicants (U.S. citizens and permanent residents only) with a recent Ph.D. degree in chemistry, biochemistry, pharmacology, or the biological sciences. To apply for a NIEHS Fellowship, send curriculum vitae, academic records, and three letters of reference to: **Donald R. Buhler, Ph.D., Chairman, Toxicology Program, Weniger Hall, Environmental Health Sciences Center, Oregon State University, Corvallis, OR 97331. Telephone: 503-754-2363.** Closing date is 30 March 1988. *OSU is an Equal Opportunity/Affirmative Action Employer and complies with Section 504 of the Rehabilitation Act of 1973. OSU has a policy of being responsive to the needs of dual-career couples.*

RESEARCH FELLOWSHIP IN CLINICAL NUTRITION. One- to 3-year postdoctoral research fellowship available for M.D. or Ph.D. Emphasis will be on molecular and cell biology in regulation of folate absorption or other nutritional questions. Supported by grant from PEW National Nutrition Program. Contact: **Charles H. Halsted, M.D., Chief Division of Clinical Nutrition, TB 156, School of Medicine, University of California, Davis, CA 95616.**

FELLOWSHIPS

FELLOWSHIP IN ENDOTHELIAL CELL PHYSIOLOGY. Studies are currently underway on the role of cell surface macromolecules in determining patterns of red cell distribution in the microcirculation. A position will open 1 July 1988 and applicants who may wish to participate in this work should send letters of recommendation and résumés to: **Dr. Brian R. Duling, Department of Physiology, School of Medicine, Box 449, Charlottesville, VA 22908.** *We are an Equal Opportunity Employer.*

DEPARTMENT OF RADIATION ONCOLOGY POSTDOCTORAL FELLOWSHIP MOLECULAR BIOLOGY OF GROWTH REGULATION IN MAMMALIAN CELLS

Applicants (Ph.D. or M.D.) with training in molecular biology of eukaryotic cells to join an established research group with interests in the biochemistry, immunology, cellular and molecular biology of growth regulation of human carcinoma cells. This project is a component of an NCI-funded multidisciplinary postdoctoral training program in cancer biology. Program Director: **R. Schmidt-Ullrich, M.D.,** Chairman, Department of Radiation Oncology. Send inquiries to: **I. David Goldman, M.D., Scientific Director, Medical College of Virginia Massey Cancer Center, MCV Box 230, Richmond, VA 23298.**

POSTDOCTORAL FELLOWSHIP IN NEUROANATOMY—NEUROPATHOLOGY at Harvard Medical School. Research on aging, Alzheimer's disease, and limbic system. Send curriculum vitae to: **M. Mesulam, M.D., Neurology Department, Beth Israel Hospital, 330 Brookline Avenue, Boston, MA 02215.**

THREE-YEAR POSTDOCTORAL FELLOWSHIPS AT THE SMITHSONIAN TROPICAL RESEARCH INSTITUTE

Applications are welcome from candidates interested in tropical biology. Proposals that include plant ecophysiology or molecular evolution in their conceptual development are especially desirable. The successful candidate is expected to reside in the Republic of Panama and base his/her studies at STRI research facilities. Comparative work in other tropical nations is possible.

Applications including a detailed research proposal, curriculum vitae, three letters of reference, and reprints should be sent to:

Chair, Postdoctoral Search Committee
Smithsonian Tropical Research Institute
APO Miami 34002-0011

The stipend is \$20,000 with travel and research funds available. Finalists may be invited to Panama for an interview. Review of applications will begin 31 March 1988.

MARKETPLACE

AUCTION 17TH-20TH CENTURY PERIODICALS/SERIALS SCIENCE & TECHNOLOGY

March 24, 1:30 PM. Conducted by Waverly Auctions for/at THE FRANKLIN INSTITUTE, 20th & The Parkway, Philadelphia.

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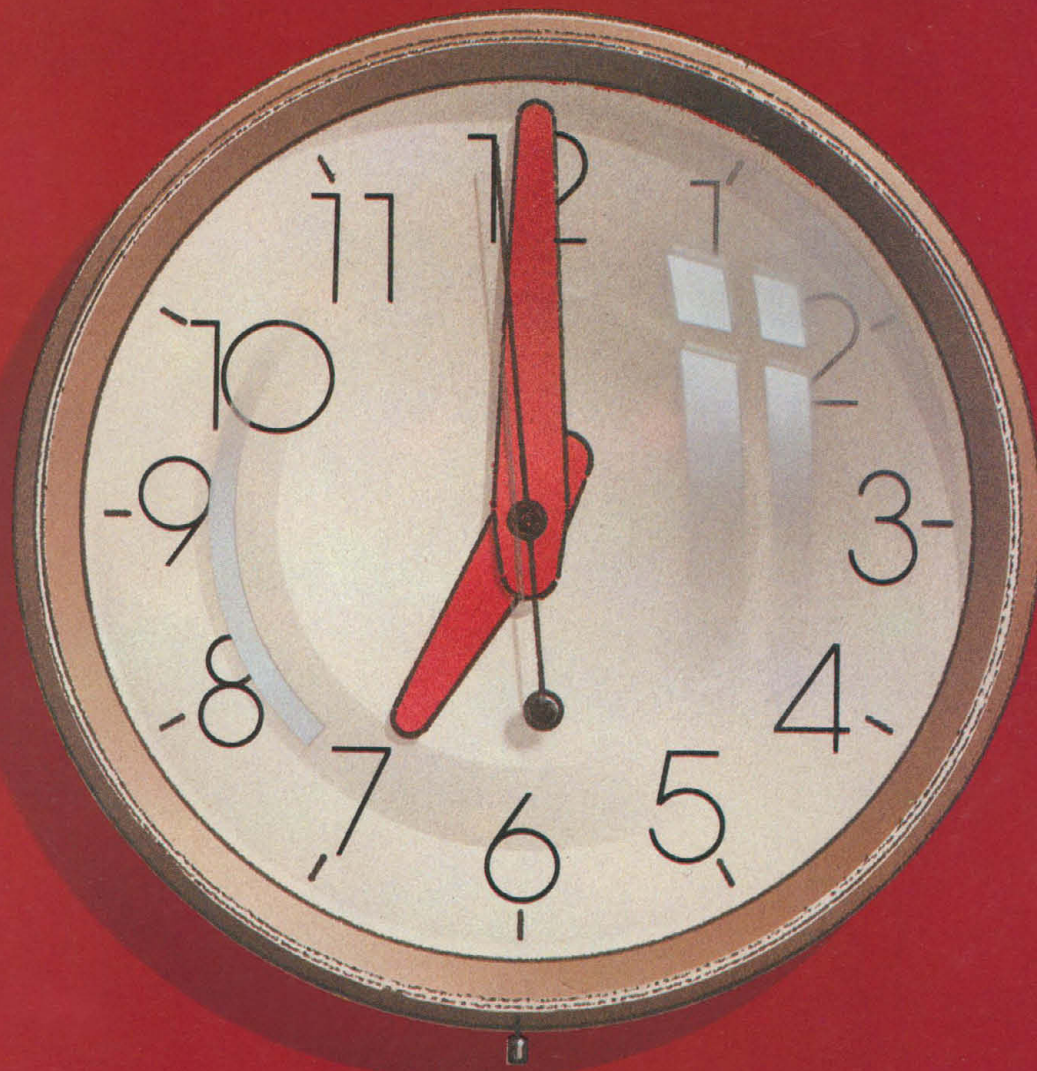
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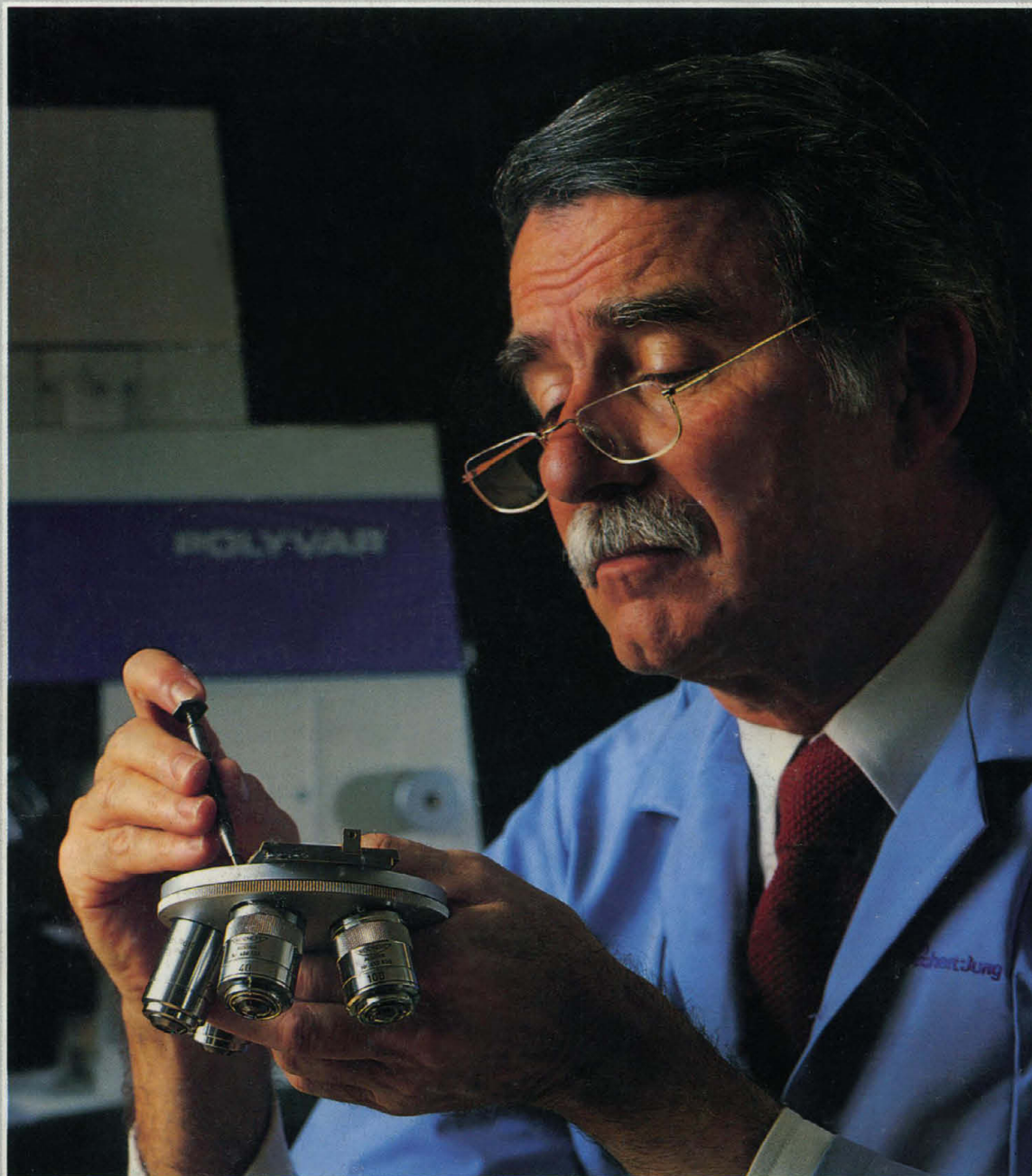
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