

enjoyed, Burnham argues, a noble status in Victorian America. Its advocates clung to a heroic dream of the scientific calling and saw their mission as the extermination of popular superstition, mysticism, fanaticism, and unreason. They could, in the late 19th century, easily recall their distinguished pedigree, a lineage that had been boldly apparent during the Age of Enlightenment when religion and popular folklore both posed apparent threats to the ideals of science, ideals Burnham carefully outlines.

Through lecture circuits, museums, classrooms, widely selling magazines and journals, books, college textbooks, and even the daily press the popularizers made their views known. Their audience, for much of the earlier period Burnham examines, was dominated by an informed, intellectually curious, socially ambitious lay public, prepared to invest some time and energy in the understanding of the new scientific languages.

Theorists of health, psychology, and natural science, the three areas that Burnham studies in some depth, preached gospels that, despite some differences of emphasis and technique, shared many qualities. With "evangelical enthusiasm" they sought to disperse "a positivistic, reductionistic view of the natural world." Condemning exploiters of human credulity, championing reason, proclaiming fidelity to truth, and skeptical of traditional authority, they projected a religious zeal in their combat against mystery, scholasticism, and "dogma." Science, said one of the great popularizers of the late 19th century, E. L. Youmans, was not a set of things but "a method of knowing" that applied to "all things that can be known." The great names in this campaign—among them David Starr Jordan, Edwin E. Slosson, C. W. Eliot, William Graham Sumner, John W. Draper, and Franklin H. Giddings—were frequently distinguished scholars and educators themselves who used military metaphors in their eagerness to exterminate superstition.

But at some point between World War I and World War II, even earlier for some areas, popularization of science and health in America changed drastically, Burnham insists, and not for the better. In the field of health, for example, the task of popularizing was yielded up by scientists and physicians to journalists and pedagogues, and the goal of transmitting systematic knowledge became instead a concentration upon products and consequences. Social marketing promoted by advertising specialists, journalists, and special advocates moved from the moralism and scientism of an earlier day to "arbitrary health habits and romantic self-centredness." Increasingly, commercial interests and public relations came to domi-

nate. Sensationalism focused attention on isolated facts, specific dangers, exaggerated threats, and extraordinary if unfounded promises. Individual cures or discoveries took the center rather than the scientific process or the research method. The "isolated-facts format was exactly the one that nineteenth-century popularizers had fought against," says Burnham, for this was the very basis of superstition: singular facts cut off from a clearly argued context. Health advice "was reduced to just another among the many amoral, unconnected, often unreasoned assertions that passed for popular science in the late twentieth century."

In the case of psychology, specialization and vulgarization eroded its position within a broad high culture in favor of a journalistic obsession with trendy, episodic, life-style concerns and the cultivation of a "new form" of superstition. And in the natural sciences an emphasis upon technology, personal celebrity, and new products replaced scientific explanation, with the most sophisticated levels of analysis reserved for a converted audience already involved in some aspect of science, readers of *Scientific American*, for example. This, the only rigorous popularization that was left, permitted scientists and technicians to learn about one another's specialties, rather than introduce their achievements to a lay public.

The enemies to popularization are clearly identified. They include the mass media, from yellow journalism to television, commercialization, advertising, consumer packaging, public relations, progressive education—a familiar litany to critics of modern American life. There were ebbs and flows to popularizing methods in the 20th century, periods of apparent recovery and serious interest followed by more retrogression—but the downward trend seems absolutely clear to Burnham.

It is difficult not to be impressed with the range of evidence Burnham has assembled, and almost impossible to be out of sympathy with his larger view. The argument, however, is relentlessly repeated and occasionally polemicized or simplified to the extent of being self-defeating. Time lines are often blurred by early anticipations of later vulgarization or late survivals of serious popularization. Parallels drawn between very different audiences make for some confusion. Some contemporary forms of science reporting—the *New Yorker* essays of the past few decades, the work of Stephen Jay Gould, Lewis Thomas, Freeman Dyson—receive almost no attention. There are indications that today's public is more knowledgeable about the politics, the prejudices, the conceits, and the human structure of scientific research than were amateurs of earlier days.

And the technically oriented constituency for popular science, even if it does not quite fit within the definition of a lay audience, has become numerically impressive.

Nonetheless, Burnham's major position remains powerful. Contemporary science is believed in by a credulous public rather than understood by an informed one. Today's popularizing processes, compared with some earlier versions, seem condescendingly simple-minded or narrowly opportunistic. And few distinguished researchers bother to concern themselves with speaking to a large lay audience.

If the problem has been identified, however, a solution has not. And science interpretation has not been alone in its decline. Popular writing on architecture, the graphic arts, music, literature, and economics may also be charged with various forms of degeneration. The issue then, is nothing less than the organization of contemporary life, its value structures and attitudes toward authority, leisure, intelligence, and achievement. It seems made to order for the jeremiad that Burnham has written.

NEIL HARRIS

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## Books Received

**Epidemiology, Health, and Society.** Selected Papers. Mervyn Susser. Oxford University Press, New York, 1987. x, 309 pp., illus. \$39.50.

**Evolutionary Epistemology.** A Multiparadigm Program. Werner Callebaut and Rik Pinxten, Eds. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xii, 458 pp. \$68. Synthese Library, vol. 190. Based on a conference, Ghent, Belgium, Nov. 1984.

**Expanding Protons.** Scattering at High Energies. Hung Cheng and Tai Tsun Wu. MIT Press, Cambridge, MA, 1987. xvi, 285 pp., illus. \$40.

**The Great Design.** Particles, Fields, and Creation. Robert K. Adair. Oxford University Press, New York, 1987. viii, 376 pp., illus. \$24.95.

**The Greenhouse Effect, Climate Change, and U.S. Forests.** William E. Shands and John S. Hoffman, Eds. Conservation Foundation, Washington, DC, 1987. xiv, 304 pp., illus. \$29.95.

**Hepadna Viruses.** William Robinson, Katsuro Koike, and Hans Will, Eds. Liss, New York, 1987. xxvi, 646 pp., illus. \$120. UCLA Symposia on Molecular and Cellular Biology, vol. 70. From a symposium, Keystone, CO, March–April 1987.

**Hetero Diels-Alder Methodology in Organic Synthesis.** Dale L. Boger and Steven M. Weinreb. Academic Press, Orlando, FL, 1987. xii, 366 pp., illus. \$89. Organic Chemistry, vol. 47.

**Invertebrate-Microbial Interactions.** Ingested Fungal Enzymes in Arthropod Biology. Michael M. Martin. Comstock (Cornell University Press), Ithaca, 1987. xii, 148 pp., illus. \$32.50; paper, \$14.95. Explorations in Chemical Ecology.

**Irrigation Development Planning.** An Introduction for Engineers. J. R. Rydzewski, Ed. Wiley, New York, 1987. xiv, 265 pp., illus. \$53.95.

**Life in the Cold.** An Introduction to Winter Ecology. Peter J. Marchand. University Press of New England, Hanover, NH, 1987. xvi, 176 pp., illus. \$18; paper, \$9.95.

**Microcosmos.** Jeremy Burgess, Michael Marten, and Rosemary Taylor. Cambridge University Press, New York, 1987. 208 pp., illus. \$29.95.

(Continued on page 1555)

## Products & Materials

### Restriction Mapping Software

MAPDRAW is a software program that makes restriction maps from DNA sequences, backtranslated amino acid sequences, fragment digests, or manually entered map data. The program produces labeled site maps for both circular and linear molecules as well as concentric or linear maps for individual enzymes. Enzyme names may be customized to suit specific needs. MAPDRAW can also produce reports containing enzyme information, overhang construction details, and site positions tabulated by cutting frequency, linear position, or alphabetically by enzyme. The program operates on the IBM PC and PS/2 family and compatible computers with a graphics card. DNASTAR. Circle 485.

### Precast Mini Gels

The Comb-in-Place Precast Mini Gels come with ten sample wells already cast on each polyacrylamide resolving gel. The user does not need to pour a stacking gel but instead just removes the comb and loads the samples into the wells. Standard gradient formulations are available for samples with high, medium, and low molecular weights. Nongradient gels and custom gradient formulations are also available. The Comb-in-Place Precast Mini Gels come in denaturing and nondenaturing formulations and in thicknesses of 0.75 or 1.50 mm. Jule, Biotechnology Division. Circle 487.

### Action Potential Discriminator

The 8701 Waveform Discriminator discriminates extracellular action potentials from different neurons or motor units. Discrimination is based on a template-matching algorithm. The algorithm can distinguish any waveform that the eye can, and the

templates can follow slow changes in amplitude or spike shape. The 8701 contains a digital storage oscilloscope. Firing frequencies of identified units are displayed on the monitor, and the user can select upper and lower frequency limits. Frequencies are smoothed by digital filtering, with the operator choosing the degree of filtering. The 8701's software operates on the IBM PC family and compatible computers with a graphics adapter; the 8701's board plugs directly into any vacant slot. Signal Processing Systems (Australia). Circle 494.

### Refrigerated Centrifuge

The Sorvall RC-28S SUPRAspeed is a refrigerated centrifuge that operates in the range from superspeed to low ultraspeed. It has a maximum speed of 28,000 rpm and a maximum centrifugal force of 100,000g.



Many multistep fractionations may be performed entirely on the RC-28S. The centrifuge automatically recognizes rotors, so that the operator does not need to remember and enter codes. The Sorvall RC-28S SUPRA-speed accepts existing Sorvall superspeed rotors as well as rotors designed for it. Du Pont. Circle 511.

### DNA Polymerase $\alpha$ -Primase

Immunoaffinity-purified human DNA polymerase  $\alpha$ -primase is available. A key component in the chromosomal replication apparatus of higher eukaryotes, DNA polymerase  $\alpha$ -primase can be used in studies that require reconstitution of model eukaryotic

DNA replication systems. The polymerase has been analyzed for contamination by exonucleases and endonucleases and has been tested for functionality. Packages of 50 and 200 units are available. Molecular Biology Resources. Circle 506.

### Water Purification System

An ultrapure water system is available. The compact, wall-mounted unit produces 1.5 liters of ultrapure water per minute. The water is 99.999% free of bacteria, pyrogens, and colloids. Particles as small as 0.005  $\mu\text{m}$  are removed, and total organic carbon is reduced to less than 20 ppb. Only inert materials such as virgin polypropylene and poly(vinylidene fluoride) are used on wetted surfaces to reduce particulates and eliminate corrosion. The water first passes through a carbon cartridge that removes chlorine and large particles, then through preconditioned ion-exchange resins to reduce ion levels, next through a cartridge that absorbs organic compounds, and finally through a spirally wound ultrafilter membrane. The final membrane cartridge is coated with Teflon to eliminate particulate shedding. Polymetrics. Circle 489.

### Waterproof pH Meter

The model 6009 is a pH and millivoltage meter. Compensation for temperature can be performed automatically or manually. A liquid crystal display simultaneously indicates the sample's pH and temperature. The 6009 is waterproof and operates with either a rechargeable 9-V battery or an ac adapter. The 198-g meter is accurate to within 0.01 pH and 0.5°C. EXTECH Instruments. Circle 490.

### Literature

*Cylinder Data* is a chart that details the weights, dimensions, gas volumes, and pressures of gas cylinders. Scott Medical Products. Circle 505.

*BioLC Series Amino Acid Analysis System* is a brochure that describes a system that determines the amino acid composition of samples by high-performance liquid chromatography. Dionex. Circle 519.

The *Research Products Catalog 1988-1989* features cell growth factors, kits and components for radioimmunoassay and enzyme immunoassay, monoclonal and polyclonal antibodies, fluorescent markers and probes, purified proteins, and cell media additives. Biomedical Technologies. Circle 520.

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.

(Continued from page 1553)

**Non-Classical Continuum Mechanics.** R. J. Knops and A. A. Lacey, Eds. Cambridge University Press, New York, 1987. xii, 335 pp., illus. Paper, \$37.50. London Mathematical Society Lecture Note Series, vol. 122. From a symposium, Durham, U.K., July 1986.

**Nonequilibrium Phase Transitions in Semiconductors.** Self-Organization Induced by Generation and Recombination Processes. E. Schöll. Springer-Verlag, New York, 1987. xii, 313 pp., illus. \$98. Springer Series in Synergetics, vol. 35.

**Nuclear Power.** Policy and Prospects. P. M. S. Jones, Ed. Wiley-Interscience, New York, 1987. xviii, 416 pp., illus. \$154. World Energy Options.

**Nuclear Weapons and Scientific Responsibility.** C. G. Weeramantry. Longwood Academic (Longwood), Wolfeboro, NH, 1987. xiv, 188 pp. + index and appendices. \$25.

**Nutrients and Brain Function.** W. B. Essman, Ed. Karger, Basel, 1987. viii, 252 pp., illus. \$146. Based on a conference, Scottsdale, AZ, Feb. 1986.

**Purāna Basins of Peninsular India** (Middle to Late Proterozoic). B. P. Radhakrishna, Ed. Geological Society of India, Bangalore, 1987. xvi, 518 pp., illus. \$60. Memoir 6. Based on a seminar, Hyderabad, India, Dec. 1984.

**Quantum Field Theory and Quantum Statistics.** Essays in Honour of the Sixtieth Birthday of E. S. Fradkin. I. A. Batalin, C. J. Isham, and G. A. Vilkovisky, Eds. Hilger, Bristol, U.K., 1987 (U.S. distributor, Taylor and Francis, Philadelphia). Two volumes. Vol. 1, Quantum Statistics and Methods of Field Theory. xxii, 697 pp., illus. Vol. 2, Models of Field Theory. xxii, 599 pp., illus. \$385.

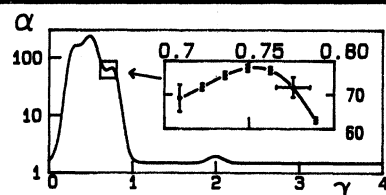
**Statistical Methods for the Analysis of Biomedical Data.** Robert F. Woolson. Wiley, New York, 1987. xxii, 513 pp., illus. \$49.95. Wiley Series in Probability and Mathematical Statistics.

**Statistical Procedures in Food Research.** J. R. Piggott, Ed. Elsevier Applied Science, Barking, U.K., 1987 (U.S. distributor, Elsevier, New York). x, 415 pp., illus. \$90.

**Without the Bomb.** The Politics of Nuclear Nonproliferation. Mitchell Reiss. Columbia University Press, New York, 1988. xxii, 337 pp. \$35.

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**Registered Patent Attorney** seeks work on biotech of chemical patent prosecution, license or enforcement matters to support graduate studies. Reasonable rates due to low overhead. Have modern, will telecommute. Box 93, **SCIENCE**.

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We are seeking an academic pathologist with experience in immunopathology or a related field such as immunocytochemical diagnosis, immunohematology, cell diagnostic markers, etc. The applicant should have an M.D. degree, be experienced in teaching, be capable of serving in diagnostic anatomical pathology and be a graduate of an LCGME-approved pathology residency program. Preference will be given for independent research capability, and, preferably, extramural research funds. Salary is commensurate with experience. Mail curriculum vitae to: **H. Clarke Anderson, M.D., Department of Pathology and Oncology, University of Kansas Medical Center, Kansas City, KS 66103.**

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### ANDROLOGIST

The Division of Reproductive Endocrinology in the Department of Obstetrics and Gynecology, Health Science Center, Syracuse, New York is seeking a qualified andrologist. The applicant should have experience in tissue culture, semen analysis, sperm antibody testing, sperm washing techniques, and sperm cryopreservation. Previous experience in IVF is preferred but is not necessary. The applicant will be responsible for the daily functions of the Andrology Laboratory and the development of research protocols in that field. Please forward your curriculum vitae to: **Michael Baggish, M.D., Chairman, or Shawky Badawy, M.D., Director, Division of Reproductive Endocrinology, Department of Obstetrics/Gynecology, Health Science Center, Syracuse, NY 13210.**

### ASSISTANT PROFESSOR NORTHWESTERN UNIVERSITY DEPARTMENT OF MICROBIOLOGY-IMMUNOLOGY

Applications are invited for a tenure-track position at the rank of assistant professor in the Department of Microbiology-Immunology, Northwestern University Medical and Dental Schools. The department is undergoing substantial growth in research space, facilities, and faculty positions as part of Northwestern University's commitment to enhance excellence in the basic biomedical sciences. Applicants are being sought whose research interests complement ongoing programs in molecular virology, immunology, and microbial pathogenesis. Of particular interest are research on immunopathogenicity or microbial pathogenicity in mammalian systems, or research on receptor biology as it pertains to the function of the immune system or to microbe-cell interactions. Primary criteria for appointment will be previous postdoctoral experience with the tools and techniques of modern molecular biology, demonstrated research ability, potential for developing an internationally recognized research program, and commitment to effective teaching at the postgraduate level. Please send curriculum vitae, summary of research interests, and the names of three references to: **Search Committee Chairman, Department of Microbiology-Immunology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, IL 60611. Northwestern University is an Affirmative Action/Equal Opportunity Employer.**

**ASSISTANT PROFESSOR**, tenure-track, radiopharmacy. Responsibilities: Maintain active extramurally funded research program; participate in graduate and undergraduate teaching. Ph.D. in radiopharmaceutical development, radiopharmaceutical chemistry, or related discipline required. Preference to candidates with B.S. degree in pharmacy. Twelve-month appointment; starting date of 1 January 1989. Salary commensurate with experience. Deadline: 1 September 1988. Send letters, curriculum vitae, statement of career objectives, and three references to: **William B. Hladik III, Chair, Radiopharmacy Search Committee, College of Pharmacy, University of New Mexico, Albuquerque, NM 87131. Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

### ASSISTANT PROFESSOR

The Department of Pharmacology and the Program in Biological Sciences of the School of Medicine, University of California, San Francisco, seek to fill a tenure-track position at the assistant professor level. The search is not confined to candidates in a single area of research; rather, we seek an investigator who works in an area broadly relevant to pharmacology—e.g., signal transduction, protein structure, neurobiology, cell biology, or molecular biology. Successful candidates should also be able to teach pharmacology to professional and graduate students. Letters of application should be accompanied by curriculum vitae and bibliography, a narrative description of plans for future research, and the names, addresses, and telephone numbers of three references. Please send all materials by 30 September 1988, to: **Chairman, Search Committee, Department of Pharmacology, UCSF, San Francisco, CA 94143-0450.** *The University of California is an Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT PROFESSOR**—The Department of Chemistry and Biochemistry and the Center for Agricultural Biotechnology of the University of Maryland, College Park, announce the opening of a tenure-track joint assistant professorship. The successful candidate will be expected to initiate a competitive research program in the area of plant biochemistry, and to establish an interface between the Department and the Center. Investigators whose research interests include the biochemical and/or enzymological aspects of plant biochemistry are especially encouraged to apply. The joint appointee will have modern laboratory space in chemistry and biochemistry, a one-half teaching load and full access to departmental facilities and graduate students. A résumé, a synopsis of research interests, and three letters of recommendation should be sent by 15 August 1988 to: **John W. Kozarich, Center for Agricultural Biotechnology, H. J. Patterson Hall, University of Maryland, College Park, MD 20742.** *The University of Maryland is an Equal Opportunity Employer.*

**ASSISTANT PROFESSOR**, tenure-track, beginning 1 January 1989. Ph.D. in biochemistry or molecular biology, commitment to liberal education, teaching in biology and chemistry departments at undergraduate and Masters' levels, development of research program interfacing biology and chemistry required. Submit résumé, description of proposed research, three letters of recommendation, and official transcripts to: **Chairman, Biology Department, James Madison University, Harrisonburg, VA 22807**, by 30 June 1988. Search will continue until position filled. *The University is an Equal Opportunity/Affirmative Action Employer.*

The Seattle Biomedical Research Institute (SBRI) invites applications for a permanent position at the **STAFF OR SENIOR SCIENTIST** level which is equivalent to assistant or associate professor. SBRI is a small, non-profit institute dedicated to basic biomedical research in a cooperative, scientist-oriented environment. Interactions with other Seattle research institutions are encouraged. Current programs focus on basic molecular biology, immunology, and molecular and immunological parasitology. The successful candidate will establish an externally funded independent research program that is related to infectious diseases and that employs molecular and/or immunological approaches. Limited initial support from the institute is available. Candidates interested in molecular pathogenesis of viral and bacterial disease or in intercellular interactions are encouraged to apply. Applicants should send their curriculum vitae, a brief statement of proposed research, and names of three references by 1 July 1988 to: **Dr. Kenneth Stuart, Seattle Biomedical Research Institute, 4 Nickerson Street, Seattle, WA 98109-1651.** *Equal Opportunity Employer.*

**ASSISTANT OR ASSOCIATE PROFESSOR, PHARMACOLOGY/TOXICOLOGY** Two tenure-track positions are open for an outstanding cardiac or vascular pharmacologist. Applicants should send curriculum vitae, a statement of research plans, and three letters of reference to: **K. E. Moore, Ph.D., Chairman, Department of Pharmacology and Toxicology, Michigan State University, East Lansing, MI 48824.** *An Equal Opportunity/Affirmative Action Employer.*

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**ASSISTANT PROFESSOR AND POSTDOCTORAL POSITIONS.** Immediate opportunities to study the molecular genetics of autoimmune diseases in humans and appropriate animal models. Ongoing projects concern genomic organization and expression of autoimmune B and T cell antigen receptors, immunoglobulin and autoantibody regulation, molecular aspects of tolerance, and antigen-binding/presentation. Candidates should have a good background in immunology and molecular biology. Send curriculum vitae and three references to: **Dr. Argyrios N. Theofilopoulos, Member, Immunology Department, Scripps Clinic and Research Foundation, 10666 North Torrey Pines Road/IMM3, La Jolla, CA 92037.**

### ASSISTANT PROFESSOR OF PHARMACOLOGY

A tenure-track faculty position of assistant professor is available in the Department of Pharmacology, University of California, Los Angeles (UCLA), for an individual with strong promise for research and teaching in the area of molecular mechanisms of drug action. Applicant should have significant postdoctoral research accomplishments, a solid background in molecular pharmacology, and the ability to respond to new challenges. Appointee is expected to establish a strong research program and effectively educate medical and graduate students in molecular pharmacology. Send curriculum vitae, bibliography, summary of professional accomplishments and goals, and names of three references to: **Chair, Search Committee, Dr. Louis J. Ignarro, Department of Pharmacology, UCLA School of Medicine, Center for the Health Sciences, Los Angeles, CA 90024.** *An Affirmative Action/Equal Opportunity Employer.*

**ASSISTANT PROFESSOR, PHARMACOLOGY/TOXICOLOGY.** This is a tenure-track position available immediately. A Ph.D. or M.D. with postdoctoral research experience is required. The appointee will be expected to develop a strong research program in addition to teaching and student advising responsibilities. Qualified applicants of any research discipline in pharmacology/toxicology may apply, but persons whose research interests are in molecular biology and/or immunopharmacology are especially urged to apply. The department is well-equipped with basic research equipment and fully-equipped tissue/cell culture facilities are available. Applications including a detailed curriculum vitae, statement of future research direction, and three letters of reference should be sent to: **Dr. Beth Hoskins, Department of Pharmacology and Toxicology, University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216-4505.** *The University of Mississippi Medical Center is an Equal Opportunity Employer, M/F/H/V.*

### ASSISTANT/ASSOCIATE PROFESSOR PHYSIOLOGY AND BIOPHYSICS UNIVERSITY OF WASHINGTON

A tenure-track position is open for outstanding candidates working at the molecular, cellular and/or integrative level in all areas of contemporary physiology. Applicants applying modern methods to study of the autonomic nervous system (including development and signal transduction) or to the cardiovascular system and its components (such as the endothelium) are particularly encouraged. Candidates are expected to develop a strong independent research program and to teach effectively at the graduate level. Submit curriculum vitae, statement of research interests and goals, and names and addresses of three references before 31 August 1988 to: **Wolfhard Almers, Chair of Search Committee, Physiology and Biophysics, SJ-40, University of Washington School of Medicine, Seattle, WA 98195.** *The University of Washington is an Equal Opportunity/Affirmative Action Employer.*

**BIOLOGY/HEALTH SCIENCES.** Tenure-track. **ASSISTANT/ASSOCIATE PROFESSOR.** Fall 1988 or fall 1989. Salary commensurate with qualifications and experience. Ph.D., excellence in teaching, research, and a firm commitment to working with students required. Teach kinesiology, exercise physiology, nutrition, and courses related to gerontology. Send résumé, three letters of reference, and evidence of scholarship and teaching to: **Chair, Department of Biology/Health Sciences, Chapman College, Orange, CA 92666** by 15 July 1988. *Affirmative Action Institution/Equal Opportunity Employer.*

## POSITIONS OPEN

### BIOLOGIST OR PHYSICAL OCEANOGRAPHER

The Harbor Branch Oceanographic Institution (HBOI) is seeking to fill an entry-level position on the Resident Scientific Staff of the Division of Marine Sciences. Applicants should have 2 years of postdoctoral experience in at least one of the following areas of marine science: Microbial ecology, comparative animal physiology, deep-sea ecology, coral reef ecology, or blue-water physical oceanography. Research areas that involve the use of HBOI's unique resources, particularly the Johnson-Sea-Link submersibles, will be given special preference. This is a full-time research position with some internal support. The chosen candidate is expected, however, to aggressively pursue external research funding. Interested applicants should send a letter outlining research background and current research interests, together with curriculum vitae and the names of three references to: **G. R. Harbison, Director, Division of Marine Sciences, Harbor Branch Oceanographic Institution, 5600 Old Dixie Highway, Ft. Pierce, FL 34946.** Application deadline: 31 August 1988. *The Harbor Branch Oceanographic Institution is an Equal Opportunity Employer.*

**CELL BIOLOGIST:** The Department of Neurology, Columbia University, seeks cell biologist at assistant professor level to develop novel cell lines for potential use in neural transplantation as part of multidisciplinary research effort in Parkinson's disease and Alzheimer's disease. Applicants must have M.D. or Ph.D., minimum of 2 years of postdoctoral research experience, and ability to obtain extramural funding. Send curriculum vitae and names of three references to: **Dr. Robert E. Burke, Neurological Institute, 710 West 168th Street, New York, NY 10032.** *Columbia University takes Affirmative Action to ensure Equal Opportunity.*

**CELLULAR BIOPHYSICS AND MOLECULAR PHYSIOLOGY: Several TENURE TRACK POSITIONS** (Assistant-Associate-Full Professor) will be available in the Department of Physiology at the University of Virginia School of Medicine that is to be expanded in these areas with the appointment of **Dr. A. P. Somlyo** as the new Chairman of the Department. Applications are invited from individuals with demonstrated accomplishments in applying the methods of molecular genetics, light optical, electron optical, spectroscopic and modern electrophysiological approaches to cell physiology. Potential areas of interest include subcellular transport and transporting membrane proteins, intracellular signaling and cell motility. Some preference may be given to individuals with an interest in the cell physiology of the cardiovascular system and contractility. Send curriculum vitae and a list of four references to: **Physiology Department Search Committee, School of Medicine, Box 449, Charlottesville, VA 22908.** *The University of Virginia is an Equal Opportunity/Affirmative Action Employer.*

### UNIVERSITY OF OTAGO DUNEDIN, NEW ZEALAND CHAIR IN MARINE SCIENCE

Applications are invited for appointment to a newly established Chair in Marine Science. Applications would be welcomed from candidates with a substantial record of research in any area or areas of basic or applied marine sciences. Proven ability in leadership of interdisciplinary teaching and research may be an advantage.

A new, well-appointed and equipped building costing \$NZ4.5 million has recently been opened at the Portobello Marine Laboratory 20 km from Dunedin. The facilities of the Laboratory, which include a 14-metre research vessel, offer excellent opportunities for marine research.

Salary will be within a range between \$NZ68,000 and \$NZ85,000 per annum.

Intending applicants can obtain further information, including a detailed description of the facilities of the Portobello Marine Laboratory and duties and responsibilities of the Professor of Marine Science, from **The Registrar, P.O. Box 56, Dunedin, New Zealand.**

Applications quoting reference number A88/11 close with the Registrar on 31 July 1988. **D. W. Girvan, Registrar.**

## POSITIONS OPEN

**CHAIRPERSON, DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS:** The University of Mississippi Medical Center invites nominations for the position of professor and chairperson of the Department of Physiology and Biophysics. Candidates should have extensive teaching experience and be established investigators with a record of scholarly contributions and participation in appropriate professional organizations. Candidates with administrative background are preferred. The Medical Center in Jackson is Mississippi's only academic health center. There are four health professional schools on the campus—Schools of Medicine, Nursing, Health Related Professions and Dentistry; graduate programs in the medical sciences; and the 541-bed University Hospital, teaching hospital for all programs. The Department of Physiology and Biophysics has campuswide teaching responsibilities. The department is particularly noted for its research in cardiovascular, renal and endocrine physiology and for its quantitative approach to physiology, especially in the application of control systems analysis and computer simulation of physiological mechanisms. There are also active research programs in the areas of cellular, respiratory and neurophysiology. Nominations for the position should include the nominee's name, curriculum vitae, and names and telephone numbers of three references, and should be addressed to: **I. K. Ho, Ph.D., Chairman, Search Committee, c/o the Department of Pharmacology and Toxicology, the University of Mississippi Medical Center, 2500 North State Street, Jackson, MS 39216-4505.** Application deadline is 1 August 1988.

The Department of Pathology of the SUNY Health Science Center at Syracuse announces a position in the Division of Clinical Pathology as **CO-DIRECTOR OF CYTOGENETICS** at University Hospital. Applicant must meet the requirement for New York State Certification of Qualification as a Laboratory Director of Cytogenetics. Applications will be accepted through 1 July 1988. Submit a letter describing interest and experience in cytogenetics, curriculum vitae and the names of three references to: **Lawrence P. Gordon, M.D., Department of Pathology, SUNY Health Science Center, Syracuse, NY 13210.** An Equal Opportunity/Affirmative Action Employer.

Senior tenure-track faculty appointment (full-time) in the Department of Psychiatry as **DIRECTOR** of the University of Michigan Substance Abuse Center of Excellence. Responsibilities include the coordination and monitoring of research efforts across university programs, facilitation of collaborative research relationships, integration of basic research efforts with clinical and teaching operations, strengthening existing resources and attracting new resources and talent, and the dissemination of information about university activities in substance abuse. Candidates must have documented track record in research, teaching, clinical leadership and administration; demonstrated ability to establish and carry out funded research; Medical Degree with Board Certification in Psychiatry or Doctoral Degree in Clinical Psychology from an accredited training program; eligible for licensure in Michigan. Send a letter of interest and curriculum vitae to: **John F. Greden, M.D., Professor and Chairman, Department of Psychiatry, B2963 Clinical Faculty Office Building (Box 0704), 1500 East Medical Center Drive, Ann Arbor, MI 48109-0704.** The University of Michigan is a Non-discriminatory/Affirmative Action Employer.

### ELECTRON MICROSCOPIST

Johns Hopkins University Medical School seeks an experienced electron microscopist to supervise, maintain, and provide instruction in a new electron microscope core facility. Duties include maintaining and supervising the use of 4 TEMs, 1 SEM and associated evaporators, microtomes and freeze-fracture apparatus; instructing and assisting both experienced and novice investigators with EM use and preparation methods; implementing an EM image analysis system; maintaining light microscopes and a new confocal fluorescence microscope. Rank and salary commensurate with experience. An established record of contributions and experience in microscopy are required. Send curriculum vitae and the names of three references to: **EM Search Committee, Department of Cell Biology and Anatomy, Johns Hopkins Medical School, 725 North Wolfe Street, Baltimore, MD 21205.**

# Scientist

## Join A Group Of Biotechnology Scientists Dedicated To Improving The Environment.

As one of the world's foremost agricultural companies, the Agricultural Division of CIBA-GEIGY Corporation is putting science to work. We're known for our commitment to research and the calibre of scientific professionals who share it. Our Biotechnology research facility in Research Triangle Park, NC, now seeks the expertise of a Tissue Culture Scientist.

Joining our genetic engineering and crop improvement program, you'll assist in the propagation and engineering of plant tissue cultures. Ideal candidate is a multi-faceted scientist with interest in culturing and engineering various types of plant tissues. A BS or MS in Botany or a crop science is required, as is 2-5 years of tissue culture lab experience, preferably with major crop species.

We'll reward your commitment with advancement opportunities, a competitive salary and generous company-paid benefits. Please forward your resume, including salary history and requirements, in confidence, to: **Mary-Dell Chilton, CIBA-GEIGY Corporation, P.O. Box 12257, Research Triangle Park, NC 27717.** We are an equal opportunity employer m/f/h/v.

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American Cyanamid Company's Agricultural Research Division has a long-standing and highly successful commitment to the discovery and development of products to improve worldwide crop and livestock production. We are growing rapidly and currently have opportunities at our laboratory and experimental farm complex ideally located near Princeton, New Jersey in the following:

### Plant Molecular Biology/Pathology

Our expanding Plant Biotechnology program has openings for individuals at the BS, MS and PhD levels in the areas of plant pathology and molecular biology. Applicants should have experience in molecular pathology of fungal pathogens or host plant responses, plant transformation systems, gene isolation, and/or the analysis of gene expression in higher plants.

American Cyanamid offers a competitive compensation and benefits package. For prompt and confidential consideration, forward your resume, an outline of research interests, career goals and the names and addresses of three references to the Employment Office.



**American Cyanamid Company**

Agricultural Research Division

P.O. Box 400

Princeton, NJ 08540

An Equal Opportunity Employer M/F/H/V

## POSITIONS OPEN

**DEVELOPMENTAL BIOLOGIST:** The Department of Embryology of the Carnegie Institution of Washington seeks a Staff (Faculty) Member who will carry out independent research in some aspect of Developmental Biology. Our Department is part of a nonprofit research institution and is situated on the Johns Hopkins University Homewood campus. Applicants should send curriculum vitae, a statement of research interest, and have three letters of recommendation sent to: **Director, Department of Embryology, Carnegie Institution of Washington, 115 West University Parkway, Baltimore, MD 21210.** An Equal Opportunity/Affirmative Action Employer.

### DIRECTOR, OFFICE OF RESEARCH SAFETY NORTHWESTERN UNIVERSITY

Northwestern University is seeking a Director for its Office of Research Safety, a centrally administered unit that has responsibilities on both the Chicago and Evanston campuses. The Office's duties encompass radiation safety, chemical, biological and rDNA safety, and hazardous waste management. The Director is responsible for program planning and development as well as maintaining regulatory compliance with applicable federal and state regulations and university policies. Candidates should have a Ph.D., or equivalent degree, in health physics, environmental health, chemistry or related field, and at least 5 years of experience, including administration, in an environmental health program or office. The Director reports to the Vice President for Research and Dean of the Graduate School through the Director of Research Services Administration. The position is available on 1 July 1988. The applicant should submit a résumé, including the names of at least three references, to: **Search Committee, Research Services Administration, Northwestern University, 633 Clark Street, Evanston, IL 60208.** Northwestern University is an Equal Opportunity Employer.

**DIRECTOR, MOLECULAR AND CELLULAR BIOLOGY GRADUATE PROGRAM.** University of Maryland, College Park. The University of Maryland is seeking a director for a newly formed inter-departmental graduate program in molecular and cellular biology. The director will:

- be a tenured full professor in one of the departments of the College of Life Sciences or the College of Agriculture, and be the program director.
- work closely with the chairs of the departments involved in the program and report directly to the Dean of the Colleges of Life Sciences and Agriculture
- represent College Park in a University-wide molecular and cellular biology graduate program

The individual selected for director should demonstrate significant sustained contributions to molecular and/or cellular biology as well as an ability to direct and lead a large inter-departmental program. The individual is expected to maintain his/her own active research program, teach appropriate courses in the program, and foster development of the program.

Applicants for the position should send their curriculum vitae, a statement of research interests, and the names and addresses of at least three potential references to: **Dr. Arthur N. Popper, Chairman, Search Committee, Molecular and Cellular Biology Program, Department of Zoology, University of Maryland, College Park, MD 20742. Telephone: 301-454-3202.**

Closing date is 17 October 1988, or until suitable applicants are found. *Equal Opportunity Employer/Affirmative Action.*

### ECOLOGICAL DATABASE ANALYST

Permanent position as database analyst and programmer for the Smithsonian Tropical Research Institute in the Republic of Panama, a bureau of the Smithsonian Institution. Duties include management and statistical analysis of several large databases on tropical forest ecology and related areas. Statistical programming experience required. Salary based on qualifications. Send curriculum vitae and three letters of recommendation to: **Director, Smithsonian Tropical Research Institute, APO Miami 34002-0011. Deadline: 15 July 1988.** An Equal Opportunity/Affirmative Action Employer.

## POSTDOCTORAL ASSOCIATE POSITIONS UNIVERSITY OF IOWA

Please contact the appropriate department to express your specific interest:

**ANATOMY** — Dr. Joe Dan Coulter, Professor and Head, Bowen Science Building.

**ANESTHESIA** — John H. Tinker, M.D., Professor and Head.

**BIOCHEMISTRY** — Alan G. Goodridge, Bowen Science Building.

**DERMATOLOGY** — John S. Strauss, M.D., Professor and Head; or Kenzo Sato, M.D., Associate Professor; Boyd Tower, General Hospital. A postdoctoral research associate for the study of electrophysiology of cultured cells.

**INTERNAL MEDICINE** — Openings available in all disciplines in the Internal Medicine Department, College of Medicine, University of Iowa. Contact Francois M. Abboud, M.D., Professor and Head; or Darris Goerd, Administrator. Phone (319) 256-2850.

**MICROBIOLOGY** — Dr. Irving P. Crawford, Professor and Head, Bowen Science Building.

**NEUROLOGY** — Postdoctoral associate positions are available in Cognitive Neuroscience, Neurophysiology, Neurobiology, Cerebrovascular Disease, Epilepsy, Sleep, and Neuromuscular Diseases. Antonio R. Damasio, M.D., Professor and Head, 2151 Roy Carver Pavilion.

**PATHOLOGY** — Dr. Richard G. Lynch, Professor and Chairman, 144 Medical Laboratories. Research activity in all areas of pathology.

**PEDIATRICS** — Dr. Frank H. Morriss, Jr., Professor and Head.

**PHARMACOLOGY** — Dr. P. Michael Conn, Chairman and Head, Bowen Science Building. Openings available in all areas of pharmacology and toxicology.

**PHYSIOLOGY & BIOPHYSICS** — Positions available for cellular and molecular research in endocrinology, neurophysiology and membrane biology. Contact Robert E. Fellows, M.D., Ph.D., Professor and Head, 5-660 Bowen Science Building.

**RADIATION BIOLOGY** — Dr. J. William Osborne, Professor and Director, 14 Medical Laboratories. Biological effects of radiation; environmental carcinogenesis and immunology; free radicals and cancer; cell proliferation in hematological and gastrointestinal systems; and radiation biochemistry of DNA base damage. Postdoctoral fellows also.

**SURGERY** — Dr. Robert J. Corry, Professor and Head, Colloton Pavilion. Research opportunities in neuroscience, oncology immunology, and organ transplantation.

**UROLOGY** — Dr. Richard D. Williams, Professor and Chairman, Carver Pavilion. A postdoctoral position is available for physicians interested in the study of immune modulation of genitourinary cancer cells *in vitro* and in animal models.

*The College of Medicine, University of Iowa, Iowa City, Iowa 52242, is an Equal Opportunity/Affirmative Action Employer.*

## REPRODUCTIVE TOXICOLOGIST

Continued expansion at The Parke-Davis Pharmaceutical Research Division has created the need for a scientist in our Reproductive Toxicology section.

The duties of the successful candidate will be to assist in the design, execution and analysis of studies which focus on drug effect on fertility and reproduction as well as effect on the embryo/fetus, newborns and weanlings. The position will also involve supervisory responsibilities and drug discovery team participation.

Requirements for this position include a Ph.D. in Reproductive Biology or closely allied field, one to three years post-doc experience in reproductive toxicology, knowledge of GLPs, experience in maintenance of animal colonies and in animal care and handling.

This position is located at our research facilities in Ann Arbor, Michigan. The successful candidate will participate in dynamic drug discovery and development teams, and enjoy an excellent salary, benefits, professional development, living and working environment.

Qualified candidates send response, salary requirements and reference list in confidence to: **Ms. M. Wolin, Warner-Lambert/Parke-Davis, 2800 Plymouth Road, Ann Arbor, MI 48105.**

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## RESEARCH SCIENTISTS

**HYBRITECH**, located in the biotechnology center of San Diego, is a recognized leader in the application of monoclonal antibody technology to human health care needs. Several excellent career opportunities are available for innovative researchers to join our immunodiagnostic product development team, our newly-formed therapeutic protein engineering group, or our medicinal chemistry department.

**CHEMISTS/BIOCHEMISTS** - Responsibilities include participation in a multidisciplinary research group devoted to the design, feasibility testing and development of new generation immunoassay systems. Successful candidates will have a Ph.D. in Chemistry, Biochemistry or Physics with 1-5 years' postdoctoral experience in one or more of the following areas: solid-phase immunochemistry chemical modification of proteins, instrument applications of immunoassays or reaction kinetics. Creativity and the ability to effectively communicate and interact with fellow project scientists and engineers are essential. Supervisory experience is desirable.

### MOLECULAR BIOLOGIST/PROTEIN CHEMIST

Responsibilities of this scientist will be to predict and model structural/functional changes in proteins and analyze these changes *in vivo* through site-directed mutagenesis studies. Essential to the success of this position are a high degree of self-motivation and effectiveness in an interdisciplinary group setting. Requirements include a Ph.D. degree and two years' postdoctoral experience in protein chemistry and molecular biology. Additional experience in protein engineering, macromolecular physical chemistry and computer modeling are highly desirable.

**SYNTHETIC/RADIOCHEMIST** - Responsibilities include the design and synthesis of novel metal chelating agents to be used to deliver radioisotopes for cancer diagnosis and therapy. This chemist will have an M.S. and 3-5 years' experience or a Ph.D. with up to two years' experience. Candidates must have synthetic experience and familiarity with TLC, HPLC, UV/VIS, IR, NMR and a willingness to work with radioisotopes. The ability to communicate clearly and to work as a multidisciplinary team member is essential.

**HYBRITECH** offers a stimulating work environment, competitive salaries and excellent company-paid benefits. Please send your resume to: **Human Resources Department, Hybritech Incorporated, P.O. Box 269006, San Diego, CA 92126.**



An Equal Opportunity Employer

## Opportunities In Biotechnology

Repligen Corporation is a leader in the application of Biotechnology to the health care and personal care markets. We are currently developing an AIDS vaccine and AIDS therapeutic products, products for the treatment of infectious diseases, cancer therapies and novel biocompatible personal care products. We take pride in the high caliber of our scientific staff and our collaborations with major research institutions and corporate partners in Europe and the United States. The expansion of our efforts has created the following opportunities:

### Protein Chemistry

**Research Scientist (A1003-4)** Ph.D. with 2-4 years postdoctoral experience. We are seeking a creative individual to lead protein structure-function projects in the area of retroviral infection and immunomodulation. Experience with physical methods of protein characterization and computer modeling of protein structure is required. The successful candidate will have a proven record of creative research and accomplishment.

### Process Development

**Research Associate (R1006-2)** B.S./M.S. in Biology, Chemistry or related science with 1-3 years of experience in protein purification. FPLC experience preferred but not required.

### Quality Assurance

**Quality Control Analysts (R3001-2)** B.S./M.S. in Biological Sciences. Two highly motivated individuals are needed, one with a background in microbiology, and the other in immunology. Experience with ELISAS, HPLC, or in a QC lab is a plus.

### Bio-Organic Chemistry

**Synthetic Organic Chemist (A1007-2)** B.S./M.S. in Organic Chemistry. The successful candidate will have demonstrated skills in the synthesis of bio-organic molecules and/or polymers. Biological background is a plus.

Repligen Corporation offers a competitive salary, excellent benefits and equity participation. Please submit a cover letter, resume and references to **Barbara Fleming, Recruiter, Repligen Corporation, One Kendall Square, Bldg. 700, Cambridge, MA 02139.** (Please refer to job code when applying). An Equal Opportunity Employer.

## Cellular Immunologist

M.D. or Ph.D. wanted to join immunology group studying human autoimmunity. Position is full time research at junior staff level. Experience with cell sorting, B cell cloning and B cell phenotyping required.

## Molecular Biologist

M.D. or Ph.D. wanted to establish molecular genetics laboratory with immunology group studying human autoimmunity. Specific interest in the study of immunoglobulin genes required. Position is full time research at junior staff level.

**For confidential consideration, please submit resume to:**

**Vincent Agnello, M.D.**  
**Department of Laboratory Medicine**  
**Lahey Clinic Medical Center**  
**41 Mall Road**  
**Burlington, MA 01805**



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ORGANON TEKNIKA CORPORATION is a leader in biomedical research and application. Our research and product development efforts pioneer new advances in the development of diagnostic and therapeutic products. Our continued growth creates an immediate opportunity for a

## PROJECT LEADER BLOOD BANKING/ IMMUNOHEMATOLOGY

You will serve as scientific leader of research projects leading to novel and state-of-the-art blood banking reagents and technologies. You will plan, direct, and conduct all technical activities required to accomplished project goals.

The successful candidate will have a Ph.D. in immunology and at least five years experience conducting research in serology, including cell surface antigens. Experience in medical diagnostics and blood banking technologies and reagents is preferred.

ORGANON TEKNIKA CORPORATION offers a competitive compensation package which includes dental insurance and an attractive 401 (K) Savings Program. Qualified applicants please send resume and salary history to:

**Human Resources Department**



P.O. Box 13867, Research Triangle Park, N.C. 27709

An Equal Opportunity Employer M/F/V/H (No Agency Referrals or Phone Calls Please)

## Biomedical Mass Spectrometry

The Department of Drug Metabolism of Smith Kline & French Laboratories, located in suburban Philadelphia, PA, is seeking qualified applicants to join a collaborative and expanding Bioanalytical Research Group. The successful candidate will: operate and maintain a triple stage quadrupole mass spectrometer dedicated to thermospray LC/MS analysis of drug metabolites, interpret and report mass spectral data, participate in metabolite isolation and characterization studies, and participate in basic research programs in drug development.

Candidate qualifications will include:

- B.S. or M.S. in Chemistry, Analytical Chemistry or related area plus 1-3 years experience in analytical mass spectrometry.
- Demonstrated experience with the daily operation and maintenance of quadrupole mass spectrometers. Experience with LC/MS and LC/MS analysis of drug metabolites in biological fluids and interpretation of mass spectral data are preferred.
- Knowledge of chemical pathways of biotransformation of xenobiotics and isolation of metabolites by HPLC methods desirable.
- Proven research ability as evidenced by scientific publications preferred.
- Excellent communication and interpersonal skills required.

We offer an excellent compensation, benefits and relocation package as well as opportunities for personal and professional growth. For confidential consideration, please forward your resume and the names of three references to Ms. Angela Varrichio, Associate Employment Administrator, V0033, SK&F Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an equal opportunity employer, M/F/H/V.

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

# Opportunities In Drug Delivery

The Department of Drug Delivery at Eastman Pharmaceuticals, a new division of Eastman Kodak Company, is conducting research directed toward developing parenteral polymeric drug delivery systems and orally active drugs including peptides. Several positions are available for motivated and highly qualified scientists with the abilities to make significant contributions to the research efforts.

## **PARENTERAL DRUG DELIVERY, POLYMER-PROTEIN INTERACTIONS**

Positions involve: Quantifying and kinetically characterizing the adsorption of proteins onto polymeric nanoparticulates; determining the conformational orientation of adsorbed proteins; identifying polymer surface characteristics responsible for adsorbing proteins and developing polymers that do not adsorb proteins; and developing methods to covalently link proteins to polymer surfaces.

**SENIOR RESEARCH SCIENTIST** - Requires a Ph.D. in Polymer Sciences or Protein Chemistry or equivalent with 1-5 years postdoctoral experience in protein/biomembrane/polymer interactions; experience with techniques for the isolation and identification of proteins, spectroscopic techniques and their application for studying membrane interactions and characterization of adsorption phenomena is essential; scientific publications demonstrating innovative approaches to the study of surface interactions are required. (When responding to this advertisement refer to Position A.)

**RESEARCH SCIENTIST** - Requires a BS or MS in Biochemistry or equivalent with 3-5 years experience in the isolation and identification of proteins, experience with chromatographic techniques is required; experience with protein-polymer interaction studies, adsorption phenomena and photon correlation spectroscopy is desirable. (When responding to this advertisement refer to Position B.)

## **PARENTERAL DRUG DELIVERY, IN VITRO MODELING**

Positions involve: Establishing and validating cell culture lines and utilizing them to evaluate the association or uptake of polymeric based drug delivery systems; developing methods to study the *in vitro* biodegradation/bioerosion of polymeric based drug delivery systems; and identifying targeting vectors that influence the cellular association of polymeric based drug delivery systems.

**SENIOR RESEARCH SCIENTIST** - Requires a Ph.D. in Biochemistry or Biology or equivalent with 1-5 years postdoctoral experience in *in vitro* cell modeling of disease states; experience with isolation and studies with macrophages and neutrophils, cell membrane transport phenomena and biomembrane interactions is essential; experience characterizing the biodegradation/bioerosion of polymeric microparticulates *in vitro* is desirable; scientific publications demonstrating innovative approaches to studying the uptake of materials by cell are required. (When responding to this advertisement refer to Position C.)

**RESEARCH SCIENTIST** - Requires a BS or MS in Biochemistry or equivalent with 3-5 years experience in tissue and cell culture; experience with isolation and studies with macrophages and neutrophils, and biomembrane-polymer interactions is desirable. (When responding to this advertisement refer to Position D.)

## **ORAL DELIVERY, IN VITRO MODELING**

Positions involve: establishing and validating *in vitro* methods to study GI tract transepithelial transport, digestion and metabolism of drugs; characterizing the luminal and brush border enzyme systems limiting availability of drugs; identifying optimum sites in the GI tract for delivery of drugs; and developing approaches to enhance the bioavailability of peptides.

**SENIOR RESEARCH SCIENTIST** - Requires a Ph.D. in Physiology or Pharmaceutics or equivalent, with 1-5 years post doctoral experience in the transport of molecules across isolated epithelial tissue; experience in the isolation and identification of peptides, drugs and their metabolites, transport phenomena and membrane structure and enzyme kinetics is essential; scientific publications that demonstrate innovative approaches to studying the transport of materials across membranes are required. (When responding to this advertisement refer to Position E.)

The positions offer competitive salaries and a full range of benefits together with outstanding opportunities for personal and professional growth. For confidential consideration please send your resume with salary history/requirements and the names of three references to **Personnel Relations, Department PDDD, Eastman Pharmaceuticals, 9 Great Valley Parkway, Great Valley, PA 19355**. We are an equal opportunity employer M/F/H/V.

## **Eastman Pharmaceuticals**

A Division of Eastman Kodak Company

## POSITIONS OPEN

### EDITOR (CHEMISTRY/MATH)

Chicago-based multi-national publishing company seeks an experienced editor to review, evaluate, and edit articles in the fields of chemistry and related sciences and mathematics. The successful candidate will have a college degree in chemistry, or in mathematics with a strong chemistry minor, and a minimum of 2 years of editing experience, preferable with reference or academic publications.

We offer a competitive compensation and benefits package. Please forward your résumé and salary history in confidence to: **Box 96, SCIENCE.**

### ELECTRON MICROSCOPIST SENIOR RESEARCH SPECIALIST Howard Hughes Medical Institute Department of Biochemistry University of California, Berkeley (UCB)

A qualified electron microscopist is sought for a long-term senior research specialist position, available immediately, to work in conjunction with our laboratory's studies on the molecular genetics of neuronal development in the embryo of the fruit fly *Drosophila melanogaster*. Opportunity to use EM in collaboration with other laboratory members studying the mechanisms controlling cell fate and cell recognition during neuronal development. Qualified candidates should have extensive experience with ultrastructural studies and be comfortable in the preparation of serial section electron micrographs and/or immuno-EM. Salary based upon experience. Send letter of interest, curriculum vitae, and names of three references to: **Professor Corey S. Goodman HHMI Investigator Department of Biochemistry University of California, Berkeley, CA 94720. HHMI and U.C.B. are Equal Opportunity/Affirmative Action Employers.**

### BROWN UNIVERSITY EVOLUTIONARY MORPHOLOGIST

The Division of Biology and Medicine plans to make a senior appointment (associate professor or professor), to take effect for the 1989 to 1990 academic year. The appointee is expected to assume leadership in teaching anatomy to medical students in the Program in Medicine, establish an externally supported research program in vertebrate evolutionary morphology at the organismal level, and serve as a member of the Graduate Program in Ecology and Evolutionary Biology. The appointee will also lead the search to fill two junior faculty positions. Responsibilities include organizing and teaching the course in human anatomy, teaching a course in a specialty area, and academic advising of students. Opportunities exist for interaction with programs in biomechanics, applied mathematics, paleoecology, and a wide range of biological and clinical areas. Applicants should submit a résumé including teaching and research experience, plans for teaching medical anatomy, future research plans, a list of publications and representative reprints, and arrange to have three letters of reference sent, all to be received by 15 October 1988, to: **Dean Frank G. Rothman, Division of Biology and Medicine, Brown University, Providence, RI 02912. An Equal Opportunity/Affirmative Action Employer.**

### FACULTY POSITION IN MICROBIOLOGY

The Institute of Microbiology, at the Hebrew University Medical School, is currently recruiting individuals with teaching and research expertise in either of the two areas:

- (a) Medical Bacteriology
- (b) Microbial Physiology

Preference will be given to candidates with research interests directed toward basic molecular mechanisms in their field of specialization.

The positions are tenure-track appointments at any rank.

Interested individuals should send curriculum vitae including a brief description of research experience and plans, and a list of three referees, before 1 December 1988, to: **Ms. Ditzza Gordon, Secretary of Search Committee, Institute of Microbiology, The Hebrew University, Hadassah Medical School, P.O.B. 1172, Jerusalem, 91010, Israel.**

### Division of Oncology, Dept. Research University Hospital, Basle, Switzerland

#### POSTDOCTORAL POSITION

Available for a biochemist. Applicants with experience in molecular immunology are invited to join a research group investigating the cellular interaction of macrophages with tumor cells in vitro and ex vivo. The project is concerned with the isolation, structural and functional analysis of macrophage membrane glycoproteins.

The post is available as soon as possible for a period of up to three years.

Applications including a curriculum vitae and publication list should be sent to **PD Dr. R. Obrist, Division of Oncology, Dept. of Internal Medicine, Kantonsspital, 4031 Basel, Switzerland.**

Genelabs, a progressive biotechnology company in the San Francisco Bay Area, has the following opportunity:

### MANAGER, PROTEIN BIOCHEMISTRY

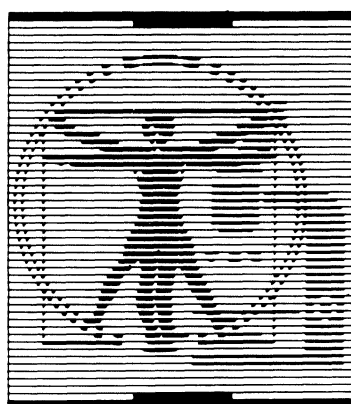
A Ph.D. in biochemistry or a related scientific discipline with 5-8 years research experience, some in an industrial setting, plus 2-3 of those years managing or supervising fellow scientists will qualify you to lead a group of biochemists/protein chemists at Genelabs. You will also interact closely with scientists in pharmaceutical development.

The ideal candidate will have hands-on experience in protein or peptide purification and primary structural analysis and be current with modern techniques in protein biochemistry and analytical methods. Excellent oral and written communication skills and experience in an entrepreneurial environment are definitely desirable.

Our work environment is exceptional in our expanding facilities located in the Seaport Centre on the San Francisco Peninsula. Please forward CV and names of 3 references in confidence to: **GENELABS INCORPORATED, 505 Penobscot Dr., Redwood City, CA 94063. Attn: Human Resources. EOE.**



**GENELABS**  
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## SCIENTISTS

If you're ready to make a lasting contribution, build a career with Program Resources, Inc. at the National Cancer Institute's Frederick Cancer Research Center. Right now, we have opportunities for researchers experienced in molecular biology and x-ray crystallography to support ongoing studies on protein-DNA interactions.

Using chemically synthesized DNA, you will survey crystallization conditions; isolate repressor-operator or transcription-activator DNA co-

crystals suitable for x-ray diffraction analysis; and collect and analyze data by crystallographic methods to obtain structure of protein-DNA complex at high resolution. By site directed mutagenesis will mutate a repressor or transcription-activator and study their interactions with DNA using computer graphics to elucidate factors important in the sequence recognition by proteins.

You must have a PhD with working experience in molecular biology, biochemistry, or x-ray crystallography. These roles are one-year appointments subject to renewal.

PRI offers a salary commensurate with credentials plus an attractive fringe benefits program including insurances, relocation allowance, and a 401 (k) savings plan. For consideration, please forward CV in confidence to:

**Barbara Norton-Gill  
Technical Recruiter  
Program Resources, Inc.  
NCI-FCRF  
Bldg. 244, P.O. Box B  
Frederick, MD 21701**



**PROGRAM  
RESOURCES,  
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## PESTICIDE CHEMIST AND DATA MANAGER

The Geochemical and Environmental Research Group (GERG) in the Department of Oceanography at Texas A&M University has two positions available. Both positions require a Ph.D. Competitive salaries commensurate with experience will be offered. Active participation in research programs and strong publication record are expected. GERG is a self-supporting research group specializing in environmental chemistry; petroleum geochemistry; organic geochemistry; and marine chemistry and biology. The GERG organization has more than 50 personnel including twelve Ph.D.'s with annual funding exceeding \$4 million from a variety of governmental and private sources.

The Pesticide Chemist position requires experience with all phases of environmental pesticide analyses including extraction, purification, quantitation (GC/ECD) and QA/QC. GERG's analytical laboratory includes 12 GC's, 4 GC/MS's and 3 LC's. All analytical and laboratory management systems are computer based. Experience in a broad range of environmental analyses is preferred as well as experience with EPA QA/QC procedures. GERG would prefer an applicant with 2-4 years of contract and management experience past the Ph.D. Refer to job #8800487.

The Data Management position requires management of GERG's data bases, interaction with governmental contractors and development of laboratory software and hardware. Although the person will act as GERG's Data Manager on large environmental projects, GERG would prefer a candidate that would also participate scientifically in funded research. Experience with statistics and environmental experimental design as well as a background in one of the basic sciences is expected. GERG will try to fill this position with a Ph.D. in computer science or statistics. However, applicants with a Ph.D. in Oceanography or other applied sciences with computer and data management experience will be considered. Refer to job #8800486.

Submit resume to: Employment Manager, Texas A&M University, Personnel Department, YMCA Bldg., College Station, TX 77843-1255.

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## IMMUNOLOGY RESEARCH

### Senior Scientist

Sandoz Pharmaceuticals Corporation is a leader in immunotherapy products that improve the quality of life. Our developments are the result of research conducted by professionals who specialize in many different fields.

The Sandoz Research Institute is currently seeking an experienced immunologist to play a vital role in research on therapeutic applications of monoclonal antibodies. Our position offers a unique opportunity for an innovative, self-motivated, independent scientist to develop products for diverse areas like immunoregulation and infectious and tumor diseases. The successful candidate will work closely within an inter-disciplinary research team of molecular biologists, immunologists, biochemists and cell biologists.

The requirements of the position include:

- Ph.D. or equivalent, and at least two years' post-doctoral experience, in immunology or related discipline.
- Record of significant publications in major scientific journals.

Positions at Sandoz offer personal satisfaction, professional opportunity/challenge, competitive salaries and an excellent benefits package. Our campus-like facilities are conveniently located in northern New Jersey.

For prompt consideration, please forward your resume with salary requirements in confidence to: Director of Human Resources, SANDOZ RESEARCH INSTITUTE, SANDOZ PHARMACEUTICALS CORPORATION, East Hanover, New Jersey 07936.



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## Molecular Biologist Gene Expression/Development

At The Upjohn Company, our research and development effort has three goals: to maximize use of critical technology resources; to increase continuity and speed of drug development; and to make the most effective use of our external resources. Upjohn's continued success in the discovery, manufacturing and marketing of pharmaceuticals depends upon the scientific talent in our laboratories.

An expanded research program in our Hairgrowth Research Group has created an immediate need for a molecular biologist to conceive and conduct research as a member of multidisciplinary team studying the regulation of gene expression during epithelial proliferation and differentiation and epithelial-mesenchymal interaction. The successful candidate will have a Ph.D. degree plus a minimum of two years of post-doctoral experience and have a comprehensive knowledge of recombinant DNA technology. The candidate will define and carry out in-

dependent projects of their own design and will be expected to publish and present data at national and international meetings. Collaboration with other scientists within and outside the company is expected. Prior exposure to skin and hair biology and/or epithelial differentiation is desirable, however, candidates applying molecular techniques in the study of related developmental systems are also encouraged to apply.

We are located in Kalamazoo, a mid-sized community in southwestern Michigan, midway between Chicago and Detroit. Upjohn offers advancement opportunities, an excellent salary, comprehensive benefits and relocation assistance. For confidential consideration, please call from outside of Michigan toll free 1/800/253-8600, ext. 3-6767, (inside Michigan call collect 616/323-6767) to request an employment application be sent. Please refer to advertisement number 21944-HA when calling. An Equal Opportunity Employer M/F.

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## POSITIONS OPEN

**FISHERIES ASSISTANT PROFESSORSHIP**, non-tenure-track, 3-year duration. Responsibilities: teaching one course in fisheries and wildlife management and conducting research in fisheries ecology/management. Ph.D. in fisheries or related field at time of appointment. Send statement of interest, résumé, transcripts, and three letters of recommendation to: **Ira Adelman, Department of Fisheries and Wildlife, 1980 Folwell Avenue, St. Paul, MN 55108**, by 5 July 1988.

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

## THE CENTER FOR BLOOD RESEARCH HARVARD MEDICAL SCHOOL FLOW CYTOMETRY OPERATOR

Position available to run a new core flow cytometry and sorting facility using the most up-to-date Coulter Epics, lasers and computer interfaces. Previous experience desired. Competitive salary and generous benefits. Please send résumé to: **Dr. Timothy Springer, The Center for Blood Research, 800 Huntington Avenue, Boston, MA 02115**. *Equal Opportunity Employer.*

## HISTOLOGIST

The American University of the Caribbean, School of Medicine (AUC), located in Montserrat, British West Indies, seeks a histologist to provide instruction to first year medical students. Excellent salary, benefits, and many recreational opportunities. One year or permanent full-time appointments available. Join AUC now for an adventure of a lifetime. Send résumé to: **Medical Education Office(S), 2801 Ponce de Leon Boulevard, #800, Miami, FL 33134**.

**IMMUNOLOGIST** with special interest in macrophage function needed for development of research program in the subdivision of Hepatology at Rhode Island Hospital, Providence, Rhode Island. Candidate must have a Ph.D. in related area of cell biology and qualify for appointment as an assistant professor of medicine at Brown University. Candidate should have experience with immunologic, electrophoretic, cell culture, and molecular biologic techniques. Experience with evaluation of macrophage function including monokine production is desirable. The individual is expected to develop an independent research program in an area related to the interaction between liver and tumor cells. Send letter of application and curriculum vitae to: **Henry Bodenheimer, M.D., Director, Subdivision of Hepatology, Rhode Island Hospital, 593 Eddy Street, Providence, RI 02902**. Letters are to be received no later than 22 July 1988. *The Rhode Island Hospital is an Equal Opportunity/Affirmative Action Employer.*

## MOLECULAR PARASITOLOGIST

The Department of Microbiology, Immunology and Parasitology, New York State College of Veterinary Medicine, seeks candidates for a tenure-track position as assistant professor of parasitology. Appointment at a higher level may be possible for an exceptional candidate. The successful applicant will be expected to develop an independent, competitively funded research program focusing on an animal parasite system and to teach veterinary and graduate students. Applicants should have a Ph.D., D.V.M./Ph.D. or equivalent. Experience in molecular parasitology and training at the postdoctoral level is required. This position is part of a major commitment by the department to apply molecular approaches to infectious disease research.

Applications including curriculum vitae and the names and addresses of three referees should be sent to: **Dr. Roger J. Avery, Chairman, Department of Microbiology, Immunology and Parasitology, NYS College of Veterinary Medicine, 616 Veterinary Research Tower, Cornell University, Ithaca, NY 14853-6401**, by 5 July 1988. Telephone inquiries will be welcomed 607-253-3400.

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

## POSITIONS OPEN

### INDUSTRIAL WASTE SPECIALIST

Sacramento County, California is now accepting applications. The position provides technical and professional advice in the analysis and evaluation of industrial discharges to the Sacramento Regional Sanitation District. B.S. degree and/or experience required. Fiscal year 1987 to 1988 monthly salary: \$2777 to \$3376. Applications and application supplements must be obtained from: **The Sacramento County Employment Office, 710 "J" Street, Sacramento, CA 95814**. Completed applications and application supplements must be received by the Employment Office no later than 5:00 p.m., 5 July 1988. Telephone: 916-440-5593. *Affirmative Action/Equal Opportunity Employer.*

### MEDICAL OFFICERS DHHS-PHS-FDA NATIONAL CENTER FOR TOXICOLOGICAL RESEARCH JEFFERSON, ARKANSAS 72079

NCTR is a nationally recognized research center and major operating component of the Department of Health and Human Services, Public Health Service, Food and Drug Administration. Its mission is to conduct research in such basic disciplines as pharmacology, physiology, biochemistry, microbiology, toxicology and biological modeling, to gain a more thorough understanding of the risks posed to human health by exposure to toxic chemicals. The incumbents will serve as medical officers in the Human Risk Assessment Division.

The Human Risk Assessment Division has been established to explore in detail the assumptions underlying risk assessment with special emphasis on the incorporation of human biology. Physicians with special interest in risk assessment in reproductive toxicology, immunotoxicology, pulmonary toxicology, developmental toxicology, carcinogenesis, or toxicity to other organs are especially encouraged to apply.

These positions are permanent career-conditional appointments made competitively through the U.S. Office of Personnel Management; PHS Commissioned Corps Officers are also encouraged to apply. Salary ranges from \$48,000 to \$67,000, plus physician comparability allowances depending on qualifications. Excellent benefits package included. Doctor of Medicine degree from U.S. or Canada or foreign medical school (properly certified by ECEMG) is required.

Association with the University of Arkansas for Medical Sciences is encouraged.

Send curriculum vitae, résumé of research and clinical interests and list of three references to: **Dick King, FDA/NCTR, Personnel Office, Jefferson, AR 72079**. For telephone inquiries, call: **Mr. King or Ms. Hutchinson, AC 501-541-4475 or 541-4505**. *DHHS-PHS-FDA is an Equal Opportunity Employer.*

**TWO MOLECULAR BIOLOGISTS** to join well-funded laboratory to study complement killing of tumor cells. One position requires strong background in molecular cloning. The other position requires experience with tissue culture and protein chemistry. Salary is competitive and depends on experience. For applicants with prior postdoctoral experience, appointment as research assistant professor possible. Positions available immediately. Submit application to: **Dr. Carl-Wilhelm Vogel, Department of Biochemistry, Georgetown University, 3900 Reservoir Road, NW, Washington, DC 20007**. *Equal Opportunity/Affirmative Action Employer.*

**MOLECULAR GENETICIST/BIOLOGIST**. Advanced Genetic Sciences (AGS), a company exploring the application of modern biotechnology to agriculture, has a postdoctoral or research scientist position open in the plant genetics department to further develop plant transposable elements as gene isolation tools. The successful candidate will be responsible for optimizing maize transposon systems in tobacco and applying them to isolate useful genes from *Arabidopsis*. Applicants should be experienced in recombinant DNA techniques. A working knowledge of bacterial plasmid manipulations and Agrobacterium-mediated transformation is highly desirable. Salary and position title will depend on qualifications and experience. Please send curriculum vitae and three letters of reference to: **Dr. Hugo Dooner, Advanced Genetic Sciences, 6701 San Pablo Avenue, Oakland, CA 94608**.

## POSITIONS OPEN

**MOLECULAR VIROLOGIST**. The Section of Comparative Medicine, Yale University School of Medicine, invites applications for an assistant professorship. Candidates should be enthusiastic about pursuing the biology of rodent viruses including mechanisms controlling duration and spread of infection. An interest in the development of molecular diagnostic reagents for animal viruses is highly desirable. Please send curriculum vitae to: **Dr. Abigail L. Smith, Section of Comparative Medicine, Yale University School of Medicine, 333 Cedar Street, P.O. Box 3333, New Haven, CT 06510** by 15 July 1988. *Yale University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

**POSTDOCTORAL**—Development of micron-sized fiber optic sensors for remote measurement of biochemical environments. Experience in thin film polymer chemistry highly desirable, but not required. New technology, potential wide applications, work in interdisciplinary research program. Full details at 307-766-5353. Two years. Salary: \$24,000. Screening begins 15 July 1988. Curriculum vitae and three recommendations to: **D. Buttry, University of Wyoming, Box 3838, Laramie, WY 82071-3838**. *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOW**. Position available immediately for a Ph.D. or M.D. with training in cellular immunology to characterize immunologic alterations induced by thermal injury. Salary range: \$22,000 to \$27,000, based on experience. U.S. citizenship or permanent residence required. Send curriculum vitae and names of three references to: **Dr. Ann Bjornson, Director, Division of Immunology, James N. Gamble Institute of Medical Research, 2141 Auburn Avenue, Cincinnati, OH 45219**. *Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITION** in neuronal transplantation and regeneration studies involving the mammalian visual system with particular emphasis on photoreceptor cell rescue in dystrophic animal models. A 2-year position with an option for an additional year will be available during June to September 1988 for a candidate who has extensive training in retinal research with particular emphasis in neuroanatomical and immunohistochemical techniques at the light and electron microscopic levels. Starting date and salary negotiable. Send curriculum vitae and names of three references to: **Dr. James E. Turner, Department of Anatomy, Bowman Gray School of Medicine, Wake Forest University, 300 South Hawthorne Road, Winston-Salem, NC 27103**. *Affirmative Action/Equal Opportunity Employer.*

## POSTDOCTORAL OPPORTUNITIES IN NEUROSCIENCE

Howard Hughes Medical Institute, one of America's leading medical research organizations, in conjunction with Johns Hopkins University School of Medicine, has two positions available to study the regulation of the nicotinic acetylcholine receptor ion channel by protein phosphorylation.

The two projects involve: (i) the study of the effect of protein phosphorylation on the single channel kinetics of the receptor by patch clamp recording from reconstituted liposomes containing purified receptor as well as from oocytes injected with normal and mutant receptor mRNAs. And (ii) the study of the regulation of tyrosine phosphorylation of the nicotinic acetylcholine receptor in muscle cells in culture.

Individuals are sought who have experience in electrophysiology or biochemistry. Send curriculum vitae and three letters of reference to:

**Dr. Richard L. Huganir  
Howard Hughes Medical Institute  
Department of Neuroscience  
Johns Hopkins University School of Medicine  
725 North Wolfe Street, Room 818 PCTB  
Baltimore, MD 21205**

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## POSITIONS OPEN

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE** position available September 1988 to study (i) novel genes controlling growth of hepatocytes, and (ii) mechanisms by which insulin and other growth factors stimulate hepatic growth. Requires experience with a variety of molecular biologic techniques. Salary guaranteed. Send curriculum vitae and names of three references to: **Dr. Rebecca A. Taub, Department of Human Genetics, University of Pennsylvania School of Medicine, Philadelphia, PA 19104-6072.**

**POSTDOCTORAL FELLOWSHIP** to study the production of singlet oxygen in biological systems by using near-infrared emission spectroscopy and to study singlet oxygen production in biological systems exposed to light and photosensitizers. Applicant should have a Ph.D. in biochemistry, biophysics or closely related area. Send curriculum vitae and list of references to: **Jeffrey R. Kanofsky, M.D., Ph.D. Section of Hematology/Oncology Loyola University Stritch School of Medicine, 2160 South First Avenue, Maywood, IL 60153.**

**POSTDOCTORAL FELLOWSHIP/RESEARCH ASSOCIATE.** Several funded positions are available in a study of molecular mechanisms of host defense systems with appointments at the postdoctoral or research associate level. Research areas include (i) cloning, structure-function studies and biological properties of a newly recognized group of endotoxin binding proteins, (ii) regulation of TNF gene expression and (iii) the role of TNF and other cytokines in inflammation. Expertise in molecular biology, protein chemistry or glycolipid/lipid chemistry is desirable. Send curriculum vitae and names of three references to: **Richard J. Ulevitch, Ph.D. or Peter S. Tobias, Ph.D., Research Institute of Scripps Clinic, IMM 12, 10666 North Torrey Pines Road, La Jolla, CA 92037.**

### POSTDOCTORAL POSITION CHEMISTRY/BIOLOGY

Los Alamos National Laboratory is seeking postdoctoral candidates to participate in a project to design and synthesize novel fluorescent probes and apply these probes to problems in cellular and molecular biology. The successful candidate should have experience or interest in several of the following areas: (i) organic and/or biochemical synthesis of fluorescent molecules; (ii) hormonal regulation of cell function; (iii) chromosome and nucleic acid labeling; (iv) biophysical measurements including flow cytometry and sorting, cell imaging, and fluorescence microscopy. The candidate should have received a Ph.D. in chemistry, biochemistry, cell biology, molecular biology or related field within the past 3 years. For more information on the research project, contact one of the principal investigators: **Babetta Marrone, 505-667-3279; Clifford Unkefer, 505-665-2560; Thomas Whaley, 505-667-2765.**

This position offers the opportunity to interact with a multidisciplinary team of scientists and utilized state-of-the-art facilities in chemistry and biology. The Biosciences Program at Los Alamos National Laboratory includes the National Flow Cytometry Resource, the Human Genome Program, and the Stable Isotopes Resource.

Postdoctoral appointments are for 1 year, renewable for a second year, and salaries range from \$32,820 to \$34,580 per year. Appointees receive employee benefits, including incoming travel and moving expenses.

To formally apply, please send résumé, employment application, three letters of reference, and graduate and undergraduate transcripts to: **Carol M. Rich, Human Resources Development Division PD-88-027, Los Alamos National Laboratory, Los Alamos, NM 87545.** Los Alamos National Laboratory is an Affirmative Action/Equal Opportunity Employer.

### GLYCOPROTEIN/CARBOHYDRATE BIOCHEMIST

Postdoctoral position available immediately, for a Ph.D. trained in glycoprotein and/or carbohydrate biochemistry to study the role of glycoprotein oligosaccharides in membrane assembly. Must have experience in HPLC and column chromatography of proteins/peptides and carbohydrates. Salary range negotiable. Send curriculum vitae and names of three references to: **Dr. Steven Fliesler, Bethesda Eye Institute, St. Louis University School of Medicine, 3655 Vista Avenue, St. Louis, MO 63110.**

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Based in our research headquarters on the San Francisco Peninsula, you will characterize novel somatostatin analogs in vivo and in vitro. Responsibilities include studying receptor interactions at the molecular level and the development of a variety of animal models, particularly in the area of diabetes and tumor biology.

To qualify, you must have a PhD in endocrinology or related field. Coursework in molecular biology and/or diabetes would be helpful. Other requirements include 1-3 years' postdoctoral work and experience in one or more of the following: radioimmunoassays, HPLC, cell culture and DNA/RNA assays.

Syntex offers a competitive compensation and relocation package in campus-like surroundings. For immediate consideration, please send your resume, to: Syntex, Professional Staffing, Dept. KH/SR, 3401 Hillview Ave., Palo Alto, CA 94304. Syntex is an equal opportunity employer.



## UNIVERSITY OF COPENHAGEN FACULTY OF NATURAL SCIENCES

Applications are invited for a Chair (Professorship) in GENERAL/MOLECULAR PHYSIOLOGY at the Zoophysiological Laboratory B, the August Krogh Institute, from 1 July, 1989.

The professor will be appointed as a Civil Servant under the Ministry of Education and Research. The annual salary amounts to approximately 360,000 Danish kroner.

Candidates are being sought with research interests in the area of ion transport across biological membranes. The physiology and biochemistry of the cell membrane is being given high priority in the planning of the direction of future research at the August Krogh Institute. Current research in this field ranges from biophysical and biochemical characterization of membrane transport systems, and studies of the cellular regulation of membrane transport, to studies of integrated transport systems in heterocellular epithelia.

In the evaluation of the applicants, a background in general physiology and biophysics will be given importance, as will expertise in experimental techniques in the above mentioned research area. The selected candidate will be expected to interact with the existing research groups at the August Krogh Institute.

Further information about research planning, facilities, and staff can be obtained from the Chairman of the Zoophysiological Laboratory B, or from the Chairman of the August Krogh Institute (13 Universitetsparken, DK-2100 Copenhagen Ø, Denmark).

The Professor will participate in the Department's teaching at all levels. The language of instruction is Danish, but English will be accepted for the first two years of the appointment.

Applications should include a current *curriculum vitae*, a complete list of publications, copies of the scientific publications and further documentation which the applicant wishes to be considered, and a brief outline of proposed research. Information concerning the applicant's teaching experience, which will be evaluated by the Study Board, should also be enclosed. All material should be submitted in triplicate together with a complete list of the enclosed material.

After evaluation of the applicants' qualifications by a Search Committee, the report will be sent to all applicants in complete form.

Applications are to be addressed to **Her Majesty the Queen of Denmark** and sent to the **Faculty of Natural Sciences, Panum Institutet, Blegdamsvej 3, DK-2200 Copenhagen N, Denmark.**

The closing date for receipt of applications is 1 September 1988.

## POST-DOCTORAL FELLOWSHIP

Merck Sharp & Dohme Research Laboratories is offering a Post-Doctoral Fellowship position to study the molecular biology of the components involved in the blood coagulation cascade. Specifically, the studies will focus on the molecular aspects of factor VII/tissue factor interactions. The use of site specific mutagenesis and all aspects of molecular biology, including DNA library construction, screening and characterization as well as heterologous expression in mammalian and bacterial cells is required.

You will find a stimulating and challenging scientific environment within our labs as well as an excellent opportunity to carry out meaningful research and publish.

Excellent salary and benefit programs accompany this position at our modern research facilities located 25 miles northwest of Philadelphia.

Please send resume with salary requirements to:

**Manager, Research Personnel  
W42-2**

**Merck Sharp & Dohme  
Research Laboratories  
West Point, PA 19486**

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We are currently developing a pilot plant operation and have opportunities available in the establishment of our Fermentation and Separations capabilities. Key responsibilities will include Scale-up, Process Development, Optimization, and Production of clinical lots.

We are seeking individuals with a BS/MS/PhD in Biological Engineering or Sciences, with at least 3 yrs. of relevant experience. Demonstrated expertise in mammalian cell culture preferred.

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Wayne State University

**DEAN  
School of Medicine**

Wayne State University invites applications and nominations for the position of Dean, School of Medicine. The School of Medicine has been operating and granting degrees as a college of medicine since 1868. The School is the largest single campus medical school in the country. It is closely affiliated with The Detroit Medical Center (DMC), a comprehensive health care delivery system with a high technology focus on whose main campus the school is situated. The DMC consists of six acute care hospitals and one rehabilitation hospital comprising 2,200 beds and an extensive network of ambulatory care centers and other services. The primary mission of the School of Medicine is to improve the health of the community through its combined educational, research and service programs.

**Responsibilities:** The dean, as principal administrative officer, reports to the Provost. In consultation with the School's faculty, the Dean leads in the formulation of academic and administrative matters, the allocation of resources, in faculty/staff personnel matters and in all relationships with the affiliated institutions that comprise the Detroit Medical Center and the local Veterans Administration hospital. The Dean plays a major role in the DMC as a senior corporate officer and serves as the Chairman of the DMC Medical Board. This is the senior DMC medical policy administrative post reporting directly to the President/CEO of the DMC and works directly on the development of DMC clinical programs.

**Qualifications:** Candidates must possess the M.D. degree and have compiled a record of clinical and scholarly achievement and teaching commensurate with appointment to the rank of professor with tenure. The candidate should be a proven leader with a distinguished record of administrative excellence, and with a commitment to affirmative action. The candidate should be skilled at interpersonal relations, and be able to work effectively with a large and talented faculty and with outside medical and health care groups. The applicant should have a proven record of obtaining and managing substantial budgets and grant activities. Salary and benefits are negotiable.

**Application:** Interviews with potential candidates will be conducted during the Summer/Fall, 1988. Application letters should include a vita, names and addresses of three references and supporting materials. Nominations and applications should be submitted to:

Charles Whitten, M.D.  
Chairman, School of Medicine  
Dean Search Committee  
Office of the Dean  
1270 Scott Hall  
Wayne State University  
Detroit, MI 48202

For best consideration, applications should be received by July 16, 1988.

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

## PROTEIN ENGINEERING LABS

**W**e are offering a unique and exciting opportunity to join us at an early stage of development, on the frontiers of protein engineering technology. Protein Engineering labs employs state-of-the-art techniques in peptide/protein synthesis, computer modeling, molecular biology, organic chemistry, and semi-synthetic analog chemistry to develop novel human therapeutics. You can work with leading scientists from industry and research institutions and can contribute to the building of a company which is on the forefront of creating new therapeutic approaches to anti-virals, anti-cancer agents, and immune modulators. We are seeking outstanding scientists and technical personnel with the following expertise:

### ***Protein/Peptide and Semi-Synthetic Chemistry***

PhD in Chemistry or Biochemistry with background and experience in protein and peptide chemistry, purification techniques, and derivation and modification of proteins and peptides, to participate in collaborative and independent projects.

### ***Molecular Biology***

PhD in Molecular Biology with background and experience in construction, expression and manipulation of DNA including site-directed and cassette mutagenesis, to participate in collaborative and independent projects.

### ***Molecular Modeling***

PhD in Biophysics or related discipline with background and experience in computer-aided-molecular modeling and rational drug design to participate in collaborative and independent projects.

### ***Immunology***

MD/PhD or PhD with experience in basic cellular and molecular immunology and the design of novel and dynamic assays and screening systems.

PROTEIN ENGINEERING LABS provides a challenging and creative work environment in close proximity to several major academic research institutions. We offer competitive salary and benefits as well as an incentive option program.

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

## PROTEIN ENGINEERING LABS

650 Town Center Drive, Suite 810

Costa Mesa, CA 92626

Attn: Human Resources Department

## POSITIONS OPEN

### POSTDOCTORAL POSITION MOLECULAR AND CELLULAR BIOLOGY JEWISH HOSPITAL AT WASHINGTON UNIVERSITY MEDICAL CENTER

Position available for quality person to study the gene expression of tissue inhibitor of metalloproteinases (TIMP) in fibroblasts and during the differentiation of human mononuclear phagocytes. Studies will involve the mechanisms of TIMP regulation in fibroblasts and U937 cells utilizing state-of-the-art molecular and cell biologic approaches. The position allows for collaborative research with other faculty members studying the biology of extracellular matrix. Applicants should send their curriculum vitae and names of references to:

**Dr. Howard G. Welgus**  
Division of Dermatology  
Jewish Hospital at Washington  
University Medical Center  
St. Louis, MO 63110

### POSTDOCTORAL POSITION HARVARD MEDICAL SCHOOL

Opportunity available immediately for Ph.D. to study molecular and cellular biology of muscarinic receptors and G-proteins in cardiac cells. Experience in molecular cloning techniques desirable. First year salary guaranteed. Send curriculum vitae to: **J. B. Galper, M.D., Ph.D.**, Cardiovascular Division, Brigham & Womens Hospital, 75 Francis Street, Boston, MA 02115. Telephone 617-732-5679.

**POSTDOCTORAL POSITION** available in the areas of molecular biology and immunology to pursue research on equine viral diseases and immunobiology. Send curriculum vitae and names of three references to: **Drs. George Allen and Ernest Bailey, Department of Veterinary Science, Gluck Equine Research Center, University of Kentucky, Lexington, KY, 40546-0099.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available to study gene expression and molecular genetics of the surfactant-associated proteins [Floros *et al.* JBC: 261, 9029 (1986); Jacobs *et al.* JBC: 262 9808, (1987)]. Molecular biology/biochemistry background is preferable. Please send curriculum vitae and names of three references to: **Joanna Floros, Ph.D.**, Harvard Medical School, 221 Longwood Avenue, Richardson-Fuller Building, Boston, MA 02135. Telephone: 617-732-4154.

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### POSTDOCTORAL POSITION PLANT TISSUE CULTURE

Position available starting after 1 September 1988, for a postdoctoral associate to work with an international team of molecular biologists to transform and regenerate cassava plants to improve agronomic characteristics. The position will run for 2 to 3 years in the U.S. with possibility of permanency at a European location to be determined. Experience in cell culture and plant regeneration required, cytogenetics or in situ techniques desirable. Send curriculum vitae and three letters of reference to: **Dr. R. N. Beachy, Department of Biology, Box 1137, Washington University, St. Louis, MO 63130.** Washington University is an Affirmative Action/Equal Opportunity Employer.

### UNIVERSITY OF CONNECTICUT HEALTH CENTER RESEARCH ASSOCIATE/ POSTDOCTORAL FELLOW

This position involves the development of acoustical and electrical measurements to be used for evaluation of the functional state of the peripheral and central components of the auditory system. The research will be conducted in both laboratory and clinical settings. The position provides an excellent opportunity for strengthening skills in computer applications and knowledge of the auditory system. Qualifications: Doctoral degree. Applicants should send curriculum vitae and letters of recommendation to: **Dr. D. O. Kim, Director of Research, Division of Otolaryngology, University of Connecticut Health Center, Farmington, CT 06032.** Telephone: 203-679-3690. An Affirmative Action/Equal Opportunity Employer M/W/H.

Integrated Genetics utilizes recombinant DNA methods to produce proteins for therapeutic use and, since its inception in 1981, has pioneered the use of mammalian cells as the expression system of choice. Continuing growth at the company has lead to the creation of this challenging new position.

## DIRECTOR OF MOLECULAR BIOLOGY

We seek a preeminent scientist to take overall responsibility for a large group of professionals involved in several aspects of Molecular Biology at IG. Reporting to the Vice-President of Science, this position will require expertise in at least one central area of molecular biology, such as cloning, expression, and/or characterization of rare mRNAs and their genes. Additional background in cell biology would be highly desirable.

In addition to graduate and postdoctoral research in molecular biology, the successful candidate will have at least five years' experience running their own laboratory, though not necessarily in an industrial setting. An exceptional record of published research, innovation, drive, and the ability to interact with and lead others is essential.

**Integrated Genetics is located in an attractive suburban area 25 miles west of Boston. We offer an excellent compensation and benefits package including equity participation. For immediate consideration, please send your resume to: Manager of Human Resources, Dept. S610, Integrated Genetics, Inc., 31 New York Avenue, Framingham, MA 01701.**

An equal opportunity employer



## CAREER OPPORTUNITIES AT BECKMAN INSTRUMENTS

Beckman's Diagnostic Systems Group, located in Southern California, is actively seeking highly motivated professionals for exceptional opportunities in our Advanced Development Group.

- **Project Scientist**—Will perform and supervise research leading to the development of proprietary diagnostic tests for CMV and HPV. Requirements include a PhD in Virology/Microbiology or Molecular Biology with 4 years experience in DNA probe development, especially in non-isotopic labels. Post-doctorate and industry experience highly desirable.

- **Biologists**—Will perform research and development leading to hybridization probe diagnostics. Requirements include a PhD or MS in Microbiology, Molecular Biology or Biochemistry with 0-4 years experience in recombinant DNA and/or nucleic acid chemistry. Familiarity with tissue culture, immunocytochemistry, DNA probes or virology highly desirable.

- **Biologists**—Must have hands-on experience in molecular biology, rDNA and/or protein chemistry. Will prepare bacteriophage, plasmid DNA's and recombinant proteins to aid in the development of recombinant based medical diagnostics. Requirements include a BS with 4-6 years experience; MS with 2-4 years; PhD with 0-2 years in Microbiology, Biology, Bacteriology or Chemistry.

We offer excellent compensation and benefits packages. Please send resume with salary history to: **Beckman Instruments, Inc., Professional Staffing-Sci-2/MG, 200 S. Kraemer Blvd., Brea, CA 92621.** An affirmative action employer.

DIAGNOSTIC SYSTEMS GROUP

# BECKMAN

A SmithKline Beckman Co.

The Division of Trauma in the Department of Surgery at the State University of New York at Stony Brook is recruiting for an individual to develop and organize its research program in trauma, burns, shock, sepsis and intensive care. A Ph.D. in Physiology, Cell Biology, Biochemistry or Bioengineering or intensive care is required. Please send CV to:

**David J. Kreis, Jr., MD, FACS**  
**Chief, Division of Trauma**  
**Health Sciences Center**  
**(HSC) 19, 060**  
**SUNY at Stony Brook**  
**Stony Brook, NY 11794**

SUNY at Stony Brook is an  
Equal/Opportunity/Affirmative  
Action Employer

## Postdoctoral Fellow

Join our Tissue Culture Development research team where we offer scientific professionals an opportunity to develop their expertise while significantly advancing our research efforts.

Position requires PhD in Cell Biology/Biochemistry. Must have a strong background in cell physiology and very good understanding of molecular biology. Knowledge of modern analytical techniques and an ability to plan and execute research projects independently are necessary. (TM87-32)

We offer a competitive salary and benefits package. Please forward resume indicating job # to: Mr. M. Urdanick, Schering-Plough Corporation, 1011 Morris Avenue, Union, NJ 07083. We are an equal opportunity employer.



Schering-Plough

## RESEARCH SCIENTISTS/RESEARCH ASSOCIATES PROTEIN STRUCTURE

**Amgen**, a recognized leader in the production of human pharmaceutical, animal health care and specialty chemical products through applied biotechnology, has immediate opportunities for Research Scientists and Research Associates in our Protein Development Group.

### RESEARCH SCIENTISTS

Dept. #317

Candidates for these positions must have a Ph.D. and extensive experience in protein sequencing as well as a complete knowledge of protein chemistry.

Responsibilities will include support of products currently under development and characterization of new proteins and factors as part of our ongoing exploratory research efforts.

### RESEARCH ASSOCIATES

Dept. #318

Qualified candidates for these positions must have a BS or MS in Biochemistry, Chemistry or a related discipline and have hands-on experience with HPLC. An understanding of computer-based data acquisition is highly desirable.

Responsibilities for these positions will include the characterization of proteins by HPLC, amino acid composition and sequence analysis.

**Amgen** is a dynamic and fast paced organization providing an exciting and innovative research environment as well as an attractive location northwest of Los Angeles. **Amgen** also offers an excellent compensation and benefits package.

If you have the necessary qualifications and are interested in the career opportunities that only a company like **Amgen** can provide, please send a c.v. or resume, including a list of references, in confidence, to:

**Recruitment, (Specify Dept. #)**

**AMGEN**  
1900 Oak Terrace Lane  
Thousand Oaks  
CA 91320

Equal Opportunity Employer



## AQUATIC TOXICOLOGIST

**\$42,180-\$59,040**

**Comprehensive Benefits**  
**San Francisco Bay Area**

East Bay Municipal Utility District, the West's largest independently operated water and wastewater utility is pleased to announce this new position in our Laboratory Services Division.

Responsibilities include establishing and managing key District programs in the areas of:

- Water Quality-based Toxicity Control
- Development and implementation of Toxicity Reduction Evaluations (TREs) for wastewater treatment plant
- Evaluation of health risk assessment standards as related to water and wastewater treatment
- Assessment of wastewater treatment plant volatile emissions and organic compounds in drinking water

Requires 6 years' experience and strong academic background; PhD preferred. Knowledge of regulatory requirements for water and wastewater industry is highly desirable. Starting salary commensurate with educational and work experience.

Requests for special applications will be accepted starting May 31, 1988 and the position will be open until filled.



Attn: Michael Franklin  
EAST BAY MUNICIPAL  
UTILITY DISTRICT  
Exam Unit  
2127 Adeline Street  
P.O. Box 24055  
Oakland, CA 94623-1055  
(415) 891-0666

EEO/AA Employer

## Visiting Scientist/ Molecular Biology & Protein Chemistry

**Postdoctoral Visiting Scientists positions are available** within the Medical Products Department at Du Pont's Glenolden Laboratory in Pennsylvania. The successful candidate will be involved in the cloning, expression and/or characterization of novel proteins involved in immunoregulation, with a particular emphasis on lymphokine receptors. Candidates should possess a Ph.D. with experience in molecular biology or receptor purification and characterization. The appointment will be for two years.

**At the world renowned Du Pont Company**, you'll find a highly stimulating scientific environment in addition to an excellent salary. To be considered, please send resume, bibliography and references by August 10, 1988 to: Dr. Richard Robb, Glenolden Laboratory, E. I. du Pont de Nemours and Company, 500 S. Ridgeway Avenue, Glenolden, PA 19036.



U.S. Citizenship or Permanent Visa required  
An Equal Opportunity Employer M/F/H/V

## RESEARCH ASSOCIATE PURIFICATION PROCESS DEVELOPMENT

**Amgen** is a recognized leader in the development of human health care, animal health care and specialty chemical products through applied biotechnology. As a result of our continuing growth we have an opportunity for a Research Associate with skills in analytical biochemistry to assist in our Purification Process Development Group.

Responsibilities for this position include the isolation and purification of recombinantly produced proteins at both the laboratory and pilot scale.

Qualified candidates must have a BS or MS in Biochemistry or a related discipline, and several years' experience in the purification and characterization of proteins. Experience with HPLC, column chromatography, SDS-PAGE and IEF is highly desirable.

**Amgen** offers a stimulating and challenging research environment as well as an excellent compensation and benefits package. Our location (about an hour northwest of Los Angeles) offers the best in Southern California living.

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

**Recruitment, Dept. #319**

**AMGEN**

**1900 Oak Terrace Lane**

**Thousand Oaks**

**CA 91320**

**Equal Opportunity Employer**



## Postdoctoral Fellowship

Applicants are invited for a postdoctoral fellowship immediately available at the Biotechnology Department of Ciba-Geigy in Basel, Switzerland.

The research will involve the identification of the eukaryotic receptor for a bacterial toxin and the subsequent cloning of the receptor gene. A combination of DNA technologies and immunological screening methods will be applied.

**Qualified candidates with a strong background in the relevant technologies will be given preference.**

**The successful applicant will be able to work in an interesting and exciting environment in which cooperation is strongly encouraged.**

Applications including curriculum vitae, a description of research, the names and addresses of three references from whom we may request letters of evaluation should be sent under ref. "SC 477" to Dr. M. Graf, CIBA-GEIGY Ltd., Personnel Department, Postfach, 4002 Basel, Switzerland.

# CIBA-GEIGY

## RESEARCH ASSOCIATE East-West Center

The East-West Center, established in 1960 by the United States Congress which provides principal funding, is a public, nonprofit educational institution, with an international board of governors. Support also comes from Asian and Pacific governments, international organizations, and private institutions.

Applications are being accepted for a three-year limited Research Associate position. The Research Associate will be responsible for planning, developing, and coordinating the programs, jointly based in the Environment and Policy Institute and the Population Institute, dealing with urban environmental issues and the range of problems associated with the dynamics of human settlements evolution in Asia and the Pacific. Among the issues to be defined and dealt with are the changing nature of urban-rural relationships, the structures and functions of urban and settlement hierarchies, the environmental planning implications of such changes, the movement of jobs and people within the spatial systems that are evolving particularly in Asian countries, the environmental consequences of rural industrialization and multi-nodal metro-politization, the changing character of environmental perceptions as between rural and urban areas, and the maintenance and enhancement of environmental quality within variously sized settlements ranging from village to metropolis. Responsibilities will include basic research on any and all of these issues; organizing research-related conferences; promoting interaction among scientists and governmental officials from developing countries within the realm; seeking sources of external financial support; advising EWC student grantees; and maintaining liaison with centers of research in the Asia-Pacific realm concerned with urban environmental problems.

**REQUIRED QUALIFICATIONS:** Ph.D. (or equivalent) in sociology, geography, planning, demography, or one of the cognate environmental or social sciences, plus at least two years' research or professional experience and a strong publications record in research on urbanization and environmental problems. Familiarity with the Asia/Pacific realm and first-hand knowledge of at least one country in the region as shown by publications.

**PREFERRED QUALIFICATIONS:** Experience in planning, organizing, and managing research projects involving individuals from various countries in Asia and the Pacific.

**SALARY RANGE:** \$27,716 to \$46,679 per year, depending on qualifications, plus cost-of-living allowance currently at 22.5% (subject to change).

Submit resume with cover letter which includes title of position you are applying for, a narrative description detailing relevance of your qualifications and background to the responsibilities of the position, and names and addresses of three professional references. Applications must be postmarked by July 15, 1988. Send to: **Rebecca Dixon, Personnel Office, Dept. 19, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96848.**

*An Equal Employment Opportunity/Affirmative Action Employer*

# Opportunities in Cystic Fibrosis Research

**NIDDK/NIH  
Cystic Fibrosis Foundation  
FELLOWSHIP PROGRAM  
at the  
NATIONAL INSTITUTES OF HEALTH  
Bethesda, Maryland**

The National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK) of the National Institutes of Health and the Cystic Fibrosis Foundation announce the availability of postdoctoral training opportunities at the NIH. This fellowship program will offer advanced research training with NIH intramural staff and sabbatical support for M.D.'s and/or Ph.D.'s in fields relevant to the rapidly developing cystic fibrosis research areas.

*Subjects and preceptors include:*

- **CELL BIOLOGY OF SECRETION**  
H.B. Pollard, J.D. Gardner, R. Ornberg,  
A.L. Burns, R. Crystal
- **ION CHANNELS**  
E. Rojas, P. Skolnick, K. Spring, B. Baum
- **MOLECULAR BIOLOGY**  
D. Camerini-Otero, L. Henighausen,  
G. Felsenfeld
- **MOLECULAR EMBRYOLOGY**  
J. Dean, F. DePablo
- **GLYCOPROTEINS AND GLYCOLIPIDS**  
B. Weintraub, V. Ginsburg, A. Minton,  
D. Roberts
- **MICROBIOLOGY**  
J. Foulds

Consideration will be given to supporting programs with other preceptors and/or laboratories at the NIH.

*For further information contact either:*

Harvey B. Pollard, M.D., Ph.D. OR	Robert J. Beall, Ph.D.
Director	Executive Vice President
NIDDK-Cystic Fibrosis	for Medical Affairs
Foundation Fellowship Program	Cystic Fibrosis Foundation
Building 8 Room 401	6931 Arlington Road
National Institutes of Health	Bethesda, Maryland 20814
Bethesda, Maryland 20892	

*Request For  
Research Grant  
Applications  
ON*

## **INFECTION, IMMUNITY AND INFLAMMATION IN CYSTIC FIBROSIS**

The Cystic Fibrosis Foundation invites investigator-initiated research grant applications in the areas of host responses to chronic pseudomonas lung infection, and the role of infection and host inflammatory reactions in lung damage in cystic fibrosis (CF).

This special request is intended to encourage innovative, meritorious studies focusing on areas including, but not limited to:

- Host and bacterial factors that predispose to pseudomonas colonization and immunologic approaches to limit this process.
- Defects in phagocytic defense of the CF lung.
- Roles of immunologic and pro-inflammatory mediators in lung destruction.
- Role of host and bacterial proteases in CF lung disease.
- Use of immunomodulators, anti-inflammatory drugs or protease inhibitors.

Applications must demonstrate potential relevance to CF.

Awards will be made as grants-in-aid. Applicants may request up to \$100,000 in total annual costs (direct and indirect) for up to two years.

Interested individuals are encouraged to contact the Foundation to discuss the potential relevance of their work. The deadline for submission of applications is September 1, 1988. Application materials are available from:



6931 Arlington Road  
Bethesda, Maryland 20814  
(301) 951-4422

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** are available in the Department of Anesthesia Research Laboratories, Harvard Medical School/Brigham and Women's Hospital. Applicants should have a doctoral degree either in molecular biology or in electrophysiology. A candidate with cDNA cloning experience will participate in the study on the expression of voltage-gated Na channels in cells, initially at the mRNA level. Another candidate with voltage-clamp experience will participate in single channels studies on the pharmacological properties of Na channels. Please send a description of research interests, curriculum vitae, and the names of three references to: **Dr. Ging Kuo Wang, Department of Anesthesia, Brigham and Women's Hospital, 75 Francis Street, Boston, MA 02115.**

**POSTDOCTORAL POSITIONS:** Available in the Departments of Plant Pathology and Agronomy to work on: (i) Cloning, sequencing, and expression of plant and fungal virus genes; and (ii) Inheritance and stability of foreign genes in transgenic plants. Excellent environment for strong interdepartmental programs in molecular virology and gene transfer technology. Applicants should have Ph.D. with strong background in recombinant DNA technology. Send curriculum vitae and three letters of reference to: **S. A. Ghabrial, Department of Plant Pathology, University of Kentucky, Lexington, KY 40546-0091. An Equal Opportunity Employer.**

## RESEARCH ASSISTANT

Parmly Hearing Institute at Loyola University has an opening for a research assistant. Primary responsibilities will be supervising the anatomy laboratory and preparing vertebrate neural tissue for viewing under the light microscope. B.S. in biological science and experience in basic histological techniques are required. M.S. degree and experience in neurobiology and SEM techniques are desirable. Submit résumé by 24 June 1988, to:

**Stan Hewitson  
Director of Human Resources  
Loyola University of Chicago  
6525 North Sheridan Road  
Chicago, IL 60626**

*Equal Opportunity Employer M/F*

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** (two) Available 1 December 1988 to study molecular aspects of natural toxin/receptor interaction in excitable membranes. A detailed background in synthetic micro-organic chemistry or an extensive working knowledge of receptor pharmacology and toxicology at the molecular level is required. Send curriculum vitae and three letters of reference by 1 August 1988 to: **Dr. Daniel G. Baden, Rosenstiel School of Marine and Atmospheric Science, 4600 Rickenbacker Causeway, Miami, FL 33149. The University of Miami is an Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position available immediately for Ph.D. with strong background in mammalian cell biology/membrane biochemistry to join a research project investigating mammary epithelial cell differentiation, under the direction of **Dr. Karen Thompson.** Emphasis will be placed on determining if stage-specific markers for normal mammary epithelial cell development can be defined.

Send curriculum vitae with complete reference information to: **Children's Hospital Oakland—Research Institute, Human Resources Department 1455, 747 52nd Street, Oakland, CA 94609. Equal Opportunity Employer.**

**RESEARCH ASSOCIATE**, to conduct research on a potential neurotoxin detected in the CSF of patients of Alzheimer's disease. Duties include conducting experiment focused on chemical structure of this compound and mechanism of its effect in the brain. Develop strategies for solving research projects; supervise two assistants and present findings at scientific conferences. Requirements include Ph.D. in physiology or pharmacology as well as strong background in techniques required to study effect of substances on the brain, including determination of biogenic amines by HPLC; administration of drugs by push-pull cannula; brain tissue superfusion; and brain perfusion. Salary \$21,375 per year, 40 hours per week. Respond with résumé only to: **Job Order #8651, Division of Employment Security, Government Center, Boston, MA 02114. No experience required.**

## POSITIONS OPEN

### HARVARD UNIVERSITY AND BOSTON UNIVERSITY MEDICAL CENTER

Position open for a **RESEARCH ASSOCIATE** to examine the role of cytoplasmic calcium and pH changes in steroid secretion at the single cell level. Techniques employed include whole-cell calcium digital imaging as well as cell population and single cell aldosterone secretion measurement. This position is part of an interdisciplinary program investigating the endocrinological aspects of hypertension.

Requirements: U.S. citizenship or permanent residency; Ph.D. or equivalent; cell electrophysiology experience preferable.

Please send curriculum vitae and brief letter of intent to: **Douglas Tillotson, Ph.D., BUMC, Physiology, R406, 80 East Concord Street, Boston, MA 02118. Affirmative Action/Equal Opportunity Employer.**

**RESEARCH ASSOCIATE/POSTDOCTORAL** position in neuropharmacology available immediately to study synaptic mechanisms responsible for ethanol intoxication, tolerance and physical dependence. Current emphasis includes biochemical, physiological, and electrophysiological models to evaluate changes in GABA<sub>A</sub> receptor-chloride ion channel transducer efficacy. Experience in neurochemistry and cell culture helpful. Send curriculum vitae, names of three references, and statement of interests to: **G. D. Frye, Department of Medical Pharmacology, Texas A & M University, College Station, TX 77843.**

*An Equal Opportunity Affirmative Action Employer.*

Beecham Laboratories, a leading manufacturer of veterinary biologicals, has openings for innovative **RESEARCH MICROBIOLOGISTS** in the fields of virology and bacteriology. Experience in vaccine development preferred. To apply send résumé to: **Hans Draayer, Manager, Biological Research and Development, Beecham Laboratories, East Lincoln Road, White Hall, IL 62092. An Equal Opportunity/Affirmative Action Employer.**

## Postdoctoral Positions

New England Biolabs, a pioneer and leader in biotechnology located twenty miles north of Boston, is seeking applicants for:

**Gene Cloning in Streptomyces**—Candidate should have a strong background in Streptomyces molecular biology to work on projects involving cloning, overproduction and mutagenesis of restriction-modification systems in Streptomyces.

**Molecular Genetics**—Candidate should have strong background in molecular biology or bacterial genetics to study the interaction between restriction-modification systems and the host cell.

In addition to competitive salary, New England Biolabs offers a very generous fringe benefits package. Attendance at meetings, publication of research results and open communication with others are encouraged.

Candidates please submit curriculum vitae with three references to:

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



## CHIMERA BIOTECH, INC.

### TRANSGENIC ANIMAL RESEARCH

Chimera Biotech, Inc. is a dynamic and exciting biotechnology company located in San Diego, California. We are a rapidly growing company with the goal of becoming the technology and market leader in the production and use of transgenic animals.

### DIRECTOR OF RESEARCH

The successful candidate will have a Ph.D. in Molecular Biology or a related discipline with experience in state-of-the-art techniques in transgenic animal production, such as micro-injection, embryonal stem cell culture, mammalian gene expression and animal physiology.

The above candidate must also possess strong communication skills and a proven ability and desire to design and direct research programs.

Chimera Biotech offers an excellent salary and benefits package including substantial equity. Please send resumes to:

**Mr. Lawrence Bock  
650 Town Center Drive, Suite 810  
Costa Mesa, CA 92626**

# BIOTECH AT ITS BEST

Integrated Genetics, Inc., a recognized leader in biotechnology, develops therapeutic and diagnostic products for the health care industry. Our continuing success leads to these new opportunities:

## SENIOR SCIENTIST

### Applied Expression

Take a leading role in our research effort in the area of gene expression, particularly in the application of expression vectors in mammalian cells. Requires a Ph.D. in molecular biology, 2 yrs.' postdoctoral training, and 2-5 yrs. of research experience in industry. We seek a highly motivated, accomplished scientist with a good publication record and experience with one or more eucaryotic expression systems.

## STAFF SCIENTIST

### Pharmacology

Coordinate and perform testing of new therapeutic drugs including toxicology studies for FDA approval. Requires a Ph.D. in Pharmacology, Biopharmaceutics, or Pharmacokinetics and at least 2 yrs.' experience in pharmacokinetics of peptide/protein molecules, coagulation and/or thrombosis animal model systems, and toxicology studies for human clinical trials.

## STAFF SCIENTIST

### Discovery

Join a team investigating and evaluating new product opportunities. Requires close interaction with scientific staff, research and evaluation of publications, and attendance at scientific meetings with follow-up on contacts. Requires a Ph.D./M.D. in science, superior communication and interpersonal skills, and a broad understanding of the science and business of biotechnology.

Integrated Genetics is located in an attractive suburban area 25 miles west of Boston. We offer an excellent compensation and benefits package, including three weeks' vacation and equity participation. For immediate consideration, please send your resume, referencing the position of interest, to:

David Nikka, Dept. S610  
Integrated Genetics, Inc.  
31 New York Avenue, Framingham, MA 01701.  
An equal opportunity employer.

## STAFF SCIENTIST

### Applied Expression

Carry out research in the area of the expression of foreign genes in eucaryotic cell hosts. Requires a Ph.D. in molecular biology and at least 2 years of relevant postdoctoral experience. Familiarity with eucaryotic expression systems is essential.

## STAFF SCIENTIST

### Molecular Biology

A Ph.D. with a broad base of molecular biology skills, particularly in the areas of cDNA synthesis and library constructions in both phage and plasmid vectors is needed to work on various research projects. Experience with procaryotic and/or eucaryotic expression systems would be helpful.

## STAFF SCIENTIST

### Cell Biology

Cell biologists are needed to study the utility of growth factors for therapeutic use and the influence of cell type on protein production by mammalian cells. Requires a Ph.D. and at least 2 yrs.' postdoctoral experience in one or more of the following: cell surface receptor-ligand interactions; intracellular mechanisms of growth factor or transforming protein action; effects of growth factors and/or extracellular matrix on the biosynthetic capacity of cells.

## STAFF SCIENTIST

### Protein Chemistry

Enhance our structural characterization of natural and recombinant proteins by developing novel techniques to study post-translational modifications. A Ph.D. in Biochemistry and experience in peptide mapping, purification, sequencing and amino acid analysis, or chemical modification of proteins is required. Postdoctoral and/or industrial experience in a protein sequencing facility a plus.

**LG** INTEGRATED  
GENETICS

## Immunology Research

Pfizer Central Research is inviting applications from immunologists to take part in the development of a new research program. Working with a strong multidisciplinary project team, you will apply your basic research skills to conceptualizing new strategies for the discovery of immune modulating agents for animal health applications.

You must possess a PhD and at least two years of postdoctoral experience in Microbial Immunology. While specific experience with assays for cytokines and immune cell functions will be considered an asset, educational training, intellectual capabilities and leadership traits are most important. Prior experience in drug discovery or evaluation is not required.

This position offers an excellent opportunity for professional recognition and growth. We also offer excellent salary, benefit and relocation package plus an attractive southeastern Connecticut shore location. Qualified applicants should submit their resume, a brief description of research accomplishments, and the names, addresses and phone numbers of three professional references to: Mr. Donald R. Nelson, Manager of Employee Relations, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.

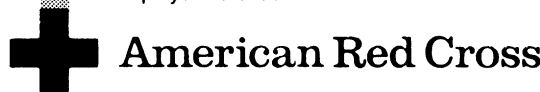


An equal opportunity employer

## POSTDOCTORAL FELLOW- CELL BIOLOGY

Postdoctoral position available to study the regulation of blood cell differentiation at the cellular and molecular levels with emphasis on monocyte/macrophages and megakaryocytes. Opportunity to study the effects of HIV on monocyte development and functions. Experience with contemporary techniques in molecular and cellular biology required. Send curriculum vitae and references to Dr. Allan Mufson, American Red Cross, Holland Laboratory, 15601 Crabbs Branch Way, Rockville, MD 20855.

An Equal Opportunity/Affirmative Action Employer M/F/H/V



## Research Associates

ZymoGenetics, Inc. is a recombinant DNA company engaged in developing human plasma proteins, growth factors, immunoglobulins, and other commercially valuable products. We currently have positions available in our Mammalian Cell Expression and Protein Chemistry departments.

Both positions require a BS/MS degree. For Mammalian Cell Expression we require experience in several of the following: DNA and RNA isolation; cloning DNA into plasmid vectors; tissue culture; isolation and purification of proteins; and assay of proteins.

For Protein Chemistry, experience in a number of the following is needed: isolation and purification of proteins and peptides; ELISAs; SDS electrophoresis; assay of proteins; and monoclonal antibody preparation.

ZymoGenetics, Inc. offers a research-oriented atmosphere, intellectual challenge and modern facilities. Seattle's beautiful surroundings, reasonable cost of living, and lively cultural activities are further incentives to relocate. Salary is commensurate with experience and ZymoGenetics offers full benefits including a tuition reimbursement program in our compensation package. Please send a detailed resume of your work experience and academic background, as well as the names and addresses of three references to: **Laura Castellano, ZymoGenetics, Inc. 4225 Roosevelt Way NE, Seattle, WA 98105, (206) 547-8080.** Equal Opportunity Employer.



## Colgate-Palmolive

### GROUP LEADER TOXICOLOGY

The Colgate-Palmolive Company's Medical Department currently seeks an experienced professional to join its Pharmacology/Toxicology staff as a **GROUP LEADER**.

Major responsibilities include leading a team of professionals to provide data support for the safety of Colgate-Palmolive products, and for systems on data storage, analysis, and retrieval.

To qualify, an individual must have a Ph.D. in one of the following: Pharmacology, Toxicology, Biochemistry, or Physiology. Five years experience in toxicology-risk assessment in a regulatory environment, computer systems, and excellent verbal and written communication skills.

The Corporate Technology Center is located on an 80-acre campus in suburban Central New Jersey, near Rutgers and Princeton Universities, and one hour from Manhattan.

For immediate consideration, please forward resume with salary history, in confidence to: Mr. Ron Thomas, Human Resources Dept. MS/SM-24, 909 River Road, Piscataway, NJ 08854.



COLGATE-PALMOLIVE COMPANY

An Equal Opportunity Employer M/F

## EXPANDING OPPORTUNITIES IN ENVIRONMENTAL/HEALTH SCIENCES



Since 1936, IITRI has been a leading independent, not-for-profit contract research organization. We seek unique individuals for the following positions:

### SENIOR VICE PRESIDENT, APPLIED SCIENCES

Reporting directly to the President, the Senior Vice President will be responsible for directing chemistry, chemical engineering, environmental sciences, petroleum, energy research, life sciences, explosion/hazards analysis, and manufacturing technology activities. Ph.D. in physical/biological sciences or engineering required; 10-15 years' experience in a research environment of which 5-10 years were in mid- or upper-level management resulting in a proven track record in technical management and organization. Exceptional communication skills, demonstrated leadership in meeting financial goals and motivational abilities complete the desired profile.

### DIRECTOR, CHEMISTRY & CHEMICAL ENGINEERING

The Director, reporting to the Senior Vice President, will manage and lead technical staff involved in analytical chemistry, polymer and organic research, pilot plant studies, and environmental sciences. Ph.D. in chemistry or chemical engineering required; plus 8-10 years' experience in a research environment. Experience will include management responsibilities resulting in a progressive growth record in organization and management of high technology activities.

Both of these positions require U.S. citizenship.

Receipt of your credentials will indicate interest in these positions. Submit to: **Ms. L. Amft, Sr. Personnel Representative, Dept. EHSILA, IIT Research Institute, 10 West 35th Street, Chicago, Illinois 60616.** Equal Opportunity/Affirmative Action Employer.

## PROTEIN CHEMIST

The Worcester Foundation is seeking an experienced protein chemist to be the primary operator of a Protein Chemistry Facility now being established. This core facility will be equipped to provide protein sequencing, peptide synthesis, amino acid analysis and peptide mapping services to our faculty. The position offers the opportunity to contribute to a diverse set of projects studying protein structure and function, including cytoskeletal proteins, receptors, signal transduction proteins, mammalian pheromones and several enzyme systems and proteins found in the nervous and male reproductive systems. Applicants should have extensive protein chemistry experience and some familiarity with a gas-phase sequencer and peptide synthesizer. Salary and level of appointment of this non-faculty position will be commensurate with experience. The Worcester Foundation is a non-profit, basic research institute located on a 100 acre wooded campus 40 miles west of Boston. Send curriculum vitae, a statement of career objective and three letters of reference to **Protein Chemist, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545 USA.**

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

### Life Sciences Technology

As the 1985 joint venture between Corning Glass Works and Ciba Geigy Ltd., Ciba Corning Diagnostics Corp. is recognized as a world leader in the medical diagnostics and biomedical research fields.

### PROJECT MANAGER - CONTROLS RESEARCH & DEVELOPMENT

We are looking for a person who can manage R&D projects in our controls business in *Irvine, CA* facility. The successful candidate should have good skills in project planning and tracking, as well as the ability to plan and manage meetings. Also, this person should have excellent people skills and be assertive, in addition to being able to work relatively unsupervised toward a goal of transferring a completed R&D project into manufacturing.

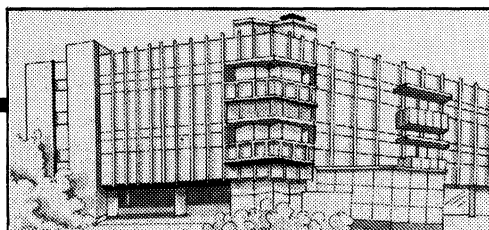
Experience in the Clinical Chemistry Controls or Reagent business is essential for success in this position.

**Excellent starting salaries and benefits. Reply with resume, in confidence, to the Human Resources Dept., Ciba Corning Diagnostics Corp., 63 North Street, Medfield, MA 02052.**

Ciba Corning Diagnostics Corp. is an equal opportunity employer, m/f/h/v.

## CIBA-CORNING

Ciba Corning Diagnostics Corp.



## MERRELL DOW RESEARCH INSTITUTE STRASBOURG CENTER

has an opening for a

### Molecular Virologist

We are seeking an independent scientist (Ph.D. + 3 years post doctorate) with a demonstrated expertise in the molecular biology of retroviruses. The successful candidate will be expected to initiate a basic research program that will investigate viral-encoded proteins as targets for antiviral drug design. Integrating within a multidisciplinary team of scientists focusing on signal transduction, the virologist will have abundant opportunities for scientific collaborations with molecular biologists, immunologists, protein and medicinal chemists, and pharmacologists. The scientist selected for this opening will immediately occupy an important role in the development of the biological sciences program at MDRI, Strasbourg. Knowledge of French is desirable, but not a requirement for this position.

Applicants should send a curriculum vitae and three letters of references to: **Mrs M.J. Bildstein Director of Personnel Services Merrell Dow Research Institute 16, rue d'Ankara F-67084 STRASBOURG Cedex - France.**

## POSITIONS OPEN

### STANFORD UNIVERSITY SCHOOL OF MEDICINE PROFESSOR OR ASSOCIATE PROFESSOR OF BIOSTATISTICS

Stanford University's School of Medicine seeks applications or nomination of candidates for a tenure position in the Division of Biostatistics in the Department of Health Research and Policy. Appointment will be at the level of professor or associate professor, depending on the qualification of the appointee. The long-standing Division of Biostatistics now resides in the new Department of Health Research and Policy, which is currently recruiting not only for this position in the Division of Biostatistics but also for additional faculty in its two other divisions, Epidemiology and Health Services Research.

Applicants should be strongly grounded in theoretical statistics and experienced in applications to biology and medicine. A strong record of scholarship is essential. Duties will include (i) teaching medical students, residents and fellows (ii) consulting with both clinical and laboratory investigators, (iii) independent and collaborative research in biostatistical methods and their applications to substantive investigations. Previous administrative experience would be desirable but is not required.

*Stanford University's School of Medicine is committed to increasing representation of women and members of minority groups among its faculty. We encourage the application and nomination of such candidates.*

Applications and nominations, including curricula vitae, should be sent to:

**Professor Lincoln E. Moses**  
Stanford University School of Medicine  
Department of Health Research and Policy  
Division of Biostatistics  
HRP Suite 114  
Stanford, CA 94305-5092

University of Minnesota Department of Radiology has a temporary, non-regular, position available for a **RA-DIOCHEMIST** at the rank of assistant professor beginning 1 July 1988. Minimum requirements include a Ph.D. in synthetic organic chemistry with documented research experience in the synthesis and radiolabeling of analogs of MPTP. The candidate must be experienced with the safe handling of neurotoxins. In addition, the candidate should have experience in the synthesis of non-classical nucleotides as potential antiviral agents. Experience in animal handling to determine the biodistribution of these compounds and potential adverse effects is also required. The candidate must be able to perform autoradiographic analysis of animal specimens, and should be comfortable with quantum mechanical modeling to determine structure activity relationships of potential radiopharmaceuticals. An interest in the application of supercomputer based algorithms to this modeling is desirable. Responsibilities will also include graduate and undergraduate instruction in radiochemistry and medicinal chemistry. Salary is negotiable and competitive, and is dependent upon past scholarly activity and post-Ph.D. experience. Applications for this position will be accepted through 30 June 1988. Send letters to: **Dr. Robert Boudreau, Director of Nuclear Medicine, Department of Radiology, University of Minnesota Medical School, Box 382 UMHC, 420 Delaware Street S.E., Minneapolis, MN 55455.** *The University of Minnesota is an Equal Opportunity and Affirmative Action Educator and Employer and specifically encourages applications from women and minorities.*



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U.S. Department of Agriculture, Agricultural Research Service. **RESEARCH MOLECULAR BIOLOGIST/BIOCHEMIST**, Plant Molecular Genetics Laboratory, Beltsville, Maryland. ARS has two positions available to identify and characterize genes involved in the resistance response of crop plants to pathogen invasion. *Must be U.S. citizen.* Salary is commensurate with experience; \$32,567 to \$38,727 per annum. Send applications (SF171) and transcripts to: **Rose Cunningham, USDA, ARS, Personnel Operations Branch, Building 003, Room 415, BARC-W, Beltsville, MD 20705** or telephone: 301-344-3954. Applications in response to this advertisement should be marked **8E014** and received by 1 July 1988. *An Equal Employment Opportunity Employer.*

## MOLECULAR BIOLOGY

The Human Genome project at the Los Alamos National Laboratory is seeking a Molecular Biologist to work as a team member on theoretical problems of mapping and sequencing the human genome. Will analyze strategies for ordering DNA fragments to obtain physical maps of human chromosomes and develop and apply computer programs for ordering sets of partially characterized fragments. Must work closely with experimental molecular biologists responsible for physical mapping. Expected to conduct theoretical research independently and/or with others on genome problems such as automatic organization and annotation of genetic data bases and pattern recognition in sequences.

The successful applicant will be expected to have a Ph.D. in Molecular Biology or equivalent combination of training and experience. Ph.D. in Physical or Computer Science together with detailed knowledge of molecular biology considered. Research experience with publications in molecular biology, experience in programming for scientific computation, and good oral and written communication skills desired.

To formally apply send resume, employment application, three letters of reference and graduate/undergraduate transcripts to Richard Garcia (MS P280) Personnel Services Division 80113-AC, Los Alamos National Laboratory, Los Alamos, New Mexico 87545. For additional information contact Karl Sirotkin, T-10, MS K710, (505) 665-0839.

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# Los Alamos

## DIAGNOSTICS RESEARCH

BURROUGHS WELLCOME CO., a leader in the research, development and manufacture of pharmaceuticals, has openings for a Trials Coordinator and a Research Scientist in the Diagnostics Research Section at their Research Triangle Park, North Carolina facility.

### Scientific Evaluation Trials Coordinator—Diagnostics

This individual will be responsible for designing and monitoring clinical trials for in vitro diagnostics products. Requirements include a Ph.D. in microbiology or related field with a minimum of one year's experience in commercial development of in vitro diagnostic products or Master's degree with five years' experience in product development and the management of diagnostics trials or equivalence in training and experience. Familiarity with hepatitis and retrovirus diagnostic or screening tests is essential. Also, experience with immunoassay methodologies involving enzyme immunoassay and latex agglutination is highly desirable. Knowledge of study design, statistics and device regulations is useful.

### Diagnostics Research Scientist

The primary responsibility in this position will be to develop in vitro diagnostic enzyme-immunoassays to retroviruses. The successful candidate will have a Ph.D. or equivalent experience/training in virology, microbiology, or related field or a Master's degree with a minimum of five years' experience as above. Experience with retroviruses and recombinant DNA technology are highly desirable.

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## **Vacancy Announcement**

### **National Institute of Neurological and Communicative Disorders and Stroke**

**National Institutes of Health  
Public Health Service  
Department of Health  
and Human Services**

The National Institute of Neurological and Communicative Disorders and Stroke (NINCDS), National Institutes of Health (NIH), Public Health Service (PHS), invites nominations and applications for the position of Chief, Neuroepidemiology Branch. This is a Senior Executive Service position with a salary range of \$64,700 to \$73,400 per annum. The individual selected may be eligible for a Physician's Comparability Allowance ranging from \$5,000 up to \$20,000. The position is located in Bethesda, Maryland.

The Chief, Neuroepidemiology Branch provides technical and administrative direction and leadership to the Institute's epidemiological program and service as the focal point within the Federal sector, the scientific community, and the public for these activities.

Candidates must meet minimum educational requirement for Medical Officer, GS-602 (or equivalent combination of experience and training), as defined by the U.S. Office of Personnel Management Handbook X-118, Qualification Standards for Positions under the General Schedule. This information is available in Federal Personnel Offices and Federal Job Information Centers. Further information about qualifications can be obtained by contacting Mr. Clifford Schein on (301) 496-6334. Information regarding the position can be obtained by contacting Dr. Mark Hallett on (301) 496-1561. An application for Federal Employment (Form SF-171), accompanied by a current curriculum vitae and bibliography should be submitted to Mr. Clifford Schein, NINCDS Personnel Office, National Institutes of Health, Building 31, Room 8A23, 9000 Rockville Pike, Bethesda, MD. 20892.

**Applications Must Be Postmarked  
No Later Than July 1, 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.



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### **Senior Scientist—Cell Biology/Biochemistry**

You'll assume responsibility for defining targets for anti-tumor drug intervention and developing drug screening programs. A PhD and minimum 0-3 years' experience in the biomedical mechanisms of oncogene action are essential.

### **Associate/Assistant Scientist—Immunology/ Molecular Biology/Cell Biology**

Strengthen your experience in recombinant DNA techniques and/or the production of monoclonal and polyclonal antibodies. These positions, which require a BS/MS, will allow you to contribute to research concerning the mechanism of oncogene action.

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## POSITIONS OPEN

### RESEARCH ANIMAL GENETICIST

The U.S. Department of Agriculture, Agricultural Research Service, Regional Poultry Research Laboratory, East Lansing, Michigan, invites applications from animal geneticists with experience in virology and molecular biology. The incumbent is expected to take the lead in a team effort to further develop methods for producing transgenic chickens using avian retroviral vectors, and develop a long range research program aimed at the transfer of genes controlling immune response and disease resistance in poultry. This is a career, permanent position. U.S. citizenship, research experience, Ph.D. or equivalent, and knowledge of animal genetics required. Beginning salary: \$33,218 to \$39,501 (GS-12/13), depending on qualifications. For information on the position, contact: **Dr. R. L. Witter, USDA/ARS/RPRL, 3606 East Mt. Hope Road, East Lansing, MI 48823. Telephone: 517-337-6828.** For information on application procedures contact: **Barbara Lamm, USDA/ARS Personnel Operations Branch, Northern Section, Building 419, BARC-East, Beltsville, MD 20705. Telephone: 301-344-1542.** Applications should be marked 8N025, sent to: **Barbara Lamm**, and must be received by 19 July 1988. *Equal Opportunity Employer.*

### RESEARCH ASSOCIATE

Position available for a biochemist in the Department of Ophthalmology at Harvard Medical School to do research in the general area of lens metabolism. Applicants should have a Ph.D. and at least 2 years of postdoctoral experience. Familiarity with enzymology, HPLC, electrophoresis, tissue culture, and immunological techniques would be helpful. Salary and rank commensurate with experience. Send curriculum vitae and a brief statement of research interests to: **Dr. John K. Wolfe, Howe Laboratory of Ophthalmology, Massachusetts Eye & Ear Infirmary, Boston, MA 02114.** *An Equal Opportunity/Affirmative Action Employer.*

**RESEARCH ASSOCIATE/Pharmacology-biochemistry positions available immediately for investigation of enzymes encapsulated into carrier erythrocytes for drug antagonism studies. Experience with enzyme purification essential. No experience in drug carrier systems necessary. Send curriculum vitae and three references to: Dr. J. L. Way, Department of Pharmacology, Texas A & M University Medical Sciences Building, College Station, TX 77843.** *Equal Opportunity/Affirmative Action.*

**RESEARCH POSITION**—Environmental microbiology, 2-year contract position to conduct research on the physiology and use of autotrophic (i.e., hydrogen oxidizing), denitrifying bacteria for removing nitrate from contaminated groundwater. Applicants should have a Ph.D. or M.S. degree in environmental microbiology or a closely related discipline and extensive experience with denitrifying bacteria. Research will focus on the isolation, physiological characterization, and activity of autotrophic denitrifying bacteria in experimental bioreactors. Starting date for position is 1 August 1988. Salary: \$29,172 per year plus complete benefit package. Submit curriculum vitae and three letters of recommendation by 1 July 1988 to: **Personnel Department, Orange County Water District, P.O. Box 8300, Fountain Valley, CA 92728-8300.**

### SCIENTIFIC DIRECTOR RETROVIRUS RESEARCH CENTER

The Baltimore VA Medical Center and University of Maryland at Baltimore are seeking an academic leader to serve as the Scientific Director of the Retrovirus Research Center (RRC). This federally funded center has programs in viral pathogenesis, immunology, and antiviral pharmacology. Candidates should have a Ph.D. with a strong background in animal or human molecular retrovirology and should be appointable at the associate or full professor level. Laboratory space and start-up support will be provided through the RRC programs. A competitive salary based upon qualifications and experience is offered.

Send curriculum vitae and name and address of three references to: **Paul M. Hoffman, M.D., Associate Chief of Staff for Research and Development (151), VA Medical Center, 3900 Loch Raven Boulevard, Baltimore, MD 21218.** *The Veterans Administration and University of Maryland are Equal Opportunity Employers.*

## POSITIONS OPEN

**SCIENCE WRITER** with capability to translate biological, psychological, and social scientific materials into forms useful to service providers, policymakers, and the general public. Must demonstrate successful experience in grant writing and ability to bring professionals from different backgrounds together to prepare grant submissions. Salary in mid-30's; competitive benefit package. Submit résumé with relevant supporting documentation to: **P.O. Box 897, Buffalo, NY 14209.** *Affirmative Action/Equal Opportunity Employer.*



### STAFF SCIENTIST

The Chemical Industry Institute of Toxicology (CIIT), an innovative leader in toxicology research, is seeking a scientist with an interest in chemical injury to the lung. The successful candidate will establish an independent research program to elucidate the cellular and molecular mechanisms involved in chemical induction of respiratory injury and/or neoplasms. Multidisciplinary collaborative support is available in the areas of pathology, inhalation exposure, cell culture, and molecular biology.

Applicants should have a Ph.D. in biochemistry, cell biology, molecular biology, or related discipline and several years of postdoctoral research experience. Please send complete résumé to: **Employment Office, CIIT, P.O. Box 12137, Research Triangle Park, NC 27709.** *An Equal Opportunity/Affirmative Action Employer.*

### JPL/NASA VISITING SENIOR SCIENTIST OFFICE OF EXPLORATION SCIENCE ADVISER

The Jet Propulsion Laboratory is seeking candidates with outstanding professional attainment in one of the following fields of space science: planetary science, astrophysics, space physics, or space life sciences. The Office of Exploration (OEXP) at NASA Headquarters has been formed to develop strategies and implementation plans for human space exploration missions, consistent with the goal of extending human activities beyond Earth orbit, as expressed in the recently issued national space policy. The visiting senior scientist would have a major role in the development of the science content of human exploration missions. The duties will include advising the Assistant Administrator for the OEXP on science opportunities and issues in the exploration program; providing the principal interface between OEXP and NASA's Office of Space Science and Applications; and representing the OEXP science potential and programs to the scientific community. Tenured faculty members are the preferred choice although qualified individuals from non-profit research institutions may also be considered. This position is open for immediate filling. Normal assignment in the Visiting Senior Scientist Program does not exceed 2 years. Appointees must be U.S. Citizens or Permanent Residents, and are expected to return to their home institution following the NASA assignment. Please provide curriculum vitae, bibliography and the names of four references to:

**Dr. Harry Ashkenas 180-900  
Department U67  
Jet Propulsion Laboratory  
4800 Oak Grove Drive  
Pasadena, CA 91109  
Telephone: 818-354-8251**  
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## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP** (Microbiology) in the Ocular Microbiology Laboratory, Department of Ophthalmology, Baylor College of Medicine, Houston. Opportunity for motivated individual with Ph.D. in microbiology or infectious disease, to be involved in NIH and privately funded studies of the biology and pharmacology of *Acanthamoeba*. Please send curriculum vitae and names of three references to: **K. R. Wilhelmus, M.D., Cullen Eye Institute, One Baylor Plaza, Houston, TX 77030.**

## SYMPOSIUM

### SYMPOSIUM ON THE MAILLARD REACTION IN AGING, DIABETES, AND NUTRITION 22 to 23 September 1988 NATIONAL INSTITUTES OF HEALTH BETHESDA, MARYLAND

Program includes more than twenty internationally recognized scholars conducting research on the chemistry and biochemistry of the Maillard reaction, role of glycation, post-glycation and browning reactions in the aging of protein and DNA, interplay between glycation and sorbitol pathways in the development of pathology in diabetes, and effects of Maillard reactions on nutritional value of foods. Contributed posters welcome. For registration and information, contact: **Dr. Vincent Monnier, Department of Pathology, Case-Western Reserve University, Cleveland, OH 44106. Telephone: 216-368-6613.**

## FELLOWSHIPS

### LA TROBE UNIVERSITY AUSTRALIA

La Trobe University **RESEARCH FELLOWSHIPS** The University is offering postdoctoral research fellowships in any discipline of the University and applications are invited from persons who have gained doctoral or equivalent qualifications within the last 5 years. A person who currently holds a permanent appointment is not eligible to apply.

The proposed research project must be in collaboration with a current University researcher and must complement the existing research work.

Fellowships, which will be awarded for a period of 24 months, are intended to advance the research activities of the University by bringing to or retaining in Australia promising scholars.

Salary offered is within the range of \$24,848 to \$28,342 per annum.

Applications must be made on the University's form which will be sent on request together with further information about the Fellowship.

Enquirers should briefly indicate the research discipline of interest to them. The closing date for applications is 30 September 1988. For further information, write to: **The Staff Officer, La Trobe University, Bundoora, Victoria, 3083, Australia.**

*Equal Opportunity is University Policy.*

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