

genetically engineered disease resistance and the concerns and difficulties associated with the testing and release of genetically engineered agricultural microorganisms.

The papers that follow include detailed reviews of genome organization and gene regulation and expression in tobacco mosaic virus and cauliflower mosaic virus, along with a chapter examining models of genetic interaction between plant pathogenic viruses and their hosts. The genera *Pseudomonas* and *Xanthomonas* are examined with regard to the use of transposable elements and site-specific mutagenesis to identify genes controlling pathogenicity. In a paper detailing the genetics of *Bremia lactucae*, I. A. Crute presents a compelling and practical argument for studying the genetics of plant pathogens by using data on the occurrence and virulence of fungicide-insensitive isolates to develop a highly effective control program combining host resistance and fungicide use. Crute also shows the effects of gene dosage on infection types and the inhibition of avirulence genes by regulatory loci. In a related chapter by R. W. Michelmore *et al.*, progress in the use of RFLP to isolate avirulence genes in *B. lactucae* is examined. Other papers describe recent research on the genetics of mating type and isozyme markers in *Phytophthora infestans*. The final papers discuss genetic control of the synthesis and accumulation of phytoalexins and molecular regulation and characterization of gene products related to resistance.

Overall, the treatment of diverse groups of plant pathogens is well balanced. The relative detail in the individual papers is generally a reflection of the amount of genetic and molecular research that has been conducted for the respective pathogen groups. The book accurately presents the current state of molecular and genetic research for many important plant pathogens.

Populations of Plant Pathogens examines genetic and epidemiological aspects of plant pathogen populations. The book is divided into three sections: basic concepts of pathogen population genetics, dynamics of pathogen populations, and genetic changes in pathogen populations. In the opening paper Day and M. S. Wolfe stress the importance of population genetics by discussing the inherent ability of plant pathogens to genetically adapt to resistant host cultivars. They also correctly point out that population genetics in plant pathology has largely been neglected, given its relative importance. Part I includes papers discussing exceptions to classical gene-for-gene interactions in host-parasite systems, factors that influence virulence gene frequency in pathogen populations, the fate of virulent mutants

in populations, the concept of race in plant pathology, and the measurement of genetic diversity in pathogen populations. Part 2 examines mathematical modeling of disease dynamics, effects of spore-dispersal gradients on disease development, and the epidemiology of soil-borne pathogens and plant viruses among other topics. In part 3, various aspects of the adaptation of pathogen populations to host resistance are discussed with reference to southern corn leaf blight, cereal rusts, downy mildew of lettuce, Dutch elm disease, and powdery mildew of barley.

I found all the papers well written and authoritative. A common theme of parts 1 and 3 is that many plant pathogen populations do not meet the assumptions inherent in classical population genetics studies. Several of the authors point out that although race surveys of plant pathogens are extremely valuable for determining levels of virulence to host resistance genes, they may not be suitable for evaluating either the effects of virulence associations on fitness or of "stabilizing selection" in pathogen populations. My only criticism is that part 2 is isolated from the rest of the book. In the preface the editors state that aspects of population genetics and population dynamics as covered in the first two parts are brought together in part 3; however, part 3 is a continuation of part 1, with little reference to the epidemiological material in part 2. Perhaps this reflects the current distance between population dynamics and genetics in plant pathology. Taken as a whole, however, this book is at present the best collection of papers dealing with the population genetics of plant pathogens, and I recommend it highly to all those concerned with theoretical and practical aspects of this subject.

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Books Received

The Abortion Question. Hyman Rodman, Betty Sarvis, and Joy Walker Bonar. Columbia University Press, New York, 1987. xvi, 223 pp., \$27.

Aquatic Biology and Hydroelectric Power Development in New Zealand. P. R. Henriques, Ed. Oxford University Press, New York, 1987. viii, 280 pp., illus. \$65.

Astrophysical Jets and Their Engines. Wolfgang Kundt, Ed. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). xii, 256 pp., illus. \$59.50. NATO Advanced Science Institutes Series C, vol. 208. From an institute, Erice, Italy, Sept. 1986.

Before Lift-Off. The Making of a Space Shuttle Crew. Henry S. F. Cooper, Jr. Johns Hopkins University Press, Baltimore, MD, 1987. xvi, 270 pp., illus. \$18.50. New Series in NASA History.

Biology of Copper Complexes. John R. J. Sorenson, Ed. Humana, Clifton, NJ, 1987. xx, 598 pp., illus. \$79.50. Experimental Biology and Medicine. From a symposium, Little Rock, AR, 1986.

Case Studies of Seven Commercial Seaweed Resources. M. S. Doty, J. F. Caddy, and B. Santelices, Eds. Food and Agriculture Organization of the United Nations, Rome, 1986 (U.S. distributor, Bernan/Unipub, Lanham, MD). x, 311 pp., illus. Paper, \$19.25. FAO Fisheries Technical Paper 281.

The Challenge of New Technology. David Simpson, Jim Love, and Jim Walker. Wheatshaf, Brighton, U.K., and Westview, Boulder, CO, 1987. x, 159 pp. \$32.50.

Chaos. Making a New Science. James Gleick. Viking, New York, 1987. xiv, 352 pp., illus., + plates. \$19.95.

Chronic Lymphocytic Leukemia. Recent Progress and Future Direction. Robert Peter Gale and Kanti R. Rai, Eds. Liss, New York, 1987. xx, 432 pp., illus. \$80. UCLA Symposia on Molecular and Cellular Biology, vol. 59. From a symposium, Napa, CA, Dec. 1986.

Circle of the Seasons. The Journal of a Naturalist's Year. Edwin Way Teale. Dodd, Mead, New York, 1987. 263 pp., illus. \$17.95; paper, \$9.95. The Edwin Way Teale Library of Nature Classics. Reprint, 1953 edition.

Collisions of Electrons with Atoms and Molecules. G. F. Drukarev. Plenum, New York, 1987. x, 242 pp., illus. \$49.50. Physics of Atoms and Molecules. Translated from the Russian edition.

Droll Science. Being a Treasury of Whimsical Characters, Laboratory Levity, and Scholarly Follies. Robert L. Weber, Compiler. Humana, Clifton, NJ, 1987. viii, 340 pp., illus. \$22.50.

Dwellings. The House Across the World. Paul Oliver. University of Texas Press, Austin, TX, 1987. 256 pp., illus. \$34.95; paper, \$21.95.

Ecological Effects of In Situ Sediment Contaminants. R. Thomas *et al.*, Eds. Junk, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). viii, 272 pp., illus. \$127.50. Developments in Hydrobiology, 39. From a workshop, Aberystwyth, Wales, Aug. 1984.

Economic Aspects of Biotechnology. Andrew J. Hacking. Cambridge University Press, New York, 1987. x, 306 pp., illus. Paper, \$19.95. Cambridge Studies in Biotechnology, vol. 3. Reprint, 1986 edition.

Electronic Band Structure and Its Applications. M. Yussouff, Ed. Springer-Verlag, New York, 1987. viii, 440 pp., illus. \$41.70. Lecture Notes in Physics, 283. From a school, Kanpur, India, Oct.-Nov. 1986.

Epstein-Barr Virus and Human Disease. P. H. Levine *et al.*, Eds. Humana, Clifton, NJ, 1987. xxxii, 530 pp., illus. \$74.50. Experimental Biology and Medicine. From a symposium, St. Petersburg, FL, Oct. 1986.

Explorations in Psychoneuroimmunology. Ruth Lloyd. Grune and Stratton (Harcourt Brace Jovanovich), Orlando, FL, 1987. xiv, 162 pp. \$34.50. Seminars in Psychiatry.

Five Kingdoms. An Illustrated Guide to the Phyla of Life on Earth. Lynn Margulis and Karlene V. Schwartz. 2nd ed. Freeman, New York, 1987. xviii, 376 pp., illus. \$35.95; paper, \$24.95.

Genetic Maps 1987. Vol. 4. Stephen J. O'Brien, Ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1987. x, 755 pp., illus. Spiral bound, \$55.

Geotectonic Evolution of China. Ren Jishun *et al.* Science Press, Beijing, and Springer-Verlag, New York, 1987. x, 203 pp., illus., + plates. \$69.

Geriatric Psychiatry and the Law. Richard Rosner and Harold I. Schwartz, Eds. Plenum, New York, 1987. xxii, 364 pp. \$49.50. Critical Issues in American Psychiatry and the Law, vol. 3.

Guidelines on the Termination of Life-Sustaining Treatment and the Care of the Dying. Hastings Center, Briarcliff Manor, NY, 1987. xii, 159 pp. Paper, \$14.50.

A Handbook of Fourier Theorems. D. C. Champeney. Cambridge University Press, New York, 1987. xii, 185 pp. \$39.50.

The Health Century. Edward Shorter. Doubleday, New York, 1987. xvi, 304 pp., illus., + plates. \$21.95. A companion to a PBS television series.

The International Encyclopedia of Astronomy. Patrick Moore, Ed. Orion, New York, 1987. 464 pp., illus. \$40.

Inventory and Monitoring of Wildlife Habitat. Allen Y. Cooperrider, Raymond J. Boyd, and Hanson R. Stuart, Compilers and Eds. U.S. Department of the Interior, Bureau of Land Management, Denver, CO, 1986 (available from the Superintendent of Documents, Washington, DC). xx, 858 pp., illus. \$38.

Kinematic Modeling, Identification, and Control of Robotic Manipulators. Henry W. Stone. Kluwer, Norwell, MA, 1987. xxii, 224 pp., illus. \$45. Kluwer International Series in Engineering and Computer Science, 29.

Light. Michael I. Sobel. University of Chicago Press, Chicago, 1987. x, 263 pp., illus. \$29.95.

Lipoprotein Lipase. Jayme Borensztajn, Ed. Elsevier, Chicago, 1987. viii, 336 pp., illus. \$43.

Medicine and Society. Clinical Decisions and Societal Values. Eli Ginzberg, Ed. Westview, Boulder, CO, 1987. xii, 153 pp., illus. \$19.95; paper, \$8. Based on a conference, Ithaca, NY 1987.

Mineral Resources. A System Analytical and Functional Approach. László Kápolvi. Springer-Verlag, New York, 1987. xvi, 316 pp., illus. \$80.60.

Molecular and Cellular Aspects of Erythropoietin and Erythropoiesis. Ivan N. Rich, Ed. Springer-Verlag, New York, 1987. viii, 460 pp., illus. \$120. NATO Advanced Science Institutes Series H, vol. 8. From a workshop, Bad Windsheim, F.R.G., Sept. 1986.

Oxygen Transport to Tissue IX. I. A. Silver and A. Silver, Eds. Plenum, New York, 1987. x, 403 pp., illus. \$75. Advances in Experimental Medicine and Biology, vol. 215. From a meeting, Cambridge, U.K., July 1986.

Penicillin and Acromonium. John F. Peberdy, Ed. Plenum, New York, 1987. xvi, 297 pp., illus. \$42.50. Biotechnology Handbooks, vol. 1.

Physical Processes in Interstellar Clouds. G. E. Morfill and M. Scholer, Eds. Reidel, Dordrecht, 1987 (U.S. distributor, Kluwer, Norwell, MA). x, 554 pp., illus. \$92. NATO Advanced Science Institutes Series C, vol. 210. From an institute, Irsee, F.R.G., Aug. 1986.

Physics and Chemistry of Small Clusters. P. Jena, B. K. Rao, and S. N. Khanna, Eds. Plenum, New York, 1987. xvi, 955 pp., illus. \$145. NATO Advanced Science Institutes Series B, vol. 158. From a symposium, Richmond, VA, Oct.-Nov. 1986.

Physics of Strong Fields. Walter Greiner, Ed. Plenum, New York, 1987. x, 1015 pp., illus. \$135. NATO Advanced Science Institutes Series B, vol. 153. From an institute Maratea, Italy, June 1986.

Phytochemical Effects of Environmental Compounds. James A. Saunders, Lynn Kosak-Channing, and Eric E. Conn, Eds. Plenum, New York, 1987. viii, 269 pp., illus. \$52.50. Recent Advances in Phytochemistry, vol. 21. From a meeting, College Park, MD, July 1986.

The Pituitary Gland. C. R. Kannan. Plenum Medical, New York, 1987. x, 594 pp., illus. \$79.50. Clinical Surveys in Endocrinology, vol. 1.

Portraits in Silicon. Robert Slater. MIT Press, Cambridge, MA, 1987. xiv, 374 pp., illus. \$24.95.

Practical Statistics for Analytical Chemists. Robert L. Anderson. Van Nostrand Reinhold, New York, 1987. xvi, 316 pp., illus. \$39.95.

Preserving Ecological Systems. The Agenda for Long-Term Research and Development. Sidney Draggan, John J. Cohnsen, and Richard E. Morrison, Eds. Praeger (Greenwood), Westport, CT, 1987. xxvi, 192 pp. \$39.95. Based on a meeting, Washington, DC, Oct. 1984.

Proceedings, CERN Accelerator School. Second General Accelerator Physics Course. (Aarhus, Denmark, Sept. 1986.) S. Turner, Ed. CERN, Geneva, 1987. xiv, 383 pp., illus. Paper.

Regional Stratigraphy of North America. William J. Frazier and David R. Schwimmer. Plenum, New York, 1987. xxiv, 719 pp., illus. \$110.

Regular Variation, Extensions and Tauberian Theorems. J. L. Geluk and L. de Haan. Centrum voor Wiskunde en Informatica, Amsterdam, 1987. 132 pp. Paper, Dfl. 20.30. CWI Tract 40.

Regulation of Ovarian and Testicular Function. Virendra B. Mahesh *et al.*, Eds. Plenum, New York, 1987. xii, 761 pp., illus. \$115. Advances in Experimental Medicine and Biology, vol. 219. From a workshop, Augusta, GA, Feb. 1987.

The Relation of Theoretical and Applied Linguistics. Olga Mišeska Tomić and Roger W. Shuy, Eds. Plenum, New York, 1987. xxii, 193 pp., illus. \$34.50. Topics in Language and Linguistics. Based on a round table, Brussels, Aug. 1984.

Science, Settlers, and Scholars. The Centennial History of The Royal Society of New Zealand. C. A. Fleming. Royal Society of New Zealand, Wellington, New Zealand, 1987. xiv, 353 pp., illus. Paper, \$ NZ 55. Royal Society of New Zealand Bulletin 25.

SDI. Has America Told Her Story to the World? Dean Godson. Pergamon-Brassey's, McLean, VA, 1987. xviii, 73 pp. Paper, \$9.95. Institute for Foreign Policy Analysis, Inc., Special Report.

The Solomon Islands Project. A Long-Term Study of Health, Human Biology, and Culture Change. Jona-

than Scott Friedlaender, Ed. Clarendon (Oxford University Press), New York, 1987. xii, 409 pp., illus. \$90. Research Monographs on Human Population Biology, 4.

Skill Acquisition Rates and Patterns. Issues and Training Implications. Norman E. Lane. Springer-Verlag, New York, 1987. xii, 153 pp. Paper, \$27. Recent Research in Psychology.

Speciation of Metals in Water, Sediment and Soil Systems. Lars Landner, Ed. Springer-Verlag, New York, 1987. viii, 190 pp., illus. Paper, \$21.70. Lecture Notes in Earth Sciences, 11. From a workshop, Sunne, Sweden, Oct. 1986.

The Toxicity of Methyl Mercury. Christine U. Eccles and Zoltan Annau, Eds. Johns Hopkins University Press, Baltimore, MD, 1987. xvi, 259 pp., illus. \$39.50. The Johns Hopkins Series of Environmental Toxicology.

Urbanization Overspeed in Tropical Africa, 1970-2000. Facts, Social Problems, and Policy. Guy Ankerl. INU Press, Geneva, Switzerland, 1986. 117 pp., illus. Paper, \$12. INU Societal Research Series.

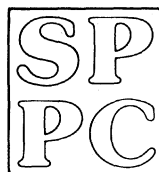
Vaccines 87. Modern Approaches to New Vaccines. Robert M. Chanock *et al.*, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, NY, 1987. xxiv, 461 pp., illus. Paper, \$95. From a meeting, Cold Spring Harbor, 1986.

Vibrational Spectroscopy of Molecules on Surfaces. John T. Yates, Jr. and Theodore E. Madey, Eds. Plenum, New York, 1987. xvi, 468 pp., illus. \$75. Methods of Surface Characterization, vol. 1.

Viruses, Immunity, and Mental Disorders. Edouard Kurstak, Z. J. Lipowski, and P. V. Morozov, Eds. Plenum Medical, New York, 1987. xiv, 468 pp., illus. \$65. Based on a conference, Montreal, Quebec, Nov. 1984.

A Walk Through the Year. Edwin Way Teale. Dodd, Mead, New York, 1987. 424 pp., illus. \$17.95; paper, \$9.95. The Edwin Way Teale Library of Nature Classics. Reprint, 1978 edition.

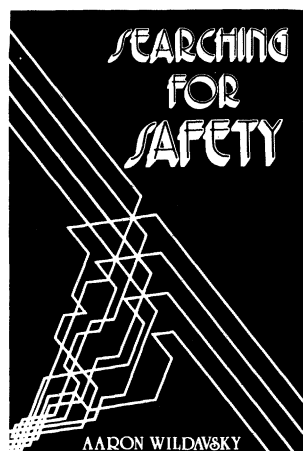
What Do Our 17-Year-Olds Know? A Report on the First National Assessment of History and Literature. Diane Ravitch and Chester E. Finn, Jr. Harper and Row, New York, 1987. x, 293 pp., illus. \$15.95.



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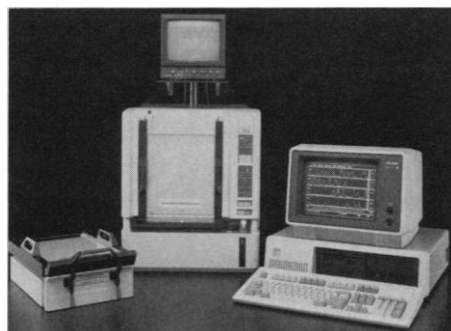
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The *HP 3350 Series Laboratory Automation Systems* brochure describes computer systems to acquire data from analytical instruments and discusses the factors that determine return on investment. Hewlett-Packard. Circle 654.

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ASSISTANT AGRONOMIST: The Department of Agronomy and Range Science, University of California, Davis, invites applications for an 11-month research position as assistant agronomist in the California Agricultural Experiment Station. The successful candidate will develop a strong research program on rice cropping systems considering, for example, modern approaches to rice/weed interactions. Facilities at both the Davis Campus and the Rice Experiment Station in Biggs, California, are available. A modern understanding of basic plant sciences with a Ph.D. in agronomy, plant physiology, soil science, or a related discipline is required. Submit curriculum vitae, list of publications, statement of research interests, transcripts, and names and addresses of three references by 1 April 1988, to: **Dr. J. E. Hill, Department of Agronomy and Range Science, University of California, Davis, CA 95616.** *The University of California is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR position open for 1 July 1988 to work on molecular defects in mutant mice with neuronal degeneration. Requirements include a Ph.D. in biochemistry, neuroscience or related field, at least 2 years of relevant postdoctoral experience, demonstrated productivity, and capability of securing extramural support. Applicants should have an interest in CNS degenerative diseases and a strong background in protein purification and chemistry as well as in molecular biology. Contact: **C. D. Nordschow, M.D., Ph.D., Chairman, Department of Pathology, Indiana University Hospital N440, 926 West Michigan Street, Indianapolis, IN 46223.** *Indiana University is an Equal Opportunity Employer.*

GEORGETOWN UNIVERSITY WASHINGTON, D.C. DEPARTMENT OF BIOCHEMISTRY

The Department of Biochemistry of the Georgetown University School of Medicine is recruiting to fill tenure-track positions at the level of **ASSISTANT PROFESSOR.** We are seeking outstanding candidates with research interests in biochemistry and/or molecular biology. Successful applicants will be expected to establish an independent research program and participate actively in graduate and postdoctoral training.

Applicants should submit, prior to 1 May 1988, curriculum vitae, statement of research goals and the names of three references to:

Chairman, Search Committee
Department of Biochemistry
Georgetown University School of Medicine
3900 Reservoir Road, NW
Washington, DC 20007

Georgetown University is an Affirmative Action/Equal Opportunity Employer.

THE UNIVERSITY OF CALGARY ASSISTANT PROFESSOR IN AUDITORY PERCEPTION

The University of Calgary Department of Psychology invites applications for an assistant professor in auditory perception. Candidates should have a Ph.D. in psychology or related area, and a demonstrated commitment to research and teaching in auditory perception. Specialization in the perception of speech and hearing in the aging population, its impact in human factors research, or the commitment to direct future research into these areas is required.

Responsibilities include undergraduate teaching, graduate student supervision and the development of an active research programme. A well-equipped laboratory is available.

Starting date: 1 July or 1 September 1988. Salary is commensurate with qualifications and experience (current minimum salary \$31,247 per annum).

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

Applications should submit a complete curriculum vitae (including reprints) and arrange to have at least three letters of recommendation sent prior to 30 April 1988 to:

Dr. J. J. Eggermont, Chair, Auditory Perception Search Committee, Department of Psychology, The University of Calgary, 2500 University Drive NW, Calgary, Alberta T2N 1N4. Telephone: 403-220-3600.

BASIC SCIENTIST/RESEARCHER. The University of Medicine and Dentistry of New Jersey/School of Osteopathic Medicine's (UMDNJ-SOM) Center for Aging is currently seeking an assistant to full professor (tenure-track position) with an expertise in neurobiology of aging. Duties include teaching, individual research and interaction with other basic scientists and clinicians. The specific area of research is flexible. Applicants for junior faculty rank must have several years of productive postdoctoral training and a vigorous research program. Applicants for senior rank must provide evidence of outstanding productivity. The deadline for application is 30 April 1988. Submit curriculum vitae, reprints, statement of research experience and future plans, and three references to: **Dr. Lloyd J. Forman, Search Committee Chairman, UMDNJ-SOM, Center for Aging, 401 Haddon Avenue, Camden, NJ 08103.** *An Affirmative Action/Equal Opportunity Employer, M/F/H/V. Minorities are encouraged to apply.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF MICROBIOLOGY

The Department of Microbiology, University of Illinois, Urbana, invites applications for a tenure-track appointment at the assistant professor level. The position is available for July 1988. Applicants must have a Ph.D. degree, and at least 2 years of postdoctoral experience. Preference will be given to applicants having a keen interest in the sequencing and analysis of bacterial genomes. The candidate will be expected to understand cloning and sequencing technologies and to have experience in the analysis of sequence data (which includes programming and experience with the analysis of large databases). The appointee is expected to establish a vigorous research program, to participate in undergraduate and graduate teaching, and to supervise graduate students. Salary is commensurate with education and experience.

Applicants should send curriculum vitae and the names and addresses of three references to: **Professor J. Konisky, Head, Department of Microbiology, University of Illinois, 131 Burrill Hall, 407 South Goodwin Street, Urbana, IL 61801. Telephone: 217-333-1737.** Applications received after 15 April 1988 may not receive full consideration. Interviews may be conducted before the closing deadline, but a final decision will not be made until after 15 April 1988. *The University of Illinois is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, WILDLIFE ECOLOGY AND MANAGEMENT

Academic year, tenure-track position, in the Department of Natural Resource Science beginning 1 September 1988. Teach undergraduate courses in wildlife management principles, management of wetland wildlife, and a graduate course in wildlife ecology or habitat analysis. Advise undergraduate and graduate students. Develop an active research program in wildlife ecology. Ph.D. in wildlife biology or management required. Demonstrated effectiveness in teaching and research highly desirable. Submit letter of application, resume and official transcripts (three letters of reference should be sent directly to address below) by 1 April 1988 (applications will be accepted until the position is filled) to: **Frank Golet, Search Committee Chair, Assistant Professor, Wildlife Ecology and Management (190245) Position, P.O. Box G, Kingston, RI 02881.**

ASSISTANT RESEARCH IMMUNOLOGIST. The University of California, San Diego (UCSD) Cancer Center is recruiting a research scientist with a Ph.D. degree in the biological sciences to work in the Clinical Immunology Program to expand its research activities into the area of IDIOTYPE control and therapy of cancer. The applicant should have experience in idiotypic control mechanisms in animal and in vitro models. Close interactions with clinical investigators of the Cancer Center are expected in the area of anti-idiotypic therapy. Salary and rank commensurate with experience and University pay scales. Apply by 1 April 1988 to: **Ivor Royston, M.D., Director, Clinical Immunology Program, UCSD Cancer Center, T-011, La Jolla, CA 92093.** *The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.*

Mercer University School of Medicine invites applications for three tenure-track positions.

ASSISTANT/ASSOCIATE PROFESSOR OF PHARMACOLOGY. Preference will be given to candidates experienced in cardiovascular and/or autonomic pharmacology.

ASSISTANT/ASSOCIATE PROFESSOR OF ANATOMY/CELL BIOLOGY. Preference will be given to candidates with training and/or teaching experience in histology.

ASSISTANT/ASSOCIATE PROFESSOR OF IMMUNOLOGY/MEDICAL MICROBIOLOGY.

All applicants must possess a Ph.D. and/or M.D., preferably with postdoctoral training. Candidates will be expected to develop an active research program. Applications will be accepted until the positions are filled. Candidates are requested to submit curriculum vitae, a brief statement of professional objectives and research interests, and the names and addresses of three references to: **Dr. Robert Moon, Chairman, Division of Basic Medical Sciences, Mercer University School of Medicine, Macon, GA 31207.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR—The Department of Physiology, Chicago College of Osteopathic Medicine, invites applications for a tenure-track position available 1 July 1988. Applicants must have a doctoral degree, several years of postdoctoral experience, and the ability to develop an independent research program and teach human physiology to medical students. Applicants should send their curriculum vitae with bibliography, reprints of several recent papers, a statement of current research interests and goals, and the names of three references by 15 April 1988 to: **Stephen J. Kopp, Ph.D., Chairman, Department of Physiology, Chicago College of Osteopathic Medicine, 5200 South Ellis Avenue, Chicago, IL 60615.**

The Chicago College of Osteopathic Medicine is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT/ASSOCIATE PROFESSOR. The Department of Biochemistry and Biophysics, John A. Burns School of Medicine, University of Hawaii, is seeking to fill a tenure-track faculty position at the assistant/associate professor level. The applicant is expected to have a strong background in protein biochemistry and a demonstrated potential or ability to obtain extramural funding. The applicant is expected to teach in undergraduate, graduate, and medical courses. Salary and rank commensurate with qualifications. Curriculum vitae and names of three references should be sent to: **Chair, Search Committee, Department of Biochemistry and Biophysics, John A. Burns School of Medicine, University of Hawaii, 1600 East West Road, Honolulu, HI 96822.** *An Equal Opportunity Employer.*

ASSOCIATE SCIENTIST—To conduct collaborative studies on the regulation of coenzyme A metabolism. Applicants must have Ph.D. degree plus two or more years of postdoctoral research experience with a strong background in biochemistry. Prefer experience with protein isolation and purification. Salary commensurate with experience. Send curriculum vitae detailing education and research experience to: **Dr. James R. Neely, Weis Center for Research, Geisinger Clinic, Danville, PA 17822.**

BIOLOGY BALL STATE UNIVERSITY MUNCIE, INDIANA

ASSISTANT PROFESSOR tenure-track position in the Department of Biology available fall 1988. We desire to hire an individual with primary interest in plants and one who is conducting innovative research using tools of biotechnology. We will consider excellent candidates in a wide range of fields; for example: aquatic botany, developmental biology, orchidology; plant-microbe interactions. Responsibilities: To teach courses such as aquatic biology, economic botany, or specialty courses, and participate in the introductory biology program; and to develop a strong research program in specialty area. Minimum qualification: Earned doctorate in biological sciences. Preferred qualifications: Demonstrated teaching/research ability, postdoctoral experiences, publications and/or evidence of other scholarly contributions. Submit résumé; documentation of scholarly activity, e.g., reprints of publications, funded grant proposals, creative activities; three letters of recommendation, and transcript to: **Chair, Botany Search Committee, Department of Biology, Ball State University, Muncie, IN 47306.** Applicants will be evaluated commencing 20 March 1988, and continue until position is filled.

Ball State University Practices Equal Opportunity in Education and Employment.

DIRECTOR OF STATEWIDE CYTOGENETICS PROGRAM. Board-certified or -eligible cytogeneticist with experience and interest in molecular biology to direct established cytogenetics laboratory and initiate planning for a regional DNA lab. Primarily service obligations, but research strongly encouraged. The Cytogenetics and Molecular Cell Biology Laboratory is a Division in the Department of Medical Genetics/Montana Medical Genetics Program. Faculty appointment at Montana State University possible. Salary commensurate with training, experience and certification status. *An Affirmative Action/Equal Opportunity Employer.* Contact: **John M. Opitz, Shodair Hospital, Box 5539, Helena, MT 59604. Telephone 406-442-1980.**

POSITIONS OPEN

BIOMATHEMATICIAN—ASSISTANT PROFESSOR. Nominations and applications are invited for a tenure-track assistant professorship. We are seeking a theoretician in the biomedical sciences capable of carrying on independent research and training graduate students. Priority areas for hiring are the neurosciences and physiology; strong candidates with other biomedical interests are encouraged to apply. Candidates will be judged on the realism and relevance of their biological modeling, command of appropriate applied mathematical techniques, ability to communicate findings, and potential for interaction with existing faculty within the department and medical school. Salary is negotiable. Send curriculum vitae and statement of research and teaching interests to: **Chair, Department of Biomathematics, School of Medicine, University of California, Los Angeles, CA 90024-1766.** Also have three letters of evaluation sent to the above address. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

CANCER RESEARCH

The AMC Cancer Research Center, an independent, nonprofit research institute, seeks to expand its scientific programs with new appointments at the **ASSISTANT/ASSOCIATE PROFESSOR** (equivalent) level. Applicants will be expected to vigorously develop independent research in an area that complements existing, active programs of laboratory, clinical and community cancer control research. Applicants with interests in molecular genetics of malignancy, determinants of metastatic growth, cytokines and anti-tumor immune reactivity, and mechanisms of tumor promotion are particularly sought, although candidates with exceptional potential carrying out studies in any area of modern cancer research will be considered. Outstanding opportunity for growth, collaboration and advancement. Excellent facilities and resources. Appointments to senior faculty positions will also be considered for applicants with nationally prominent and well-funded research programs. Send curriculum vitae, names of three references, brief statement of research plans and other pertinent information to:

**Dr. Philip Furmansk
Scientific Director
AMC Cancer Research Center
1600 Pierce Street
Denver, CO 80214**

AMC is an Equal Opportunity/Affirmative Action Employer.

CELLULAR IMMUNOLOGIST

The Virginia-Maryland College of Veterinary Medicine invites applications for a tenure-track faculty position in cellular immunology. The appointee will be required to develop a productive and extramurally funded research program and assist in the training of graduate students. Opportunities will be given to share in the teaching of veterinary students and contributing to the clinical service program. Preference will be given to candidates holding a D.V.M. (or equivalent) and a Ph.D. and/or Board certification or equivalent qualification in pathology or microbiology. Significant research interest in molecular aspects of infectious diseases are desirable.

Applications should include a current curriculum vitae, together with a letter outlining teaching, research, clinical experience, and future goals. The names and addresses of three people who will provide letters of reference should be included. Candidates from academic and non-academic sectors are encouraged to apply. Academic rank and salary will be negotiated in relation to background and experience.

Closing date for applications: 1 June 1988.

Starting date: to be negotiated.

Apply to:

**Dr. Donald O. Cordes
Chairman, Search Committee
Department of Pathobiology
Virginia-Maryland College of
Veterinary Medicine
Virginia Tech
Blacksburg, VA 24061**

An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

CELL AND DEVELOPMENTAL BIOLOGIST MEHARRY MEDICAL COLLEGE

Meharry Medical College has a tenure-track position at the assistant professor level for a cell and developmental biologist in the School of Medicine or the School of Graduate Studies, particularly the departments of biochemistry or anatomical sciences or the Division of Biomedical Sciences. The appointment will involve teaching graduate and medical students. In addition, development of a research program in an area of interest will be expected. The position is partially supported by a \$5-million, 5-year grant to Meharry Medical College from NSF to support a Center of Excellence in Cell and Molecular Biology. The deadline for application is 15 April 1988. Salary is commensurate with experience. Send curriculum vitae and the names of three references to:

Dr. George C. Hill
Director and Professor
Division of Biomedical Sciences
Meharry Medical College
1005 D. B. Todd, Jr., Boulevard
Nashville, TN 37208
Telephone: 615-327-6193
Equal Opportunity Employer

CELLULAR IMMUNOLOGIST

The Department of General Surgery at Rush-Presbyterian-St. Luke's Hospital of Rush University invites applications for a full-time position as assistant professor and associate scientist. Interested applicants must have an M.D. and/or Ph.D. degree with experience in basic tumor and transplant immunology. Ongoing investigations include: phenotypic and functional characterization of tumor-infiltrating leukocytes, therapeutic potential of large granular lymphocytes in bone marrow transplantation, flow cytometric analysis of solid tumors, and predictors of rejection in renal and hepatic transplantation. Qualities of the successful applicant should include the ability to pursue a research program bridging basic laboratory investigation with clinically relevant problems in oncology and transplantation. Interested persons should submit curriculum vitae and three letters of recommendation to:

Steven G. Economou, M.D., Chairman
Department of General Surgery
Rush-Presbyterian-St. Luke's
Medical Center
1653 West Congress Parkway
Chicago, IL 60612

CHAIRMAN DEPARTMENT OF MICROBIOLOGY AND IMMUNOLOGY UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE BALTIMORE

The University of Maryland School of Medicine is conducting a comprehensive search for a new Chairperson for the Department of Microbiology and Immunology. Candidates should have a strong background in contemporary molecular biology or immunology and have significant research accomplishments. Persons with previous administrative experience holding either M.D. or Ph.D. degrees will be considered.

The University of Maryland School of Medicine is a strong, research-oriented academic institution in downtown Baltimore. The Department of Microbiology and Immunology has extensive laboratory space and major new research space is expected at the school in the next 3 to 5 years. The University and the state government have targeted biotechnology for immediate development and growth and have allocated resources in this area.

Candidates for this position are asked to send an expression of interest and curriculum vitae prior to 15 May 1988 to:

Kenneth P. Johnson, M.D., Chairman
Microbiology-Immunology Search Committee
University of Maryland Hospital (Room N4W46)
22 South Greene Street
Baltimore, MD 21201

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

POSITIONS OPEN

CHAIRPERSON BIOENGINEERING. The College of Engineering of the University of Michigan seeks a senior level faculty member in the area of bioengineering. It is our desire to identify a candidate who would also chair the University's Bioengineering Program and play a major role in providing leadership and direction for the Program.

The position would be that of full professor with tenure within an appropriate department of the College. The Bioengineering Program is a joint program of the Medical School and the Engineering College under the auspices of the Horace Rackham School of Graduate Studies. Close ties with the Medical School are desirable and appropriate arrangements such as joint appointments and laboratory space may be made with the Medical School according to the candidate's needs and interests.

The completion of major construction projects recently has provided the College of Engineering and the Medical School with new facilities on contiguous campuses. New facilities under construction will complete the link between several existing engineering buildings and provide significant laboratory and office space for the Bioengineering Program. The College of Engineering has undergone a strong period of growth recently as the result of an intensified commitment to excellence in students, faculty and facilities. After careful review it has been concluded that Bioengineering Program can contribute strongly to the College of Engineering and the School of Medicine. Thus the College needs a strong leader to represent and guide the Bioengineering Program so that its potential may be realized.

Please send applications, including a résumé and three references to: **Professor William J. Williams, Search Committee Chairman, Electrical Engineering and Computer Science Department, University of Michigan, Ann Arbor, MI 48109.** Review of applications will begin immediately. *The University of Michigan is an Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON DEPARTMENT OF PSYCHIATRY UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE, UAB

The University of Alabama School of Medicine, UAB, is seeking a person to fill the position of Chairperson, Department of Psychiatry. The department is responsible for teaching medical students, residents, and graduate students in psychiatry and relevant areas of the neurosciences, as well as conducting multidisciplinary research on psychiatric disorders and related topics in the neurosciences. Patient care responsibilities include a comprehensive mental health center, inpatient and outpatient services, as well as substance abuse programs. A certificate of need for a new 90-bed psychiatric hospital has recently been obtained, and it is anticipated that construction of this facility will begin shortly.

UAB is strongly committed to research. Its medical research programs are undergirded by excellent basic science departments, facilities and state-of-the-art equipment and shared resources.

Inquiries and application should be received by 30 June 1988, and should be addressed to:

Mrs. A. D. Hyche
Office of the Dean
University of Alabama School of Medicine
UAB Station
Birmingham, AL 35294
An Affirmative Action/Equal Opportunity Employer

ECOLOGIST

The Department of Biology of Loyola University of Chicago, Lake Shore Campus, invites applications for a 9-month, tenure-track position at the level of assistant professor. A Ph.D. is required; postdoctoral experience is desirable. Individuals should be engaged in modern and imaginative research in experimental aquatic ecology. The successful candidate will develop an active, funded research program, direct graduate students, and teach undergraduate and graduate courses. Submit curriculum vitae, a description of research interests, and three letters of recommendation by 15 April to: **Dr. Robert Hamilton, Chairman, Search Committee, Department of Biology, Loyola University of Chicago, 6525 North Sheridan Road, Chicago, IL 60626.** *An Equal Opportunity Employer.*

POSITIONS OPEN

CHAIRPERSON DEPARTMENT OF FOOD SCIENCE AND HUMAN NUTRITION MICHIGAN STATE UNIVERSITY

Provide leadership and coordinate extension, research, and public service in Food Science/Technology, Nutrition, Foods and Dietetics. Candidates should have a doctorate in food science, nutrition, foods, or related field; administrative potential or past administrative experience; and a record of achievement in research, extension, or teaching in an academic, industrial, or governmental setting. This is a 12-month, full-time, tenure-system appointment at the rank of professor. Available 1 July 1988. Send letter of application and résumé by 15 April 1988 to: **Dr. Maurice R. Bennink, Department of Food Science and Human Nutrition, 106 Food Science Building, Michigan State University, East Lansing, MI 48824-1224, Telephone: 517-353-9512.**

MSU is an Affirmative Action/Equal Opportunity Institution.

CYTOGENETICS/MOLECULAR GENETICS

The Department of Biology, Hofstra University, invites applications for a tenure-track faculty appointment at the **ASSISTANT PROFESSOR** level. A Ph.D. is required, and postdoctoral experience is preferred. The candidate will be expected to teach courses in the area of cytogenetics/molecular genetics and in introductory-level biology. The candidate also will be expected to develop an active research program in his/her area of interest. Curriculum vitae, representative reprints, and three letters of recommendation should be submitted by 31 March 1988 to: **Dr. Carleton J. Phillips, Chairman, Department of Biology, Hofstra University, Hempstead, NY 11550.** *An Equal Opportunity/Affirmative Action Employer.*

DEVELOPMENTAL NEUROGENETICS. Postdoctoral positions available to examine spontaneous and transgenic mutant gene control of neuronal excitability and synaptic plasticity in developing CNS of the mouse. Major interest in neocortical and hippocampal systems. Strong experience in cellular neurophysiology, immunocytochemistry, or molecular neurogenetics required. Excellent salary and benefits. Send letter of intent, curriculum vitae, and names of two references to: **Dr. Jeffrey L. Noebels, Developmental Neurogenetics Laboratory, Department of Neurology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030.**

EXECUTIVE DIRECTOR

The United States Arctic Research Commission seeks candidates with a broad knowledge of Arctic research and policy activities to serve as Executive Director. The Executive Director is responsible to the Commission in executing the Commission's charge of developing an integrated arctic research policy and assisting the federal government in establishing a national arctic research program to implement the policy.

The Executive Director is responsible for all technical, financial, and administrative operations of the Commission. Appointed by and reporting to the Chairman, he/she will be located at and in charge of the Washington, D.C. office of the Commission. The Executive Director also acts as the link of the Commission with federal agencies, congressional committees, relevant committees and boards of the National Academy of Sciences, national and international scientific organizations, etc.

U.S. citizenship is required. Applicants should have demonstrated excellence in scientific and advisory service program management related to arctic science and technology, extensive administrative, supervisory, and financial management experience, be familiar with university and government laboratory operations, and possess excellent communications skills. The candidate should have at least 5 years of recent experience with national advisory groups in research and policy. An advanced degree is desired (M.S. or Ph.D. in science or engineering). Salary is competitive based on qualifications and experience.

Applications with curriculum vitae should be submitted by 31 March 1988 to the following address: **Chairman, Arctic Research Commission, Geophysical Institute, University of Alaska, Fairbanks, AK 99775-0800.**

The Arctic Research Commission is an Equal Opportunity Employer.

RESEARCH SCIENTIST PHARMACOLOGY

Amgen is a dynamic, growing organization producing human therapeutic products through recombinant DNA technology. Our leadership in the development of Erythropoietin and Granulocyte Colony Stimulating Factor has placed us at the leading edge of the biotechnology industry. Our continued growth has created an immediate opportunity for a Research Scientist in our Pharmacology Group.

Applicants must possess a Ph.D. in Pharmacology or a related discipline with a strong background in whole animal research and experience in one or more of the following areas: inflammation, wound repair, immunopharmacology, hematology and oncology. Proficiency in statistical analysis of data is essential, and postdoctoral training is highly desirable.

Amgen offers a competitive compensation and benefits package, including equity participation, as well as a challenging and stimulating research environment. Our location one hour northwest of Los Angeles offers the best in Southern California living. Qualified applicants should direct a resume and a list of 3 references, in confidence, to:

**Recruitment, Dept. #30
AMGEN
1900 Oak Terrace Lane
Thousand Oaks
CA 91320**



Equal Opportunity Employer

LOOKING FOR A CAREER CHANGE?

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

Please send resume with cover letter including salary requirements to:

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

EOE

Biochemist

Pfizer Central Research has an immediate opening in its Molecular Genetics Department for a Biochemist. You will become part of a multidisciplinary research group involved in developing novel approaches to discover drugs which regulate the immune system.

You should possess a MS or BS in biochemistry, molecular immunology or a related field. You also should have a general background in protein chemistry and biochemistry methodology as well as laboratory experience utilizing modern techniques for the isolation and characterization of proteins and peptides from natural and recombinant sources.

In addition to a stimulating scientific environment, we also offer competitive compensation, benefit package and the opportunity to live in an attractive Connecticut shore community. Please send resume and description of research accomplishments to: Mrs. Lorraine C. Corr, Personnel Associate, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.



An equal opportunity employer

Postdoctoral Scientist

Genentech, Inc., a leader in the field of biotechnology, is currently seeking a Postdoctoral Scientist. In this position, you will be involved in the development of *in vitro* and *in vivo* cellular and animal models which can be used to predict the efficacy of protein or peptide immunotherapeutics.

Requirements include experience in tissue culture and in the preparation and handling of human blood leukocytes. Experience in the development and use of immunoassays and in animal handling is desirable.

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

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POSITIONS OPEN

DEVELOPMENTAL BIOLOGISTS

Two tenure-eligible assistant professor positions, beginning August 1988, with preferred specialties in reproductive biology, and the biology of aging. Ph.D. required. Candidates should have molecular/cellular orientations and postdoctoral experience. The successful candidates will be expected to develop productive research programs and to seek external funding. They will participate in the teaching program at the graduate (M.S.), undergraduate, and introductory non-major levels on a rotational basis. The Department of Biological Sciences is housed in a modern well-designed building and successful candidates will be provided generous laboratory space and good animal quarters.

These positions afford an unusual opportunity for professional growth through possible participation in an emerging basic and biomedical research consortium with strong regional commitment and support.

Application deadline is 15 April 1988 and the 15th of months thereafter until the positions are filled (subject to budgetary approval). Please submit curriculum vitae, transcripts, statement of research plans, and names of three references to:

Dr. George H. Sweet
Department of Biological Sciences
The Wichita State University
Wichita, KS 67208

The Wichita State University is an Equal Opportunity/Affirmative Action Employer.

WORK ENVIRONMENT DEPARTMENT FACULTY OPPORTUNITIES

Applications are invited for the following tenure-track positions (Contingent upon available positions)

INDUSTRIAL HYGIENIST

Expertise in exposure assessment; interest in public policy is desirable.

EPIDEMIOLOGIST

Expertise in workplace hazard identification and quantification required. Research experience in health effects of physical-chemical or biomechanical hazards is desirable.

ERGONOMIST

Expertise in the evaluation and control of bio-mechanical hazards required. Research experience in the solution of ergonomic programs in industry is desirable.

The University of Lowell, located in the center of the high-technology corridor northwest of Boston, is one of three public universities in Massachusetts. With a current enrollment of over 15,000, it is one of the foremost professional universities in the Northeast.

Send letter of interest, résumé and references to: Head, Department of Work Environment, College of Engineering, University of Lowell, Lowell, MA 01854. Telephone: 617-452-5000, extension 3040.

UNIVERSITY OF LOWELL

The University of Lowell is an Equal Opportunity/Affirmative Action, Title IX, 504 Employer.

BOSTON UNIVERSITY FACULTY AND RESEARCH POSITIONS

In a major 5-year expansion of the Physics Department, 16 faculty and several research positions were created by Boston University in 1985. The physical plant, computation facility and the machine, assembly and electronic shops have been upgraded to support the increased research activity. Twelve new faculty members have joined the effort.

The Department is now expanding our program in condensed matter. This involves new laboratory and office space, enhanced central facilities and four additional faculty positions. Outstanding condensed matter experimentalists and theorists at all levels are invited to apply. Positions are also available in theoretical and experimental particle physics.

The criteria of choice are scientific excellence and the promise of quality work in the forefront of research, ability to attract quality graduate students and interact constructively with fellow physicists, and outstanding teaching capabilities in faculty candidates.

Inquiries should be addressed to: Chairman, Physics Department, Boston University, 590 Commonwealth Avenue, Boston, MA 02215. *Boston University is an Equal Opportunity/Affirmative Action Institution.*

POSITIONS OPEN

DIRECTOR MARYLAND SEA GRANT COLLEGE

The Maryland Sea Grant College supports a range of research, education, and extension efforts throughout the state. The College focuses its research efforts on the Chesapeake Bay, with emphasis on fisheries, environmental quality, and seafood technology. Sea Grant supports projects on all campuses of The University of Maryland and also at The Johns Hopkins University, and other institutions in the state and in the region.

The College is seeking a Director of national stature, with background in the sciences, extension, or the law. The new Director will provide leadership for a significant advance in the quality and in the prestige of the Maryland Sea Grant College. The Director should be well acquainted with Sea Grant programs throughout the nation. Although not a requirement, it is hoped that the Director will qualify for an academic appointment at one of the campuses of The University of Maryland.

The position is now available and will be filled as soon as possible. Nominations and applications are encouraged before 30 April 1988, but will be considered until the time of final appointment. Write to: Dr. David S. Sparks, Vice President for Academic Affairs, Graduate Studies, and Research, Chairman Search Committee, The University of Maryland, Adelphi, MD 20783.

The University of Maryland is an Equal Opportunity Employer and actively seeks applications from minority and women candidates.

EXPERIMENTAL GEOCHEMISTRY, GEOLOGY, OR GEOPHYSICS. The Department of Earth and Planetary Sciences of The Johns Hopkins University invites applications for a **FACULTY POSITION** in experimental geochemistry, geology, or geophysics. The position is tenured or tenure-track at a level commensurate with the applicant's qualifications. The successful candidate should have a broad range of scientific interests and will be expected to develop a vigorous program of graduate teaching and research in his or her field of expertise. Applications should include a complete curriculum vitae, recent reprints, and the names of at least three referees. They should be sent to: Professor John M. Ferry, Department of Earth and Planetary Sciences, The Johns Hopkins University, Baltimore, MD 21218 no later than 1 April 1988.

The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are particularly encouraged to apply.

FACULTY POSITION AVAILABLE IN MOLECULAR CELL BIOLOGY

The Division of Life Sciences, The University of Texas at San Antonio, invites applications for a tenure-track position at either a junior or senior level in molecular cell biology with interest and experience in recombinant DNA research related to the nervous system. Candidates must show demonstrated research productivity and substantial ability and interest in teaching. Responsibilities will include teaching, research, and supervision of undergraduate and graduate student research. A Ph.D. is required, and postdoctoral experience desired. Submit curriculum vitae, names of at least three professional references, and representative publications to: Director, Division of Life Sciences, The University of Texas at San Antonio, San Antonio, TX 78285-0662. Applications will be reviewed starting 1 April 1988, and the review will continue until the position is filled. *The University of Texas at San Antonio is an Affirmative Action/Equal Opportunity Employer.*

Several newly created **FACULTY POSITIONS** at the assistant and associate professor levels in the Department of Hematology of the Division of Medicine in the M. D. Anderson Hospital and Tumor Institute, Houston, Texas are available. This department has responsibility for one of the largest patient populations of leukemia, lymphoma, and bone marrow transplant patients with extensive facilities and resources for the experimental therapy of these disorders.

Applicants with a strong interest in the study of neoplastic cells at the molecular or cell biological level, bone marrow transplantation and the treatment of leukemia, and lymphoma should apply to: Albert Deisseroth, M.D., Ph.D., Chairman, Department of Hematology, 1515 Holcombe Boulevard, Box 24, Houston, TX 77030. *M. D. Anderson Hospital is an Equal Opportunity Employer.*



PHARMACOLOGIST/ ENDOCRINOLOGIST

Nova Pharmaceutical Corporation, a leading research & development company in Baltimore, MD, is inviting applications for a scientist with expertise in mitogens and cytokines to participate in a unique drug discovery program. The successful candidate should possess a PhD and 0-4 years of postdoctoral experience. Individuals with training in pharmacology, biochemistry, molecular biology, immunology or cell biology are encouraged to apply. Those applicants, however, with a demonstrated understanding of ligand-receptor binding and cell culture are preferred. The position will require supervision of a small group of technical associates, plus excellent written and oral communication skills.

Nova Pharmaceutical Corporation offers an excellent compensation and benefits package as well as a challenging work environment. Interested individuals should forward their resume, along with a cover letter detailing specific interest and three references to:

L. Faris, RA-PK, Nova Pharmaceutical Corporation, 6200 Freeport Centre, Baltimore, MD 21224-2788. Equal opportunity employer m/f.

DIRECTOR OF PHARMACEUTICAL DEVELOPMENT

Nelson Research & Development Company headquartered on the University of California campus in Irvine — adjacent to the medical school — is a small, highly creative research company committed to the discovery and development of new drugs.

Our recent acquisition by the Ethyl Corporation affords us the opportunity to expand our Drug Development activities. As part of this expansion, we have the need for a dynamic individual to head our Pharmaceutical Development Department.

In the short term, your primary responsibility will be to organize and develop a small department to be functionally responsible for meeting the Product Development needs of the Company. Experience with both oral and parenteral dosage forms is essential. In the longer term, your responsibility will be to develop a highly creative research unit within the Department to investigate novel drug delivery systems.

The ideal candidate will hold a Ph.D. degree, and will have a minimum of 5 years experience in the pharmaceutical industry. Excellent oral and written communication skills are obviously essential.

The position offers a rare challenge and unique opportunity for professional growth along with the chance to contribute to the overall success of a growing Company.

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

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

An Equal Opportunity Employer



CYTOGENETICIST

The Medical Genetics Laboratory of Children's Hospital, a 313-bed tertiary care center, is seeking an Assistant Clinical Cytogeneticist. Qualified candidates will have a Ph.D. and A.B.M.G. certification (or eligibility). Interested candidates would be working in a rapidly expanding well-equipped, regional laboratory. Candidates must be highly motivated with a solid background in cytogenetics. A strong desire to convey superior skills to technologists and a fundamental commitment to scholarly activities and to high-quality clinical service are strongly recommended.

Children's Hospital, Inc. offers salaries commensurate with experience and an excellent benefits package. Persons interested in accepting our challenge for excellence are encouraged to submit a resume and three letters of reference to:

Richard Stallard, Ph.D.
Director of Cytogenetics
Children's Hospital
700 Children's Drive
Columbus, Ohio 43205

Carnegie Mellon University

The Departments of Biological Sciences and Chemistry

invite applications for Faculty Positions in X-ray Crystallography

The Departments of Chemistry and Biological Sciences announce their intention to establish a research center in biomolecular structure. Appointees will hold tenure track positions in Biological Sciences and/or Chemistry at the appropriate professorial level. Applications are particularly solicited from individuals with well established research programs focusing upon the use of x-ray crystallography to analyze biological structure and function. An outstanding opportunity exists at Carnegie Mellon to establish a major center for analysis of biological structure. This center will involve three new faculty appointments. Initially we hope to identify a senior faculty member or members who will participate in determining the scientific direction and organization of this center. Curriculum vitae should be sent to:

**Search Committee; Biomolecular Structure
Departments of Biological Sciences and Chemistry
Carnegie Mellon University
4400 Fifth Avenue
Pittsburgh, PA 15213**

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

RESEARCH SCIENTIST DRUG METABOLISM

WYETH-AYERST RESEARCH, a subsidiary of Fortune 100 American Home Products Corporation, has two openings for research scientists in its Drug Metabolism Division.

RESEARCH ASSOCIATE

This position requires an experienced investigator to study the metabolism and pharmacokinetics of developmental drugs in laboratory animals and man. The candidate must have a strong background in chromatographic methods of analysis, isolation (from biological samples) and structure elucidation of metabolites, experience in radiometric techniques, and excellent oral and written communication skills. This position requires a Ph.D. in Chemistry or Biochemistry and at least 3 years post-doctoral experience in a relevant drug metabolism field.

SENIOR SCIENTIST

A motivated scientist is needed to study the absorption, distribution, metabolism and excretion of foreign compounds in laboratory animals and man. The candidate should have experience in the development of analytical methods to quantitate xenobiotics in biological fluids, the use of animal models to study the metabolic fate of foreign compounds and pharmacokinetic principles. Excellent oral and written communication skills would be an asset. A Ph.D. in Physical or Life Sciences with at least one year post-doctoral experience is required.

Wyeth-Ayerst offers an excellent salary and benefits package with opportunities for career advancement. Interested candidates should submit a resume with salary history to:

Personnel Manager, Dept. MC



WYETH-AYERST RESEARCH

CN 8000
Princeton, NJ 08543-8000
Equal Opportunity Employer M/F/H/V

BIOTECHNOLOGY/DIAGNOSTICS RESEARCH & DEVELOPMENT

At Baxter Healthcare Corporation, Pandex Division, our breakthroughs in innovative immunoassay technology have put us at the forefront of this field while helping drive our substantial rate of growth. Creative and independent Scientists at the Ph.D, MS and BS level are now needed to support our expanding biotechnology efforts in the following areas:

- BIOPROCESSING
- MOLECULAR BIOLOGY
- RETROVIROLOGY/VIROLOGY
- IMMUNOLOGY/IMMUNOCHEMISTRY
- ASSAY DEVELOPMENT
- MICROBIOLOGY

At Pandex you'll find a unique scientific environment supported by the Fortune 75 Baxter, yet within an atmosphere where you'll play a key and independent project role while being recognized for your contribution. Our organization is located in an attractive suburban area 30 miles north of Chicago and we offer excellent compensation. For confidential consideration, please send resume to: Anne McNicholl, Personnel Director, Baxter Healthcare Corporation, Pandex Division, 909 Orchard Street, Mundelein, IL 60060. Equal Opportunity Employer.

FASEB or ASM Meeting Bound?

Pandex representatives will be in attendance at FASEB in Las Vegas, May 1-5 and at ASM in Miami, May 8-13. Send us your resume now to arrange for a possible meeting at either convention.

Pandex Division

Baxter

SCIENTISTS

Several positions are available at Neurogenetic Corporation, Paramus, New Jersey for scientists interested in the molecular biology, cell biology and protein chemistry of the nervous system.

Molecular and cell biologists should have expertise in at least one of the following areas: recombinant DNA technology, expression systems, or cell culture. Protein chemists should have experience in the isolation, purification and characterization of a variety of proteins as well as peptide synthesis.

Neurogenetic Corporation is a privately-held company engaged in the application of genetic engineering to the diagnosis and treatment of neurobiological disorders. The company was formed in 1987 by a group of leading neurobiologists and has an outstanding Scientific Advisory Board.

Neurogenetic Corporation offers an excellent compensation package and opportunities to contribute to this growing company. All applications will be kept confidential. Applications, including a full curriculum vitae and the names and addresses of three references, should be directed to:

Neurogenetic Corporation
215 College Road, Paramus, NJ 07652

An Equal Opportunity Employer

CANCER IMMUNOBIOLOGY

The University of Texas Southwestern Medical Center at Dallas has announced a new Cancer Immunobiology Program under the directorship of Dr. Ellen S. Vitetta. The plan is to develop the program into a new Center devoted to research on the immunobiology of cancer, with particular focus on leukemia/lymphoma.

The Program is located in a research complex that also houses the Howard Hughes Medical Institute, several other Centers conducting biomedical research, and an immunotoxin production laboratory to generate material for human clinical trials. The Program has access to central facilities, including common equipment, and animal rooms.

The first individuals are being recruited for September, 1988. Scientists are being sought at the associate or full professor levels to head groups which will interact to develop new approaches to the biology and therapy of lymphoid tumors. Their research will include tumorigenesis, dormancy, effector cells, lymphokines, immunotoxins and genetically engineered reagents. Such individuals should have strong backgrounds in either cell biology, molecular biology, pharmacology or tumor immunology.

Individual salaries, research space, and start-up funding are provided. Members of the Program may have academic appointments in basic and/or clinical departments and membership in graduate school programs. Investigators will be able to interact with clinicians at Parkland Memorial Hospital and the soon-to-be-completed University Hospital. Candidates must hold M.D. or Ph.D. degrees (or their equivalents) and must have a record of major research achievement.

Please address inquiries and applications (with *Curriculum vitae*, references and statements of interests) to:

Dr. Ellen Vitetta
Cancer Immunobiology
University of Texas Southwestern Medical Center
5323 Harry Hines Boulevard
Dallas, Texas 75235-9048

The University of Texas Southwestern Medical Center at Dallas is an Equal Opportunity/Affirmative Action employer.

Science Writer

Pfizer Central Research has an immediate opening for a Clinical Research Scientist interested in a scientific writing career. Duties include compiling, drafting and editing a wide range of documents for new drug research and registration.

This position requires a person with a science background, broad research experience and strong writing skills. Alternatively, a person with technical writing experience and familiarity with the drug research and development process would be considered.

This position offers an excellent opportunity for professional recognition and a competitive compensation and benefit package. Located in Groton, Connecticut, Pfizer Central Research is in the midst of attractive shore communities, and one hour from New Haven, Hartford, and Providence. Please send resume to: Ms. Leighton K. Gleicher, Personnel Associate, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.



An equal opportunity employer

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1515 BROADWAY
NEW YORK, N.Y. 10036

Atherosclerosis Research

Eli Lilly and Company, a research-intensive pharmaceutical company headquartered in Indianapolis, is in search of an accomplished scientist to lead an atherosclerosis research program. This individual will establish a preclinical group of Senior Scientists whose primary mission will be exploratory research and discovery of drugs to treat atherosclerosis and related vascular disorders.

We are searching for a self-motivated, visionary scientist to conceptualize, focus, and organize a drug discovery program in the area of atherosclerosis. Leadership qualities including excellent communication, interpersonal, analytical, and organizational skills are important. The successful candidate will participate in building this drug discovery effort and have an opportunity to recruit new talent. Either a Ph.D. or M.D. degree is required with a minimum of 7 years industrial or academic experience and an indepth understanding of the mechanisms underlying the atherosclerotic process. An established research record in the area of atherosclerosis and a national scientific reputation are required. The successful candidate's level of entry and position title will be commensurate with their experience.

Eli Lilly and Company offers a professional environment and an attractive compensation package. For prompt consideration, please forward your curriculum vitae to:



John W. Crooks, Manager,
College Relations (ASR)
Eli Lilly and Company,
Lilly Corporate Center
Indianapolis, Indiana 46285

Equal Opportunity Employer

ONE DISCOVERY DESERVES ANOTHER

Boehringer Mannheim is a leader in Medical Diagnostics, Biochemicals, and Medical Research. This leadership has been attained through emphasis on quality and team effort. We are continuing our expansion and growth throughout 1988, and are seeking those talented individuals looking for a dynamic, progressive organization which offers the potential to turn aspirations into reality. If you possess a background and interest in any of the following areas, we would like to hear from you!

•CHEMISTRY•

*Clinical Biochemistry Organic
Polymer Protein Analytical*

•BIOLOGICAL SCIENCES•

Cell Molecular-Probe Technology Micro

•TEST DEVELOPMENT•

•ENGINEERING•

*Mechanical Software Electrical
Electro Optical Chemical*

•MARKET RESEARCH•

•SCIENTIFIC PROGRAMMING•

At Boehringer Mannheim, we offer an exciting and challenging environment as well as an excellent compensation and benefit program. We invite you to send your resume with salary history, for confidential consideration to: Dept. SCI, Human Resources, BOEHRINGER MANNHEIM, P.O. Box 50100, 9115 Hague Road, Indianapolis, IN 46250. We are an equal opportunity employer.

**BOEHRINGER
MANNHEIM**



POSITIONS OPEN

FACULTY POSITION FERMENTATION TECHNOLOGIST

The new Center for Food and Industrial Agricultural Product Development at Iowa State University seeks applicants for an assistant or associate professor position in fermentation technology. The incumbent is expected to develop a graduate research program in new technologies for fermentation and integration of product recovery and develop qualifications for tenure in the Department of Food Technology. Capabilities should complement those of a team of chemists, microbiologists, and engineers focused on developing fermentation technologies to produce industrial chemicals and food ingredients. Although the position is primarily research, the individual will share in technology transfer and teaching. A Ph.D. in chemical engineering, food science, microbiology, or related discipline is required. Industrial or academic postdoctoral experience is preferred. Application can be made by sending a résumé, list of publications, three references, and a statement of research interests to: **Lawrence A. Johnson, Iowa State University, Department of Food Technology, 102 Dairy Industry Building, Ames, IA 50011. Telephone: 515-294-4365. Deadline is 15 April 1988 or until position is filled.**

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

FACULTY POSITIONS BIOMEDICAL ENGINEERING

The University of Southern California invites applications for two tenure-track faculty positions available 1 September 1988. Applicants must have a Ph.D. or an M.D. degree with experience in sensory physiology, biosensors, or medical imaging. Duties include both teaching and research; appointee will be expected to establish his or her own research program. Rank and salary will be commensurate with qualifications.

Send résumé and the names of three references to:

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

An Equal Opportunity/Affirmative Action Employer

JUNIOR OR SENIOR POSTDOCTORAL/ RESEARCH ASSOCIATE

Position available 1 April 1988 to study molecular mechanisms controlling genomic activation [see *PNAS USA* 83, 8231 (1986)]. Experience in analyzing chromosomal proteins preferred. Salary commensurate with experience and includes fringe benefits. Annual appointment renewable up to 5 years. Have curriculum vitae and three letters of recommendation sent to: **Dr. Marie A. DiBerardino, Department of Physiology and Biochemistry, The Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, PA 19129.**

Equal Opportunity/Affirmative Action Employers.

NEUROBIOLOGY— POSTDOCTORAL ASSOCIATES

Two openings are now available in the laboratory of **Dr. Robert O'Connell** to study **Olfactory Neurobiology**. One position seeks to explore olfactory transduction at the membrane level. This research involves biophysical and biochemical approaches to the molecular mechanisms responsible for pheromone detection in insect olfactory receptor neurons. Experience with either membrane reconstitution, second messenger system biochemistry or single-channel recording techniques is required. The second position seeks to explore mechanisms of olfactory communication at several levels. The planned research involves a multidisciplinary approach to the anatomical, behavioral, chemical, electrophysiological, and hormonal substrates of olfactory communication in several mammalian species. Experience in one or more of these areas is required. Salaries are commensurate with experience. The Worcester Foundation is situated on a wooded 100-acre campus only a few minutes from the Medical School and other universities in Worcester and in close proximity to Boston, Hartford, and Providence area academic and research institutions. Send curriculum vitae, a statement of past research interests, and the names of at least three references to: **Dr. Robert O'Connell, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

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

POSITIONS OPEN

IMMUNOLOGISTS

Biotherapeutics Inc., a health care service company, contracts with suitable cancer patients to perform laboratory research services designed to develop custom-tailored biotherapeutic options.

With expansion plans for a national network of laboratories, the company seeks a qualified individual for the following position:

LABORATORY DIRECTOR

Candidate should have a proven track record in research, a Ph.D. and specific expertise in tumor cell biology or cellular immunology. Administrative and managerial experience is preferred. Specific responsibilities will include planning, developing and administration of the laboratory; and coordination of basic and contract-related research.

Qualified candidates should send curriculum vitae and salary history to: **Biotherapeutics Inc., Personnel Department, P.O. Box 1676, Franklin, TN 37065-1676.**

INSTRUCTOR OF BIOLOGICAL SCIENCE CENTRAL OREGON COMMUNITY COLLEGE

Successful candidate will teach courses in human anatomy and physiology, microbiology, and general biology. Qualifications: M.A. or M.S. in zoology or biology, and substantial graduate work beyond (approximately all but dissertation (ABD) level). The position requires an emphasis in human (vertebrate) anatomy and physiology. Salary: \$23,000 to \$26,000. For required application or more information, contact: **The Personnel Office, Central Oregon Community College, 2600 NW College Way, Bend, OR 97701. Telephone: 503-385-5513. Equal Employment Opportunity/Affirmative Action.**

COGNITIVE SCIENCE UNIVERSITY OF ROCHESTER

The University of Rochester is continuing its search begun last year for a **LUCE PROFESSOR OF COGNITIVE SCIENCE**. Rochester has an active interdisciplinary Cognitive Science group with participating faculty in the departments of Computer Science, Philosophy, Psychology, Foreign Language, Literatures and Linguistics, Physiology, Anatomy, and in the Graduate School of Education. The University has a B.A. program in cognitive science, and is planning to develop a Ph.D. program. Cognitive scientists with distinguished records in any area are encouraged to apply.

Application materials should be sent to: **Professor Michael K. Tanenhaus, Department of Psychology, University of Rochester, River Station, Rochester, NY 14627. The University of Rochester is an Affirmative Action and Equal Opportunity Employer. We encourage applications from minority group members, from women, and from the handicapped.**

MOLECULAR BIOLOGIST

Molecular biologist at the instructor or assistant professor level needed to joint program project team. Candidates should have the M.D. or Ph.D. degree, expertise in human genetics and a background in aging research. Tissue culture experience with skin-derived cells desirable. Curriculum vitae and three letters of reference to: **Dr. B. Gilchrist, Department of Dermatology, Boston University School of Medicine, 80 East Concord Street, Boston, MA 02118.**

MOLECULAR PLANT PHYSIOLOGIST

Tenure-track faculty position in plant physiology available to complement existing programs in molecular and developmental genetics. Individuals studying the molecular basis of hormone or herbicide action are encouraged to apply. Applicants should have postdoctoral experience and demonstrated potential to establish a competitive research program. Teaching responsibilities include both graduate and undergraduate courses. A commitment to excellence in teaching is required. To assure full consideration, send curriculum vitae, statement of research goals, and three letters of recommendation by 8 April 1988 to: **Dr. Glenn Todd, Department of Botany and Microbiology, Oklahoma State University, Stillwater, OK 74078. Oklahoma State University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

MAGNETIC RESONANCE SPECTROSCOPIST

McLean Hospital Neurodiagnostic Imaging Center is looking for a research magnetic resonance spectroscopist with postdoctoral level experience in *in vivo* animal and/or human spectroscopy, particularly involving the central nervous system. This staff-level position includes a Harvard Medical School joint appointment and collaborative association with the research spectroscopy group at the Massachusetts General Hospital. The McLean facility has a GE 1.5T Signa system with spectroscopy console. The primary research focus of the facility is the study of brain-behavior relationships through correlation of function with localized metabolic activity. This position is available as of 1 July 1988. Inquiries should be directed to: **Dr. Bryan T. Woods, Director, Department of Neurology, McLean Hospital, 115 Mill Street, Belmont, MA 02178. An Equal Opportunity Employer.**

A **MAMMALOGIST**, and a **VERTEBRATE POPULATION ECOLOGIST** are sought by the Department of Zoology and Wildlife Science at Auburn University. Both are 9-month tenure-track positions at the assistant professor level, effective 16 September 1988. Applicants must have a Ph.D. in biological science with strong emphasis in the specified discipline. Postdoctoral experience is preferred. The positions require direction of graduate students, development of an externally funded program of research, and participation in position-related service activities. The mammalogist position entails teaching an undergraduate course in human/mammalian anatomy, and undergraduate and graduate courses in mammalogy. The vertebrate population ecologist position entails teaching an undergraduate course in ecology, and a graduate course in population ecology, with the option to develop an additional graduate course. Research interests of the ecologist should be field-oriented. Applicants should submit curriculum vitae, a letter outlining goals, academic transcripts, evidence of potential for teaching excellence, a list of publications with selected reprints, and five letters of recommendation by 1 April 1988 to: **Dr. John F. Pritchett, Head, Department of Zoology and Wildlife Science, Auburn University, Auburn, AL 36849-5414. Telephone: 205-826-4850. Members of minority groups and women are encouraged to apply. Auburn University is an Affirmative Action/Equal Opportunity Employer.**

MOLECULAR NEUROBIOLOGIST MEHARRY MEDICAL COLLEGE

Meharry Medical College has a tenure-track position available at the assistant professor level for a molecular neurobiologist in either the Department of Physiology or Anatomical Sciences. The appointment, in the School of Medicine, will involve teaching graduate and medical students. In addition, development of a research program in an area of interest will be expected. The individual would be a participant in the Neuroscience Group consisting of ten faculty members. The position is partially supported by a \$5,000,000, 5-year grant to Meharry Medical College from NSF to support a Center of Excellence in Cell and Molecular Biology. The deadline for application is 15 April 1988. Salary commensurate with experience. Send curriculum vitae and the names of three references to:

**Dr. George C. Hill
Director and Professor
Division of Biomedical Sciences
Meharry Medical College
1005 D. B. Todd, Jr. Boulevard
Nashville, TN 37208
Telephone: 615-327-6193
Equal Opportunity Employer**

MOLECULAR VIROLOGIST. Tenure-track assistant professor position available after 1 July 1988. Candidates should have research interests in virology at the molecular biology level. Responsibilities include contribution to departmental teaching effort and participation in a joint Ph.D. graduate program with the School of Medicine. The applicant will be expected to maintain independent research and successfully compete for financial support. Applicant should send curriculum vitae and the names and addresses of three referees to: **Dr. Teh-hsing Chiu, Department of Microbiology-Biochemistry, School of Dental Medicine, University of Pittsburgh, Pittsburgh, PA 15261. Closing date for position is 1 April 1988. The University of Pittsburgh is an Equal Opportunity/Affirmative Action Employer.**

CALIFORNIA INSTITUTE OF TECHNOLOGY

THE MYRON A. BANTRELL POSTDOCTORATE FELLOWSHIP FOR SCIENTIFIC RESEARCH IN GEOLOGICAL AND PLANETARY SCIENCES

Fellowships will be awarded for postdoctoral studies in geological and planetary sciences at the California Institute of Technology. These fellowships carry annual stipends of \$30,000 from Fall 1988, and in addition offer a research-expense fund of \$1,000 per year. The duration of fellowships will normally be for 1-2 years. Applicants must be U.S. citizens.

This fellowship program has been established to offer scientists, typically within two years of receipt of the Ph.D., the best possible opportunity to develop their talents. It is the intent of this program to identify and support innovative and creative work in the earth and planetary sciences, with particular emphasis on interdisciplinary work. In addition to individuals with degrees in geology, geophysics, geochemistry or planetary science, we urge highly talented individuals with training in chemistry, physics, biology or computer sciences to apply. The Caltech faculty is currently active in Planetary Science, Geology, Geophysics, Geochemistry and Cosmochemistry.

Application forms may be obtained from Professor G. J. Wasserburg, Chairman, Division of Geological and Planetary Sciences, 170-25, California Institute of Technology, Pasadena, California 91125.

**COMPLETED APPLICATIONS WITH REFERENCES
SHOULD ARRIVE AT CALTECH
BEFORE MAY 1, 1988.**

Fellowship candidates will automatically be considered for other available postdoctoral positions at Caltech in their fields of interest.

Caltech is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.



Veterinary Pathologists

Smith Kline & French Research Ltd have vacancies for qualified veterinary pathologists to join the Pathology Department.

Prospective candidates should possess a veterinary degree plus an advanced degree in pathology and demonstrated capabilities in toxicologic or experimental pathology. ACVP certification is preferred.

Responsibilities include the design, conduct and interpretation of toxicity studies of pharmaceutical candidates. The successful candidate should have a strong research and diagnostic background and will be expected to investigate the pathogenesis of selected lesions encountered in toxicology studies. Candidates should be able to work independently and as a part of a team. Collaboration with colleagues in drug discovery is encouraged. Excellent organisational and communication skills are required for these positions.

We offer an excellent salary and benefits package for this position, including a company car and generous relocation where appropriate. Our laboratories are well equipped with modern instrumentation and situated in a country estate of 37 acres in rural Hertfordshire, just north of London.

Please send a CV quoting reference No. 186/PJB to Penelope Bucknell, Personnel Manager, Smith Kline & French Research Ltd., The Frythe, Welwyn, Herts. AL6 9AR. England.

SK&F

Leaders in pharmaceutical research and development worldwide

PLANT TISSUE CULTURE

A leading international horticultural company has an immediate opening at the Assistant Scientist level in its corporate tissue culture laboratory. The qualifications for the position are an MS or BS in horticulture or related area of plant science and experience in plant tissue, cell and protoplast culture.

Send curriculum vitae to:

Dr. C.E. Green
Vice President
of Research

Bail GEO. J. BALL, INC.

P.O. Box 335
West Chicago, IL 60185

PROGRAM LEADER Division of Educational Programs ARGONNE NATIONAL LABORATORY

The Division of Educational Programs of Argonne National Laboratory invites nominations and applications for the position of PROGRAM LEADER FOR STUDENT PROGRAMS.

Description: The Program Leader for Student Programs is responsible for the development, operation and evaluation of programs which enable honors quality undergraduate students to participate in research programs. A major new academic year program, the Science and Engineering Research Semester, which combines research experience with supplementary academic work so as to receive academic credit was initiated this year. Significant growth in this program is expected over the next few years, and leadership of this program is a major responsibility of this position.

In addition, Program Leaders in the Division of Educational Programs are responsible for liaison with one or more of the research divisions of the Laboratory for the purpose of identifying opportunities for special interactions with the academic community and facilitating their development. Program Leaders are encouraged and expected to maintain some research or other technical activities for the purpose of maintaining professional competence and currency.

Qualifications: Applicants should have a Ph.D. (or equivalent) in a basic physical science discipline (preferably physics or biology or a closely related field), successful research experience, and considerable interest and capability in working with a broad range of scientific and engineering research programs. Experience in an academic or national research environment is highly desirable.

Salary is competitive, and commensurate with qualifications and experience.

Additional information about this position and the activities of the Division can be obtained by writing to the Director, Division of Educational Programs, Argonne National Laboratory, 9700 S. Cass Avenue, Argonne, IL 60439.

Applications consisting of a current resume and a list of three professional references should be sent by April 15, 1988 to:



Rosalie L. Bottino
Box J-DEP-31783-55
Employment and Placement
ARGONNE NATIONAL LABORATORY
9700 South Cass Avenue
Argonne, IL 60439

Argonne is an equal opportunity/affirmative
action employer

POSITIONS OPEN

MOLECULAR BIOLOGIST UNIVERSITY OF MARYLAND SCHOOL OF MEDICINE AND MEDICAL BIOTECHNOLOGY CENTER

The Department of Medicine, with the University of Maryland Medical Biotechnology Center, is seeking full-time tenure-track investigator with expertise in transcriptional activation of HIV genes. The position requires a Ph.D. in molecular biology or related field and significant research accomplishment with the ability to obtain independent funding.

Salary and academic rank are commensurate with qualifications and experience. Please send curriculum vitae, one page statement of past experience, one-page description of future research plans, and names of three references to:

John W. Warren, M.D.
Department of Medicine
University of Maryland School of Medicine
10 South Pine Street
Baltimore, MD 21201

An Equal Opportunity/Affirmative Action Employer.

NEUROSCIENTIST

The Biology Department at San Diego State University invites applications for a tenure-track faculty position, assistant or associate professor level. Individuals with research and teaching interests in neurosciences, with an emphasis on biochemical, molecular and electrophysiological aspects of receptor and ion channel structure and function, are encouraged to apply. This individual would be expected to build a strong research program and participate in both graduate and undergraduate education. Postdoctoral experience is desirable. Send curriculum vitae, selected reprints, a statement of professional goals, and names, addresses, and telephone numbers of three referees by 1 April 1988 to: **Chairman, Neurosciences Search Committee, Biology Department, San Diego State University, San Diego, CA 92182.** *An Affirmative Action/Equal Opportunity Employer.*

The Center for Advanced Research in Biotechnology (CARB) has a faculty position open for a **PHYSICAL BIOCHEMIST**. This is a tenure-track position at the assistant, associate, or senior staff scientist level. CARB is a newly established basic research institute devoted to fundamental problems in protein structure, function, and engineering. CARB is a joint venture between the University of Maryland, the National Bureau of Standards, and Montgomery County, Maryland, and the successful candidate will be an employee of the University of Maryland. CARB's new 40,000 square foot research facility located in the Shady Grove Life Science Center will open this summer. CARB's temporary facilities are located nearby at the National Bureau of Standards.

CARB has established state-of-the-art laboratories in macromolecular crystallography, molecular biology, and theoretical modeling of protein structure and function. Future developments will include a high field NMR facility and physical biochemistry. For physical biochemistry, CARB is seeking an individual interested in experimental approaches to protein folding, stability, and function. The successful candidate will be expected to develop a strong independent research program and collaborate with other CARB scientists.

Please send a current curriculum vitae, an outline of research interests and goals, and request that at least three letters of reference be sent to: **CARB PB Search Committee, Room A353, Building 221, National Bureau of Standards, Gaithersburg, MD 20899.** The closing date is 15 April 1988.

PLANT PHYSIOLOGIST. Tenure-track assistant professor in biology beginning in August 1988. Applicants should have a Ph.D. in the biological sciences and demonstrated effectiveness in teaching at the undergraduate level. Responsibilities include teaching introductory biology courses, and developing upper level courses in plant physiology, and in either plant ecology and/or microbiology. The successful candidate is expected to establish a research program involving undergraduate students and the resources of a 4-year institution located in a coastal environment. Send curriculum vitae, and names of three references postmarked by 25 March 1988 to: **Chair, Department of Biology, USC-Coastal Carolina College, P.O. Box 1954, Conway, SC 29526.** Telephone: 803-347-3161. Screening of applications will begin on 1 March 1988. *USC-Coastal Carolina College is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

PHYSIOLOGIST BALL STATE UNIVERSITY MUNCIE, INDIANA

Assistant or associate professor, a tenure-track position in the Department of Physiology and Health Science, available fall 1988. Duties include teaching graduate and undergraduate human physiology courses, possible involvement in basic human anatomy, supervision of master's candidates, and development of a funded research program in specialty area. Requires Ph.D. in physiology or closely related field; postdoctorate and college teaching experience are preferred. Salary and rank will be commensurate with experience. Submit curriculum vitae, list of publications, transcript of highest earned degree, three current letters of recommendation, and statement of research interests to: **Dr. Charles B. Carroll, Acting Chairperson, Department of Physiology and Health Science, Ball State University, Muncie, IN 47306.** Applications will be evaluated commencing 30 March 1988, but position is open until filled.

Ball State University Practices Equal Opportunity in Education and Employment.

POSTDOCTORAL FELLOW—Position available 1 July 1988 for a Ph.D. interested in vascular smooth muscle (VSM) function and regulation. Research is in the area of generation, regulation and interaction of second messengers in VSM, and the role of protein kinases in VSM function and regulation. The interested candidate should have experience with VSM or other Ca^{2+} -dependent systems, preferably at cellular and/or molecular levels. Send curriculum vitae including a summary of research interests and the names of three references to: **Dr. Harold A. Singer, Weis Center for Research, (26-12) Geisinger Clinic, Danville, PA 17822.**

POSTDOCTORAL POSITION

A postdoctoral position is available immediately to study microtubule-associated motility factors and other microtubule-associated proteins. Projects involve molecular cloning of microtubule-associated proteins from brain tissue and sea urchin egg; and molecular, biochemical and immunological analysis of proteins involved in fast axoplasmic transport and mitosis. Send curriculum vitae and three letters of recommendation to: **Dr. Richard Vallee, Principal Scientist, Co-Director of the Cancer Center, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545.**

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

POSTDOCTORAL POSITION available for studying structure and regulation of expression of neuroectoderm-associated tumor antigens during development and tumorigenesis. Applicant must have experience in construction and screening of cDNA libraries. Send curriculum vitae and names of three references to: **Dr. Ralph A. Reisfeld, Department of Immunology, IMM13, Scripps Clinic and Research Foundation, 10666 North Torrey Pines Road, La Jolla, CA 92037.**

POSTDOCTORAL POSITION available immediately for research on the mechanisms of sulfonamide resistance (including gene amplification) and/or biochemistry and genetics of folate biosynthesis in *E. coli*. Send curriculum vitae and the names and addresses of three references to: **Brian P. Nichols, Laboratory for Cell, Molecular, and Developmental Biology, Department of Biological Sciences mc067, University of Illinois at Chicago, P.O. Box 4348, Chicago, IL 60680.** *The University of Illinois at Chicago is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION TUMOR VIROLOGY

Available immediately, we have recently discovered RNA covalently bound to SV40 Tag and to the oncogene product p53. The RNAs, the bonding and the possible significance to oncogenic transformation will be studied. Stipend in the range \$20,000 to \$26,000. Send curriculum vitae and names of three references to:

Dr. Robert Carroll
Department of Pathology
New York University Medical School
550 First Avenue
New York, NY 10016

POSITIONS OPEN

POSTDOCTORAL POSITION in developmental neurobiology of the taste system for one or more years. Reorganization of taste receptive fields and microorganization with central taste nuclei are studied with single cell neurophysiology, neuron labeling and reconstruction techniques in fetal and postnatal mammals. Experience with microiontophoresis, single neuron reconstruction, neuroanatomy of developing nervous system, and/or electron microscopy is desirable, but applicants with excellent backgrounds in any area of neuroscience will be considered. Send letter of research interests, curriculum vitae, and names of three references to: **Dr. C. M. Mistretta, Department of Biologic and Materials Sciences, School of Dentistry, University of Michigan, Ann Arbor, MI 48109.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION

Postdoctoral position available immediately for studies of growth regulation of breast cancer by hormones and growth factors. Ongoing projects include the importance of autocrine growth factors in growth regulation, and growth factor and oncogene expression in the development of estrogen independence. Biochemical, molecular, and genetic approaches will be used in these studies. A Ph.D. and a strong background in common cell biology and molecular biology techniques are desirable. Salary commensurate with experience. Send curriculum vitae and three references to: **Dr. C. Kent Osborne, Department of Medicine, University of Texas Health Science Center, San Antonio, TX 78284.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately to study gene expression and signal transduction in *Saccharomyces*. Genetic, molecular, and biochemical approaches will be used to characterize the induction and repression of the yeast *GAL* genes. Send curriculum vitae and names and addresses of three references to: **Dr. Bob West, Department of Biochemistry and Molecular Biology, SUNY Health Science Center, Syracuse, NY 13210.** Telephone: 315-473-5156.

POSTDOCTORAL POSITION immediately available in cellular and molecular immunology to study mechanisms underlying uptake and processing of antigens and their application in vaccine development. Previous training in cellular immunology or protein chemistry desirable. Send curriculum vitae with three references to: **Dr. J. Gabriel Michael, Department of Microbiology and Molecular Genetics, University of Cincinnati Medical Center, M.L. #524, Cincinnati, OH 45267.**

POSTDOCTORAL POSITIONS available 1 July 1988 for energetic researchers interested in studying the control of gene expression. The systems in use include the identification and characterization of genes whose expression is modulated during B- (G. Kitchingman) and T-cell differentiation (R. Goorha), and the control of viral gene expression by an adenovirus single-stranded DNA-binding protein (G. Kitchingman). Some experience with molecular biology desirable, but the willingness to work hard within our two highly interactive groups is paramount. Send curriculum vitae, and the names of three people who can be contacted for letters of reference to either: **Dr. G. Kitchingman or Dr. R. Goorha, Department of Virology and Molecular Biology, St. Jude Children's Research Hospital, 332 North Lauderdale Street, Memphis, TN 38101.**

St. Jude Children's Research Hospital is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITIONS—Two positions are available on an NIH training-grant in neuroanatomy. Studies will concentrate on the anatomical bases for the functional organization of cerebral cortex. Areas of particular interest include: the structural bases for interhemispheric interactions in visual cortical function, and the structural bases of nociceptive-evoked activity in limbic cortex. Electrophysiologists seeking training in neuroanatomical techniques are encouraged to apply. Interested persons should send their curriculum vitae and a letter outlining their research interests to:

Drs. B. Payne, A. Peters or B. Vogt
Department of Anatomy
Boston University School of Medicine
80 East Concord Street
Boston, MA 02118

SAFETY OFFICER

Howard Hughes Medical Institute

Howard Hughes Medical Institute invites nominations and applications for the position of Safety Officer. This is a new position and

presents an unusual opportunity for the development and maintenance of a comprehensive program for monitoring safety and environmental health within the research laboratories operated by HHMI.

The Institute is one of the leading medical research organizations, at present conducting biomedical research in laboratories located in 29 academic medical centers and universities throughout the United States.

Reporting to the Vice President and Chief Scientific Officer, and working closely with Safety Officers at each of the host academic institutions, the principal responsibilities of the Safety Officer will be:

- To establish appropriate safety standards for all HHMI laboratories and to monitor that they are being effectively followed. Among the safety issues to be addressed are the handling of biohazardous materials, radiation safety, animal welfare and the processing of hazardous waste.

- To keep abreast of and to ensure compliance with all relevant Federal and State regulations.
- To develop and implement a safety training program for HHMI laboratory personnel.
- To act as liaison with host institutions with respect to safety issues.
- To advise senior management in the development of a total laboratory risk management program.

Preferred qualifications include:

- An earned doctorate in medicine or science.
- Certification in safety, industrial health or equivalent.
- At least five years of appropriate experience, including significant experience in biological or biomedical research, preferably in an academic environment.
- Good communication and interpersonal skills. An ability to interact with research scientists and with administrative and scientific personnel.

Applications or nominations (with complete resumes) should be sent by May 15, 1988 to:

Director-Human Resources
Howard Hughes Medical Institute
6701 Rockledge Drive
Bethesda, MD 20817

HHMI is an Equal Opportunity Employer.



Cell Biology Research BS/MS

The Upjohn Company, a leader in research and development of pharmaceuticals, is seeking Research Associates at the BS or MS degree levels for our Cell Biology Research Group. Degrees in Biochemistry, Cell Biology, Microbiology, Immunology or related area with solid academic achievement are highly desirable. Several years of relevant research experiences and demonstrated skills in experimental design and state-of-the-art analysis are needed.

PROTEIN BIOCHEMIST: Incumbent will assist a scientist in a basic research lab exploring the mechanisms of membrane protein transport to the cell surface using a cell-free, reconstituted transport system. Position will provide an opportunity for independent work and exploring new technologies. Background and laboratory experience with general biochemical procedures, protein purification and routine tissue culture techniques are necessary.

IMMUNOLOGIST: This person will work independently on production and characterization of monoclonal antibodies to small molecules, proteins and

cell surface antigens. Job responsibilities include: immunizations, fusion, screening of fusion products, cloning, ascites production, assay development (RIA, ELISA, fluorescence, Western blotting), and characterization of monoclonal antibodies produced. Investigations will include development of new methodologies for immunization and screening.

Kalamazoo is located in Southwestern Michigan midway between Chicago and Detroit and offers varied cultural events, cosmopolitan shopping and entertainment, lakes and woodlands minutes away, abundant year-round sports and recreation. Upjohn offers advancement opportunities, a highly competitive salary commensurate with experience, 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 to you immediately. Please refer to advertisement number 1748-A when calling. We are an Equal Opportunity Employer M/F.

Our Commitment to Scientific
Excellence Continues...

Upjohn

DIRECTOR OF CORE FACILITIES PROTEIN SEQUENCING

SUNY Health Science Center at Brooklyn is seeking a doctoral-level candidate to direct and supervise a protein sequencing and amino acid analysis laboratory. The candidate should have 3-5 years of post-doctoral experience in relevant techniques and should be willing to work on a collaborative basis with other investigators in the Health Science Center. Based on qualifications and experience, the position offers an academic rank of Research Assistant/Associate Professor in the Department of Biochemistry. Please send resume with cover letter, to: **Dr. Alfred Stracher, SUNY Health Science Center at Brooklyn, 450 Clarkson Avenue, Box 8, Brooklyn, New York 11203.**



State University of New York
HEALTH SCIENCE CENTER
AT BROOKLYN

EO/AA Employer DMC# C-0154

McKNIGHT AWARDS FOR INTERDISCIPLINARY RESEARCH PROJECTS IN PLANT BIOLOGY

The McKnight Foundation announces the third series of awards designed to stimulate research and training in basic plant biology as it relates to agriculture. The purpose of the Awards is to stimulate new efforts and alliances and to encourage continuing efforts of established groups which emphasize training as a major component of their research.

The McKnight Awards will be few in number and will be granted to groups of investigators whose programs are anticipated to be of outstanding potential significance. Awards will be for a period of three years. Funding will be flexible, providing up to a maximum of \$300,000 per award for each year. Indirect costs will be limited to 10 percent.

These awards will permit approaches to research and training that are not normally possible through the usual granting channels. Thus, the awards will make available the resources necessary for interdisciplinary research initiatives that will place a major emphasis on training of pre and postdoctoral students. Modest funding for a limited number of undergraduate students may be included as an incentive for them to enter careers in fundamental plant biology.

All applicants are asked to submit a preliminary pre-proposal to be received by May 15, 1988 (two pages in length). For those projects which the Review Committee judges will be most competitive in meeting the objectives of The McKnight Foundation, an invitation will be issued by June 8, 1988, to submit a full proposal by August 15, 1988. The full proposals which receive the Committee's recommendations will be announced by December 31, 1988, with funding commencing on July 1, 1989.

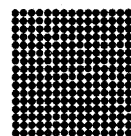
Requests for further information and instructions about applications should be directed to **Russell V. Ewald, Executive Vice President, The McKnight Foundation, 410 Peavey Building, Minneapolis, Minnesota 55402.**

VIROLOGY, IMMUNOLOGY, VACCINE DEVELOPMENT POSTDOCTORAL POSITIONS

Chiron Corporation, a recognized leader in the biotechnology industry, has several postdoctoral positions available in the areas of virology, immunology and vaccine development. Successful candidates will join an ongoing research program for viral vaccine development including a study of the natural host immune response, identification and production of key viral antigens and the role of adjuvants and other immunomodulators in vaccination.

These positions offer an excellent opportunity for professional growth and recognition. Publication of important findings will be encouraged. We offer a competitive compensation and benefit package and the opportunity to live in an attractive Bay Area community.

Send curriculum vitae and two names of references to the **Human Resources Dept. Code 2, Chiron Corporation, 4560 Horton Street, Emeryville, CA 94608.**



CHIRON
CORPORATION



RESEARCH ASSOCIATE

NOVA PHARMACEUTICAL CORPORATION, a leading research and development company in Baltimore, MD, is accepting applications for the position of Research Associate in its drug discovery division.

Qualified candidates will possess a Ph.D. in Psychology/Pharmacology and an interest in amino acid Pharmacology. Minimum of 3 years experience in behavioral analysis as well as computer literacy (SKED & FORTRAN) is required. Previous supervisory experience is a plus.

NOVA PHARMACEUTICAL CORPORATION offers a competitive compensation and benefits package as well as a challenging work environment. Interested individuals should forward their CV along with the names of three references to: **L. Faris - RA/JF; Nova Pharmaceutical Corporation, 6200 Freeport Centre, Baltimore, MD 21224-2788.** Equal opportunity employer M/F.

University of Miami SCHOOL OF MEDICINE

POSTDOCTORAL POSITIONS AND GRADUATE STUDY

CELL AND MOLECULAR BIOLOGY

Several postdoctoral positions are currently available to study membrane protein biogenesis, sorting, localization, and interactions with the cytoskeleton. Emphasis is placed on molecular and biochemical approaches to studying the regulation and organization of membrane proteins in eukaryotic cells. Applicants should have a strong background in Biochemistry, Cell Biology, or Molecular Biology. In addition, several pre-doctoral fellowships are available to qualified candidates.

L.Y.W. Bourguignon: signal transduction and membrane cytoskeletal interactions during hormone action.

D.R. Burgess: development of intestinal brush border using molecular and biochemical techniques.

K.L. Carraway: biosynthesis and expression of tumor cell surface antigens using biochemical and molecular biological approaches.

C.A.C. Carraway and K.L. Carraway: biochemistry and molecular biology of membrane-microfilament interactions.

M. Pierce: characterization of neural retina cell surface specific adhesion molecules.

R.L. Rotundo: molecular neurobiology; regulation of acetylcholinesterase biogenesis and localization at the transcriptional and translational levels.

R.L. Rotundo: transport and sorting of neuronal membrane proteins in transfected cells.

Inquiries concerning graduate studies should be addressed to the Graduate Studies Committee Chairman. Inquiries concerning postdoctoral positions should be addressed directly to the individuals above at:

DEPARTMENT OF ANATOMY & CELL BIOLOGY
UNIVERSITY OF MIAMI SCHOOL OF MEDICINE
1600 N.W. 10th AVENUE
MIAMI, FLORIDA 33101

CLINICAL RESEARCH ASSOCIATES

Nelson Research & Development Company headquartered on the University of California campus in Irvine — adjacent to the medical school — is a small, highly creative research company committed to the discovery and development of new drugs.

Our recent acquisition by the Ethyl Corporation affords us the opportunity to expand our Drug Development activities. As part of this expansion, we have the need for dynamic individuals to serve as Clinical Research Associates.

Reporting to the Director of Clinical Research, you will be responsible for all phases of clinical studies including study design, writing protocols, initiating and monitoring studies, and preparing final study reports for inclusion in IND and NDA submissions.

The ideal candidate will have a B.S. or higher degree in Biological Sciences and a minimum of 2 years related experience in the pharmaceutical industry. Excellent oral and written communication skills are obviously essential.

The position offers a unique opportunity for professional growth along with the chance to contribute to the overall success of a growing Company.

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

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

An Equal Opportunity Employer

Protein Chemists

The Department of Protein Chemistry has two openings in a laboratory studying the structural properties of growth factors. The laboratory is equipped with state-of-the-art HPLC and gas phase sequencing equipment. Ongoing projects include the use of site directed mutagenesis to study the folding and biological properties of growth factor mutants, and the purification and structural characterization of growth factors from natural sources.

Postdoctoral Scientist

The Postdoctoral fellow would pursue the study of growth factor structure and function. The successful candidate will have a background in protein biochemistry or in the molecular or cellular biology of growth factors and a keen interest in acquiring skills in the areas of structural protein chemistry.

Research Associate

The Research Associate would maintain and run an ABI 475A gas phase sequencer facility, perform amino acid analysis, and HPLC isolation of proteins and peptides. The candidate would be expected to become an integral member of the research group as well as maintain a state-of-the-art sequencing laboratory. The successful candidate should have a B.S. or M.S. in biochemistry and a minimum of two years experience in protein sequence analysis. Consideration will be given to candidates with several years experience with HPLC separation of proteins and peptides and an interest in learning protein sequence analysis.

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



Triton Biosciences Inc.

NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE POSTDOCTORAL OPPORTUNITIES FOR AIDS RESEARCH AT NIH

Postdoctoral positions are available to carry out research at the campus of the National Institutes of Health in Bethesda, Maryland on the development of a targeted anti viral agent for the treatment of AIDS. These positions are part of a new cooperative effort to utilize the techniques of structural biology, molecular biology, enzymology, and organic chemistry, to develop an agent based on structural and mechanistic considerations that will interfere with the AIDS virus (HIV) life cycle. Inquiries should be directed to the scientists listed below at the National Institutes of Health, Bethesda, Maryland, 20892. Positions are available for:

Structural biologist to investigate HIV components by high resolution electron microscopy and image processing (write to Dr. Alasdair Steven, NIAMS, Building 6, Room 114; Tel: 301-496-0131.)

Molecular biologist or biochemist to work on expression, purification, and site directed mutagenesis of CD4 (T4) protein, the HIV receptor (write to R. Daniel Camerini-Otero, NIDDK, Building 10, Room 9D-15; Tel: 301-496-2710).

Molecular biologist to study tat-I and tat-III interactions with cellular factors and regulation of HIV gene transcription (write to Dr. Teh Jeang or Dr. John Brady, NCI, Building 41, Room B-307; Tel: 301-496-0987).

Molecular biologist with strong background in recombinant DNA technology and some experience in protein biochemistry to perform structure-function studies on the HIV *pol* gene (write to Dr. Judith G. Levin, NICHD, Building 6, Room 305; Tel: 301-496-5538).

Molecular biologist to analyze trans-acting gene regulation mediated by the HIV tat gene and its interaction with other viral and cellular genes (write to Dr. Barrie J. Carter, NIDDK, Building 8, Room 304; Tel: 301-496-0604).

Molecular biologist to work on the molecular mechanisms of trans-activation in cells infected with human retroviruses, especially HIV (write to Dr. Alan N. Schechter, NIDDK, Building 10, Room 9N307; Tel: 301-496-5408).

Molecular biologist with background in recombinant DNA technology and nucleic acid sequencing to perform molecular characterization of HIV protease mutants and primate lentiviruses closely related to HIV-2 (write to Dr. Raoul E. Benveniste, NCI, Building 560, Room 21-78, Frederick, MD 21701-1013; Tel: 301-698-5547).

Molecular biologist to carry out cloning and expression of HIV genes and site-directed mutagenesis (write to Dr. Carol J. Marcus-Sekura, FDA, Building 29A, Room 3B05; Tel: 301-496-2696).

Molecular biologist to create and characterize transgenic mice expressing HIV gene constructs (write to Dr. Heiner Westphal, NICHD, Building 6, Room 338; Tel: 301-496-1855).

Cellular immunologist or molecular biologist to study the interactions of the CD4 receptor on T cells with HIV envelope protein and MHC class II antigens (write to Dr. Hana Golding, NCI, Building 10, Room 4B17; Tel: 301-496-9211).

Biochemist with experience in protein kinase and phosphorylation analyses and HPLC purification techniques to investigate the role of protein phosphorylation in viral replication, and to develop inhibitors of the phosphorylation process (write to Dr. Robert I. Glazer, NCI, Building 37, Room 5D02; Tel: 301-496-3268).

Biochemist or immunologist to investigate the "targeting" of monoclonal antibodies and/or lipid vesicles to HIV-infected cells (write to Dr. John N. Weinstein, NCI, Building 10, Room 4B-56; Tel: 301-496-9571).

Biochemist to study the mechanisms of HIV reverse transcriptase using molecular biological and physical biochemical approaches (write to Dr. Samuel H. Wilson, NCI, Building 37, Room 4D25; Tel: 301-496-2745).

Protein chemist or biochemist to study regulatory proteins binding to the HIV LTR (write to Dr. Lothar Hennighausen, NIDDK, Building 10, Room 9N113; Tel: 301-496-2716).

Protein chemist to isolate, purify, and crystallize HIV proteins for X-ray crystallographic investigations (write to Dr. David R. Davies, NIDDK, Building 2, Room 316; Tel: 301-496-4295).

Theoretical biophysicist to apply a new statistical mechanical algorithm (HAL) for analyzing protein structure-function relations of the HIV envelope protein (write to Dr. John N. Weinstein, NCI, Building 10, Room 4B-56; Tel: 301-496-9571).

Theoretical chemist to investigate structure-function relations in HIV proteins using molecular modelling and simulation methods (write to Dr. Bernard R. Brooks, DCRT, Building 12A, Room 2057; Tel: 301-496-0148).

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

POSTDOCTORAL POSITION MOLECULAR ENDOCRINOLOGY

To study hormonal control of gene expression in the mammalian brain and reproductive system. Training in reproductive endocrinology or experience with molecular biology techniques desirable. Candidates should send a complete curriculum vitae and names of three references to: **Dr. Kelly E. Mayo, Department of Biochemistry, Molecular Biology and Cell Biology, Northwestern University, Evanston, IL 60208.**

POSTDOCTORAL POSITION available to study tropomyosin gene expression and function in muscle and nonmuscle cells. Research areas include studies of gene structure, regulation of tissue-specific RNA splicing and expression and function of tropomyosin in normal and transformed cells. Send curriculum vitae and names of references to: **Dr. David M. Helfman, Cold Spring Harbor Laboratory, P.O. Box 100, Cold Spring Harbor, NY 11724.**

POSTDOCTORAL POSITIONS

Postdoctoral positions available to carry out research on the influence of diet on carcinogenesis, including studies of selenium, vitamin E, fats, polyamines, and exercise, with an emphasis on molecular and biochemical approaches to mechanisms of tumor promotion. Positions available 1 August 1988. Opportunities for advancement in expanding cancer research center. Submit curriculum vitae and names of three references to: **Dr. Henry Thompson, Chief, Laboratory of Nutrition Research, AMC Cancer Research Center, 1600 Pierce Street, Denver, CO 80214. AMC is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITIONS available. Neuro-peptide and neurotrophic factor genes in development and aging. The focus is on transcription and mRNA stability. Models are cell lines and transgenic mice. Send curriculum vitae and names of three references to: **Gerhard Heinrich, M.D., Wellman 320, Massachusetts General Hospital, Boston, MA 02114.**

POSTDOCTORAL POSITIONS. Up to three positions available to investigate the molecular biology, biochemistry and genetics of chloroplast lipid synthesis and to study photosynthesis in lipid mutants of *Arabidopsis*. Salary commensurate with experience. Send curriculum vitae and three letters of reference to: **Dr. John Browse, Institute of Biological Chemistry, Washington State University, Pullman, WA 99164-6340. Telephone: 509-335-2293. Washington State University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE

Position available 1 May 1988 at Virginia Polytechnic and State University, Blacksburg, Virginia to determine seasonal changes in antioxidants and allied resistance mechanisms in red spruce needles from various sites in the eastern United States. Collaboration with plant molecular biology group. Doctorate in plant physiology or biochemistry required. Salary commensurate with experience. Send curriculum vitae, telephone numbers of references, statement of scientific interests, and sample publications to: **Dr. Ruth Alschner, Boyce Thompson Institute, Cornell University, Ithaca, NY 14853. Telephone: 607-257-2030.**

NATIONAL INSTITUTES OF HEALTH MOLECULAR BIOLOGY/ TRANSGENIC MICE/ ENDOCRINE DISEASES

POSTDOCTORAL RESEARCH POSITION for M.D., Ph.D., D.D.S., or equivalent, with training in recombinant DNA technology and construction of vectors to work on transgenic mice and endocrine diseases. Candidates with 1 or 2 years of experience preferred. The initial appointment will be for 2 years, with renewals on a yearly basis. Starting salary range, depending on experience, is \$20,000 to \$46,000 per year. *Must be U.S. citizen.* The position is available immediately. Send curriculum vitae and names of three references to: **Dr. Lois Salzman, Assistant Scientific Director, National Institute of Dental Research, National Institutes of Health, Building 30, Room 131, Bethesda, MD 20892.**

NIH is an Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITIONS on NIH training-grant in neurobiology. The individuals involved and their research interests are: **G. Bittner** (nerve regeneration, synaptic plasticity); **J. Larimer** (crayfish motor system); **G. Pollak** (bat echolocation); **W. Thompson** (synapse elimination at the neuromuscular junction); **H. Zakon** (influence of steroid hormones on excitable cells). Available July 1988; U.S. citizens or residents only. Contact one of the above faculty at:

**Department of Zoology
University of Texas at Austin
Austin, TX 78712**

POSTDOCTORAL RESEARCH ASSOCIATE

An opportunity exists for a Research Associate knowledgeable in fluorescence spectroscopy and its application to clinical diagnosis to undertake research involving the development of immunofluorescent diagnostic assays. Strong background in analytical chemistry and immunology is essential. Some experience of hospital diagnostic biochemistry would also be an advantage. *Priority is being given to Canadian applicants and both males and females are invited to apply.* Salary range: \$25,100 per annum.

Please submit curriculum vitae and names of at least three referees to: **Dr. David M. Goldberg, Department of Clinical Biochemistry, 100 College Street, Room 415, University of Toronto, Toronto, Ontario, M5G 1L5.**

Closing date for receipt of applications 1 April 1988.

POSTDOCTORAL/RESEARCH ASSOCIATES. Available immediately for NIH-funded research on inducible or developmentally regulated genes. Research requires the application of standard molecular biology techniques. Annual renewal up to 4 years possible. Salary \$20,000 to \$25,000 per year, depending on previous experience and title. Submit curriculum vitae, representative publications, and names of three references to **Box 40, SCIENCE.**

POSTDOCTORAL RESEARCH FELLOW

Ph.D. or M.D. to pursue a variety of topics related to cellular and molecular aspects of blood cell function. Other areas of interest include the genetic characterization of cell surface antigens. A successful candidate will be expected to adopt a problem-solving approach that utilizes current molecular and biochemical techniques. A letter stating current background and specific research interests, along with curriculum vitae and the name, address and telephone number of three references should be sent to: **Drs. Richard H. Aster, Peter J. Newman, The Blood Center of Southeastern Wisconsin, 1701 West Wisconsin Avenue, Milwaukee, WI 53233.**

POSTDOCTORAL RESEARCHER. 11-month, Department of Chemistry, full-time, federal funds, to begin on or after 1 May 1988. Continuation dependent upon availability of funds. Duties: isolate, identify, screen using monoclonal antibodies, and cultivate marine bacteria from *Palythoa toxica* for palytoxin production; determine optimal conditions for toxin production and long-term storage of the organism. Minimum qualifications: Ph.D. in microbiology or equivalent, with research experience in isolation, identification, and cultivation of marine microorganisms. Minimum salary: \$2085 per month. Submit letter of application, curriculum vitae, and names of three references to: **Dr. Gregory M. L. Patterson, Department of Chemistry, 2545 The Mall, University of Hawaii at Manoa, Honolulu, HI 96822.** Closing date: 31 March 1988.

RESEARCH ASSOCIATE. Collaborate with NIH-funded studies of humoral factor(s) affecting cell ion transport and growth in hypertension [see *AJP* 251, H984 (1986)]. Applicant should have Ph.D. in biochemistry, pharmacology, or cell biology with postdoctoral training. Experience with cell culture and with chromatographic procedures, including HPLC, necessary. Beginning salary up to \$36,000. Send curriculum vitae to: **H. W. Overbeck, M.D., Ph.D., Departments of Medicine and Physiology, University of Alabama at Birmingham, Birmingham, AL 35294. Equal Employment Opportunity/Affirmative Action.**

POSITIONS OPEN

POSTDOCTORAL RESEARCHER, 11-month, Department of Chemistry, full-time, federal funds, to begin on or after 1 May 1988. Continuation dependent upon availability of funds. Duties: Isolate, identify, cultivate, and preserve *Gambierdiscus toxicus*; Optimize toxin production; perform large-scale cultivation for isolation of toxins. Minimum qualifications: Ph.D. in phycology or equivalent, with research experience in isolation, identification, and cultivation of marine dinoflagellates. Minimum salary: \$2085 per month. Submit letter of application, curriculum vitae, and names of three references to: **Dr. Gregory M. L. Patterson, Department of Chemistry, 2545 The Mall, University of Hawaii at Manoa, Honolulu, HI 96822.** Closing date: 31 March 1988.

NAMED PROFESSORSHIP IN BOTANY OR MICROBIOLOGY

The Department of Botany and Microbiology at the University of Oklahoma is seeking nominations and candidates for a named professorship in recognition of **Dr. George Lynn Cross**, former president of the University and Chairman of the department. The Department of Botany and Microbiology has 20 faculty members, about 50 graduate students, well-equipped teaching and research facilities, and strong externally funded research programs. The candidate must be an established scholar with research interests in molecular aspects of physiology or a related area of modern biology to further advance the department's research and educational excellence and to help develop biotechnology in the state. Candidates must have a Ph.D. in a life science or related area and possess a distinguished, internationally recognized, and externally funded research program.

The candidate must submit curriculum vitae, description of current and future research goals and the names of five references. Applications will be reviewed at 3-month intervals starting on 15 April 1988 until the position is filled. Application materials and nominations should be sent to: **Dr. Michael J. McInerney, Search Committee, Department of Botany and Microbiology, University of Oklahoma, Norman, OK 73019.**

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

RESEARCH ASSOCIATE

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

RESEARCH ASSOCIATE—ASSOCIATE PROFESSOR, Department of Medicine: To perform scientific research in molecular cytogenetics of cancer cells. To direct the laboratory of molecular biology of the Section of Hematology/Oncology, Department of Medicine. To teach graduate students and clinical fellows. Research work involves analysis of polytene chromosomes and use of in situ hybridization technique. Must lead independent scientific research groups involving minimum of six professional staff in several related projects, and collaborate with other medical school faculty. Forty hours per week, 8:30 to 5:00. \$43,000 per year. Must have Ph.D. or M.D. in medicine or genetics—cell biology, and 4 years of experience in the offered position or 4 years of experience as research biologist or postdoctoral fellow. Required experience must have involved the use of advanced approaches and technology, recombinant DNA research, such as gene cloning and mapping, including cloning in lambda, plasmids and single-stranded phages, restriction enzyme analysis, DNA sequencing and DNA or RNA blotting methods. Must have published at least 20 research papers in refereed scientific journals. Send résumés to: **Illinois Department of Employment Security, 401 South State Street, 3-South, Chicago, IL 60605, Attention: R. S. Felton, Ref. No. V-IL-7530-F. An employer paid ad.**

U.S. Department of Energy

POSTGRADUATE RESEARCH PROGRAMS

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

- Research at national laboratories
- Stipends \$19–35,000 depending on degree, program, research area
- Recent graduate degree
- U.S. citizens or PRAs eligible
- Information



Postgraduate Research Programs
University Programs Division
Oak Ridge Associated Universities
P.O. Box 117
Oak Ridge, TN 37831-0117
(615) 576-3190

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION

Available Fall 1988 to participate in quantitative neuroanatomical studies of the hippocampal formation that are designed to generate data for computer simulation of hippocampal neural networks. Applicant should have some familiarity with intracellular electrophysiological techniques, the in vitro hippocampal slice preparation and neuronal tract tracing methods. Send vita, summary of research interests and experiences and names of three references to:

David G. Amaral
The Salk Institute
P.O. Box 85800
San Diego, CA 92138

Equal Opportunity Employer M/F/H/V

Genentech, Inc., a leader in the field of biotechnology, has the following opportunities available at our South San Francisco headquarters.

Scientist Protein Purification & Characterization

We are seeking a highly motivated and innovative Scientist with experience in the purification and characterization of proteins. This Scientist will join a multidisciplinary team of biochemists and biochemical engineers developing methods to purify and characterize recombinant proteins to be used as human pharmaceuticals. The individual will focus on rapid protein purification and characterization in conjunction with research.

The successful candidate will have a PhD in Biochemistry with at least 2 years' postgraduate experience in either academia or industry with a demonstrated record of accomplishment. Knowledge of HPLC, FPLC, affinity and other protein purification/analysis techniques is essential.

Research Assistant/Associate

We are also seeking a Research Assistant/Associate to work on cDNA cloning and the expression/functional analysis of polypeptides. You will also be involved in membrane signal transduction. This opportunity requires a BS/MS in Molecular Biology, Cell Biology or equivalent with at least 2 years' experience in molecular cloning techniques. Cell culture experience is desirable.

Genentech, Inc. offers an excellent salary and benefits package coupled with the opportunity to make a significant contribution to our organization. For the Scientist position, please send resume to: Joyce Goulden, Human Resources Dept. 0642, Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. For the Assistant/Associate position, please send resume to Eric Mankuta, Human Resources Dept. 1413 at the same address. An equal opportunity employer.

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POSITIONS OPEN

RADIATION BIOLOGIST/ CANCER BIOLOGIST

The Department of Radiation Medicine at Massachusetts General Hospital (MGH) has an opening for a cellular radiobiologist to do research on the radiosensitization of mammalian cells in tissue culture. The project deals with the effects and mechanisms of action of thiol-depleting agents on cell radiosensitization and metabolism in the presence of various electron-affinic agents. Endpoints used include cell lethality and DNA damage. These studies are being pursued with a view to determining how improvements in cancer radiotherapy might be achieved in a major treatment center. The research will be performed in a well-established, fully equipped laboratory located in the Cox Cancer Management Center at MGH. Wide opportunities for multidisciplinary interaction exist within the research/academic complex of the biomedical community of the Boston area. Applicants are sought that can work at the radiobiology/biochemistry interface in a challenging environment. Ph.D. in radiobiology, biochemistry, or molecular biology, plus laboratory experience required. Level of appointment depends on experience. Concurrent faculty appointment at Harvard Medical School available for suitably qualified individual. Apply to: **Dr. Edward R. Epp, Department of Radiation Medicine, Massachusetts General Hospital, Boston, MA 02114.**

Massachusetts General Hospital/Harvard University are Equal Opportunity/Affirmative Action Employers. Qualified women and minority group members are encouraged to apply.

RESEARCH ASSOCIATE—Department of Psychiatry, Emory University School of Medicine. Candidate must have Ph.D. in biological or chemical sciences, and extensive laboratory experience in the development and performance of radioimmunoassay and high pressure liquid chromatography with electrochemical detection. Substances to be assayed include neurotransmitters, neurotransmitter metabolites, hormones and peptides from plasma, cerebrospinal fluid and urine. This laboratory supports a multi-investigator clinical research unit studying the psychobiology of major psychiatric illnesses including depression, schizophrenia, and panic disorders. Please send curriculum vitae and list of three references to: **Theresa C. Schrum, Emory University, Department of Psychiatry, P.O. Box AF, Atlanta, GA 30322. Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSOCIATE (Ph.D.) and ASSISTANT (M.Sc./B.Sc.) positions are available immediately to work on epitope mapping and structure/function relationship of proteins. Experience in microbiology, protein purification and characterization, instrumentation including FPLC, HPLC, peptide synthesizer, sequencer and amino acid analyzer preferred. Résumés only to: **Dr. G. Bedi, State University of New York at Buffalo, Department of Oral Biology, 3435 Main Street, Buffalo, NY 14214. We are an Equal Opportunity/Affirmative Action Employer.**

MICHIGAN STATE UNIVERSITY EAST LANSING, MICHIGAN RESEARCH ASSOCIATE ENVIRONMENTAL CARCINOGENESIS- MUTAGENESIS

Two positions are available for individuals with a strong background in molecular biology, biochemistry, or microbiology to investigate the molecular and cellular mechanisms of carcinogen-induced mutagenesis and malignant transformation of diploid human cells. The multidisciplinary approaches used include: transfection of oncogenes into human cells and characterization of their effects; mutagenesis of shuttle vectors replicating in human cells that differ in DNA repair capacity; sequence analysis of the types of genetic changes induced in endogenous genes of human cells; and induction and analysis of human cell homologous recombination.

Send application, curriculum vitae, reprints, and three letters of recommendation to:

Drs. J. Justin McCormick and Veronica M. Maher
Professors of Departments of Biochemistry
and Microbiology
B-620 West Fee Hall/Carcinogenesis Laboratory
Michigan State University
East Lansing, MI 48824-1316

Michigan State University is an Affirmative Action/Equal Opportunity Institution.

POSITIONS OPEN

RESEARCH ASSOCIATE, PENN STATE—Position available immediately for a molecular biologist with a Ph.D. plus postdoctoral or equivalent training and experience in biochemistry, molecular biology or related areas. Gene cloning expertise is essential and experience with the enzymology or molecular biology of cyclooxygenase, lipoxygenase or Se-dependent or independent glutathione peroxidases is desirable. A record of relevant publication in well-refereed journals is necessary. In addition to conducting molecular biology research related to the enzymes listed above, the successful candidate will train and supervise graduate students and technical personnel. Starting salary \$22,500 to \$25,000, depending on qualifications. Send curriculum vitae, copies of two publications, and two letters of recommendation to: **Dr. C. Channa Reddy, Department of Veterinary Science, Penn State University, 226 Fenske Laboratory, Box RA, University Park, PA 16802. The University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.**

UNIVERSITY OF ARIZONA DEPARTMENT OF PHYSICS

It is anticipated that support will be available for **RESEARCH POSITIONS** in theoretical physics programs in a) Muon Catalyzed Fusion and b) Antiproton Interaction with Matter. Preference will be given to candidates with demonstrated capacity and interest in interdisciplinary research on the borderline between particle, nuclear, atomic or molecular physics. Appointment level and compensation will be commensurate with degree of experience. All applications received by 1 April 1988 will be considered. Applications received after that date may also receive consideration for future positions. Inquiries should be addressed to: **Dr. J. Rafelski, Department of Physics, University of Arizona, Tucson, AZ 85721.** The first decisions may be made as early as spring 1988. *The University of Arizona is an Equal Opportunity/Affirmative Action Employer.*

SABBATICAL RESEARCH OPPORTUNITIES IN GERONTOLOGY. Opportunities to pursue sabbatical research related to aging in the behavioral, biological, clinical and social sciences and in the humanities are available at The University of Michigan Institute of Gerontology. Projects must relate directly to ongoing research of one of the following faculty members: **W. Andrew Achenbaum, Ph.D.; Richard C. Adelman, David Aminoff, Ph.D., D.Sc.; Bennett J. Cohen, Ph.D., D.V.M.; John A. Faulkner, Ph.D.; Brant E. Fries, Ph.D.; Ari Gafni, Ph.D.; Jeffrey B. Halter, M.D.; A. Regula Herzog, Ph.D.; James S. House, Ph.D.; Neal Krause, Ph.D.; John Kuwada, Ph.D.; Jersey Liang, Ph.D.; Marion A. Perlmuter, Ph.D.; Duncan Steel, Ph.D.; Mark Supiano, M.D.; Lois Verbrugge, Ph.D.; Bryant Villeponteau, Ph.D.; Timothy P. White, Ph.D.** The minimal visitation is 6 months. Start date, visiting professorships, and partial salary support are negotiable. These positions are intended primarily for established investigators who lack previous experience in gerontology. Interested candidates should forward curriculum vitae, bibliography, and letter of intent to: **Dr. Richard C. Adelman, Director, Institute of Gerontology, The University of Michigan, 300 North Ingalls, Ann Arbor, MI 48109-2007. A non-discriminatory/Affirmative Action Employer.**

SCIENTISTS BIOMOLECULAR CHEMISTRY

Positions are available in the Department of Biomolecular Chemistry for a protein crystallographer and a molecular modeler. Candidates will be working within a highly multidisciplinary group using the protein engineering approach to design and study proteins with altered properties and structure, and mimicking ligand-receptor interactions with rationally designed small molecules. Applicants for the molecular modeling positions may have interests in research problems related to either macromolecular structure or small molecule drug design. Candidates for both positions should have a Ph.D. and at least 2 years of postdoctoral experience in a research area related to structural biology. Applicants should send curriculum vitae and the name of three references to: **Dr. Anthony Kossiakoff, Department of Biomolecular Chemistry, Genentech, Inc., 460 Point San Bruno Boulevard, South San Francisco, CA 94080. An Equal Opportunity Employer.**

GENENTECH, INC.

POSITIONS OPEN

RESEARCH ASSOCIATE OF MICROBIOLOGY AND IMMUNOLOGY

Research associate: Minimum requirements: Ph.D., M.D., or equivalent, with knowledge of cellular and/or molecular immunology to work on a project concerning the pathogenesis of chronic inflammatory diseases. Annual salary between \$20,000 and \$28,000, depending on experience and qualifications. Send résumé to: **Mr. K. E. Johnson, University of Illinois at Chicago, Department of Microbiology/Immunology, E-703 MSA, 835 South Wolcott, Chicago, IL 60612. The University is an Affirmative Action/Equal Opportunity Employer.**

SCIENTIFIC PROGRAM DIRECTORS

The American Cancer Society invites applications for the position of Scientific Program Director in Atlanta. Scientific Program Directors are responsible primarily for the administration and management of the Society's peer-reviewed, extramural research program. Applicants must be 5 to 10 years beyond their Ph.D. or M.D. degree, and have demonstrated independent research and grant-writing capability. Interested individuals should submit their curriculum vitae with the names, addresses, and telephone numbers of three references to:

**Personnel Director
American Cancer Society
261 Madison Avenue
New York, NY 10016**

SKIN BIOLOGIST

Estee Lauder, Inc., a world leader in quality cosmetics and skin care, is seeking a highly motivated individual to join our Biological Research Unit.

The successful candidate will have a Ph.D. in either biochemistry, physiology, or immunology. Some postdoctoral experience preferred as well as experience working with mammalian skin.

This position offers an excellent working environment, salary, and company-paid benefits.

Please send curriculum vitae and names of three references to:

**Professional Recruitment
Estee Lauder, Inc.
125 Pinelawn Road
Melville, NY 11747**

The Department of Biology, College of St. Thomas, seeks to fill a full-time, **TEMPORARY POSITION** for one year beginning September 1988. Rank and salary are negotiable. Teaching responsibilities will include comparative vertebrate anatomy and animal physiology, for biology majors; and human anatomy and physiology, and general biology laboratories, for non-majors. The College of St. Thomas is a coeducational, Catholic liberal arts college committed to the total development of the individual student. The successful applicant will have a Ph.D., or substantial progress toward the degree, and a strong commitment to teaching at the undergraduate level. Send letter of application, curriculum vitae, and three letters of reference directly to: **Mrs. Kathy Fell, Box 4208, College of St. Thomas, 2115 Summit Avenue, St. Paul, MN 55105.** All materials must be received by 1 April 1988. *An Equal Opportunity/Affirmative Action Employer.*

VASCULAR CELL BIOLOGY. The Department of Medical Physiology and the Microcirculation Research Institute at Texas A&M University announce the creation of two new tenure-track faculty positions at the **ASSISTANT/ASSOCIATE PROFESSOR** levels. We are interested in individuals specializing in molecular and cellular physiology of vascular smooth muscle. Preference will be given to investigators who have already demonstrated the ability to conduct independent research and to garner peer-reviewed grant funding at the national level. The successful candidate will join a faculty composed exclusively of cardiovascular scientists with research interests ranging from molecular biology to system physiology. The new faculty members will participate in the department's medical and graduate education programs. Please send curriculum vitae, statement of research interests, and the names of three references to: **Harris J. Granger, Ph.D., Professor and Head, Department of Medical Physiology, College of Medicine, Texas A&M University, College Station, TX 77843.**

BIOTECH AT ITS BEST

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

RESEARCH MANAGER

Lead work on Hemopoietic Growth Factors from conception through scale-up. Includes supervision of cloning and assay groups, overseeing production and purification of clinical-grade material, and overall contract management. Requires a PhD and 7 yrs postdoctoral experience in molecular or cellular biology preferably with emphasis on cloning and characterization of growth factors. Strong management skills essential. Industrial experience preferred.

STAFF SCIENTIST

Coordinate and perform on/off-site testing of new therapeutic drugs including toxicology studies for FDA approval. Requires a PhD 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 necessary for human clinical trials.

STAFF SCIENTIST

Join a team responsible for investigating and evaluating new product opportunities for IG. Will require close interaction with scientific staff, research and evaluation of publications, and attendance at scientific meetings with follow-up on contacts. A PhD/MD in science and a broad understanding of the science and business of biotechnology is required. Superior communication and interpersonal skills are essential.

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 to:

**David Nikka
Dept. S311
Integrated Genetics, Inc.
31 New York Avenue
Framingham, MA 01701.**

An equal opportunity employer

**INTEGRATED
GENETICS**

POSTDOCTORAL FELLOW PCR-DNA Amplification

Cetus, a frontrunner in Biotechnology is seeking applications for a Postdoctoral Fellowship to study the structure and function of thermostable DNA Polymerases.

This person's efforts will be directed toward improved understanding of the Polymerase Chain Reaction (PCR) in vitro DNA amplification technique and to extending the applications for thermostable DNA Polymerases. Responsibilities include detailed characterization of kinetic properties, such as extension rate processivity, displacement synthesis and fidelity. The successful applicant will have the opportunity to collaborate with the highly motivated CETUS PCR group.

We require a Ph.D. in Biochemistry or Molecular Biology and up to 3 years' directly relevant experience in nucleic acid enzymology. Preference will be given to highly creative, exceptionally productive scientists with experience studying kinetic properties of DNA polymerase(s) and with fidelity assays. Experience with antibody-affinity chromatography would be an asset. Excellent written communication skills are essential.

This position will be a 2 year appointment and may be extended to 3 years by mutual agreement. Please send C.V. to:

**Cetus Corporation
Box DGPD
1400 53rd Street
Emeryville, CA 94608.**



We are an equal opportunity/affirmative action employer.

Applied bioTechnology

Staff Scientist, Protein Chemistry

Applied bioTechnology is a growing company specializing in:

- genetically engineered vaccines for the veterinary and human markets
- novel products for cancer diagnostics and therapeutics based on oncogene technology

An immediate opening exists for a highly motivated individual in our Protein Chemistry/Immunology Group. As a member of our vaccine development team, the qualified applicant will coordinate the analysis and characterization of proteins expressed by a variety of recombinant DNA techniques. This individual will also contribute to the design of purification schemes for a variety of antigens and antibodies to be used in the analysis of oncogene-encoded products and the development of cancer diagnostics. The successful candidate should have a Ph.D. in Biochemistry, with post-doctoral training. Strong organizational and communication skills required.

Please submit your resume or curriculum vitae to:

Applied bioTechnology, Inc.

**80 Rogers Street
Cambridge, MA 02142**

An Equal Opportunity Employer M/F/H/V



Research Assistants

Genentech, Inc., a leader in the field of biotechnology, has two opportunities within our research group. The successful candidates will assist in the development and performance of RIA's, ELISA's and radio receptor assays in support of ongoing research projects. Once developed, assays will be run routinely and will require maintenance and problem solving.

The ideal candidates will have an MS in Biology or Microbiology and 4 years' experience with mitogen assays, RIA's, ELISA's and radio receptor assays including related techniques, i.e. radio iodination, gel chromatography, affinity chromatography, enzyme conjugation and tissue culture. Familiarity with computer programming is also required.

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

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The new Center for Pharmaceutical Technology at the School of Pharmacy, University of Missouri-Kansas City is seeking two Senior Research Associates, one experienced in pharmaceutical tablet and capsule production and the other in quality control. The possibility exists for appointment as an instructor in the school with opportunity for graduate study. The positions are ideal for industrial scientists, including people who have accepted early retirement, seeking a university appointment in an attractive urban area. Salary and title are negotiable. Please send a letter, vitae, and a list of references to:

Lester Chafetz, Ph.D.

Professor of Pharmacy and Director,
Center for Pharmaceutical Technology,
University of Missouri-Kansas City
Kansas City, MO 64110-2499



University of Missouri-Kansas City
an equal opportunity institution

CHEMIST

Sigma Chemical Company employs hundreds of staff personnel at our St. Louis laboratory and manufacturing headquarters. Our biochemicals, diagnostic kits and reagents are distributed to a purify conscious international market that relies on our integrity and professionalism.

Excellent opportunities exist for innovative researchers in our Clinical R&D Department. We are currently seeking highly knowledgeable and experienced professionals for the following key positions:

SENIOR CHEMIST - Toxicology

Requires Ph.D. in Biochemistry, Immunology, Clinical Chemistry or related fields. One to three years industrial experience in research and development of non-isotopic procedures for the assay of therapeutic drugs is essential. Supervisory experience and prior experience with assay procedures for drugs of abuse would be helpful.

SENIOR CHEMIST - Special Chemistry

Candidate should have Ph.D. in Biochemistry or related field. One to three years commercial experience in development of diagnostic products in one or more of the following areas is preferred: Tumor markers, Coagulation and Homeostasis, or Isoenzyme assays.

We can provide a competitive salary and a full company-paid benefits package. Send your confidential resume and salary history to:

SIGMA
DIAGNOSTICS

Diagnostic Positions
SIGMA CHEMICAL
COMPANY
P.O. Box 14508
St. Louis, MO 63178

An Equal Opportunity Employer

SENIOR SCIENTISTS - MOLECULAR BIOLOGY

THE LISTER HILL NATIONAL CENTER FOR BIOMEDICAL COMMUNICATIONS, the research division of the National Library of Medicine located at the National Institutes of Health in Bethesda, Maryland, is seeking qualified individuals for a Senior Scientist position in its Biotechnology Information program. The candidate is expected to establish and conduct a research program in molecular biology computing which may include, but is not limited to, prediction of structural or biological function from sequence data, comparative analyses of physical and genetic maps, pattern recognition in sequence data, or evolution of gene sequences. Computing facilities include twenty Sun workstations and servers, DEC Vax 11/780s, IBM mainframes, a network link to a Cray S-MP at the National Cancer Institute, and direct Arpanet access. Programming staff support is also available.

Applicants must have a Ph.D. in molecular biology or a related field and a publication record in the above research areas. Appointment is for a one- to two-year period, extendable to four years. Salary range is \$40,000 to \$65,000 depending upon experience.

Send curriculum vitae and the names of three references to:

Dennis Benson, Ph.D.

Lister Hill National Center for
Biomedical Communications

National Library of Medicine
National Institutes of Health, Public Health Service
8600 Rockville Pike, Bethesda, MD 20894

For further information call:

Ms. Yvonne Reid (301) 496-4441

NIH IS AN EQUAL OPPORTUNITY EMPLOYER

INVITRON

Invitron Corporation, a leading Biotechnology Company focused on the production of biopharmaceuticals, has the following openings in its Redwood City Research facility:

Scientist—Protein Biochemistry

PhD with experience in peptide chemistry and protein characterization, especially with regard to peptide synthesis, sequencing and covalent modification. **Please send responses to AD #60-1.**

Scientist—Cell Biology

PhD in analytical or biological chemistry and experience in the development of clinical or biological assays. To establish an analytical group, responsible for developing immunological/biochemical assays including ELISA, RIA, FIA, etc., as well as assays to determine amino acids, carbohydrates and other factors in biological media. **Please respond to AD #62-1.**

Scientist—Molecular Biology

PhD in molecular biology with 2 years' postdoctoral experience. Expertise in mammalian cell culture, eukaryotic gene regulation, and recombinant DNA techniques is essential. Successful candidate will lead an active research group in gene expression. **Please respond to AD #64-1.**

Scientist—Molecular Biology

PhD in molecular biology. Expertise in nucleic acid chemistry preferred. Qualified individuals are expected to direct our oligonucleotide synthesis and DNA sequencing efforts in molecular genetics group. **Please respond to AD #64-2.**

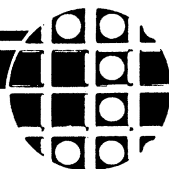
Research Associate/Assistant—Protein Biochemistry

BS/MS degree, 1-2 years' experience in several of the following areas: protein purification using LC, HPLC, and FPLC; peptide mapping and reverse phase techniques; amino acid analysis; peptide synthesis. **Please respond to AD #60-2.**

Research Assistant—Molecular Biology

BS/MS in biology, chemistry or related degree, expertise in mammalian cell culture, gel-electrophoresis, cDNA cloning, and/or DNA sequencing. **Please respond to AD #64-3.**

Invitron offers competitive salaries and full benefits with excellent potential for growth according to ability. Please forward resumes to:



J. Bliss
INVITRON CORPORATION
301 Penobscot Drive
Redwood City, CA 94063

We are an Equal Opportunity Employer, M/F

Myocardial Ischemia and Thrombosis Research

The LILLY RESEARCH LABORATORIES, a division of Eli Lilly and Company, is emphasizing its commitment to cardiovascular medicine. This has resulted in the following career opportunities for senior personnel to provide leadership roles in myocardial ischemia and thrombosis research programs. Applicants must be accomplished doctoral level scientists with a minimum of 5 years industrial or academic experience, an interest in drug discovery, and an established research program and publication record.

For thrombosis, we are particularly interested in a scientist with experience studying the biochemical, pharmacological, and physiological interactions between vascular endothelial cells and platelets. Expertise in cell culture, platelet aggregation, mediator release, and the effects of intercellular mediators on endothelial cell function would also be desirable.

Individuals applying for the myocardial ischemia position will ideally have an in-depth knowledge of the molecular mechanisms underlying ischemic damage to myocardium and the role of formed blood elements in the ischemic process. An understanding of cardiovascular hemodynamics is also important.

Successful candidates will be responsible for providing scientific leadership to these important areas of research. Broadly based scientific experience and good communication and organizational skills will be essential. The successful candidate's level of entry and position title will be commensurate with their experience.

Eli Lilly and Company offers a professional environment and an attractive compensation package. For prompt consideration, please forward your curriculum vitae to:



John W. Crooks, Manager,
College Relations (MI/TR)
Eli Lilly and Company,
Lilly Corporate Center
Indianapolis, Indiana 46285

Equal Opportunity Employer

POSITIONS OPEN

TWO TENURE-TRACK POSITIONS: (1) Neuropsychology, research interest in language, memory or cognition; (2) Speech Perception, preferred interest in man-machine communication. Both participate in interdisciplinary doctoral program and teach undergraduate courses. *Indication of sex and ethnicity for Affirmative Action purposes is requested but not required.* Please send curriculum vitae with names of three references by 31 March 1988, to:

Academic Searches #532-533
University of Texas at Dallas
P.O. Box 830688
Richardson, TX 75083-0688

The University of Texas at Dallas is an Affirmative Action/Equal Opportunity Employer.

VICE CHAIRMAN FOR BASIC SCIENCE RESEARCH

Children's Hospital Medical Center of Cincinnati, Ohio, an Institution with a faculty of 131 M.D.'s and 33 Ph.D.'s, is searching for an individual to fill the position of Vice-Chairman for Basic Science Research. Children's Hospital Medical Center and Children's Hospital Research Foundation function as the Department of Pediatrics of the University of Cincinnati College of Medicine through a strong affiliation agreement with the University. The Institution is a private, not-for-profit, endowed organization with a strong past and present history in research and pediatrics. The individual for whom we search should be a scientist at the forefront of molecular biology research, with a M.D. or a M.D.-Ph.D. degree. The person should command excellent grant support in his present position and have qualities of leadership. Responsibilities of the position are to maintain and develop the Division of Basic Science Research, which has a faculty of 20 Ph.D.'s, 12 Ph.D. research fellows, and 22 graduate students devoted to research, molecular genetics and, to a lesser extent, teratology. The individual will have responsibility for increasing the excellence in molecular biology presently on-going, for controlling budgets, for space allocations of the investigators in the Division, and will act under the Chairman of the Department of Pediatrics as a leader of research in the Institution.

Applications should be made in writing by submitting curriculum vitae to: **William K. Schubert, M.D., Chairman, Department of Pediatrics and President, Children's Hospital Medical Center, Elland and Bethesda Avenues, Cincinnati, OH 45229-2899.**

VISITING SCIENTIST/ENGINEER THE INSTITUTE OF PAPER CHEMISTRY (IPC)

IPC invites scientists and engineers to participate in its Visiting Program. IPC is a research institute and graduate school with research programs as follows:

ENGINEERING: Papermaking Processes; Heat and Mass Transfer; Fluid Mechanics; Combustion and Transport Processes; Process Control and Simulation; Corrosion.

CHEMISTRY: Cellulose and Lignin; Photochemical Reactions in Paper and Fibers; Structure of Woody Tissue; Delignification and Bleaching Processes; Molten Salts.

PHYSICS: Optical Properties of Paper; Mechanical Properties of Paper and Board; Elastic and Viscoelastic Properties of Fibrous Composites; Sensor Development.

FOREST BIOLOGY: Embryogenesis and Organogenesis of Forest Trees; Plant Physiological and Developmental Biology.

Postdoctoral appointments also available. Submit curriculum vitae and references to: **Personnel, The Institute of Paper Chemistry, Box 1039, Appleton, WI 54912-1039.**

Affirmative Action/Equal Opportunity Employer

ZOOLOGY ASSISTANT PROFESSOR, tenure-track, starting September 1988. Salary range \$28,000 to \$31,080. Instruct undergraduate zoology and biology courses. Ph.D. and previous teaching experience required. Application letter, curriculum vitae, official transcripts of all college work, and three letters of recommendation should be sent by 1 April 1988, to: **C. Leslie Carpenter, Assistant Dean, The Ohio State University at Marion, 1465 Mt. Vernon Avenue, Marion, OH 43302-5695.** *An Equal Opportunity/Affirmative Action Employer.*

CONFERENCE

HARVARD SCHOOL OF PUBLIC HEALTH offers the following professional continuing education opportunities in 1988: "Ionizing Radiation: Risks, Biological Effects, and Policy Implications," 1 to 3 June 1988; "Certification of Biological Safety Cabinets," 18 to 23 July 1988; "AIDS and Infectious Disease in the Workplace," 28 to 29 July 1988; "Occupational and Environmental Radiation Protection," 15 to 19 August 1988. Contact: **Office of Continuing Education, Department S, Harvard School of Public Health, 677 Huntington Avenue, Boston, MA 02115.** Telephone: 617-732-0972.

COURSE

PENN STATE BIOTECHNOLOGY INSTITUTE WORKSHOP HYBRIDOMA AND MONOCLONAL ANTIBODIES

A 4-day workshop will provide researchers with both practical and theoretical background on hybridoma and monoclonal antibody production. The course will emphasize lab experience starting with immunization, and covering all aspects through ascites production. Offered 16 to 19 May 1988. Limited to 20 participants. Cost: \$600. Contact: **Dr. Richard Arteca, 519 Biotechnology Institute, University Park, PA 16802.** Telephone: 814-865-0921.

SYMPOSIUM

TROPICAL DISEASES SYMPOSIUM MEHARRY MEDICAL COLLEGE NASHVILLE, TENNESSEE 26 APRIL 1988

Meharry Medical College, School of Graduate Studies, Division of Biomedical Sciences, will hold its Fifth Annual Tropical Diseases Symposium entitled "Recent Advances in the Immunology and Biochemistry of Tropical Diseases" on Tuesday, 26 April 1988. Speakers attending this 1-day symposium will include: **L. Schofield,** New York University (Immunity to malaria); **S. Hajduk,** University of Alabama, Birmingham (Trypanosome mitochondria biogenesis); **C. Clayton,** Rockefeller University, (Trypanosome nuclear gene expression); **B. Greene,** Case Western (Immunity to onchocerciasis); **M. Pereira,** Tufts University (*T. cruzi* neuraminidase); **S. Craig,** University of California, San Francisco (Cloning of *S. mansoni* HGPRTase gene); **T. Shinnick,** CDC (Mycobacterial antigens). The registration fee is \$30, \$10 for students. For further information, please contact: **Dr. George C. Hill, Director and Professor, Division of Biomedical Sciences, Meharry Medical College, Nashville, TN 37208.** Telephone: 615-327-6193. This symposium is supported by an NIH training grant with predoctoral and postdoctoral positions available.

FELLOWSHIPS

GRADUATE FELLOWSHIP—Competitive fellowship is available particularly to Black American citizens to work toward an M.S. in plant science at the University of Delaware. Research areas include plant-mycorrhizae interactions and plant tissue culture. A yearly stipend of \$7,785 with full tuition waiver is available. Student will devote full time to study. For further information, contact: **Dr. Sherry Kitto or Dr. Carol Janerette, Department of Plant Science, University of Delaware, Newark, DE 19717.** Telephone: 302-451-2535. *The University of Delaware is an Affirmative Action/Equal Opportunity Employer.*

PREDOCTORAL FELLOWSHIPS are available for studies leading to the Ph.D. in the Physiology Graduate Program in the Temple University School of Medicine. Stipends and tuition waivers are available for eligible candidates. Specific research topic areas include cell biology of normal and diseased myocardium, membrane receptors, developmental cardiopulmonary physiology, liquid ventilation, underwater medicine, membrane transport, gastrointestinal function, vascular smooth muscle chemoreceptor function, and control of microcirculation. Applications may be sent to: **Steven R. Houser, Ph.D., Director, Physiology Graduate Program, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, PA 19140.** *Equal Opportunity Employer, M/F.*

FELLOWSHIPS

HARVARD SCHOOL OF PUBLIC HEALTH INTERDISCIPLINARY PROGRAMS IN HEALTH POSTDOCTORAL FELLOWSHIPS



The Program in Environmental Health and Public Policy invites applications from promising graduates of advanced degree programs in the natural or social sciences. The program focuses on the scientific and analytical foundations for environmental decisions. In addition to conducting individual research, fellows are encouraged to collaborate with each other and faculty members on projects of mutual interest. A group project might consider, for example, the effect of scientific uncertainties on environmental decisions.

Fellows will be appointed for a term of 1 year, starting September 1988. Award may be renewed. Application deadline: 15 April 1988. Decisions announced in May.

For information, write to:

**Professor Donald F. Hornig
Harvard School of Public Health
665 Huntington Avenue
Boston, MA 02115
Telephone: 617-732-1258**

POSTDOCTORAL FELLOWSHIP

Two-year postdoctoral fellowship available immediately at The Miriam Hospital for a person interested in cell and molecular biology. New graduates considered.

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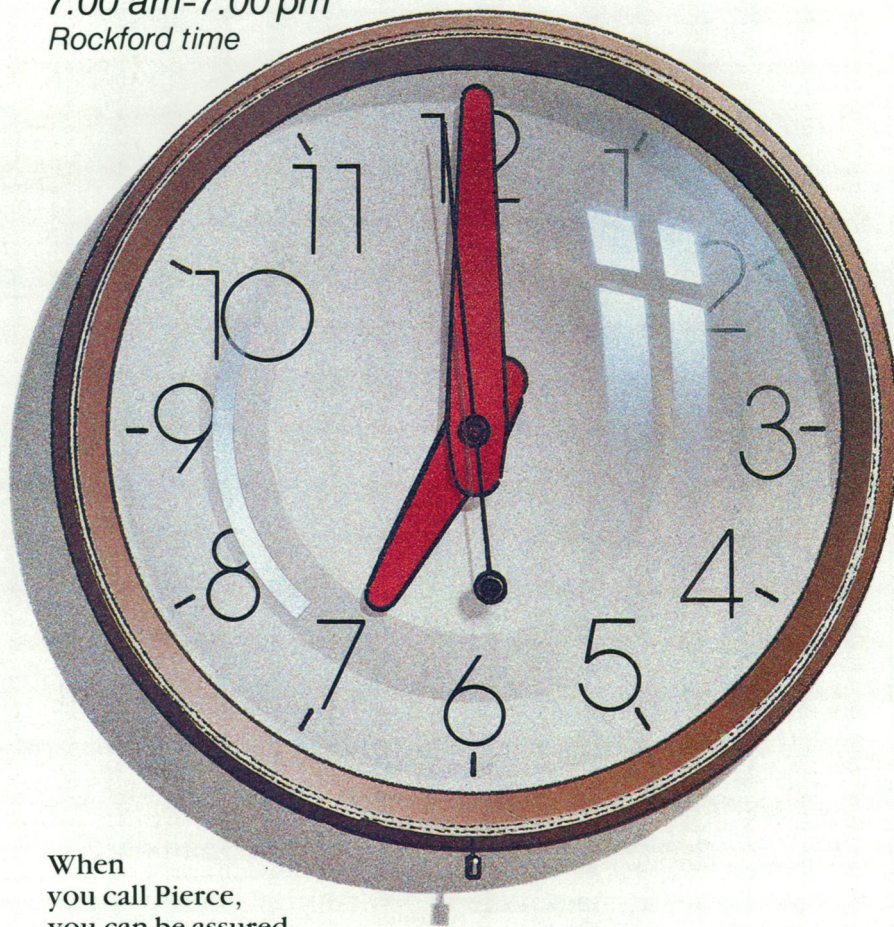
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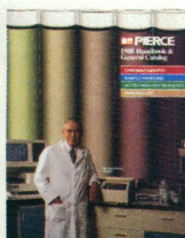
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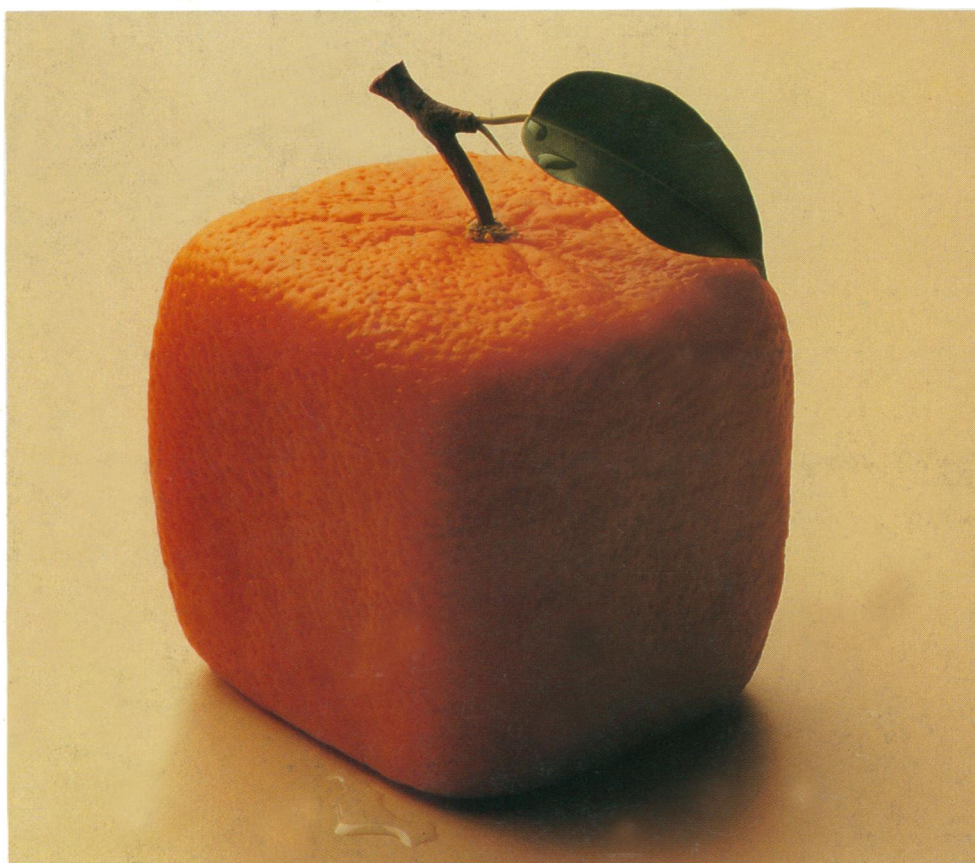
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