

form of representation, namely the full 3-D model, and proposes types of description that can be compared directly with the forms of familiar or indeed unfamiliar objects. Chapter 6 draws all these threads together and closes the main part of the book, but there is a delightful epilogue (chapter 7), which takes the form of a conversation between Marr and an intelligent critic of his ideas (could this be Francis Crick?) and touches on a number of more general issues about the nature of psychological theories. This chapter should be compulsory reading for all psychology students whether or not they are interested in visual perception.

*Vision* will be seen as a milestone in the history of the subject. Even if no single one of Marr's detailed hypotheses ultimately survives, which is unlikely, the questions he raises can no longer be ignored and the methodology he proposes seems to be the only one that has any hope of illuminating the bewildering circuitry of the central nervous system. David Marr's lifework will have been vindicated when neuroscientists cannot understand how it was ever possible to doubt the validity of his theoretical maxims.

H. C. LONGUET-HIGGINS  
*Laboratory of Experimental Psychology, University of Sussex, Brighton BN1 9QG, England*

## Stellar Explosions

**Supernovae.** A Survey of Current Research. Proceedings of an institute, Cambridge, England, June 1981. MARTIN J. REES and RAY J. STONEHAM, Eds. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). xxiv, 590 pp., illus. \$69. NATO Advanced Study Institutes Series C, vol. 90.

This volume of symposium proceedings, supplemented by the proceedings of IAU symposium No. 101 on supernova remnants, will provide an authoritative and up-to-date survey of this important and fast-developing field.

The first half of *Supernovae* contains a series of papers on theories of supernova formation that provide an almost embarrassing number of ways in which single stars of widely differing masses can explode to become supernovae. Additional mechanisms involve production of supernovae by mass transfer onto white dwarfs in binary systems. What is not yet clear is how the plethora of theoretical supernova models is to be related to the spectroscopic observations that show only two distinct types of supernovae:

Type I, which do not show hydrogen absorption, and Type II, which do.

Observations in the Galaxy and the Magellanic clouds show that there are at least three quite distinct types of young supernova remnants, of which Cassiopeia A, the Crab Nebula, and the remnant of Tycho's supernova of 1572 are the prototypes. It is not at all clear yet how these three types of remnants are related to the two kinds of supernovae that are actually observed.

The excellent discussions in the volume of supernova frequency by Tammann and of the pulsar birthrate by Lyne reduce but do not yet eliminate the apparent discrepancy between these two quantities. (Since about a third of the most recent supernovae have left pulsars one would expect the supernova birthrate to be approximately three times higher than that of pulsars.) It is significant that such a discrepancy between supernova and pulsar rates remains even though Tammann has adopted supernova rates that may turn out to have been somewhat too optimistic. From his rates one calculates that a supernova should occur in M 31, M 33, the Large Magellanic Cloud, and the Small Magellanic Cloud once every 16.3 years, whereas only a single supernova has been seen in these galaxies during the last century.

Finally, a number of authors emphasize the importance of better statistical data on the supernova frequency in distant galaxies. The development of charge-coupled device detectors and of computer-controlled telescopes should enable us to obtain such improved data in the near future. Furthermore, such new observations should allow one to see if the usually overexposed cores of galaxies exhibit a much higher supernova frequency than has so far been suspected.

SIDNEY VAN DEN BERGH  
*Dominion Astrophysical Observatory, Victoria, British Columbia V8X 4M6, Canada*

## Books Received

**Anthropological Studies in Great Britain and Ireland.** Melvin Firestone, Ed. Arizona State University, Tempe, 1982. vi, 148 pp., illus. Paper, \$8. Anthropological Research Papers No. 27.

**Asbestos.** Directory of Research and Documentation Centres. Sandro Amaducci, Ed. Reidel, Dordrecht, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 390 pp. \$52.

**Asbestos.** Directory of Unpublished Studies. First Edition. Up to July 31, 1981. Sandro Amaducci, Ed. Reidel, Dordrecht, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xii, 338 pp. \$45.

**Boiling Energy.** Community Healing among the Kalahari Kung. Richard Katz. Harvard University Press, Cambridge, Mass., 1982. xx, 330 pp., illus. \$25.

**CAD 82.** Papers from a conference, Brighton,

England, Mar. 1982. Alan Pipes, Ed. Butterworths, Boston, 1982. xii, 710 pp., illus. \$64.95.

**Directory of Publishing Sources.** The Researcher's Guide to Journals in Engineering and Technology. Sarojini Balachandran. Wiley-Interscience, New York, 1982. viii, 344 pp. \$27.50.

**Documents in Communist Affairs—1981.** Bogdan Szajkowski, Ed. Butterworths, Boston, 1982. xii, 348 pp. \$65.

**Effects of Gaseous Air Pollution in Agriculture and Horticulture.** Papers from a meeting, Sutton Bonington, Eng. M. H. Unsworth and D. P. Ormrod, Eds. Butterworths, Boston, 1982. xiv, 532 pp., illus. \$89.95.

**Electrical and Electronic Clocks and Watches.** J. D. Weaver. Newnes Technical Books (Butterworths), Boston, 1982. vi, 234 pp., illus. \$29.95.

**Fundamentals of Preparative Organic Chemistry.** R. Keese, R. K. Müller, and T. P. Toube. Ellis Horwood, Chichester, 1982 (U.S. distributor, Halsted [Wiley], New York). 150 pp., illus. \$42.95.

**The Future of Coal.** Peter James. Crane, Russak, New York, 1982. xxiv, 272 pp., illus. \$19.50.

**Generosity and Jealousy.** The Swat Pukhtun of Northern Pakistan. Charles Lindholm. Columbia University Press, New York, 1982. xxxiv, 322 pp., illus. Cloth, \$28; paper, \$14.

**Hypnosis and Experience.** The Exploration of Phenomena and Process. Peter W. Sheehan and Kevin M. McConkey. Erlbaum, Hillsdale, N.J., 1982. xvi, 298 pp. \$29.95.

**ICP in Infancy and Childhood.** Papers from a meeting, Budapest, July 1981. E. Paraciz, Ed. Karger, Basel, 1982. viii, 146 pp., illus. Paper, \$58.75. Monographs in Paediatrics, vol. 15.

**Immunopathology.** Papers from a symposium, San Diego, Oct. 1980. Frank J. Dixon and Peter A. Miescher, Eds. Academic Press, New York, 1982. xviii, 556 pp., illus. \$54.

**Linear Orderings.** Joseph G. Rosenstein. Academic Press, New York, 1982. xviii, 488 pp. \$64. Pure and Applied Mathematics.

**Liquefied Petroleum Gases.** Guide to Properties, Applications and Uses. A. F. Williams and W. L. Lom. Ellis Horwood, Chichester, ed. 2, 1982 (U.S. distributor, Halsted [Wiley], New York). xx, 522 pp., illus. \$108.95.

**Liquids and Liquid Mixtures.** J. S. Rowlinson and F. L. Swinton. Butterworths, Boston, ed. 3, 1982. viii, 328 pp., illus. \$34.95. Butterworths Monographs in Chemistry.

**Major Structural Zones and Faults of the Northern Appalachians.** Papers from a symposium, Quebec City, May 1979. P. St-Julien and J. Béland, Eds. Geological Association of Canada, Waterloo, Ontario, 1982. vi, 280 pp., illus. Members, \$24; nonmembers, \$29. Geological Association of Canada Special Paper 24.

**The Mammals of Minnesota.** Evan B. Hazard. Illustrations by Nan Kane. Published for the James Ford Bell Museum of Natural History by University of Minnesota Press, Minneapolis, 1982. xii, 282 pp., illus. Cloth, \$39.50; paper, \$15.95.

**Outline of Genetic Epidemiology.** Newton E. Morton. Karger, Basel, 1982. x, 252 pp., illus. Paper, \$49.

**Paediatric Respiratory Physiology and Clinical Aspects of Paediatric Pneumology.** Papers from a meeting, Bern, Sept. 1981. R. Kraemer, Ed. Karger, Basel, 1982. xii, 248 pp., illus. Papers, \$99. Modern Problems in Paediatrics, vol. 21.

**A Panorama of Pure Mathematics.** As seen by N. Bourbaki. Jean Dieudonné. Translated by I. G. Macdonald. Academic Press, New York, 1982. x, 290 pp., illus. \$29.50. Pure and Applied Mathematics.

**The Role of Solar Ultraviolet Radiation in Marine Ecosystems.** Papers from an institute, Copenhagen, July 1980. John Calkins, Ed. Plenum, New York, 1982. xvi, 724 pp., illus. \$79.50. NATO Conference Series 4: Marine Sciences, vol. 7.

**Rutland Water—Decade of Change.** Proceedings of a conference, Leicester, England, Apr. 1981. David M. Harper and John A. Bullock, Eds. Junk, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). viii, 232 pp., illus. \$54. Developments in Hydrobiology 8. Reprinted from *Hydrobiologia*, vol. 88, No. 1/2.

**Sedimentary Structures.** J. D. Collinson and D. B. Thompson. Allen and Unwin, London, 1982. xiv, 194 pp., illus. Cloth, \$40; paper, \$17.95.

**Sédiments Aragonitiques et Leur Genèse.** Jean-Paul Loreau. Editions du Muséum National d'Histoire Naturelle, Paris, 1982. 314 pp., illus. Paper, 160F. Mémoires du Muséum National d'Histoire Naturelle, series C, vol. 47.

**Two-Dimensional Nuclear Magnetic Resonance in Liquids.** Ad Bax. Reidel, Dordrecht, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). vi, 200 pp., illus. \$29.50.

**Wildlands and Woodlots.** The Story of New England's Forests. Lloyd C. Irland. University Press of New England, Hanover, N.H., 1982. xiv, 218 pp., illus. \$17.50.

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**Biochemist,** Ph.D. MT(ASCP). Ten years in clinical laboratories. Supervisory, management, and teaching experience. Seeking supervisory position in medical laboratory and/or teaching position in biochemistry/medical technology. North central, northwestern, Rocky Mountain regions preferred. Box 317, SCIENCE.

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## POSITIONS WANTED

**Biomedical Engineer.** B.S.E. degree from Purdue University expected in December 1982. Available January 1983. Interdisciplinary education includes microprocessor based systems, digital logic systems, circuit analysis, bionics, microbiology, and tissue biology. Seeks entry-level position with medical products manufacturer. William Tremulis, Box 654-M, Young Graduate House, West Lafayette, Indiana 47906. Telephone: 317-743-0028.

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**Cell/Developmental Biologist:** Ph.D. 1971. Postdoctoral and several years of graduate/undergraduate teaching and supervision. Extensive publications; interest in cell structure, nuclear proteins, gene expression, and so forth, in relation to hormone action, drugs, and aging. Experienced in electron microscopy/broad range of molecular techniques. Seeks academic/industry position in southwestern United States. Box 318, SCIENCE.

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Applicants should send curriculum vitae, identifying vacancy number for which they are applying, to: **Charles B. McCall, M.D., Dean, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Okla. 73190.** We are an *Equal Opportunity Employer*.

### ASSISTANT PROFESSOR OF PARASITOLOGY

The Department of Pathobiology, University of Pennsylvania School of Veterinary Medicine, is inviting applications for a faculty position at the rank of assistant professor in the Laboratory of Parasitology, with a starting date of 1 July 1983. Applicants are expected to have a D.V.M. and/or a Ph.D. degree. A demonstrated ability and interest in research and teaching in parasitology is essential. Desirable research interests include biochemistry, immunology, or molecular genetics of parasites. Candidates are requested to submit curriculum vitae and the names of at least three references to: **Dr. Robert Grieve, Head, Laboratory of Parasitology, Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa. 19104.**

Application deadline is 1 May 1983, or thereafter until the position is filled.

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## POSITIONS OPEN

**ANATOMY FACULTY POSITION** open for productive researcher and teacher. Rank and salary negotiable; M.D. or Ph.D. required. Current areas of research interest include cell and molecular biology of nervous, cardiovascular, and reproductive-endocrine systems; department is developing computer-based image analysis techniques. Send curriculum vitae and three letters of reference to: **Dr. T. H. Williams, Department of Anatomy, BSB, The University of Iowa, Iowa City, Iowa 52242.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR**—The Section of Medicinal Chemistry and Pharmacognosy, School of Pharmacy, University of Connecticut, seeks to fill a tenure-track position by 1 September 1983. Minimum qualifications include a Ph.D. in pharmacognosy, organic or biochemistry, and research experience in structural and biosynthetic studies of natural products. Postdoctoral experience and an undergraduate degree in pharmacy are desirable. The successful applicant will be expected to participate in undergraduate and graduate teaching and to actively pursue research in natural products. Salary is based on qualifications and experience. Curriculum vitae, graduate transcript, one research proposal, and three letters of recommendation should be sent to: **Alexandros Makriyannis, Head, Section of Medicinal Chemistry and Pharmacognosy, UNIVERSITY OF CONNECTICUT, School of Pharmacy, Box U-92, Storrs, Conn. 06268,** before 1 March 1983. *An Equal Opportunity/Affirmative Action Employer.* (Search S-170.)

### ASSISTANT OR ASSOCIATE PROFESSOR OF BIOLOGICAL CHEMISTRY WASHINGTON UNIVERSITY

The Department of Biological Chemistry at Washington University School of Medicine is seeking applications from investigators with proven research potential either at the level of assistant or associate professor. We are interested in receiving applications from scientists studying molecular aspects of development or cellular differentiation. Washington University offers unique opportunities for young faculty due to a strong tradition of high quality research and interdepartmental interactions. Applicants should provide complete curriculum vitae, a short description of research interests, and the names of three individuals who can be contacted for letters of recommendation by writing to: **Dr. Luis Glaser, Department of Biological Chemistry, Washington University School of Medicine, 660 South Euclid Avenue, Box 8094, St. Louis, Missouri 63110.** *An Equal Opportunity/Affirmative Action Employer.*

### THE EPPLEY INSTITUTE FOR RESEARCH ON CANCER AND ALLIED DISEASES ASSISTANT PROFESSORS CANCER RESEARCH

The Eppley Institute for Research on Cancer and Allied Diseases of the University of Nebraska Medical Center invites applications for three tenure-track faculty positions. Appointments will be made at the assistant professor level with a secondary position in one of the basic science departments. Successful candidates will have a doctoral degree and at least 2 years of relevant postdoctoral training in **cancer cell biology or in molecular biology.** Candidates must be able to develop and maintain an independent research program as well as to interact in a collaborative way with other faculty members. The facilities at Eppley are excellent and the salary is competitive. Interested applicants should forward, no later than 31 December 1982, curriculum vitae, a list of publications, the names of three references, and a one-page statement of the research interests to be pursued to: **Director, Eppley Institute for Research on Cancer and Allied Diseases, 42nd and Dewey Avenue, Omaha, Nebraska 68105.**

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**ASSISTANT PROFESSOR Extension Specialist,** soil fertility-horticultural crops, 60 percent extension, 40 percent research. Emphasis on commercial vegetables and small fruits. Ph.D. horticulture, soil science, agronomy, or plant science. Specialization in plant nutrition and soil fertility required. Application deadline: 7 February 1983. Send letter of intent, résumé, transcripts, and three letters of reference to: **James J. Lewis, Extension Personnel Office, 260 Coffey Hall, University of Minnesota, St. Paul, Minn. 55108; telephone: 612-373-1865.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

## POSITIONS OPEN

**ASSISTANT PROFESSOR—Developmental biology/genetics.** Tenure-track, to start 1 September 1983. Ph.D. in developmental biology with a background in genetics, teaching excellence, commitment to liberal arts, and interest in directing undergraduate research are essential. Primary responsibilities include general biology, genetics, vertebrate embryology, vertebrate comparative anatomy, and human physiology. Faculty committee participation and student advisement also expected. Whittier, located in suburban Los Angeles, is a private liberal arts college. Letter of application, résumé, transcripts, and three letters of recommendation should be forwarded by 1 February to: **Biology Search Committee, Dr. C. Morris, Department of Biology, Whittier College, Whittier, Calif. 90608.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR: INORGANIC CHEMISTRY.** The Chemistry Department, Wesleyan University, invites applications for a tenure-track position in the general area of inorganic chemistry. Strong commitment to excellence in research and teaching at both graduate and undergraduate levels is essential. Send résumé, a short description of projected research, and names of three references to: **Bryan E. Kohler, Chairman, Department of Chemistry, Wesleyan University, Middletown, Conn. 06457.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR—MICROBIOLOGY.** The Biology Department of the University of South Carolina solicits applications for a tenure-track position in microbiology. Candidates should have postdoctoral experience and be prepared to establish a strong research program dealing with the genetics, molecular biology, or biochemistry of microorganisms. Start-up funds will be provided. Send curriculum vitae, summary of research plans, three recent papers, and the names of three references by 7 January 1983 to: **Dr. Bert Ely, Chairman, Microbiology Search Committee, Department of Biology, University of South Carolina, Columbia, South Carolina 29208.** *An Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT PROFESSOR OF MICROBIOLOGY—**Microbial cytologist. A tenure-track appointment, to begin September 1983, to teach microbial cytology and ultrastructure using electron microscopy and other course of value to the department. Qualifications: Ph.D. required. Applicants with medical microbiological backgrounds will be given preference. A strong research program is expected. Send résumé, including a description of research accomplishments and future interests, and the names of three referees, by 15 February 1983, to: **Dr. Robert M. Zsigray, Chairman, Microbiology Department, Spaulding Hall, University of New Hampshire (UNH), Durham, N.H. 03824.** *UNH is an Affirmative Action/Equal Opportunity Employer.*

The Department of Psychology at the University of Massachusetts/Amherst expects to have an **ASSISTANT PROFESSOR** tenure-track position to be filled fall 1983 in the area of **neurochemical/neuropharmacological bases of behavior.** Preference will be given to applicants with postdoctoral experience and demonstrated research and teaching excellence. Interested individuals should send curriculum vitae and three letters of reference before 15 January 1983 to: **Bonnie Strickland, Ph.D., Chair, Department of Psychology, University of Massachusetts, Amherst, Mass. 01003.** *The University of Massachusetts is an Equal Opportunity Employer.*

**ASSISTANT PROFESSOR OF PATHOLOGY—**Position open for M.D. with background in pathology and strong research interest. Apply to: **Dr. Renato Baserga, Chairman, Department of Pathology, Temple University School of Medicine, Room 105 OMS, 3400 North Broad Street, Philadelphia, Pa. 19140.** *Equal Opportunity/Affirmative Action Employer.*

Applications are sought from M.D.'s and Ph.D.'s for positions in the Department of Pathology at the level of either **ASSISTANT, ASSOCIATE, OR FULL PROFESSOR,** depending on qualifications and experience. Responsibilities will include teaching and hospital service. Pursuit of individual research interests as well as participation in ongoing research is encouraged. Send curriculum vitae and references to: **Joseph Wiener, M.D., Chairman, Department of Pathology, Wayne State University School of Medicine, 540 East Canfield Avenue, Detroit, Michigan 48201.**

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## POSITIONS OPEN

**ASSISTANT RESEARCH SCIENTIST, VIROLOGY.** The Department of Entomology and the Texas Agricultural Experiment Station, Texas A & M University, invite applications for a research position starting immediately. Applicants should have background in molecular biology or virology. The successful applicant will be expected to conduct independent research on the molecular biology of the baculovirus genome and gene expression. Starting salary is \$25,000. For additional information, contact: **Dr. Max D. Summers, Department of Entomology, Texas A & M University, College Station, Texas 77843.** Send curriculum vitae, reprints, and the names of three references. *Texas A & M University is an Equal Opportunity/Affirmative Action Employer.*

**ASSOCIATE CHIEF OF STAFF FOR RESEARCH AND DEVELOPMENT** applications are invited at the Veterans Administration Medical Center, Kansas City, Missouri.

Candidates should be established M.D. investigators who have a record of meritorious research, have been highly successful in competing for research funding, and are actively engaged in a substantial ongoing research program. Candidates to head this \$3-million program with 150 employees should have prior administrative experience and will be expected to provide dynamic leadership in the continuing development of research programs.

Joint appointments will be given at the Veterans Administration Medical Center and the appropriate department at the University of Kansas College of Health Sciences and Hospital.

Respond with curriculum vitae and three references to: **James A. Kennedy, M.D., Chairman, Search Committee, Veterans Administration Medical Center, 4801 Linwood Boulevard, Kansas City, Mo. 64128.**

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Department of Psychology and Women's Studies Program, University of Michigan, Ann Arbor, is seeking to make a joint appointment at the **ASSOCIATE OR FULL PROFESSOR** level for fall 1983. The position would be half-time in women's studies and half-time in psychology. Scholarly and research interests in psychology are open. We seek an outstanding candidate regardless of area of research specialization. An interest in experiential learning for the teaching of specific women's studies' courses is preferred. *The University of Michigan is an Affirmative Action/Equal Opportunity Employer.* Please send curriculum vitae, selected publications, and a letter describing teaching and research interests as soon as possible. Applications will be considered up to 31 January 1983. Send materials to: **Dr. Jacqueline Eccles (Parsons), Psychology Department, University of Michigan, Ann Arbor, Mich. 48109.**

## BIOCHEMIST

A position is open for an **instructor/assistant professor of biochemistry** in our Department of Chemistry. Candidates must have a Ph.D. in biochemistry or a closely related field; additional capability in toxicology would be an asset. Duties are primarily teaching but opportunities for research are available. This is a 12-month, tenure-track appointment starting 1 January 1983.

The National College of Chiropractic has an enrollment of about 900 and is accredited by North Central Association of Schools and Colleges and by the Council on Chiropractic Education. The B.S. degree in human biology and the doctor of chiropractic degree are awarded.

Applications, including names of three references, will be accepted until 17 December, or until the position is filled. Applications should be addressed to:

**Frederick Varricchio, Ph.D.  
Chairman, Department of Chemistry  
National College of Chiropractic  
200 East Roosevelt Road  
Lombard, Ill. 60148**

**BIOCHEMIST,** tenure-track position. Rank and salary dependent upon qualifications and experience; available fall 1983. Ph.D. required; postdoctoral research experience highly desirable. Submit a letter of application, curriculum vitae, and an outline of research plans, and arrange for three letters of recommendation to be sent to: **Dr. Donald R. Paulson, Chair, Department of Chemistry, California State University, Los Angeles, Los Angeles, Calif. 90032.** Deadline for receipt of applications: 15 January 1983. *The University is an Affirmative Action/Equal Opportunity/Handicapped/Title IX Employer.*

## POSITIONS OPEN

### BIOCHEMIST

Full-time position available in January 1983 or July 1983; teaching biochemistry with laboratory and developing an independent research project in an interest area of the applicant as it relates to health science. Ph.D. required. Interested persons with **OTHER SPECIALTIES** relevant to preclinical sciences are invited to submit a letter discussing teaching and research experience. Enclose curriculum vitae, with names and addresses of three references, to: **Search Committee, Basic Science Division, Northwestern College of Chiropractic, 1834 South Mississippi River Boulevard, St. Paul, Minn. 55116.** *An Equal Opportunity Employer.*

### BIOLOGICAL SCIENCES

**THE PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE** invites applications for two tenure-track positions at the **assistant professor** level, beginning 15 August 1983.

**ANIMAL BIOLOGIST** to teach invertebrate zoology and/or parasitology or environmental biology. The candidate will also participate in teaching animal biology and develop other undergraduate courses in areas of interest.

**PLANT BIOLOGIST** to teach plant biology, environmental biology, and develop other undergraduate courses in areas of interest.

Applicants for either position must have a Ph.D., a strong interest in **undergraduate teaching**, and, as opportunity permits, be able to develop a research program and graduate level courses.

Applications for consideration should consist of the following: (i) letter of application addressing the above criteria, (ii) complete résumé, including a current transcript, and (iii) names, addresses, and telephone numbers of three references. All applications must be submitted by 15 January 1983 to: **Gilbert L. Zink, Ph.D., Chairman of the Search Committee, Department of Biological Sciences, Philadelphia College of Pharmacy and Science, 43rd Street and Kingsessing Mall, Philadelphia, Pa. 19104.** *An Equal Opportunity/Affirmative Action Employer.*

### CELLULAR OR MOLECULAR BOTANIST AND PLANT OR FUNGAL PHYSIOLOGIST

The Department of Botany, Iowa State University, announces two 9-month, tenure-track positions (minimum salaries: \$19,500), available 21 August 1983 for individuals with a Ph.D. or equivalent. **CELLULAR OR MOLECULAR BOTANIST** (assistant or associate professor level): preference will be given to individuals with research experience in recombinant DNA, protoplast culture, nuclear and cytoplasmic interactions as they relate to development and regulation of DNA or protein synthesis. Teaching responsibilities include a one-semester course on the plant cell and a course in the individual's area of specialization and/or participation in general botany or general biology. **PLANT PHYSIOLOGIST** specializing in nitrogen fixation or fungal physiology (assistant professor level) (contingent upon funding): preference will be given to individuals with teaching and/or postdoctoral research experience and experience in current biotechnological methods. Teaching responsibilities include a one-semester course in plant physiology and a graduate course in the individual's area of specialization, and/or participation in general botany or general biology. Development of a strong research program is expected in both positions. Application deadline for both positions is 15 January 1983. Late applications and applications from outstanding candidates about to complete the Ph.D. may be considered. Send curriculum vitae, graduate academic transcripts, a statement of research interests, and three letters of recommendation to: **Ronald C. Coolbaugh, Chairman, Department of Botany, Iowa State University, Ames, Iowa 50011.** *Iowa State University is an Equal Opportunity/Affirmative Action Employer.*

**DEVELOPMENTAL BIOLOGIST—UNIVERSITY OF SOUTH CAROLINA.** The Department of Biology seeks, for fall 1983, a tenure-track assistant professor to interact with a strong program in molecular, cellular, and developmental biology. The successful candidate will be expected to establish a quality research program and teach in some area of developmental biology. Start-up funds will be provided. Send curriculum vitae, brief description of research interests, and three letters of recommendation by 7 January 1983 to: **Dr. Roger H. Sawyer, Developmental Search, Department of Biology, University of South Carolina, Columbia, S.C. 29208.** *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**BIOMEDICAL TECHNICIANS.** Positions available in Experimental Medicine Section, Tulane University Medical School. (i) Radioimmunoassay technician; B.S. degree and 2 years of experience in RIA required. (ii) Biological laboratory technician; B.S. degree and experience in rat physiology or tissue culture preferred. (iii) Biochemist; B.S. or M.S. degree and laboratory experience required. Send credentials and references to: **Jean Goffredo, Research Building 3, VA Hospital, 1601 Perdido Street, New Orleans, La. 70146. Telephone: 504-589-5230. An Equal Opportunity/Affirmative Action Employer.**

**DEVELOPMENTAL BIOLOGY.** Duties include teaching a course in developmental biology, a freshman level biology course, and department chairmanship. Requirements: an earned doctorate in biology, demonstrated ability in teaching, and evidence of potential in leadership and administration. Rank and salary are dependent upon qualifications. Letters of application (or nomination) and current academic résumé should be sent to: **Dr. Robert Bland, Department of Biology, College of St. Thomas, St. Paul, Minn. 55105, before 1 February 1983. The College is an Equal Opportunity/Affirmative Action Employer.**

### EUKARYOTIC CELL GENETICIST

The School of Life and Health Sciences at the University of Delaware is seeking a eukaryotic cell geneticist with postdoctoral training. Desirable areas of training include molecular genetics or somatic cell genetics. Preference will be given to candidates with research experience utilizing recombinant DNA techniques. This is a tenure-track position and is expected to be filled at the assistant professor rank. The successful candidate will be expected to teach an advanced course in his/her area of interest and an undergraduate course in human genetics. Applicants should submit curriculum vitae, representative publications, a statement of research plans, and three letters of recommendation to: **Dr. Milton H. Stetson, Associate Director for Graduate Programs and Research, School of Life and Health Sciences, University of Delaware, Newark, Del. 19711. The closing date for applications is 15 January 1983. The University of Delaware is an Affirmative Action/Equal Opportunity Employer.**

## MEDICAL SCHOOL DEAN

New York Medical College invites nominations and applications for the position of Academic Dean. Candidates should have outstanding accomplishment in academic medicine and demonstrated administrative ability. Nominees and applicants should possess the personal attributes necessary to provide scholarly and dynamic leadership to one of the nation's oldest and largest private medical schools during an important stage of its development.

The academic campus of New York Medical College is located in Westchester County. Clinical facilities of the college are located in New York City and throughout the lower Hudson Valley. Nominations and applications should be sent to:

**Secretary, Dean's Search Committee  
Office of the President  
New York Medical College  
Elmwood Hall  
Valhalla, New York 10595**

New York Medical College  
is an equal opportunity employer M/F

## POSITIONS OPEN

### UNIVERSITY OF SOUTHERN CALIFORNIA (USC)

#### Keck Chair of Geological Sciences

The Department of Geological Sciences invites nominations and applications for the W. M. Keck Foundation Professorship in the Geological Sciences. We are seeking a geoscientist with a proven and distinguished record of research and teaching in any area of geology or geophysics. Preference will be given to candidates whose research is in structural geology or combines structure and geophysics.

The appointment is expected to be made by September 1983, and résumés, nominations, and letters of inquiry will be accepted until the chair is filled. Salary will be commensurate with the candidate's qualifications and experience.

*USC is an Equal Opportunity/Affirmative Action Employer.*

Contact:

**Dr. Robert G. Douglas  
Chairman  
Department of Geological Sciences/SCI 165  
University of Southern California  
University Park-MS 0741  
Los Angeles, Calif. 90089-0741**

### CHAIRPERSON

#### DEPARTMENT OF PSYCHIATRY AND MENTAL HEALTH SCIENCES

Applications are solicited for the position of chairperson of the Department of Psychiatry and Mental Health Sciences of the Medical College of Wisconsin in Milwaukee, Wisconsin. We seek a candidate with the highest academic credentials and with demonstrated skills in administration, teaching, and research for a vigorous multifaceted Department of Psychiatry. *The Medical College of Wisconsin is an Equal Opportunity/Affirmative Action Employer; women and minorities are encouraged to apply.* This position is now available. Submit inquiries and curriculum vitae by 15 December 1982 to: **Jordan N. Fink, M.D., Chairman, Psychiatry and Mental Health Sciences Search Committee, Professor of Medicine, c/o J. Robert Koewing, Special Assistant to the Dean, Medical College of Wisconsin, 8701 Watertown Plank Road, Milwaukee, Wisconsin 53226.**

### UNIVERSITY OF MISSOURI-ST. LOUIS SCHOOL OF OPTOMETRY FACULTY POSITIONS



The School is seeking full-time faculty members. Individuals with expertise in the following areas will be considered:

**Binocular Vision/Ocular Motility.** Specific responsibilities will include teaching courses in visual science to optometry students and conducting research. Evidence of scholarly research activities, in the form of published articles in refereed journals and papers presented at professional meetings will be heavily weighted, as will evidence of teaching ability. The person selected will be expected to develop new research proposals and to obtain support for new or continuing research activities. Ph.D. or O.D./Ph.D. required. Post-doctoral research experience is desirable.

**Public Health/Epidemiologist.** Specific responsibilities will include teaching courses in the optometry curriculum, possibly supervising students in clinical work, as well as establishing courses in specialty area. Candidates should provide evidence of teaching ability and scholarly activities. The individual selected will be expected to interact with the faculty in the development of new (or the continuation of on-going) research programs. The O.D. or Ph.D. is an essential requirement; however, a M.P.H. degree, residency completion or additional clinical experience is desirable.

Rank and salary will be commensurate with experience. The date of appointment is negotiable. Letters of application with current résumés, including the names of three references, should be submitted no later than February 15, 1983 to:

**DR. JERRY L. CHRISTENSEN  
DEAN, SCHOOL OF OPTOMETRY  
UNIVERSITY OF MISSOURI-ST. LOUIS  
8001 NATURAL BRIDGE ROAD  
ST. LOUIS, MISSOURI 63121**

*The University of Missouri is an equal employment and education opportunity institution.*

## POSITIONS OPEN

### CHAIR

#### DEPARTMENT OF BIOLOGICAL SCIENCES UNIVERSITY OF MARYLAND BALTIMORE COUNTY (UMBC)

The Department of Biological Sciences is seeking a distinguished scientist to serve as Professor and Chair. The Department is comprised of 22 productive faculty members whose research interests range from molecular to population biology. Almost all the faculty have extramural funding. It is anticipated that additional faculty will join the Department over the next few years. Expansion into a new teaching and research facility will occur over the next year. The Department presently offers the Ph.D. in Biological Sciences, in addition to the M.S. and B.A. degrees.

Send curriculum vitae and names and addresses of at least three references to:

**Dr. R. P. Burchard and Dr. F. E. Hanson  
Chairmen, Search Committee  
Department of Biological Sciences  
University of Maryland Baltimore County  
Catonsville, Maryland 21228**

*UMBC is an Affirmative Action/Equal Opportunity Employer.*

### DEAN, College of Arts and Sciences

Lamar University in its College of Arts and Sciences employs 120 faculty in nine departments, and offers master's degrees in several departments.

The successful candidate will have an earned doctorate in an arts and sciences discipline, a history of distinguished teaching, and a notable record of scholarly achievement, including research and publication.

The position begins in August 1983, with the salary in the \$52,000 to \$57,000 range. A letter of application and curriculum vitae containing the names, addresses, and telephone numbers of at least three references must be received by 17 January 1983. *Equal Opportunity/Affirmative Action Employer.*

Submit to: **Dr. Keith C. Hansen, P.O. Box 10022, Lamar University, Beaumont, Texas 77710.**

### INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMI-ARID TROPICS (ICRISAT) near Hyderabad, India invites applications for PRINCIPAL PLANT PATHOLOGIST PEARL MILLET

#### Duties

- 1) To lead the pearl millet pathology team in the development, execution, and reporting of results, of plant disease research projects that meet the needs of the interdisciplinary, international Pearl Millet Improvement Program where the major emphasis for disease control is on the utilization of stable and durable host plant resistance.
- 2) To contribute to the research philosophy and direction of the ICRISAT Pearl Millet Improvement Program and to the achievement of its objectives.
- 3) To participate in activities that contribute to the achievement of the Institute's research and training goals and objectives.

#### Location

The position is at ICRISAT Center, Patancheru near Hyderabad, India, but will involve travel in India and Africa.

#### Qualifications

- a) **Essential:** (i) Ph.D. in plant pathology, and at least 10 years of research experience in the field of identification and utilization of host plant resistance; (ii) Willingness to travel frequently in the pearl millet growing regions of the world.
- b) **Desirable:** (i) Experience in tropical agricultural research; (ii) Ability to converse in French.

Apply in writing with full details, via air mail, to: **The Director General, International Crops Research Institute for the Semi-Arid Tropics, ICRISAT Patancheru P.O., Andhra Pradesh 502 324, India.**



## POSITIONS OPEN

**Chairman, Department of Land Resource Science  
Ontario Agricultural College  
University of Guelph**

Applications are invited for the position of **CHAIRMAN**, Department of Land Resource Science at the University of Guelph; the position is available 1 July 1983.

The Department of Land Resource is one of nine administrative units in the Ontario Agricultural College, having a close working relationship with these, as well as other units such as the Department of Geography, and the School of Rural Planning and Development. The department is made up of 20 faculty and 28 staff members. The department administers undergraduate programs in earth science, soil science, and resources management, graduate programs in agrometeorology and soil science, and a large and diverse research program.

The successful applicant will have background and experience in either soil science, agrometeorology, or in a closely related field, and will have demonstrated qualities of leadership in a multidisciplinary context. Experience in teaching, research, and administration is desirable.

The closing date for applications is 15 January 1983. Applications should include curriculum vitae and the names and addresses of three persons who may be contacted for reference.

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

Enquiries and applications, which will be treated in confidence, should be addressed to: **Clayton M. Switzer, Dean, Ontario Agricultural College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.** Position subject to final budgetary approval.

### DIRECTOR OF CLINICAL HISTOCOMPATIBILITY LABORATORY

A director for the clinical histocompatibility laboratory of the University Health Center of Pittsburgh is being sought. The laboratory is responsible for all immunologic evaluations both pre- and post-transplant for a kidney, liver, and heart transplantation program. An independent and collaborative research effort is an integral component of this position in clinical transplantation.

Interested individuals, possessing either an M.D. or Ph.D. degree, should send letters stating their qualifications, curriculum vitae, and three letters of recommendation to:

**Bruce S. Rabin, M.D., Ph.D.  
Director, Clinical Immunopathology  
Department of Pathology  
Room 406 Scaife Hall  
University of Pittsburgh  
School of Medicine  
Pittsburgh, Pa. 15261**

*An Equal Opportunity/Affirmative Action Employer*

### ENVIRONMENTAL QUALITY AND HEALTH POSITION

**UNIVERSITY OF CALIFORNIA, IRVINE:** The Program in Social Ecology, University of California at Irvine, invites applications for an assistant professor in a tenure-track position, beginning September 1983. Candidates must be well trained in analytical or physical chemistry and have research interests in environmental chemistry and in the health implications of environmental contaminants. Doctoral training may be in chemistry, toxicology, environmental science or engineering, public health, or medicine. The candidate must be capable of developing an independent research program within the environmental analysis (environmental quality and health) area of the Program in Social Ecology. The ideal candidate would have experience and/or interests in the public policy application of environmental research findings. The Program in Social Ecology is a multidisciplinary unit that grants the B.A., M.A., and Ph.D. degrees. Faculty include biologists, health specialists, lawyers, planners, psychologists, and sociologists who conduct research on environmental and social problems. The campus is located 40 miles south of Los Angeles and 5 miles inland from the Pacific Ocean. Applications from all qualified candidates are welcome. Candidates should submit a brief letter stating research interests and equipment needs, curriculum vitae, and names and addresses of three references by 15 February 1983 to: **Dr. Steven D. Colome, Chair, Search Committee, Program in Social Ecology, University of California, Irvine, Irvine, Calif. 92717.** *An Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**DIRECTOR, CENTER FOR RESEARCH ON SULFUR IN COAL (CRSC)**—The Center, a joint enterprise of the Illinois State Geological Survey (ISGS), Southern Illinois University at Carbondale, and University of Illinois at Urbana-Champaign, invites applications for the position of director. The director will be a staff member of the ISGS, a division of the Illinois Department of Energy and Natural Resources. The ISGS is located at the University of Illinois, Urbana-Champaign. The CRSC will conduct coordinated research on sulfur and other constituents in Illinois Basin coal at the ISGS and the two universities, supported by grant, contract, and internal funds. Current CRSC research is funded by the Illinois Coal Research Board. The director will be responsible for planning and developing a research program, for securing funding from government and private sources, and for developing liaison with coal-related interests in the state. Candidates are sought who have proven capability of developing, administering, and securing funding for research, and a doctorate or equivalent training/experience in a discipline related to coal. Salary will be commensurate with professional qualifications. Applications should be submitted by 31 December 1982 to: **Neil F. Shimp, Chairman, Search Committee, Center for Research on Sulfur in Coal, Illinois State Geological Survey, 615 East Peabody Drive, Champaign, Ill. 61820.** Telephone: 217-333-5106. *An Affirmative Action/Equal Opportunity Employer.*

### DIRECTOR, PEDIATRIC RESEARCH INSTITUTE

The Department of Pediatrics, St. Louis University, is seeking M.D. or Ph.D. applicants for the director of The Pediatric Research Institute. The department has ongoing research in developmental biology, gastroenterology, nephrology, ophthalmology, cardiology, immunology, hematology, and orthopedics. Applicants should have demonstrated proficiency in teaching and record of success in research. The distinguished applicant will receive a faculty appointment. Submit applications, including curriculum vitae and three references, by 1 January 1983 to: **Dr. Akihiko Noguchi, Department of Pediatrics, St. Louis University, 1465 South Grand Boulevard, St. Louis, Missouri 63104.** *Equal Opportunity/Affirmative Action Employer.*

**ENVIRONMENTAL PATHOLOGY.** Pre- and post-doctoral positions available July 1983. Research emphasis is on cellular and molecular effects (mutagenesis, teratogenesis, biotransformation) of toxic chemicals (especially trace metals, aromatic hydrocarbons). Inquiries: **N. Karle Mottet, M.D., Program Director, Department of Pathology, SM-30, University of Washington, Seattle, Wash. 98195.** *The University of Washington is an Affirmative Action/Equal Opportunity Employer.*

### FACULTY MEMBER, DEPARTMENT OF EMBRYOLOGY, CARNEGIE INSTITUTION OF WASHINGTON, BALTIMORE, MARYLAND

The department is a research institute whose faculty studies developmental biology. Applicants can be at any level of experience beyond the postdoctoral period. To apply send curriculum vitae and a brief statement of research interest (fewer than three pages) and have three letters of recommendation sent to:

**Director, Department of Embryology  
Carnegie Institution of Washington  
115 West University Parkway  
Baltimore, Maryland 21210**

*An Equal Opportunity/Affirmative Action Employer*

### FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology of The University of Texas Health Science Center at Dallas seeks applications for tenure-track positions at the level of assistant or associate professor. Applicants must have a relevant Ph.D. or M.D. degree, postdoctoral training, and show evidence of firm commitment to a career in independent research. We are particularly interested in considering individuals with an appropriate background who wish to apply techniques of molecular or cellular biology or biochemistry to fundamental problems of pharmacological interest. Responsibilities will also include teaching of medical and/or graduate students after the first year of employment. Send curriculum vitae and a brief description of proposed research to: **Dr. Alfred G. Gilman, Chairman, Department of Pharmacology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**FACULTY-LEVEL OPPORTUNITIES** to join new and growing dynamic research group of cell and molecular biologists (all individually NIH-funded) who seek able coequal collaborators with prior experience in cell genetics, membranes, cell-cycle/aging/division, molecular cloning, cell differentiation (for example, role of hormones/growth factors in lung and lens cells maturation currently under study), and tumor virology. Very generous space, access to all major equipment, attractive institutional support, excellent salaries, but individuals **must** be able to transfer ongoing NIH or other grant support at time of appointment. Special consideration to scientists interested in interfacing their research with new diagnostic evaluation for clinical departments, as well as those who plan complete effort in pure basic research. (Sponsorship of applications of exceptionally qualified new P.I.'s also possible.) Expanding Medical Center in good neighborhood (15 minutes from midtown Manhattan). For further information and application, contact: **Dr. Joy Hochstadt, Cell Genetics Research Laboratory, Department of Pathology, Catholic Medical Center, 89-15 Woodhaven Boulevard, Woodhaven, N.Y. 11421; telephone: 212-849-1200.**

**FACULTY POSITION, ENVIRONMENTAL HEALTH:** The School of Public Health is accepting applications for a tenure-track position at the assistant professor level. The applicant must have a Ph.D. degree in chemistry, environmental health, or a closely related field; postdoctoral experience is desirable. The academic background must show strength in analytical chemistry with an environmental health orientation. Responsibilities include graduate-level teaching, advising, and service in a major Environmental Health (EH) program; research in applicant's specialty area and in general EH as compatible with program needs; and aggressive pursuit of research/training grants and contracts. Starting date for this position is approximately 1 July 1983. Applications must be received by 1 February 1983. Submit current curriculum vitae, names and addresses of three references, and a brief statement of interests related to EH to: **Dr. Fay M. Thompson, Search Committee Chairperson, 1158 (C) Mayo, EH, University of Minnesota, Minneapolis, Minn. 55455.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites applications from women and minorities.*

### FACULTY POSITIONS IN MICROBIOLOGY AND MOLECULAR GENETICS

The Department of Microbiology and Molecular Genetics at the University of Cincinnati College of Medicine is undergoing a major expansion, and invites applications for tenure-track positions at any level. Candidate should be involved in a vigorous and creative research program and should have demonstrated independence as an investigator. Preference will be given to individuals in the areas of molecular or cellular immunology, yeast genetics, and molecular mechanisms of pathogenesis. Applicants should submit curriculum vitae and a short statement of research accomplishments and direction for future research, along with the names of three scientists willing to write letters of recommendation. These should be forwarded to: **Dr. Jerry B. Lingrel, Chairman, Department of Microbiology and Molecular Genetics (524), University of Cincinnati College of Medicine, Cincinnati, Ohio 45267.** *The University of Cincinnati is an Equal Opportunity Affirmative Action Employer.*

### FACULTY POSITIONS IN NEUROBIOLOGY

Positions are open for tenure-track appointments at the University of Southern California. Candidates must have a doctoral degree and at least 2 years of postdoctoral training. Research of the applicant may be in any area of the basic or applied neural sciences, but particular attention will be given to those working in the general areas of neuroendocrinology, development, membrane biophysics, or neurological disorders. Candidates will be expected to establish an independent research program of the highest quality and to teach in the areas of their choice. Please send curriculum vitae, bibliography, three letters of reference, and a brief description of career goals and research objectives by 31 December 1982 to:

**Chairman, Search Committee  
Section of Neurobiology  
Department of Biological Sciences  
University of Southern California  
Los Angeles, Calif. 90089-0371**

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

#### POSTDOCTORAL RESEARCH AWARDS

Sponsored by the  
**BALLISTIC RESEARCH LABORATORY**  
in association with  
**THE NATIONAL RESEARCH COUNCIL**

The National Research Council will make awards in 1983 under the Resident Associateship Program, which provides awardees with opportunities to conduct experimental and theoretical research as visiting scientists and engineers in the fields of:

Applied Computer Sciences  
Applied Mathematics  
Probability Theory and Stochastic Processes  
Combustion Research  
Fluid Mechanics  
Continuum Mechanics  
Materials Sciences  
Nuclear and Radiation Physics  
Physical Chemistry  
Quantum Chemistry

in the Ballistic Research Laboratory complex located in the beautiful Chesapeake Bay country of Maryland, within easy driving distance of the metropolitan centers of Baltimore, Philadelphia, and Washington, D.C.

Some programs are open to senior investigators as well as recent doctorates.

Further details on research programs may be obtained from: **Dr. L. J. Puckett**, telephone: 301-278-6246, at the Ballistic Research Laboratory, Aberdeen Proving Ground, Md. 21005.

For application materials and details on specific research opportunities, write promptly, giving areas of interest, to:

Associateship Office (JH-610-P)  
**NATIONAL RESEARCH COUNCIL**  
2101 Constitution Avenue, NW  
Washington, D.C. 20418

Postmark deadline for application is 15 January.

## RESEARCH SCIENTISTS

Interferon Sciences, Inc. is currently expanding its facilities and looking for individuals possessing a Ph.D. degree with post doctoral experience in each of the following areas:

- A) Cellular Immunology; experience in the area of T cell hybridomas, T cell regulation, T cell activation and lymphokines
- B) Biochemistry; experience in protein isolation, purification, and identification
- C) Molecular Biology; experience in recombinant DNA methodology (DNA isolations, sequencing, hybridization, cloning, and expression)

Qualified individuals should submit resumes to:

L. Zuckerman  
Personnel Director  
Interferon Sciences, Inc.  
783 Jersey Avenue  
New Brunswick, NJ 08901

 **INTERFERON**  
SCIENCES, INC.

An affirmative action/equal opportunity employer

# U.S. Department of Energy Master's Thesis Research Nuclear Waste Management

**DESCRIPTION:** The U.S. Department of Energy in association with Argonne National Laboratory, will offer ten awards for Master's thesis research on nuclear waste management, in applicable areas of engineering or the physical sciences. The purpose of these awards is to enable graduate students in disciplines related to nuclear waste management to obtain practical research experience. Each of the ten research programs will be conducted at the academic institution with which the student is enrolled, under the guidance of the student's research professor. Any resources required for the research must be available on campus. The student will be required to provide to Argonne National Laboratory brief quarterly technical progress reports and a final detailed report at the conclusion of the research. Journal publication of the research is encouraged. The duration of the award will be from June 1, 1983 to May 31, 1984.

**AREAS OF RESEARCH:** The management of all types of nuclear waste is of interest including high-level, low-level, transuranic, airborne, and mill tailings. Typical research areas of interest include waste form properties, interactions with geologic media, and environmental safety aspects of waste treatment, transportation, and final disposal.

**ELIGIBILITY:** An award recipient must currently be a U.S. citizen and accepted as a full-time graduate student at an accredited U.S. college or university. The proposed research must have the approval of the applicant's research professor and the department chairperson. Selections will be by peer review and will be based on academic record, availability of research facilities and faculty guidance, and applicability of the proposed research to the objectives and programs of the Department of Energy.

**FINANCIAL ASSISTANCE:** The Department of Energy will provide up to a total of \$12,000 for each accepted research proposal, payable to the academic institution where the research is performed.

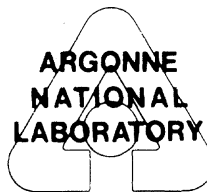
**APPLICATIONS:** Each student applicant should provide to Argonne National Laboratory, at the address below, a 200-300 word summary of the proposed research, along with an undergraduate grade transcript, and brief statements regarding citizenship status and availability of required research facilities and qualified faculty guidance. The application must carry written endorsement of the student's research professor and department chairperson.

**APPLICATION DEADLINE:** March 15, 1983

**MAILING ADDRESS:** Research proposals and requests for further information should be directed to:

J. Howard Kittel  
Manager, Office of Waste  
Management Programs  
Argonne National Laboratory  
9700 South Cass Avenue  
Argonne, Illinois 60439

(312) 972-6677



An Equal Opportunity/  
Affirmative Action Employer

## POSITIONS OPEN

**FACULTY POSITION IN NEUROPSYCHOLOGY—THE CITY COLLEGE OF CITY UNIVERSITY OF NEW YORK (CUNY).** The Department of Psychology invites applications for an anticipated (1 September 1983) tenure-track position at the assistant/associate professor level; a Ph.D. required. We are particularly interested in individuals with a strong background in clinical neuropsychological research, especially the areas of childhood or geriatric disorders. The successful candidate will be expected to develop an independent research program and to participate in training predoctoral students. Send curriculum vitae, a description of future research plans, and the names of three references by 1 February 1983 to: **Dr. J. Rosen, Department of Psychology, The City College of CUNY, Convent Avenue at 138th Street, New York, N.Y. 10031.** *An Equal Opportunity/Affirmative Action Employer, M/F/V/H.*

The University of Michigan Medical School, Department of Radiology, has on occasion open **FACULTY POSITIONS** within the department and its affiliated hospitals. Physicians filling these positions will take part in the programs of patient care, teaching, and research of the Department of Radiology. They will supervise the activities of house officers and aid in the teaching of house officers and medical students. Qualified applicants must be American Board of Radiology-certified and Board-eligible. Previous training or work experience in an academic institution as well as demonstration of previous academic research and teaching experience are desirable. Academic rank will depend on qualifications and experience.

Interested applicants should contact: **William Martel, M.D., Acting Chairman, Department of Radiology, University of Michigan Medical School, Ann Arbor, Michigan 48109.** *A nondiscriminatory, Affirmative Action Employer.*

### IMMUNOLOGIST

The Department of Biology, University of California, Riverside, seeks an immunologist for a tenure-track position starting 1 July 1983. The appointment will be at the assistant professor level. We seek an individual with strong research potential to interact with an active group in cell biology focused on cell surface phenomena. Preference will be given to persons doing research in reproductive immunology and/or cell surface immunology. A productive research program and willingness to develop courses at the graduate and undergraduate level are essential. Postdoctoral experience is highly desirable. Applicants should send up-to-date curriculum vitae, a brief description of research and teaching goals, reprints of scientific papers, and request at least three letters of reference be sent to:

**Professor Vaughan Shoemaker, Chairman  
Department of Biology  
University of California  
Riverside, California 92521**

*The University of California is an Equal Opportunity/Affirmative Action Employer. Applications are invited from all qualified individuals.*

### INSTRUCTOR/ASSISTANT PROFESSOR Ann Arbor Veteran's Administration Medical Center

The University of Michigan Medical School, Department of Pathology, is seeking a pathologist (Board-certified or -eligible in both anatomic and clinical pathology) for an academic position that will involve responsibility for service activities, especially in the Clinical Laboratories. There will be opportunities for teaching related to medical students and residents. There will also be opportunities to become involved in research activities related to immunopathology. Appointment in this position at the Veteran's Administration Medical Center carries a full academic title in the Department of Pathology at the University of Michigan Medical School. Candidates should contact:

**Peter A. Ward, M.D.  
Department of Pathology  
University of Michigan Medical School  
1315 Catherine Road  
M5240 Medical Science I  
Ann Arbor, Mich. 48109  
Telephone: 313-763-6384**

**or  
Lee A. Weatherbee, M.D.  
Department of Pathology  
Veteran's Administration Medical Center  
2215 Fuller Road  
Ann Arbor, Mich. 48105  
Telephone: 313-769-7100, extension 357**

## POSITIONS OPEN

### HEAD OF OPHTHALMOLOGY DEPARTMENT

Applicants for this position in the University of Pittsburgh School of Medicine should have strength in research and teaching and a record to indicate great capability in further growth and leadership of a strong clinical academic department.

Applications with complete curriculum vitae and the names of three individuals who may be reached as references should be sent before 15 January 1983 to: **Oscar M. Reinmuth, M.D., Department of Neurology, 322 Scaife Hall, University of Pittsburgh, Pittsburgh, Pa. 15261.** *An Equal Opportunity/Affirmative Action Employer.*

### IMMUNOCHEMIST

Battelle Columbus Laboratories, a world leader in research and development, has an immediate opening in our Medical Sciences Section for an immunochemist. We seek a person with an M.S. or Ph.D. in immunology, biochemistry, or a related field to perform experimental studies in antibody production and characterization and the development of immunoassays. Experience with immunochemical techniques, including enzyme immunoassays, is required and experience with monoclonal antibodies is desired.

This career position involves active laboratory work and the responsibility to direct one or two laboratory technicians. Future career growth will require excellent communication skills and the ability to market contract research.

Battelle offers a competitive salary, excellent employee benefits, and career growth opportunities. Interested individuals should send résumés, in confidence, to: **Richard C. Needles, Employment Department 0-3.**



**Battelle**

Columbus Laboratories  
505 King Avenue  
Columbus, Ohio 43201

An opening is available at the Connective Tissue Research Institute (CTRI) for an **ESTABLISHED INVESTIGATOR** (4 years or more post-Ph.D.). We are seeking an individual with a history of achievement in either cell biology, immunology, or molecular biology relevant to connective tissues. Initial, guaranteed, salary support will be available for up to 2½ years for the investigator and a technician during which time he/she will be expected to develop a fully funded research program.

The investigator will have access to all of the central laboratory facilities and services of the CTRI. Approximately 500 square feet of modern laboratory space will be made available to the investigator plus approximately 150 square feet of furnished office space.

The CTRI is a component of the University City Science Center which is located at the campus of the University of Pennsylvania in a recently developed urban research park and has affiliations with the Schools of Medicine and Dentistry of the University of Pennsylvania.

The Science Center will offer an attractive salary along with a comprehensive benefit plan which includes medical, dental, life, disability, and retirement benefits.

Send curriculum vitae and bibliography to: **Dr. Nicholas A. Kefalides, CTRI, 3624 Market Street, Philadelphia, Pa. 19104.** *An Equal Opportunity Employer.*

**MICROBIOLOGY / GENETICS — BIOLOGICAL SCIENCES.** One full-time, tenure-track appointment at the assistant professor rank. Applicant should be qualified to teach microbiology, genetics, and general biology. Ph.D. required. Candidate should demonstrate the ability and willingness to teach students with a broad range of cultural, ethnic, and academic backgrounds. In addition, the applicant will be required to exhibit a strong interest in maintaining a vigorous research program. The existing Department of Biological Sciences has strong research interests and is equipped with major equipment items to sustain research activities. It is the department's expectation that the applicant will also seek external funding. Send curriculum vitae, three letters of support, and reprints by 15 January 1983, for the starting date of 1 September 1983. Salary negotiable based on qualifications. *Women and minority candidates are encouraged to apply.* Send résumé to: **Director of Affirmative Action, Search Committee BS/M/G, State University of New York—College at Old Westbury, Old Westbury, N.Y. 11568.**

## POSITIONS OPEN

### THE UNIVERSITY OF SYDNEY

#### FIXED-TERM LECTURESHIP IN BIOLOGY

Applications are sought from persons with a research interest in animal ecology, in which preference may be given to applicants with interests in terrestrial population ecology. The appointee will be expected to carry out and supervise research, including that of postgraduate students, and to participate in the teaching of ecology and general animal biology.

Salary range: A\$20,963 to A\$27,539 per annum.

Fixed-term for 3 years from date of appointment. The University reserves the right not to proceed with any appointment for financial or other reasons.

Applications, including curriculum vitae, list of publications, and names of three referees, should be forwarded by 22 December 1982 to: **The Registrar, University of Sydney, N.S.W. 2006, Australia,** from whom further information is available. Additional information also available from: **Head, School of Biological Sciences, University of Sydney, N.S.W. 2006, Australia.**

**MAMMARY GLAND BIOLOGY**, postdoctoral position available to study the role of cellular endomembranes in synthesis, modification, and secretion of the constituents of milk. Applicants with experience in nucleic acid isolation and in vitro translation are welcomed. Submit curriculum vitae to: **T. W. Keenan, Head, Department of Biochemistry, Virginia Polytechnic Institute, Blacksburg, Va. 24061.** *Virginia Tech is an Equal Opportunity/Affirmative Action Employer.*

### OCULAR NEUROSCIENTIST

Tenure-track position available immediately in Department of Ophthalmology with strength in retina and extraocular muscle research. We seek a cellular neurobiologist willing to work in one of these two areas. Candidate's training should be in membrane electrophysiology, cellular pharmacology/biochemistry, immunocytochemistry, or related fields. Rank and salary dependent on qualifications. Send curriculum vitae and three letters of recommendation to: **Professor H. Ripps, Department of Ophthalmology, New York University Medical Center, 550 First Avenue, New York, N.Y. 10016.**

**PHARMACOLOGY.** Two assistant professor, tenure-track positions available 16 September 1983. Ph.D. in pharmacology required with specialization in one or more of these areas: autonomic, cardiovascular, immunologic, neuroendocrine, and renal. Duties involve teaching pharmacology to undergraduate and graduate students, and conducting independent and cooperative research.

Send résumé and teaching and research goals and ask three people familiar with your professional work to send letters by 1 February 1983 to:

**Richard A. Ohvall, Ph.D.  
Dean, School of Pharmacy  
Oregon State University  
Corvallis, Oregon 97331**

*Oregon State University is an Equal Opportunity/Affirmative Action Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

**PHARMACOLOGIST OR NUTRITIONIST** with an interest in studying essential metalloelement metabolism and activities of metal complexes in animal models of disease should apply for an open postdoctoral position offered by: **John R. J. Sorenson, University of Arkansas, College of Pharmacy, 4301 West Markham, Little Rock, Ark. 72205.**

**Ph.D. REQUIRED** with experience of oncogenic transformation assay systems with cells in vitro. Strong background in radiation biology or molecular genetics essential. Send credentials, reprints, and three letters of reference to: **Dr. Eric J. Hall, Radiological Research Laboratory, Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Equal Opportunity/Affirmative Action Employer.*

### RESEARCH ASSOCIATE

Ph.D. in radiobiology required for project involving the response of mammalian cells in culture to radiations of varying quality delivered at low dose rate. Experience required in cell culture techniques, particularly with cells of human origin. Send credentials, reprints, and three letters of reference to: **Dr. Eric J. Hall, Radiological Research Laboratory, Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Equal Opportunity/Affirmative Action Employer.*



## Becton Dickinson is creating a new team in Nucleic Acid Hybridization

Becton Dickinson is a billion dollar healthcare company leading a revolution in biotechnology. We view our commitment to recombinant DNA, Nucleic Acid Hybridization and related R&D areas as essential to our future. This is why we are expanding our resources and have immediate opportunities for scientists with the following qualifications:

### Scientist, Recombinant DNA Technology

Will be responsible for planning and performing complex experiments relating to the use of nucleic acid hybridization as a tool for detecting infectious agents. You will also work closely with other divisions of B-D to evaluate the utilization of gene cloning to the missions of the corporation.

Position requires a PhD in Molecular Biology, Microbiology, Biochemistry or Cell Biology and 2-5 years postdoctoral experience in Molecular Biology. Expert knowledge of nucleic acid hybridization and cloning, and previous contact with the biotechnology community essential.

### Molecular Biologist

Will participate in experiments aimed at qualifying nucleic acid hybridization as a tool for detecting infectious organisms in patient specimens.

Background must include a BS/MS in Molecular Biology, Biochemistry, Microbiology or Cell Biology with 2 years of laboratory experience in nucleic acid hybridization and/or DNA cloning. Knowledge of nucleic acid sequencing essential.

Both positions offer excellent salary, benefits and the opportunity to advance your personal and professional growth. For immediate consideration, send your resume complete with salary history to: **Ms. Joy Meini, Becton Dickinson & Company, Charles & Chase Streets, Baltimore, MD 21201.**

*Caring for people is our business*

**BECTON  
DICKINSON**

**NRL**

## RESEARCH PHYSICIST

GS-1310-12 — \$29,374 to \$38,185 per annum  
(salary dependent on qualifications)

### NAVAL RESEARCH LABORATORY Optical Sciences Division

Research Physicist to provide theoretical support in the Laser Physics Branch which conducts theoretical and experimental research in high energy lasers, nonlinear optics and laser induced chemistry. Applies advanced computer modeling techniques to complement and guide experimental efforts on projects such as unstable resonators and control of modes, injection locking of laser resonators, physics of gas and solid state lasers, laser induced multi-photon site-selective chemistry, and interaction of laser radiation with surfaces.

**Qualifications:** Ph.D. or equivalent experience in Physics with at least three years experience in computer modeling for laser physics and laser induced chemistry.

Interested applicants should submit a Personal Qualifications Statement (SF-171) or detailed resume by 22 December 1982 to:

**NAVAL RESEARCH LABORATORY  
Civilian Personnel Office  
Attention: 65-056-11.2:EL: (S)  
4555 Overlook Avenue, S.W.  
Washington, D.C. 20375**

An Equal Opportunity Employer  
(Minority/Female/Disabled)

U.S. Citizenship Required

## Pharmaceutical Research

Expansion of Pfizer's Central Research Division has created a number of openings for Ph.D. scientists to pursue research aimed at the discovery and development of important new therapeutic agents for metabolic, gastrointestinal and CV disorders.

The appointees will be expected to initiate innovative research programs from within established multi-disciplinary teams of scientists already engaged in these tasks. Exploitation of novel biological mechanisms and the publication of important findings will be encouraged.

### DIABETES RESEARCH

Two positions require biologists interested in working in the areas of hormone secretion and the vascular and ocular complications of diabetes. We are seeking people with either a cell biological or biochemical background. Previous experience in the areas of tissue culture techniques, hormone secretion/action, or membrane structure and function will be advantageous.

### GI & RENAL RESEARCH

Both of these positions require individuals with a strong background in mammalian physiology. For the opening in GI research, we prefer candidates with interests in the effects of hormones and other bioactive mediators on GI secretions or blood flow. For the appointment in renal research, candidates should have a background in renal physiology as it relates to the control of blood pressure, water, and electrolyte balance. Preference will be given to individuals experienced with whole animal preparations.

These positions offer excellent opportunity for professional recognition and career growth. In addition, we offer a competitive compensation and benefit package and the opportunity to live in an attractive Connecticut shore community. Please send resume and brief description of research interests to **Dr. J. K. Larson, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.**



An equal opportunity employer

## POSITIONS OPEN

**MICROBIOLOGIST** with Ph.D. or equivalent and two or more years of experience in clinical or medical microbiology. Position responsibilities include: hybridoma production and screening, serologic analysis, and maintenance and characterization of bacterial and viral stocks.

Biotechnology company with strong technical team, excellent benefits, competitive salary. *Equal Opportunity Employer*. Interested persons should send résumé, in confidence, to: **Ingrid Rasch, Personnel Manager, Genetic Systems Corporation, 3005 First Avenue, Seattle, Washington 98121.**

## MOLECULAR CELL PHYSIOLOGIST

A tenured or tenure-track teaching and research position is available fall 1983 in eukaryotic cell/organelle physiology. The appointment can be made at the rank of **FULL, ASSOCIATE OR ASSISTANT PROFESSOR**, depending on experience. We are seeking an established biologist with a record of independent research, using molecular techniques such as recombinant DNA, to study eukaryotic systems. A vigorous research program with external funding from government or industry is expected. A commitment to teaching at the undergraduate and graduate level is important. Please send a résumé, names and addresses of three references, two or three selected reprints, and a brief discussion of present and prospective research and teaching interests by 31 January 1983 to: **Search Committee, Department of Biology, Portland State University, P.O. Box 751, Portland, Oregon 97207. An Equal Opportunity/Affirmative Action Employer.**

## PLANT BIOCHEMIST/MOLECULAR BIOLOGIST

The Department of Agricultural Biochemistry at the University of Nebraska-Lincoln invites applications and nominations for a 12-month, tenure-track faculty position in plant biochemistry or molecular biology, which will not augment, but rather complement the department's existing programs in photosynthetic C-metabolism and membranes, N<sub>2</sub> fixation, and host-specific pathotoxins. Although this position will primarily entail basic research within the Agricultural Experiment Station (75 percent), the appointee will also participate in the teaching program (25 percent). Salary and rank are open. Postdoctoral training is highly desirable. Send résumé and three letters of support by 1 February 1983 to: **Dr. R. Chollet, Department of Agricultural Biochemistry, University of Nebraska-Lincoln, Lincoln, Neb. 68583-0718. Telephone: 402-472-2936. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL ASSISTANT:** Ph.D. or equivalent degree in biochemistry, cell biology, molecular biology, or developmental biology. To study development of avian cornea and wound healing in ocular tissue. Send résumé and two references to: **Winston W. Y. Kao, Ph.D., Ophthalmic Research Laboratories, Department of Ophthalmology, University of Cincinnati College of Medicine, 231 Bethesda Avenue, Mail Location Number 527, Cincinnati, Ohio 45267. Telephone: 513-872-5151.**

## POSTDOCTORAL FELLOW FISH ECOLOGY

Two-year appointment. Applications welcomed from persons with research experience in fish ecology or related fields. Forward curriculum vitae, statement of research interests, and two letters of reference by 1 February 1983 to: **Dr. W. C. Leggett, Department of Biology, McGill University, Montreal, Quebec, Canada H3A 1B1.**

University of Arkansas for Medical Sciences  
Departments of Medicine and Biochemistry  
**POSTDOCTORAL FELLOWS:** Two positions available starting January to September 1983 for persons with strong background in **molecular biology and somatic cell genetics** for studies on cellular aging; 2 to 3 years with salary depending upon experience. Apply with curriculum vitae and names and addresses of three references to: **Dr. Sam Goldstein and Dr. Robert J. Shmookler Reis, Departments of Medicine and Biochemistry, Slot 604, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Ark. 72205.**

**POSTDOCTORAL POSITION** available immediately for studies on chromatin function in mammalian cells with special interest in DNA repair, poly APR-ribose, and cell cycle. Send curriculum vitae and references to: **Dr. K. Ebisuzaki, Cancer Research Laboratory, University of Western Ontario, London, Ontario, Canada N6A 5B8.**

## POSITIONS OPEN

**POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE**—Position available to study the molecular structure of the H-Y gene. Candidates with knowledge in biochemistry and recombinant DNA techniques are invited to send curriculum vitae and three references we may contact. Position available February 1983. Respond no later than January 1983 to: **Drs. Gloria Koo/Ulrich Hemmerling, SLOAN-KETTERING INSTITUTE for Cancer Research, 1275 York Avenue, New York, N.Y. 10021. An Equal Opportunity Employer, M/F.**

The Department of Physiology at the University of Massachusetts Medical School invites applications from candidates having a Ph.D. in cell biology, endocrinology, or biochemistry for a position as a **POSTDOCTORAL FELLOW**.

The position involves ongoing research into the mechanisms of the cellular actions of peptide hormones.

Please send curriculum vitae and names of three references to: **Dr. H. Maurice Goodman, Professor and Chairman, Department of Physiology,**

**University of Massachusetts  
Medical School  
55 Lake Avenue North  
Worcester, Mass. 01605**

*An Affirmative Action/Equal Opportunity Employer. Applications from women and minorities are especially encouraged.*

**POSTDOCTORAL POSITION** available for a cardiovascular physiologist to join a team studying the role of CNS mechanisms in the pathogenesis of cardiac arrhythmias. The fellow should be expert in instrumentation and computer techniques that allow the study of cardiovascular function in awake, behaving dogs. Send curriculum vitae and telephone numbers of two references to: **Dr. B. Natelson, Department of Neurosciences, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—NEW JERSEY MEDICAL SCHOOL, 88 Ross Street, East Orange, N.J. 07018. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available for M.D. or Ph.D. (physiology or pharmacology). Experience in opiate receptor techniques or control of breathing desirable. Beginning salary is \$18,000. Please send curriculum vitae and names of two references to: **Dr. Teodoro V. Santiago, Department of Medicine, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—Rutgers Medical School, Academic Health Science Center, CN19, New Brunswick, New Jersey 08903. An Equal Opportunity/Affirmative Action Employer, M/F.**

**POSTDOCTORAL POSITION** available now in Department of Medicine, Tulane Medical School. Research involves role of peptides in cardiovascular regulation. Experience required in smooth muscle physiologic and pharmacologic techniques. Send curriculum vitae and two references to: **Thomas Giles, M.D., Professor, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, La. 70112.**

**POSTDOCTORAL POSITION (Ph.D.)** available 1 July 1983 for fellow in reproductive endocrinology, focusing on modulation of gonadotropin action at the cellular level. Background in biochemistry and culture techniques desirable. Send curriculum vitae and names and telephone numbers of two references to: **Dr. Judith L. Vaitukaitis, Section of Endocrinology and Metabolism, Boston University School of Medicine, 818 Harrison Avenue, Boston, Mass. 02118.**

**POSTDOCTORAL POSITION** available immediately for studies on the structure of cell surface glycoconjugates from embryonal carcinoma cells. Experience in the purification and analysis of complex carbohydrates desired. Salary: \$15,000 to \$17,000 per year. Send curriculum vitae and names of three references to: **Dr. Michiko N. Fukuda, La Jolla Cancer Research Foundation, 10901 North Torrey Pines Road, La Jolla, Calif. 92037. Applicants are encouraged to apply by 15 January 1983.**

## POSITIONS OPEN

NIH-supported **POSTDOCTORAL POSITION** is available in neurobiology at the Boys Town Institute for Communication Disorders in Children. The neurobiology unit consists of laboratories of neurophysiology (E. Javel), neurochemistry (B. J. Morley), and neuroanatomy (W. B. Warr). Preference will be given to individuals with an interdisciplinary approach to audition. Send curriculum vitae, description of research interests, and three letters of recommendation to: **C. S. Watson, The Boys Town Institute for Communication Disorders in Children, 555 North 30 Street, Omaha, Neb. 68131. An Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available January 1983 for studies of symbiotic compatibility in the nitrogen-fixing *Frankia-actinorhizal* plant symbioses. A background in some aspect of symbiology research required with experience in ultrastructural, serological, or physiological techniques preferred. Send curriculum vitae and names of three references to: **Dr. Dwight Baker, Charles F. Kettering Research Laboratory, 150 East South College Street, Yellow Springs, Ohio 45387. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately to work on physical and chemical properties of the iron-molybdenum cofactor of nitrogenase. Send curriculum vitae to: **Dr. William E. Newton, Charles F. Kettering Research Laboratory, 150 East South College Street, Yellow Springs, Ohio 45387. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available immediately for a Ph.D. in plant physiology, plant biochemistry, or related plant sciences to study the plant growth regulation associated with selected pesticides. Experience in bioassay and mechanisms of plant growth regulation is preferred. Salary commensurate with experience. Initial appointment will be 1 year with possible 2-year extension. Send curriculum vitae and names of three references to: **Dr. Robert Aycock, Department of Plant Pathology, North Carolina State University, Raleigh, N.C. 27650; telephone: 919-737-2730.**

**POSTDOCTORAL POSITION** available for Ph.D. with experience in central and peripheral cardiovascular physiology to investigate the role of central monoaminergic pathways in the regulation of autonomic functions. NIH supported position for 2 years. Salary up to \$14,000. Send curriculum vitae and references to: **Dr. Patrice G. Guyenet, Department of Pharmacology, University of Virginia, 1300 Jefferson Park Avenue, Charlottesville, Va. 22908. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available for Ph.D. in the area of plant molecular biology. Experience in either recombinant DNA research or plant cell culture is desirable. Research will involve the isolation and characterization of plant nuclear genes encoding chloroplast proteins. Send curriculum vitae and names of references to: **Dr. A. R. Cashmore, Department of Cell Biology, The Rockefeller University, 1230 York Avenue, New York, N.Y. 10021.**

**POSTDOCTORAL POSITION IN MEMBRANE BIOCHEMISTRY** available immediately to study protein-lipid interactions involved in cell membrane disruption during immune attack by complement proteins. Specific projects will include investigating the topographical arrangement of individual complement proteins (C5b-9) with respect to the membrane using photolabeling techniques and defining membrane properties that alter a target's susceptibility to complement action. Experience in biochemical/biophysical techniques desired. Salary commensurate with training and experience. Send curriculum vitae and names of three references to: **Dr. Valerie Hu, Department of Biochemistry, c/o Personnel/Manpower, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814.**

## POSTDOCTORAL POSITIONS

Two postdoctoral positions are available immediately in the areas of fertilization and reproductive immunology. Studies include biochemical analyses of sperm autoantigens, T-cell antigens, sperm plasma membranes, and the use of monoclonal antibodies to study fertilization. Familiarity with immunology or reproductive biology desirable. Send letter, curriculum vitae, and the names of three references to: **Dr. Michael O'Rand, Laboratories for Cell Biology, Department of Anatomy, University of North Carolina School of Medicine, 210A Swing Building 217H, Chapel Hill, N.C. 27514.**

*An Affirmative Action/Equal Opportunity Employer*

# RESEARCH ASSISTANT

Applicants are invited for the position of Research Assistant in the Central Nervous System Research Unit. This position would require follow-up studies on lead compounds by receptor finding assay, enzymatic assay and radioimmunoassay, GC/MS and HPLC.

Qualifications include a minimum of a MS or BS degree in Biochemistry with training in CNS Pharmacology and experience in procedures used with small laboratory animals. Additional training in Computer Science is desirable.

Kalamazoo is a mid-size, southwestern Michigan Community providing immediate access to an excellent mix of cultural/recreational pursuits. Excellent benefits and salary program. Please submit resume in confidence to:

Lance D. Williams

**Upjohn**

**The Upjohn Company**  
7000 Portage Road  
Kalamazoo, Michigan 49001

An Equal Opportunity Employer M/F

## THE GEORGE WASHINGTON UNIVERSITY SPRING SYMPOSIUM ON HEALTH SCIENCES

(Washington, D.C., May 31-June 3, 1983)

### THYMIC HORMONES AND LYMPHOKINES '83; THEIR CHEMISTRY AND CLINICAL APPLICATION IN THE TREATMENT OF IMMUNODEFICIENCY DISEASES AND CANCER

The conference will feature five sessions: I. *Chemistry of Thymic Hormones*: N. Trainin (Rehovot), B. Horecker (Nutley), T. L. K. Low (Washington), M. Dardenne (Paris), C. Birr (Freiburg), A. L. Goldstein (Washington), J. F. Bach (Paris), B. Haynes (Durham); II. *Chemistry of Lymphokines*: D. Goeddel (San Francisco), J. Ihle (Frederick), G. Granger (Irvine), S. B. Mizel (College Park), B. Paul (Bethesda), R. Stanley (New York), R. Gallo (Bethesda), M. Chirigos (Frederick), S. Gillis (Seattle, Wash.); III. *Mechanism of Action and Immune Regulation*: E. Pick (Tel Aviv), R. Rebar (La Jolla), N. Hall (Washington), K. Smith (Dartmouth), C. Sorg (Munster), J. Oppenheim (Bethesda), A. DeWeck (Bern), J. Vilcek (New York); IV. *Pharmacology and In Vivo Actions*: B. Papermaster (Columbia), B. Serrou (Montpelier), G. Doria (Rome), G. Torado (Frederick), Y. Yagi (Tokyo), S. Rosenberg (Bethesda), J. Hadden (Tampa), E. Garaci (Rome); V. *Clinical Applications*: R. Oldham (Frederick), P. B. Chretien (Baltimore), D. Dumonde (London), R. Jacobs (Washington), D. Wara (San Francisco), A. Skotnicki (Krakow), S. Davis (East Orange), W. Wara (San Francisco), S. Shang (Beijing) and R. Schulof (Washington).

There will be open registration for a limited number of participants including those who wish to make poster presentations. The deadline for receipt of registration forms and registration fees will be May 15, 1983.

For further information and/or registration forms, write to: **Dr. A. L. Goldstein, Seminar '83, Department of Biochemistry, George Washington University Medical Center, 2300 Eye Street, N.W., Washington, D.C. 20037, (202) 676-3517.**

## AAAS MASS MEDIA SCIENCE AND ENGINEERING FELLOWS PROGRAM

AAAS invites outstanding students in the natural and social sciences and engineering, preferably those at the graduate level, to apply for the 1983 Mass Media Science and Engineering Fellows Program. Students majoring in English, journalism, or other nontechnical fields are not eligible for these fellowships.

Fellows will work as reporters, researchers, and production assistants for 10 weeks during the summer at radio stations, television stations, newspapers, and newsmagazines throughout the United States. Fellows will have the opportunity to participate in the news-making process, to increase their understanding of editorial decision-making and information dissemination, and to develop skill in conveying to the public a better understanding and appreciation of science and technology. AAAS pays a \$250 weekly stipend and travel expenditures. Deadline for receipt of applications is 1 February 1983. *Minorities and handicapped persons are especially encouraged to apply.*

For further information and an application, write:

**Mass Media Science and Engineering Fellows Program**  
AAAS, 6th floor  
1776 Massachusetts Avenue, NW  
Washington, D.C. 20036

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☐ \$103 air-surface delivery via Holland

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## POSITIONS OPEN

**POSTDOCTORAL POSITION** to study gene expression in adenovirus, using molecular genetics and expression vector technologies. Send curriculum vitae and three references to: **Dr. William Wold, INSTITUTE FOR MOLECULAR VIROLOGY, 3681 Park Avenue, St. Louis, Mo. 63110. An Equal Opportunity/Affirmative Action Employer, M/F/H.**

**POSTDOCTORAL POSITIONS** (two) available now for Ph.D. biochemists to: (a) study specific glycoproteins from purified brain cells; and (b) do metabolic studies on Schwann cells in culture. Chromatography, electrophoresis, receptor turnover, glycosylation, antibody production, cell-free translation are necessary techniques. Send curriculum vitae, research experience, and three letters of reference to: (a) **Dr. Shirley Podulso**, (b) **Dr. Gihan Tennekoon**, Department of Neurology, The Johns Hopkins University School of Medicine, 600 North Wolfe Street, Baltimore, Md. 21205.

**PSYCHOBIOLOGIST** (tenure-track). Teaching and research in the field of **BEHAVIOR GENETICS**. Associated interests may include psychopharmacology, molecular biology, neurochemistry, psychopathology. Send curriculum vitae documenting research and teaching ability and potential to: **Chair, Psychobiology Search Committee, Department of Psychology, State University of New York, Binghamton, N.Y. 13901.**

### RESEARCHER

Will investigate the regulation of protein synthesis in dormant and developing embryos. Will also participate in other projects dealing with the regulation of growth of normal and neoplastic cells. The specific skills required are: protein purification techniques; anti-sera production and radioimmunoassays; the use of high-speed centrifuges, spectrophotometers, and scintillation counters; growth of cells in tissue culture. Must have Ph.D. in microbiology. Also, must have knowledge in growing microorganisms and operating small fermentors. Forty hours per week at \$6.82 per hour. Please contact: **Mississippi State Employment Service, 502 Yazoo Street, Jackson, Miss. 39205. An Equal Opportunity Employer. Job Order Number 1121401.**

**RESEARCH ASSOCIATE** (postdoctoral). Position available immediately for cell culture studies, of factors affecting ovarian cellular differentiation. Expertise in cell culture, membrane receptor methodology, and/or biochemical endocrinology desirable but not necessary. Please send curriculum vitae and references to: **Dr. David W. Schomberg, Box 3323, Departments of Obstetrics and Gynecology and Physiology, Duke University Medical Center, Durham, N.C. 27710. An Affirmative Action/Equal Opportunity Employer.**

The University of Michigan Medical School, Department of Surgery, seeks a **SECTION HEAD OF PLASTIC AND RECONSTRUCTIVE SURGERY**. Need individual to direct the academic, patient care, research, educational, and administrative programs of the Section of Plastic and Reconstructive Surgery. Candidates should be eligible for appointment at the professor or associate professor rank, be certified by the American Board of Plastic Surgery or its equivalent, and have evidence of national prominence. Qualifications include clinical expertise, research productivity, medical student and resident teaching experience, and administrative ability. In addition, skills in leadership, organization, and interpersonal relationships are necessary. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.* Reply to: **Jeremiah G. Turcotte, M.D., Chairman, Department of Surgery, University of Michigan, Ann Arbor, Michigan 48109.**

The University of Michigan Medical School, Department of Surgery, seeks a **SECTION HEAD OF THORACIC SURGERY**. Need individual to direct the academic, patient care, research, educational, and administrative programs of the Section of Thoracic Surgery. Candidates should be eligible for appointment at the professor or associate professor rank, be certified by the American Board of Thoracic Surgery or its equivalent, and have evidence of national prominence. Qualifications include clinical expertise, research productivity, medical student and resident teaching experience, and administrative ability. In addition, skills in leadership, organization, and interpersonal relationships are necessary. *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.* Reply to: **Jeremiah G. Turcotte, M.D., Chairman, Department of Surgery, University of Michigan, Ann Arbor, Michigan 48109.**

## POSITIONS OPEN

**RESEARCH ASSOCIATE I** located in Artesia, N.M. Assume responsibilities as chief investigator in an on-going research program involving pest management, primarily entomological in cotton (40 percent), corn (10 percent), and pecans (5 percent). Serve as primary coordinator for a pilot cotton scouting program. Serve as area-wide resource person for cotton, corn, and pecan pest-related inquiries working in cooperation with county agents and other specialists. Conduct pest management demonstration program on cotton, corn, and pecans. Work in cooperation with Associate Director, AES, Assistant Director and Natural Resources Program Unit, CES, Branch Station Superintendent, and other on-site professionals. Salary commensurate with experience (\$18,000 to \$20,000). Assignment for 18 months or until principal investigator returns from overseas assignment. Send résumé and three letters of recommendation to: **Carl Barnes, Superintendent, Southeastern Branch Station, New Mexico State University, Rt. 1, Box 121, Artesia, N.M. 88210.** Deadline for applications: 1 January 1983 or until filled. *An Equal Opportunity/Affirmative Action Employer.*

**RESEARCH SCIENTIST**, \$30,000 per year. Opening for research scientist responsible for designing and conducting independent research in natural products chemistry and plant cell/tissue culture production of plant cell compounds such as pharmaceuticals, fragrances, and pesticides. Individual must have Ph.D. in organic chemistry and minimum of 1 year of postdoctoral experience in natural product synthesis by plant cells and tissues and maintenance, handling, and modification of plant cell/tissue cultures. Must have ability to interact with other scientists involved with molecular biology, agronomy, and biochemistry. Full-time permanent position; 40 hours per week. Applicants should send résumés to: **Sath Menon, Job Service Office, 206 North Broom Street, Madison, Wisconsin 53703; telephone: 608-266-3678. An Equal Opportunity Employer.** This ad not paid for by Job Service funds.

The Department of Comparative Medicine, Tufts University School of Veterinary Medicine, is recruiting a D.V.M., Ph.D., or M.D. **TOXICOLOGIST** at the assistant professor level. Candidates in all areas of basic or applied toxicology are encouraged to apply. Responsibilities will include: developing an active research program within the veterinary school, directing a course in toxicology, and participating in collaborative research programs within the biomedical institutions of Tufts. Interested candidates should send curriculum vitae plus the names of three references to:

**Dr. C. L. Reinisch  
Tufts University  
136 Harrison Avenue  
Boston, Mass. 02111**

### VICE PRESIDENT FOR RESEARCH LEHIGH UNIVERSITY

Applications and nominations are sought for the position of vice president for research. The vice president for research is responsible for encouraging and promoting research at the university. He or she is a member of the president's staff and reports formally to the provost and through the provost to the president.

The vice president for research directs the office of research and the office of research program development. The office of research assists faculty in the development of proposals, in negotiations with contracting agencies, and in the financial management of grants. The office of research program development assists faculty in finding funding sources and coordinates the university-industry and liaison programs. Directors of research centers and institutes report to the vice president for research. He or she chairs the research council and administers various internal research funds. The vice president for research develops and implements policy for research personnel, sponsored research, and major new research thrusts of the university.

Qualifications should include an earned doctorate, experience with funded research, and successful experience in a senior administrative position. Applications should include complete curriculum vitae and the names and addresses of three references who may be contacted. Applications and nominations should be sent no later than 15 January 1983 to the chairman of the search committee: **Professor D. M. Smyth, Cox Laboratory, Building 32, Lehigh University, Bethlehem, Pa. 18015.**

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

## POSITIONS OPEN

### RESEARCH SCHOLAR

The Department of Microbiology, University of Alberta, invites applications for a position as research scholar at assistant/associate professor (\$27,000 to \$39,820; \$35,420 to \$51,658) rank. The successful candidate must have a Ph.D. and/or M.D. degree(s) in basic and/or applied microbiology. Preference will be given to investigators who have recently completed postdoctoral training and who have demonstrated potential for an independent research career. The position is dependent upon successful application for a competitive award from an external agency. The incumbent will enjoy the privileges of the university academic rank at which the appointment is made. Applicants should forward their curriculum vitae, outlines of their research interests, and names of three references to: **Dr. D. W. S. Westlake, Department of Microbiology, The University of Alberta, Edmonton, Alberta, Canada T6G 2E9.** Closing date: 31 March 1983. *The University is an Equal Opportunity Employer but, in accordance with Canadian Immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.*

### TUMOR BIOLOGIST

The Ontario Cancer Foundation London Clinic is seeking a career scientist to join a multidisciplinary group being formed to conduct basic research in tumor biology, invasion, and metastasis. Applications from molecular geneticists are especially sought, but candidates with other interests consistent with the aims of the research group will also be considered. Appointment to an appropriate academic department in the University of Western Ontario will be sought.

Applications, including curriculum vitae, statement of research objectives, and names of three referees should be sent to: **Dr. Ann F. Chambers, The Ontario Cancer Foundation London Clinic, 391 South Street, London, Ontario, Canada N6A 4G5.**

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

## SCIENTIFIC EXCHANGES

### NAS SCIENTIFIC EXCHANGE PROGRAMS WITH USSR AND EASTERN EUROPE

Applications are invited from American scientists who wish to make professional visits in the USSR, Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and Yugoslavia between January and December 1984. Applicants must be U.S. citizens and have a doctoral degree in the natural, biomedical, or social and behavioral sciences by the time of visit. Deadline for requesting applications is Tuesday, 1 March 1983. Please contact:

**Section on USSR and Eastern Europe  
National Academy of Sciences  
2101 Constitution Avenue, NW  
Washington, D.C. 20418  
Telephone: 202-334-2644/2645**

## RESEARCH GRANTS

### GRADUATE AND POSTGRADUATE RESEARCH GRANTS

The Biological Research Station of The Edmund Niles Huyck Preserve, Inc., offers grants for the support of research in which the natural resources of the Huyck Preserve are utilized. Currently, projects relating to watershed dynamics will be given special consideration. These grants in amounts up to \$2000 are available to graduate and postgraduate investigators.

The 1,400-acre Preserve is located on the Helderberg Plateau, in the Town of Rensselaerville, 30 miles southwest of Albany, New York. Included within the Preserve are natural and reforested woodlands, old fields, Lake Myosotis (100 acres), Lincoln Pond (10 acres), and approximately 3 miles of intermittent streams. Housing and laboratory space are provided here.

Inquire for instructions on application and additional information from: **Deborah Gordon, Business Manager, The E. N. Huyck Preserve, Inc., P.O. Box 188, Rensselaerville, N.Y. 12147.**

Applications are due on or before 31 January. Awards will be announced by 15 March.

## Eukaryotic Cloning

Genex Corporation is seeking an experienced molecular biologist to lead a research group in the cloning and expression of eukaryotic proteins in *E. coli*. Applicants must have a Ph.D. and at least five years direct experience with techniques for cDNA synthesis and cloning, and in a variety of methods used for identification of specific cDNA clones. Experience with M13 cloning and sequencing techniques, computer manipulation of DNA sequences, and expression of cloned proteins in eukaryotic cells is desirable.

Genex offers a stimulating, cooperative research and business environment, competitive salaries and fringe benefits and excellent research facilities. Genex is located in Rockville and Gaithersburg, Maryland. A curriculum vitae describing your scientific background, publications and containing three professional references should be submitted prior to December 24, in confidence to:

**Genex Corporation**

Department R  
6110 Executive Boulevard  
Rockville, Maryland 20852

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## BIOSYSTEMS UPDATE

### Protein Sequencing Specialists

Applied Biosystems is a young high-technology instrumentation company located on the San Francisco Peninsula. We recently introduced a new gas-phase protein/peptide sequencer which quickly established itself as the world's largest-selling sequencer.

We are expanding our research and development efforts in high-sensitivity sequencing, and need a Chemist or Biochemist with extensive experience in the analysis of protein structure. Sequencer-related publications and recognition as an acknowledged sequencing expert are definite assets.

The position includes responsibilities in the areas of product improvement, new product development, customer liaison and the establishment of high-level in-house sequencing capability.

The salary would be very competitive and equity is available for a top individual. Please send a resume or phone (415) 570-6667.

APPLIED BIOSYSTEMS, INC.  
850 Lincoln Centre Dr., Foster City, CA 94404

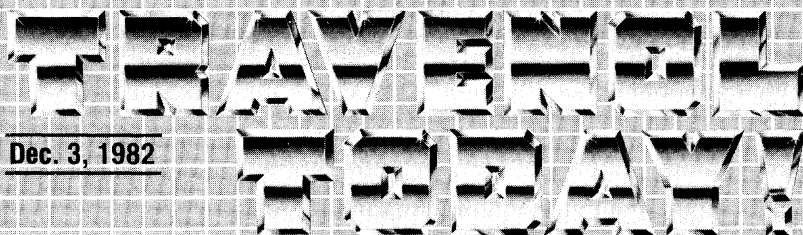


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Travenol today is a company constantly searching for ways to develop new and better health care products. We invite you to join us in that search. Travenol provides an outstanding salary and benefits package which includes profit sharing and employee stock purchase plan. For consideration, send resume and salary history, in confidence to: Pat Davis, Travenol Laboratories, Inc., 6301 Lincoln Avenue, Morton Grove, IL 60053. Equal Opportunity Employer.



Dec. 3, 1982

### MANAGER SAFETY ASSESSMENT

Qualified candidates will have a Ph.D. in Physiology, Pharmacology or equivalent and a background in extracorporeal devices, large animal surgery, and blood coagulation. A familiarity with preclinical work required for IDE, PMA submissions is also necessary. This individual will conduct studies to determine the safety and efficacy of medical devices, and propose new programs to effectively utilize group expertise in the development of new products.

### MANAGER GENERAL TOXICOLOGY

This position involves coordinating the activities of scientific personnel in the overall performance of safety studies. Responsibilities include the training and supervising of subordinates, data interpretation and preparation of safety study reports, position papers and literature summaries. The qualified candidate will be thoroughly familiar with laboratory facilities, practices and instrumentation, as well as GLP regulations. A Ph.D. in Toxicology or related background is required. At least 3-5 years experience in safety assessment evaluations required with specialization in immunotoxicology preferred.





## CONFERENCE

Announcing the: **Fourth International Symposium on Calcium-Binding Proteins and Calcium Function in Health and Disease**, 16 to 19 May 1983, Trieste, Italy. For registration information, and for instructions for the submission of abstracts, contact: T. C. Vaman, Duke University Medical Center, Box 3020, Durham, N.C. 27710, or Secretariat of the Fourth International Symposium on Calcium-Binding Proteins in Health and Disease, c/o Instituto di Chimica Biologica, Università di Trieste, via A. Valerio 32, 34124 Trieste, Italy.

## GRADUATE STUDY

### NEUROSCIENCES AT BAYLOR COLLEGE OF MEDICINE

An interdepartment Neuroscience Program is offered at Baylor College of Medicine for students interested in advanced study leading to the Ph.D. in neuroscience. The faculty of the program share common interests in neurobiology and promote collaborative research intended to maximize the interdisciplinary nature of the student's education. Applications must be completed by 1 April 1983. Applicants are notified regarding admission and financial support by 15 May 1983. Information regarding the program curriculum, research opportunities, and application procedures may be obtained from:

Scott F. Basinger, Ph.D.  
Predoctoral Director  
Program in Neuroscience  
Baylor College of Medicine  
Texas Medical Center  
Houston, Texas 77030

## PROGRAMS

### DOCTORAL PROGRAM

The Department of Anatomy of the University of Iowa College of Medicine offers graduate programs leading to the Ph.D. degree in the areas of cell, cardiovascular, and reproductive biology, neurosciences, and hormone action. Both morphologic and biochemical research approaches are extensively used in the department. Teaching and research assistantships are available for qualified applicants. Currently, assistantships are for \$5700 plus tuition. For further information and application forms, write: Director, Graduate Training, Department of Anatomy, BSB, The University of Iowa, Iowa City, Iowa 52242. The University of Iowa is an Equal Opportunity/Affirmative Action Employer.

### GRADUATE PROGRAM—MARINE BIOLOGY IN CHARLESTON, SOUTH CAROLINA

The Charleston Higher Education Consortium (CHEC) announces the availability of a unique graduate program in marine biology. The M.S. degree is bestowed by the College of Charleston and the Ph.D. degree is bestowed by the Medical University of South Carolina. A faculty of over 50 represents the College of Charleston, the Citadel, the South Carolina Marine Resources Research Institute, and the Medical University of South Carolina. Students are provided space at modern, well-equipped facilities overlooking Charleston Harbor. Emphasis is placed on modern marine ecology, systematics, fisheries, mariculture, and marine biomedical disciplines, for example, developmental biology, biochemistry, physiology, neurobiology, immunology, parasitology, and pathology. Teaching assistantships and predoctoral fellowships are available on a competitive basis. For additional information, contact: Dr. Thomas C. Cheng, Director, CHEC Marine Biology Graduate Program, P.O. Box 12559 (Ft. Johnson), Charleston, South Carolina 29412. Telephone: 803-795-7490.

### CARDIOVASCULAR PHYSIOLOGY TRAINING PROGRAM

NIH training grant provides full tuition plus a monthly stipend of \$420. Students with a B.S. in the biological or physical sciences who are interested in a Ph.D. degree should write:

GRADUATE PROGRAM ADVISOR  
Department of Physiology and Biophysics SJ-40  
University of Washington Medical School  
Seattle, Wash. 98195

## PROGRAMS

### UNIVERSITY OF COLORADO POSTDOCTORAL RESEARCH TRAINING IN DEVELOPMENTAL PSYCHOBIOLOGY

M.D. and Ph.D. trainees will receive broad and comprehensive training in research methods and strategies in developmental psychobiology with an emphasis on development of clinically relevant maladaptive behavior. A 1-year training program is offered with the possibility of an additional 1-year renewal. Internationally recognized faculty will provide training and varied research opportunities, including tissue culture, electrophysiology, neuromagnetism, neuroimmunology, animal models including nonhuman primates, infant development, and clinical psychiatric and pediatric problems. Available beginning summer 1983.

*Equal Opportunity/Affirmative Action Employer.*

For further information, contact:

Martin Reite, M.D., Program Director  
Department of Psychiatry, Box 0268  
4200 East Ninth Avenue  
University of Colorado School of Medicine  
Denver, Colorado 80262

## TRAINEESHIPS

**PREDCTORAL AND POSTDOCTORAL TRAINING IN MOLECULAR VIROLOGY.** Several predoctoral and postdoctoral traineeships are available for qualified applicants through NIH training grants. Preceptors include: Drs. G. M. Air, J. C. Bennett, D. H. L. Bishop, R. W. Compans, E. Hunter, E. Lamont, J. Lebowitz, P. Roy, J. P. Segrest, and R. D. Wells. Research areas include: gene cloning, sequence analysis, and expression, viral immunology, and membrane biology. Send applications and inquiries to: Dr. R. W. Compans, Department of Microbiology, University of Alabama in Birmingham, Birmingham, Ala. 35294. An Affirmative Action/Equal Opportunity Employer.

## FELLOWSHIPS

### GRADUATE FELLOWSHIPS IN BIOMEDICAL AND PHYSICAL SCIENCES

Physics	Physiology	Molecular Cell Biology
Anatomy	Biochemistry	Computer Sciences
Biology	Oral Biology	Biophysical Sciences
Genetics	Pharmacology	Biomathematics
Chemistry	Biostatistics	Physiological Optics
Pathology	Neurosciences	Biomedical Engineering

Well-funded faculty with diverse interests. Good postgraduation placement record. Above average stipends include full payment of tuition. Contact: The Graduate School (A), University of Alabama in Birmingham, Birmingham, Ala. 35294; telephone: 205-934-7110.

**Postdoctoral Fellowships in Biochemistry.** Two positions: 2 to 3 years; Ph.D. or M.D.; from 1 March 1983. Research involves ongoing programs on structure, properties, and function of ACTH- and catecholamine-specific receptors and protein kinases in normal and malignant adrenal cortex. Stipend: \$12,000 to \$14,000 per year. Send complete curriculum vitae, including a statement of research interests, with three letters of references to:

Rameshwar K. Sharma  
Department of Biochemistry  
University of Tennessee Center for Health Sciences  
894 Union Avenue  
Memphis, Tennessee 38163

**SEVEN POSTDOCTORAL FELLOWSHIP POSITIONS** are available in fall 1983 for research in estuarine lagoon and nearshore continental shelf waters. Research areas include phytoplankton systematics and ecology, zooplankton biology, invertebrate reproduction and development, benthic community ecology, fish ecology and behavior, sedimentary processes including coral reefs and fouling communities, biogeochemistry, and physical oceanography emphasizing air-sea interaction. Deadline for application is 1 April 1983. Request information brochure and application packet from:

Dr. Kevin J. Eckelberger  
Postdoctoral Program  
Harbor Branch Institution, Inc.  
RR 1, Box 196-A  
Fort Pierce, Florida 33450  
*An Equal Opportunity Employer*

## FELLOWSHIPS

### POSTDOCTORAL RESEARCH FELLOWSHIPS IN HUNTINGTON'S DISEASE

Applications are invited for postdoctoral fellowships in clinical and/or basic research in studies relating to problems of Huntington's Disease. Applicants must have received either M.D., Ph.D., or the equivalent before fellowship is to be activated. Fellowships will be awarded for 1 year but a second year of support may be applied for. Candidates are welcomed whose background and research proposal is within one of the following areas: basic sciences, including neuroscience, biochemistry, molecular biology, pathology, and pharmacology, and clinical sciences including neurology, psychiatry, and human genetics. Fellowship stipend will be from \$15,500 to \$17,000, depending upon the background of the fellow. The fellowship may be done at any institution with adequate facilities and with an appropriate sponsor. Application deadline is 15 February 1983. Awards will be announced by 15 March 1983, for fellowship to begin 1 July 1983. Send for application materials: The National Huntington's Disease Association, 128A East 74 Street, New York, N.Y. 10021.

### PREDCTORAL AND POSTDOCTORAL FELLOWSHIPS IN BIOCHEMISTRY

The Department of Biochemistry, The University of Texas Health Science Center at Dallas, invites applications from qualified individuals who wish to pursue pregraduate or postgraduate studies related to the fundamental chemistry of biological processes. Major areas of emphasis include cell and developmental biology, endocrinology, enzymology, immunology, molecular genetics, pharmacology, and toxicology. Appointees will be supported by state and federal funds or The Robert A. Welch Foundation Fellowships. Postdoctoral candidates should make application prior to 15 May by sending curriculum vitae. Predoctoral candidates should request application forms from: Chairman, Graduate Studies Committee in Biochemistry, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. An Equal Opportunity/Affirmative Action University.

The Department of Psychiatry at the Albert Einstein College of Medicine offers **RESEARCH FELLOWSHIPS IN BIOLOGICAL PSYCHIATRY** beginning on 1 July 1983. (Two lines will be open on 1 December 1982.) The 2- to 3-year fellowship program offers training in clinical psychopharmacology and behavioral endocrinology with integration of relevant basic sciences aspects. Fellows will participate in collaborative studies of major psychiatric disorders and will be encouraged and trained to develop their own projects. Candidates should have completed 3 years of approved psychiatric residency and have a strong commitment to research. Salary is \$33,000 to \$36,000 per year; 7 percent increase is expected on 1 July 1983.

Send application, including description of areas of interest, curriculum vitae, and list of publications, to: Herman M. Van Praag, M.D., Ph.D., Chairman, Department of Psychiatry, THE ALBERT EINSTEIN COLLEGE OF MEDICINE, 1300 Morris Park Avenue, Bronx, New York 10461. For more information, telephone: Uriel Halbreich, M.D., Director, Division of Biological Psychiatry, at 212-409-6086. An Equal Opportunity Employer.

## MARKETPLACE

### USED EQUIPMENT WANTED

Large Cage/Rack Washer  
Double Door Autoclave  
V-Blender (3 cu. ft.)  
Bedding Dispenser  
Sizer and Grinder  
Ancillary Equipment for Animal  
Facilities Operation  
Contact:  
Purchasing Agent  
Toxicology Support Industries  
P. O. Box 34075, 501/374-9954  
Little Rock, AR 72203

## SENIOR PATTERN RECOGNITION SCIENTIST

Geometric Data, a leading manufacturer of highly sophisticated medical electronic instrumentation, is seeking a results oriented experienced Senior Pattern Recognition Scientist to assist our research and development team in developing systems for ultimate use in the hospital and clinical laboratory.

The primary responsibility will be to conduct research in the area of pattern recognition using statistical classification techniques. Key skills will include demonstrated project leadership ability working in a multi discipline environment and the ability to supervise from 1 to 3 individuals while conducting research projects that will result in new product applications for clinical instrumentation.

The position requires a minimum of 3 years research experience in the following areas: Statistical Pattern Recognition, Digital Image Processing, Bio-medical Applications Systems Design, and Project Supervision. The ideal candidate will have a PhD in computer science or E.E. with an emphasis in Artificial Intelligence.

We offer a competitive salary, comprehensive company paid benefits and a stimulating professional environment. For immediate consideration please send resume stating salary history and requirements in confidence to: or call:

800-523-7886  
Director of Human Resources

Geometric Data  
a SmithKline company  
999 West Valley Road  
Wayne, PA 19087

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## ANALYTICAL CHEMISTRY FELLOWSHIP

The College of American Pathologists in concert with the National Bureau of Standards offers a Fellowship in the Organic Chemistry Division of the National Bureau of Standards. Candidates must have a doctorate in analytical chemistry.

The appointee will be designated the Roger K. Gilbert/College of American Pathologists Fellow and will work under the direction of the Director of the Section of Organic Analytical Chemistry at the Bureau of Standards.

The position offers an unparalleled opportunity in advanced technology in analytical chemistry. Appointments are for two years, contingent on review after the first.

Salary, exclusive of benefits, in mid-twenties, depending on post-graduate and other experience.

Applicants should send their curriculum vitae and bibliography to:



Commission on Scientific Resources  
College of American Pathologists  
7400 North Skokie Boulevard  
Skokie, Illinois 60077

## ASSOCIATE DIRECTOR OF RESEARCH, LIFE SCIENCES

The Office of Naval Research is seeking an outstanding individual to serve in this Senior Executive Service position.

The Associate Director of Research, Life Sciences is responsible for providing leadership and direction for all aspects of the Office of Naval Research's \$20M fundamental and applied research programs in life sciences. With his/her staff, the Associate Director formulates balanced and integrated policies and programs which constitute the long-range plans for contract research in the life sciences. When funded, he/she exercises full authority in the allocation of resources to the Biological Sciences Division and the Psychological Sciences Division. The Associate Director guides and directs the management and administration of these two divisions and reviews, coordinates and evaluates their scientific and technological progress and ensures that the benefits of their research are made

available to the Navy. He/She represents the life sciences at all levels of the Department of Defense and serves as the chief spokesperson for all of ONR's life sciences research, both nationally and internationally. The Associate Director maintains effective liaison between civilian research activities and the Navy, interpreting military requirements in terms of scientific capabilities, and keeping abreast of world-wide trends in the biological and psychological sciences.

Candidates should possess a Ph.D. or equivalent in the biological or psychological sciences plus significant accomplishments in the performance and management of research and development. Substantial experience in both biology and psychology is preferred. However, consideration will be

given to those whose formal training has been limited to either biology or psychology if they can produce strong evidence of a good working knowledge of the other field.

Salary dependent upon individual qualifications; however, the current Federal pay cap limits salary to \$58,500.

Interested persons should submit a resume or Standard Form 171, Personal Qualifications Statement (available at Federal Job Information Centers or from the address below), to:

### OFFICE OF NAVAL RESEARCH Civilian Personnel Division

Code 791SC, Room 823  
800 North Quincy Street, Arlington, VA 22217  
Announcement #82-60 (S)

Applications will be accepted through 17 January 1983 and must be postmarked by that date.  
An Equal Opportunity Employer • U.S. Citizenship Required



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