

with population structure and species diversity on scales greater than generation times, suffer most from these problems.

Overall, Harris has succeeded in demonstrating the importance of scale in studying the dynamics of phytoplankton populations. This book should serve as a somber reminder that the major limitation to a better understanding of phytoplankton in nature is not what we can perceive but what we can measure.

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Bioenergetics Extended

The Vital Force. A Study of Bioenergetics. FRANKLIN M. HAROLD. Freeman, New York, 1986. xx, 577 pp., illus. \$37.95.

One aim of this provocative book is to provide an up-to-date account for a wide audience of traditional topics in bioenergetics, such as oxidative and photosynthetic phosphorylations and other processes encompassed by usual treatments of chemiosmotic theory. The first two-thirds of the book are devoted to this purpose, in an authoritative, first-rate summary that draws on the microbial world to illustrate the diversity of successful applications of chemiosmotic principles. Harold is unmatched as an expositor in this arena and is just as good at outlining the underlying details of biochemistry and biophysics. I liked best the discussions of electron transport reactions (including Mitchell's Q cycle) and how they might be coupled to proton movements. To be sure, those who work in these areas do not always agree on the details, but Harold knows the field well enough to distinguish for us the debatable material from the rest. It is especially useful to have his broad perspective on these matters, since specialized reviews typically have too narrow a focus and general texts of biochemistry or physiology usually fail to look beyond their own disciplines. Even on its own, this is a valuable contribution.

The book has, however, a more substantial agenda. We are alerted to this early on by the comment that "bioenergetics has become too important, and too interesting, to be relegated to bioenergeticists," and the implied promise is fulfilled by the concluding 180 pages. At that point the boundaries of bioenergetics are suddenly extended, and to balance the earlier "bacterial paradigm" Harold now emphasizes molecules peculiarly eukaryotic (actin, myosin, tubulin, and so

on) and activities normally associated with cell and developmental biology (cell motility, signal transduction, morphogenesis). I suspect his attempt to link bioenergetics and motility will be no more fruitful than past efforts to draw parallels between the performance of chemical and mechanical work. But the appropriation of signal transduction mechanisms (emphasizing Ca^{2+} transport) and morphogenesis (with an eye to Jaffe's circulating currents) now makes perfect sense—and exciting reading. Indeed, Harold gives us a new appreciation of the value of bioenergetics in interpreting more general aspects of membrane function. The book is exceptionally well written, and Harold's delightful array of biological examples adds unexpected charm to the entire work.

Harold has succeeded in writing a book suited to many readers, beginning with the interested undergraduate and extending to the professional. The book has serious lessons for any committed cell biologist.

PETER C. MALONEY
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Books Received

Academic Preparation Series. The College Board, New York, 1986. Paper. *Academic Preparation in English* (vi, 96 pp.). *Academic Preparation in Foreign Language* (viii, 120 pp.). *Academic Preparation in Mathematics* (vi, 86 pp.). *Academic Preparation in Science* (viii, 103 pp., illus.). *Academic Preparation in Social Studies* (vi, 106 pp.). *Academic Preparation in the Arts* (vi, 93 pp.). Slipcased set, including *Academic Preparation for College* (1983; vi, 46 pp.), \$20; individual volumes, \$6.95.

Adaptive Processes in Visual and Oculomotor Systems. E. L. Keller and D. S. Zee, Eds. Pergamon, New York, 1986. xx, 496 pp., illus. \$80. Advances in the Biosciences, vol. 57. From a conference, Asolimar, CA, June 1985.

Advanced Scanning Electron Microscopy and X-Ray Microanalysis. Dale E. Newbury *et al.* Plenum, New York, 1986. xii, 454 pp., illus. + plates. \$37.50.

Air. Composition and Chemistry. Peter Brimblecomber. Cambridge University Press, New York, 1986. x, 224 pp., illus. \$39.50; paper, \$14.95. Cambridge Environmental Chemistry Series.

Alzheimer's and Parkinson's Disease. Strategies for Research and Development. Abraham Fisher, Israel Hanin, and Chaim Lachman, Eds. Plenum, New York, 1986. xvi, 710 pp., illus. \$95. Advances in Behavioral Biology, vol. 29. From a conference, Eilat, Israel, March 1985.

Benefit, Cost, and Beyond. The Political Economy of Benefit-Cost Analysis. James T. Campen. Ballinger, Cambridge, MA, 1986. xii, 241 pp. \$29.95.

The Biochemical Basis of Neuropsychopharmacology. Jack R. Cooper, Floyd E. Bloom, and Robert H. Roth, 5th ed. Oxford University Press, New York, 1986. xii, 400 pp., illus. \$27.95; paper, \$16.95.

Biogenesis of Aromas. Thomas H. Parliment and Rodney Croteau, Eds. American Chemical Society, Washington, DC, 1986. x, 397 pp., illus. \$74.95. ACS Symposium Series, 317. Based on a symposium, Chicago, Sept. 1985.

Biological Foundations of Behaviour. Frederick Toates. Open University Press, Philadelphia, 1986. xiv, 130 pp., illus. Paper, \$15. Open Guides to Psychology.

Biological Monitoring Techniques for Human Exposure to Industrial Chemicals. Analysis of Fat, Skin, Nails, Hair, Blood, Urine, and Breath. L. Sheldon *et al.*

Noyes, Park Ridge, NJ, 1986. xxii, 387 pp., illus. \$48. **Biological Science.** William T. Keeton and James L. Gould with Carol Grant Gould. 4th ed. Norton, New York, 1986. xxvi, 1175 pp., illus. + appendix. \$36.95.

Concise Dictionary of Biology. Oxford University Press, New York, 1985. viii, 261 pp., illus. \$16.95. Oxford Science Publications.

Concise Dictionary of Chemistry. Oxford University Press, New York, 1985. viii, 308 pp., illus. \$16.95. Oxford Science Publications.

Concise Dictionary of Physics. Oxford University Press, New York, 1985. viii, 295 pp., illus. \$16.95. Oxford Science Publications.

Concise Marine Almanac. Gerard J. Mangone. Van Nostrand Reinhold, New York, 1986. viii, 135 pp. \$27.95.

Drug Resistance. G. R. Stark and H. Calvert, Eds. Published for the Imperial Cancer Research Fund by Oxford University Press, New York, 1986. iv, 152 pp., illus. Paper, \$29. Cancer Surveys, vol. 5, no. 1.

The Eagle's Nest. Natural History and American Ideas, 1812–1842. Charlotte M. Porter. University of Alabama Press, University, 1986. xiv, 253 pp., illus. \$24.95. History of American Science and Technology Series.

Ground Water Quality Protection. State and Local Strategies. Committee on Ground Water Quality Protection, National Research Council. National Academy Press, Washington, DC, 1986. xvi, 309 pp., illus. Paper, \$24.50.

A Guide to Mechanism in Organic Chemistry. Peter Sykes. 6th ed. Longman, New York, and Wiley, New York, 1986. xii, 416 pp., illus. Paper, \$21.95.

A Handbook for the Identification of Cephalopod Beaks. Malcolm R. Clarke, Ed. Clarendon (Oxford University Press), New York, 1986. xiv, 273 pp., illus. \$49.95. Based on a workshop, Plymouth, UK, June 1981.

Handbook of Prevention. Barry A. Edelstein and Larry Michelson, Eds. Plenum, New York, 1986. xxiv, 400 pp., illus. \$50. A collection concerned with psychological, medical, and environmental problems.

Ionic Channels in Cells and Model Systems. Ramon Latorre, Ed. Plenum, New York, 1986. xxiv, 437 pp., illus. \$69.50. Series of the Centro de Estudios Científicos de Santiago. Based on a course, Santiago, Chile, Nov. 1984.

Kimberlites. Mineralogy, Geochemistry, and Petrology. Roger H. Mitchell. Plenum, New York, 1986. xviii, 442 pp., illus. \$65.

Mechanisms of Insect Olfaction. T. L. Payne, M. C. Birch, and C. E. J. Kennedy, Eds. Clarendon (Oxford University Press), New York, 1986. xviii, 364 pp., illus. \$69. Based on a seminar, Oxford, UK, Aug. 1984.

Mechanisms of Receptor Regulation. George Poste and Stanley T. Crooke, Eds. Plenum, New York, 1986. xxvi, 432 pp., illus. \$59.50. New Horizons in Therapeutics. Smith Kline and French Laboratories Research Symposia Series. From a symposium, Philadelphia, 1984.

New Brain Imaging Techniques and Psychopharmacology. Michael R. Trimble, Ed. Oxford University Press, New York, 1986. x, 134 pp., illus. + plates. \$45. British Association for Psychopharmacology Monographs, no. 9. Oxford Medical Publications.

1985 British Crop Protection Conference. (Brighton Metropole, Nov. 1985). Weeds. British Crop Protection Council, Croydon, 1985 (U.S. distributor, ISBS, Portland, OR). 3 vols. 1x, 1204 pp., illus. Paper, \$68.

NMR in the Life Sciences. E. Morton Bradbury and Claudio Nicolini, Eds. Plenum, New York, 1986. viii, 237 pp., illus. \$45. NATO Advanced Science Institutes Series A, vol. 107. From an institute, Erice, Italy, June 1985.

The Physiology of Thirst and Sodium Appetite. G. de Caro, A. N. Epstein, and M. Massi, Eds. Plenum, New York, 1986. xx, 565 pp., illus. \$89.50. NATO Advanced Science Institutes Series A, vol. 105. From a workshop, Camerino, Italy, July 1984.

Plasticity in Plants. D. H. Jennings and A. J. Trewavas, Eds. Company of Biologists, Department of Zoology, Cambridge University, Cambridge, UK, 1986. xvi, 372 pp., illus. \$60. Symposia of the Society of Experimental Biology, no. 40. From a meeting, Durham, UK, Sept. 1985.

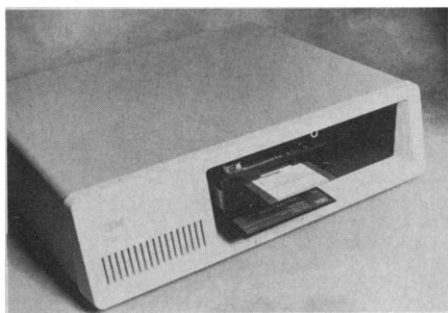
Unification and Supersymmetry. The Frontiers of Quark-Lepton Physics. Rabindra N. Mohapatra. Springer-Verlag, New York, 1986. xiv, 309 pp., illus. \$34. Contemporary Physics.

Women, Health, and Culture. Phyllis Noerager Stern, Ed. Hemisphere, New York, 1986. xiv, 190 pp., illus. \$27.95. A Health Care for Women International Publication.

Products & Materials

3.5-Inch Disk Drive for IBM Computers

The ND354A disk drive may be installed in IBM-PC and compatible computers to allow them to accept 3.5-inch floppy disks.



The user may then take advantage of the rugged and compact 3.5-inch disk with its higher storage capacity (720 kilobytes) without changing computers or operating systems. Files and software can now be transferred to and from portable personal computers. The disk drive comes with a conversion kit. Toshiba. Circle 545.

Faster, More Powerful XT

The personal computer XT model 286 is an upgraded XT featuring increased memory, an Intel 80286 microprocessor, and up to three internal drives. Model 286 operates up to three times as fast as earlier XT models and comes with 640 kilobytes of memory. Memory is expandable up to 12.6 megabytes. Standard features of the model 286 include an enhanced keyboard, a serial-parallel adapter card, a 20-megabyte fixed hard disk, and a 1.5-megabyte disk drive for 5.25-inch double-sided disks. An optional second internal disk drive may be a 5.25-inch double-sided disk drive with either 360 kilobytes or 1.2 megabytes of storage capacity or a 3.5-inch, double-sided disk drive storing 720 kilobytes. The computer also supports a 3.5-inch external disk drive. A 3.5-inch disk drive allows the computer to share disks with convertible and portable personal computers. The model 286 requires DOS version 3.2. IBM. Circle 546.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card and placing it in a mailbox. Postage is free.

DNA Sequencing Software

Recombinant Toolkit is a user-friendly software package for analyzing DNA and amino acid sequences. Its "restrict" function finds recognition sites for groups of restriction enzymes. The "search" function seeks special cases of restriction, while the "reverse translation with restriction" function finds every recognition site for peptides or proteins up to 1000 amino acids long. Other features include translation, update restriction enzyme, count-codon usage, start-stop-renumber, input, output, and notepad. To operate, Recombinant Toolkit requires an IBM PC, XT, AT, or a true compatible with a minimum of 256 kilobytes of random access memory, DOS 2.0 or later, and a hard disk. Elsevier-BIOSOFT. Circle 547.

C Language Incremental Compiler

Instant-C 2.0 compiler processes only those parts of a C language program that the user changes, rather than all the source code files. It combines the interactive environment and ease-of-use of an interpreter with the execution speed of a compiler. Programmers may create new programs and maintain or extend existing programs. Instant-C incorporates a printer, full-screen editor, source level debugger, object code linker, source code checker, and a run-time checker, which includes checking invalid or null pointer references and array bounds. The program development cycle is considerably shortened because the link step and intermediate disk files are eliminated, all the tools are integrated so they work together, and the editor, compiler-interpreter, and debugger all reside in memory at once. Also, incremental compilation enables programmers to recompile only what they have changed; thus, compilation time is proportional to the size of a single edited function rather than to the size of the source code files. Instant-C 2.0 operates on the IBM-PC personal computer, its compatibles, and any other system with MS-DOS or Concurrent-DOS. Rational Systems. Circle 548.

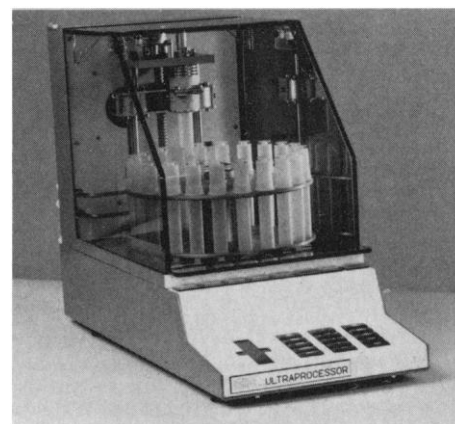
Automated Spectrometer

The Gemini FT NMR is an automated spectrometer designed for proton and carbon experiments. Its menu-driven user interface enables even novice users to obtain results to complex nuclear magnetic resonance problems quickly and easily. Other aids to the user include extensive self-diagnostic capabilities, many automated NMR

experiments (including HETCOR, HC APT, and DEPT), and the option to type commands rather than choosing from the menu. The Gemini FT NMR may be linked with other Gemini spectrometers, as well as with VXR spectrometers and DEC VAX computers. Varian Associates. Circle 549.

Automated Tissue Processing

The 3189 Ultraprocessor is a compact, automated tissue processor. It contains a built-in rotating carousel that is controlled by computer and has a capacity of 64 filled



and sealed reagent vials. Specimens are moved from vial to vial without cross-contamination. The 3189 Ultraprocessor accommodates all specimens embedded in resin, whether destined for light or electron microscopy. RMC. Circle 550.

Literature

High-Purity Solvents is a five-section brochure listing performance data and applications for a line of solvents. American Burdick & Jackson. Circle 551.

X-SPECT 6150 describes a personal computer-based, modularized x-ray fluorescence analysis system. EG&G Ortec. Circle 552.

1986 Annual Catalog for Industry and Education presents 132 pages of optical and science products, including glass, prisms, meters, microscopes, telescopes, binoculars, and photography accessories. Edmund Scientific. Circle 553.

Catalog #1786: Quality Measuring Instruments and Precision Tools comprises 448 pages of electronic, mechanical, and optical precision instruments. Fowler. Circle 554.

XA-1000 describes a continuous-simulation work station that uses a graphical, block-diagram approach to simulation. Xanalog. Circle 555.

Personnel Placement

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

LINE CLASSIFIED ADVERTISING DEADLINES:
28 November issue (mailed 21 November): **7 November**
5 December issue (mailed 28 November): **14 November**
12 December issue (mailed 5 December): **20 November**
19 December issue (mailed 12 December): **26 November**

POSITIONS WANTED: 40¢ per word, plus \$4 for use of box number, per week. \$10 minimum, per week. Prepayment required. This rate is available only to individuals seeking jobs.

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Send copy for all **Positions Wanted** ads and **Line Display** ads less than 1/6 page in size (125 millimeters) to:

SCIENCE Classified Advertising
1333 H Street, NW, Room 940
Washington, DC 20005
Telephone: 202-326-6555

Send copy for **Fractional Display** ads, 1/6 page and larger, and all **Marketplace** ads to:

Scherago Associates, Inc.
1515 Broadway
New York, NY 10036
Telephone: 212-730-1050

Blind ad replies should be addressed as follows:

Box (give number)
SCIENCE
1333 H Street, NW
Washington, DC 20005

POSITIONS WANTED

British Acarologist with a Ph.D. from the Department of Medical Entomology, London School of Hygiene and Tropical Medicine, London University (1979) with many publications on the ultrastructure of soft and hard tick internal organs and good background in entomology and EM techniques is seeking a job starting from August/September 1987. Send for curriculum vitae from: Dr. M. Samir, Sciences and Mathematics Center, Makkah P.O. Box 2064, Kingdom of Saudi Arabia. Box 192, SCIENCE. 11/7, 21

Biochemist/Cell Biologist, Ph.D. Experience in angiogenesis-related growth factor control of cell proliferation (one patent) and connective tissue research and development. Publications in both areas. Seeks industrial or academic position, research, or administration, with East Coast location. Box 194, SCIENCE. 11/7, 14, 21

Cell Biologist/Microbiologist (Ph.D.) Ten years of teaching and research experience at excellent university. Presently employed in research institute doing basic cell biology. Well-informed and current in modern biology with an appreciation and interest in most facets of biology. Prior teaching experience: cell biology, molecular biology, biochemistry, microbiology, and virology. Eager to return to teaching or teaching/research position where quality teaching is valued. Box 180, SCIENCE. X

Pharmacologist, Ph.D. 1982. Research assistant professor. Interested in the role of mediators in inflammation and immunology and the action of anti-inflammatory, anti-rheumatic drugs, and immunomodulators. Experienced in animal models, cell culture, histology, HPLC, and immunoassays. Seeks an academic research position. Box 193, SCIENCE. X

POSITIONS WANTED

Light/Electron Microscopist. More than 15 years of experience in histology, SEM and LEM, including DNA spreading and ultrathin sectioning; excellent references. Seeks position in Boston area for 1987. Box 186, SCIENCE. 11/7, 14, 21

Retrovirologist Ph.D. AIDS researcher with publications and teaching experience. Cell biologist with some molecular biology experience. Innovative scientist experienced in laboratory management, cell-virus culture, serology, viral proteins, Southern blot analysis, and antiviral agents. Seeks academic/industrial research position. Box 189, SCIENCE. X

Symbiologist, frontiersperson, regeneration technophile seeks position in forward-looking, regeneration-oriented industry, agency, or academic department. Strong interest in uses of sustainable biological processes for resource management. Currently U.S. Department of Agriculture postdoctoral fellow studying *N₂-fixing actinomycetes (Frankia)* from root nodules of actinorhizal plants. Former professor, taught general and pathogenic microbiology, immunology, and general biology for 10 years. Available August 1987. Box 195, SCIENCE. 11/7, 14, 21, 28

Zoologist/Anatomist, Ph.D. Broad background; experienced, innovative teacher; some administrative experience. Preference: small college teaching. Box 187, SCIENCE. 11/7, 14

POSITIONS OPEN

ANALYTICAL BIOCHEMIST/CHEMIST

A tenure-track, assistant professor position (or other levels) is available immediately. Candidate must have the ability to develop research in an area of transmitter neurochemistry, collaborate on ongoing psychopharmacologic studies in the laboratory, and develop/supervise/carry out psychoactive drug measurements in clinical samples.

Send curriculum vitae, names, and addresses of three references to: **Joan Gill, Department of Psychiatry, Medical College of Pennsylvania/EPPI, 3200 Henry Avenue, Philadelphia, PA 19129.**

ANATOMY FACULTY POSITION

Ph.D. or equivalent. Anatomist to teach neuroanatomy and assist in teaching gross anatomy to first-year medical students. Primary interest should be in developing teaching excellence. Development of a research program with eventual independent funding is encouraged. Research interests are open. Salary commensurate with qualifications and rank. Send curriculum vitae and three references by **5 December 1986** to:

Dr. Tage Kvist
Assistant Dean for Basic Sciences
Department of Anatomy
Philadelphia College of Osteopathic Medicine
(PCOM)
4150 City Avenue
Philadelphia, PA 19131

Starting date as early as 1 January 1987. *PCOM is an Equal Opportunity Employer.*

ASSISTANT DIRECTOR—The Mount Desert Island Biological Laboratory (MDIBL). Duties include: management of day-to-day operations, budget preparation and oversight, public relations, acquisition and management of external grants and gifts, and assist in the administration of the Laboratory's toxicology center. Experience in research administration and knowledge of microcomputers essential. M.S. in biological sciences required, Ph.D. preferred. Salary \$25,000 to \$35,000, depending on experience. Applications should include résumé and names and telephone numbers of three references. The position is available immediately; applications will be accepted until the position is filled. The MDIBL is a nonprofit research institute which emphasizes the use of marine organisms as tools for basic and applied biological research. Contact: **Dr. David H. Evans; telephone: 904-392-1489, or Dr. David L. Wynne; telephone: 207-288-3605, or write: Assistant Director Search, MDIBL, Salsbury Cove, ME 04672. Equal Opportunity Employer.**

POSITIONS OPEN

UNIVERSITY OF SASKATCHEWAN ASSISTANT PROFESSOR

Applications are invited for a tenure-stream position at the assistant professor level in the area of molecular genetics.

Candidates should have a Ph.D. degree and, preferably, additional research experience in recombinant DNA techniques. Capability in the field of control of gene expression and gene transfer is essential. Preference may be given to candidates with a strong background in plant molecular biology.

The post will take effect on 1 July 1987, or earlier, if a suitable candidate is found. Send curriculum vitae and the names, addresses, and telephone numbers of at least three references to: **Dr. John King, Department of Biology, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, S7N 0W0.**

The closing date is 31 December 1986, or thereafter until the position is filled.

University of California, Berkeley announces, pending budgetary approval, one or more appointments starting 1 July 1987 at the ASSISTANT PROFESSOR level for an **Old World prehistoric archaeologist** and a **North American archaeologist**. Applicants must have completed their Ph.D. dissertation. The deadline for receipt of all applications is 20 January 1987. *The University of California is an Equal Opportunity/Affirmative Action Employer.* Send a letter, curriculum vitae and the names of three referees to: **William S. Simmons, Chair, Department of Anthropology, University of California, Berkeley, CA 94720.**

University of California, Berkeley announces, pending budgetary approval, one or more appointments starting 1 July 1987 at the tenured level for an **OLD WORLD PREHISTORIC ARCHAEOLOGIST** and a **NORTH AMERICAN ARCHAEOLOGIST**. The deadline for receipt of all applications is 20 January 1987. *The University of California is an Equal Opportunity/Affirmative Action Employer.* Send a letter, curriculum vitae and the names of three referees to: **William S. Simmons, Chair, Department of Anthropology, University of California, Berkeley, CA 94720.**

The Department of Medical Microbiology, College of Veterinary Medicine, is accepting applications for a full-time teaching and research position at the level of **ASSISTANT PROFESSOR**. Candidates must have attained the Ph.D. and D.V.M. degrees and possess a strong background in recombinant DNA technology including gene cloning and expression as evidenced by a minimum of 2 years of postdoctoral experience in microbial or molecular genetics and recent publications that exhibit such expertise. The position requires teaching of microbiology to first-year veterinary students, as well as developing graduate courses in some aspect of molecular biology and advising graduate students. The research activities of the appointee should involve the molecular approach and be directed towards the study of infectious diseases in some area of veterinary medicine. The deadline for submission of applications is 15 February 1987. Interested candidates should send their curriculum vitae together with reprints of two recent publications, a brief summary of future research interests, and names of three references to: **Dr. Solomon Kadis, Search Committee Chairperson, Department of Medical Microbiology, College of Veterinary Medicine, University of Georgia, Athens, Georgia 30602. The University of Georgia is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.**

The State University of New York (SUNY) at Purchase invites applications for a tenure-track position as **ASSISTANT PROFESSOR IN BIOLOGY** to begin 1 September 1987. Teaching duties will include animal physiology, human anatomy and physiology, vertebrate zoology, and/or histology. Ph.D. required. An active research program and the ability to engage and supervise undergraduates in baccalaureate thesis research are essential. Liberal fringe benefits, including TIAA/CREF. Send curriculum vitae and names of three references by 15 December to:

Biology Search Committee
SUNY Purchase
Purchase, NY 10577

An Affirmative Action/Equal Opportunity Employer.

POSITIONS OPEN

The Department of Anatomy, Thomas Jefferson University, is inviting applications to a tenure-track position as an **ASSISTANT PROFESSOR**. Candidates should be qualified to participate in an NIH-funded pre- and postdoctoral training program in developmental/teratology. Applicants should have postdoctoral training and a demonstrable ability to develop a strong and creative research program which utilizes cellular and/or molecular biological techniques in the analysis of developmental mechanisms. Candidates will be expected to have or acquire experience in teaching human gross anatomy to permit participation in our team-taught course for freshman medical students. Send curriculum vitae, statement of research plans and objectives, and three letters of reference to: **Dr. Robert M. Greene, Search Committee Chairman, Department of Anatomy, Thomas Jefferson University, 1020 Locust Street, Philadelphia, PA 19107.**

ASSISTANT PROFESSOR, PATHOBIOLOGY BROWN UNIVERSITY

The Department of Pathology and Laboratory Medicine at Brown University is seeking an experimental pathologist for a campus-based tenure-track position as assistant professor. The successful candidate is expected to develop an independent research program, supported by external funds, involving the study of basic mechanisms of disease pathogenesis. The successful candidate will participate in the teaching of general or systemic pathology to medical students and/or the training of undergraduate and graduate students in pathobiology.

An M.D., D.V.M., and/or Ph.D. degree and a minimum of 2 years of postdoctoral or residency research training in pathology are required. Preference will be given to M.D.'s with training in an area related to environmental pathology. Opportunities for the practice of clinical or anatomic pathology on a part-time basis are available at the Brown University-affiliated hospitals for suitable candidates.

Please send curriculum vitae, a description of career objectives and research plans, and the names of three references to: **Dr. Nelson Fausto, Chairperson, Department of Pathology and Laboratory Medicine, Division of Biology and Medicine, Brown University, Providence, RI 02912.** We encourage applications from women and minority candidates. Brown University is an Equal Opportunity/Affirmative Action Employer. Deadline for applications: 1 January 1987.

PLANT BIOSYSTEMATICS

A position at the **assistant professor** level will be available July 1987 in the Department of Organismic and Evolutionary Biology at Harvard University in the field of plant biosystematics. The position will be based in the Harvard University Herbaria. Applicants should have a Ph.D.; postdoctoral experience desirable. Preference will be given to applicants with an experimental approach, and/or whose techniques are those of molecular systematics, cytogenetics, or analysis of secondary plant compounds. Candidates should have an interest in the evolution of a particular group of vascular plants. The successful candidate will be expected to contribute to undergraduate and graduate teaching in the department. Closing date is 7 December 1986. Please send curriculum vitae, statement of research interests and objectives, and names of three references to: **P. F. Stevens, Harvard University Herbaria, 22 Divinity Avenue, Cambridge, MA 02138.** Harvard University is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR OF PHARMACOLOGY. Applications are invited for a tenure-track faculty position in a research-oriented Department of Pharmacology. Minimal qualifications include a Ph.D. or M.D. degree with strong postdoctoral experience. Candidates must be capable of establishing an independent research program and collaborative ties with existing faculty. Active research programs include cardiovascular, biochemical toxicology, and neuropharmacology. Send curriculum vitae, statement of research goals, and names of four evaluators to: **Chairman, Pharmacology Search Committee, Department of Pharmacology, College of Medicine, University of Illinois at Chicago, 835 South Wolcott, Chicago, IL 60612.** To assure full consideration, apply by 19 December 1986. The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

POSITIONS OPEN

ASSISTANT PROFESSOR, Ph.D. biology, tenure-track, entry level. Candidate will be expected to teach introductory biology and developmental biology, and to conduct an active research program. Submit curriculum vitae to: **Chair, Department of Natural Sciences, Baruch College/CUNY, 17 Lexington Avenue, Box 502, New York, NY 10010, by 26 December 1986.** Baruch College is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR MOLECULAR NEUROBIOLOGY

The Section of Molecular Neurobiology, Yale University School of Medicine, invites applications for a starting level assistant professorship. Applicants should work on neurobiological problems and have training in patch clamp analysis of CNS neurons. Those now in a postdoctoral fellowship are preferred. To apply, send curriculum vitae, statement of research interests and two letters of recommendation before 15 January 1987 to: **Dr. Charles F. Stevens, Section of Molecular Neurobiology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510.** Yale University is an Equal Opportunity/Affirmative Action Employer. Women and members of minority groups are encouraged to apply.

ASSISTANT PROFESSOR, NUTRITIONAL SCIENCES. The University of Toronto, Department of Nutritional Sciences invites applications for a joint appointment between the university and the Toronto General Hospital. Applicants should hold a Ph.D. Preference will be given to those with active research interests in experimental approaches to whole body metabolism and application to some aspect of clinical nutrition research and who have a background in mathematical modeling. The successful candidate will participate in graduate and undergraduate teaching, and function actively within the nutrition program at Toronto General Hospital. Letter of application with complete curriculum vitae and the names of three referees to: **Dr. G. H. Anderson, Chairman, Department of Nutritional Sciences, FitzGerald Building, University of Toronto, Toronto, Ontario, Canada M5S 1A8.** Closing date: 30 November 1986. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

ASTRONOMY

Subject to final budgetary approval, the Department of Astronomy of the University of California expects to make a tenure-track appointment in astronomy/astrophysics at the **ASSISTANT PROFESSOR** level, effective 1 July 1987. We seek optical or infrared observers who will utilize the facilities of the planned ten-meter telescope. Preference will be given to research interests in active galactic nuclei and quasi-stellar objects, but other fields will also be considered. Applicants should send, as soon as possible, curriculum vitae and bibliography, and a brief statement of research interests to: **Professor I. R. King, Chairman of Search Committee, Department of Astronomy, University of California, Berkeley, CA 94720.** Include the names of three references, but do not ask them to write letters until requested. Applications should be received by 15 December 1986.

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

BEHAVIORAL NEUROBIOLOGIST. Harvard Medical School, Laboratory of Neurophysiology. Two-year funded position open to applicants with experience in extracellular microelectrode recording. Ongoing research project focuses upon cellular basis of sleep cycle control in the pontine brain stem of cats. Areas of investigation include long-term recording from raphe neurons, and PGO burst cells. Involves collaboration with neuropharmacology team. Special consideration will be given to candidates with a strong technical background in neurophysiology, neuroanatomy, and computer programming who are seeking a postdoctoral opportunity, or a junior faculty position. Send letter of interest and curriculum vitae to: **Dr. J. Allan Hobson, 74 Fenwood Road, Boston, MA 02115.** Harvard University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ASSISTANT PROFESSORSHIPS

Applications are invited for assistant professorships in any field of chemistry, including organic, inorganic, physical, structural, theoretical, biological, or solid state. Applicants should arrange to have three letters of recommendation sent independently and should include curriculum vitae and a short statement of research interests. Harvard University is an Affirmative Action/Equal Opportunity Employer. Applications from female and minority group members are welcome. Applications and supporting material should be sent no later than 30 November 1986 to: **Chairman, Search Committee, Office of the Director, Department of Chemistry, Harvard University, 12 Oxford Street, Cambridge, MA 02138.**

ASSISTANT PROFESSORSHIP IN MICROBIAL PHYSIOLOGY. Available January 1987 or deferrable to August 1987. Position is nontenure track. Applicant must have a Ph.D. in microbiology. Duties to include teaching and research in microbiology. Development of independent research program is expected. Appointment is anticipated for 2 years, with possibility of renewal. Send curriculum vitae, publications, statement of research interests, and have forwarded three recommendations by 15 December 1986 to: **Dr. Iola T. McClurkin, Chair, Microbiology Search Committee, Biology Department, University of Mississippi, University, MS 38677.** An Equal Opportunity/Affirmative Action Employer.

BIOCHEMIST: The Chemistry Department of Colby College invites applications for a tenure-track assistant professorship in biochemistry commencing 1 September 1987. The candidate should have a Ph.D. in biochemistry, an interest in teaching, and research interests amenable to collaboration with undergraduates. The successful applicant will teach two semesters of biochemistry with laboratory, a one-semester nonmajors course, a one-semester course in an area of current biochemical interest, and direct undergraduate research projects. Colby is recognized for excellence in undergraduate education and close faculty-student interaction. A curriculum vitae, transcripts, statement of teaching and research interests, and three letters of reference should be sent to: **Professor Wayne L. Smith, Chair, Department of Chemistry, Colby College, Waterville, ME 04901.** The closing date for completed applications is 15 December 1986. An Equal Opportunity/Affirmative Action Employer.

BIOCHEMISTRY/MOLECULAR BIOLOGY The Faculty of Dentistry of Université de Montréal requires a **research assistant in biochemistry or molecular biology** to join a multidisciplinary group.

The candidate should be or be willing to become fluent in French and will eventually participate in teaching to dental students.

Send inquiries and curriculum vitae to: **Dr. James Percy Lund, Assistant Dean of Research, Faculty of Medicine, University of Montreal, P.O. 6128, Box A, Montréal (Québec), Canada H3C 3J7.** In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.

CARDIOVASCULAR PHYSIOLOGIST

Department of Physiology
University of Kansas Medical Center

Applications and nominations are invited for this tenured position to begin 1 July 1987 or sooner. We are seeking candidates with first-class records in research as judged by quality, productivity, and sustained and current research funds from extramural sources. Commitment to the teaching and training programs of the department is essential. Candidates should possess the Ph.D. or M.D. degree and be several years beyond the postdoctoral level. Rank and salary will be commensurate with previous experience. The closing date for applications is 15 December 1986, or until a suitable candidate is found. Applicants should send a copy of their curriculum vitae, a statement of research accomplishments and future goals, and the names of three references to:

**Dr. Gilbert S. Greenwald
Department of Physiology
University of Kansas Medical Center
Kansas City, KS 66103**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

BIOLOGY

Assistant or associate professor, tenure-track position to begin 1 September 1987. Ph.D. required. Duties include undergraduate courses in general biology and vertebrate systems physiology or microbiology. Candidates should have a commitment to excellence in teaching. Salary commensurate with experience. *Minority applicants are strongly encouraged to apply. An Equal Opportunity/Affirmative Action Employer.* Application deadline: 1 December 1986. Send letter of interest, résumé, and the names and telephone numbers of three references to: **Dr. Ralph J. Rascati, Department of Biology, Kennesaw College, Marietta, GA 30061.**

CARDIOVASCULAR PHYSIOLOGY: Applications are invited for a 2-year NIH-funded postdoctoral position at the Medical College of Ohio. Candidates with research interests in neural, hormonal, metabolic, or biophysical aspects of cardiovascular function are encouraged to apply. Exceptional candidates will be considered for an academic appointment. Send résumé and the names of three references to:

Steven L. Britton
Cardiovascular Laboratory
Department of Physiology
Medical College of Ohio
C.S. number 10008
Toledo, OH 43699
Telephone: 419-381-4148

CELL BIOLOGIST—DARTMOUTH

The Department of Biological Sciences, Dartmouth College, invites applications for a full-time, tenure-track position in **cell biology** at the assistant professor level beginning July 1987. Qualifications include a Ph.D. and at least 2 years of postdoctoral experience. Applicants employing biochemical, immunological, or molecular techniques in cell motility and/or neurobiology are especially encouraged to apply. The successful candidate will be expected to initiate a vigorous, independent research program, to interact with other cell, developmental, neuro- and molecular biologists, and to participate actively in the undergraduate and graduate teaching program of the department. Please send letters of application, including curriculum vitae, reprints, statement of research and teaching interests, and at least three letters of recommendation by 10 January 1987 to: **Search Committee, Department of Biological Sciences, Dartmouth College, Hanover, NH 03755. Dartmouth College is an Equal Opportunity/Affirmative Action Employer.**

CELL PHYSIOLOGIST AND REPRODUCTIVE PHYSIOLOGIST. Tenure-track positions for fall 1987 at the rank of associate or full professor. Ph.D. and postdoctoral experience required. Candidates should have a demonstrated record of independent research and ability to obtain funding for research. Reproductive physiologist is a joint appointment with women's studies. Submit application to: **Dr. Rajen S. Anand, Chair, Department of Anatomy and Physiology, California State University, Long Beach, CA 90840**, by 1 December 1986. *CSULB is an Equal Opportunity/Affirmative Action Employer.*

CHAIR, DEPARTMENT OF CHEMISTRY, UNIVERSITY OF WASHINGTON. Applications and nominations are invited for the position of professor and chairperson of the Department of Chemistry. We seek a vigorous individual with outstanding research accomplishments, a distinguished teaching record, and a special talent and commitment to executive leadership. This department is undergoing a period of rapid growth in the vitality and quality of its research and teaching activities. The faculty is being expanded and renewed by the appointment of numerous outstanding scientists with research interests in new and diverse directions. Guiding the department through a period of continued improvement and change is both the challenge and the opportunity. As with any faculty position, normal activities may include research and graduate teaching. Interested candidates holding a doctoral degree should submit applications by 15 December 1986 to: **Professor E. J. Heller, Search Committee, Department of Chemistry, BG-10, University of Washington, Seattle, WA 98195. The University of Washington is an Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN



Wayne State University

CHAIRPERSON

Department of Pharmaceutical Sciences
Wayne State University
College of Pharmacy and Allied Health Professions
Detroit, MI

Nominations and applications are invited for the position of chairperson of the Department of Pharmaceutical Sciences in the College of Pharmacy and Allied Health Professions at Wayne State University. The department consists of young and dynamic programs in pharmaceuticals, medicinal chemistry, pharmacology, and pharmaceutical administration. The position carries a 12-month academic appointment. Starting date is 1 July 1987, or as soon as possible thereafter.

Qualifications and Experience

Candidates should possess a Ph.D. degree in an area of one of the pharmaceutical sciences and a strong commitment to undergraduate and graduate pharmaceutical education. Demonstrated excellence in research and a past record of demonstrated ability to secure external grant funding is necessary. The preferred candidate will have strong administrative capabilities.

Duties and Responsibilities

The chairperson will be responsible for the administration and allocation of resources in the undergraduate and graduate programs in the pharmaceutical sciences. The ability to stimulate and coordinate research and extramural funding in the pharmaceutical sciences will be essential.

Nominations and applications should be submitted to:

Dr. Salvador Pancorbo, Chairman
Selection Advisory Committee
for Pharmaceutical Sciences Chairperson
College of Pharmacy and Allied Health Professions
Wayne State University
Detroit, MI 48202

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

DEPUTY DIRECTOR, National Electron Probe Resource For Analysis of Cells. M.D. or Ph.D. skilled in cell biology of cultured cells, in transport physiology, and with a strong background in physics of biomedical instrumentation including computer systems. The deputy director will manage the core activity of the national resource, including data acquisition and hardware and software development. She/he will assist in conducting experiments using electron probe analysis of cultured cells and microfluorescence studies on individual cells. She/he will serve as a liaison with prospective and active collaborating laboratories nationally. Prior experience with electron microprobe analysis desirable, but not necessary. Junior Faculty rank. *Equal Opportunity/Affirmative Action Employer.* Please submit curriculum vitae, list of publications, and names of three references to: **C. Lechene, M.D., Harvard Medical School/Brigham and Women's Hospital, 221 Longwood Avenue, Boston, MA 02115.**

PROTEIN BIOCHEMIST

Applications are invited to fill a tenure-track **assistant professorship of biology** in a growing department with increasing strength in prokaryotic and eukaryotic molecular biology. We seek an individual whose training and research interests are in an area of **protein biochemistry** which will complement current departmental programs in biochemistry, molecular genetics, microbiology, cell biology, and parasitology. The successful candidate will be expected to teach in the undergraduate and graduate programs and to implement a research program which will attract extramural funding. Applications should include curriculum vitae, the names, addresses, and telephone numbers of three references and a brief description of your current and proposed research program. Review of applications will begin 1 December 1986. Please submit your application to: **Dr. P. Dennis Smith, Chairman, Protein Biochemistry Search Committee, Department of Biology, Southern Methodist University (SMU), Dallas, TX 75275. SMU is an Equal Opportunity/Affirmative Action/Title IX Employer.**

POSITIONS OPEN

CHEMOSENSATION

The Monell Chemical Senses Center, a multidisciplinary nonprofit research center devoted exclusively to studying the mechanisms and functions of the chemical senses, has an opening for an individual studying human perception. The person hired will be expected to maintain a strong, independent research program in chemosensation and to work with other staff members in our newly established clinical center. Applicants must have a doctoral degree. Rank and salary are flexible and commensurate with qualifications. A letter of application with a complete curriculum vitae and the names of at least three references should be sent to: **Director, Monell Chemical Senses Center, 3500 Market Street, Philadelphia, PA 19104. Monell is an Equal Opportunity/Affirmative Action Employer.**

COMPARATIVE VERTEBRATE ANATOMIST—tenure-track, assistant professor position. Must have Ph.D. in biological science. Starting date: 1 September 1987. Teaching areas include introductory biology, human anatomy and physiology, and comparative anatomy. Candidates expected to maintain research program, direct graduate student training at master's level, and conduct graduate level courses. Application deadline: 5 January 1987. Curriculum vitae, relevant publications, official transcripts, and three letters of recommendation (sent directly by recommender) should be forwarded to: **Dr. J. R. Koke, Search and Screen Committee, Department of Biology, Southwest Texas State University (SWTSU), San Marcos, TX 78666.** The university reserves the right not to proceed with any appointment for financial or programmatic reasons. *SWTSU is an Equal Opportunity/Affirmative Action Employer.*

DIAGNOSTIC RADIOLOGIC PHYSICIST

The Department of Radiology of the Hospital of the University of Pennsylvania is seeking a diagnostic radiologic physicist. The position includes the responsibility for supervising the image quality control program, consulting on clinical dosimetry, and teaching radiologic physics at a graduate and undergraduate level. Research work is encouraged and extensive laboratory facilities are available.

Interested applicants should send their résumé to: **Harold L. Kundel, M.D., Department of Radiology, Hospital of the University of Pennsylvania, 3400 Spruce Street, Philadelphia, PA 19104.**

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

DIRECTOR NMR IMAGING CENTER STANFORD UNIVERSITY

Stanford University is developing a new Nuclear Magnetic Resonance Imaging Center. The purpose of this center is to provide opportunities for collaboration between basic researchers and clinical investigators to rapidly translate basic scientific discoveries in NMR spectroscopy into significant clinical advances in diagnosis and therapy. The focus will be on NMR as a tool for in vivo spectroscopy and structural chemical investigations. A new building will house the center.

The director of this center should be an outstanding scientist who will develop an innovative research program at the medical center and university. Leadership qualities and the ability to integrate different disciplines ranging from physics to medicine are also essential. The director should also be able to head an advanced training program. The departmental affiliation of the director will be determined on the basis of his or her interests and experience.

Applications and nominations for the position of director are invited. *Stanford is committed to increasing representation of women and minority groups among its faculty, and we particularly encourage applications and nominations of such candidates.* Send curriculum vitae, a statement of research accomplishments and future research directions, and the names of three references to: **NMR Imaging Search Committee, Attention: Marian Knox, Stanford Medical School, Room M-119, Stanford, CA 94305.** Application should be received by 15 December 1986.

Stanford University is an Equal Opportunity Employer

POSITIONS OPEN

DIRECTOR OF ANIMAL CARE AND USE

The University of Georgia is seeking qualified applicants for the position of director of university animal care and use.

The director will report to the vice president for research and other cognizant university administrators on animal care policies and issues; work closely with the Animal Care and Use Committee; implement and administer institutional compliance with laws, regulations, policies, Assurance of Compliance, and guidelines; provide detailed technical oversight for activities such as veterinary care; and provide consultation and advice to investigators and others on all aspects of the care and use of animals.

Qualifications for this position include a Ph.D. or D.V.M., plus experience in animal-related concerns. Candidates should have administrative experience and knowledge of issues relating to the care and use of animals in research, research training, and biological testing, including alternatives to the use of animals in those functions.

This is a new position. Deadline for receipt of applications or nominations is 1 January 1987.

Salary competitive. Send curriculum vitae listing three references to: Joe L. Key, Vice President for Research, The University of Georgia, Graduate Studies Research Center, Athens, GA 30602.

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

DIRECTOR OF THE WAMI MEDICAL PROGRAM IN IDAHO

Search Extended

The University of Idaho solicits nominations and applications for the position of director for Idaho's component of the WAMI (Washington, Alaska, Montana, Idaho) Regional Medical Education Program of the University of Washington School of Medicine. Position descriptions are available on requests made to the address below. Starting date is 1 July 1987. To apply please submit a letter of application, a résumé, and four original letters of reference by 1 December 1986, to: Chair, WAMI Search Committee, College of Letters and Science, University of Idaho, Moscow, ID 83843.

The University of Idaho is an Equal Opportunity/Affirmative Action Employer and Educational Institution.

DIRECTOR, ACADEMIC LEARNING SKILLS CENTER. Oversees campus-wide programs for undergraduate student retention. Manages staff and budget. Position eligibility: Ph.D. in English, reading, psychology, mathematics, science, or cognate field. Administrative and learning skills experience preferred. Salary, \$35,000 to \$40,000; application deadline, 20 January 1987; hire date, 1 July 1987. Send résumé and three letters of recommendation to: Dr. Robert L. Wrenn, Search Chair, 200 West Old Main, University of Arizona, Tucson, AZ 85721. *The University of Arizona is an Equal Employment Opportunity/Affirmative Action Employer.*

The Department of Physiology and Molecular Biophysics, Baylor College of Medicine, has a strong program in molecular excitability and is seeking additional FACULTY with expertise in this area. Tenure-track positions are available at all levels to applicants with research interests in, but not restricted to, the following special areas of investigation: ligand-gated membrane channels, signal transduction, developmental molecular genetics, real-time imaging of excitable cells, and ultrastructure. M.D. or Ph.D. in appropriate field required and approximately 4 years of postdoctoral training. Laboratory space and basic equipment provided and initial laboratory support available. Successful candidate will devote majority of his/her effort to establishing and maintaining an independent research program related to the main interests of the department. Send curriculum vitae, a brief description of past and present research experience, and names of three or more references to:

Dr. A. M. Brown, Professor and Chairman
Physiology and Molecular Biophysics Department
Baylor College of Medicine
Houston, TX 77030

Equal Opportunity/Affirmative Action Employer

7 NOVEMBER 1986

Molecular Biologist

The Tradition Continues.

Bringing State-Of-The-Art Research To New Areas Of Science.

At Upjohn, one of the world's premier pharmaceutical companies, we foster an atmosphere where individuality is encouraged and new ideas can surface quickly. We're committed to broadening scientific knowledge in ground-breaking areas.

Our strategy in Molecular Biology Research, part of Upjohn's growing Biotechnology program, begins with bringing state-of-the-art research to new areas of molecular and cellular biology and integrating these new technologies into other research programs throughout the company. You will be responsible for developing molecular research programs and interacting with therapeutic discovery programs. Using gene cloning techniques such as cDNA and genomic library construction, you will establish a research program in a therapeutically important system. A Ph.D. in a relevant field, post doctoral experience and a background and interest in applying molecular biology to problems in neurobiology is required. Established investigators are encouraged to apply.

Kalamazoo is a medium-sized Southwestern Michigan community with immediate access to a mix of excellent cultural, educational and recreational pursuits, including numerous lakes and a four-season climate.

For confidential consideration, please call from outside Michigan toll free 1-800-253-8600, ext. 3-6767, (inside Michigan call collect 616-323-6767) to request an employment application to be sent to you immediately. Please refer to ad number 19338-F when calling.



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An Equal Opportunity Employer m/f.

G.D. Searle & Company, a respected leader in pharmaceutical research and development, has immediate opportunities for Ph.D. and M.S. level scientists as follows:

Research Investigator — Drug Metabolism (#7NT-7)

Our Drug Metabolism Department seeks an individual with proven expertise in the design and conduct of pharmacokinetic and metabolism studies in laboratory animals and in humans. Qualified applicants will have a Ph.D. in Pharmaceutical Sciences, Pharmacology, or related area with 1-3 years experience.

Research Investigator — Cardiac Arrhythmias (#OPF-7)

The Cardiovascular Discovery group has a need for a Ph.D. in Physiology or Pharmacology with 1-3 years of postdoctoral training emphasizing cardiac research. The individual selected will be a member of a research team with responsibilities to include: designing and conducting in vivo/in vitro studies to identify and characterize new antiarrhythmic agents; developing new arrhythmia models; and establishing a basic research project.

Post Doctoral Fellow — Cardiovascular Discovery (#OPO-4)

An opportunity exists for an individual interested in performing basic research on K channels in single cardiac cells. Candidates should have a recent Ph.D. in Physiology, Biophysics or Pharmacology and experience in whole-cell and/or single channel patch clamp techniques.

Research Biologist — Central Nervous System Research (#40N-5)

The ideal candidate for this position will have an M.S. in Neurobiology with experience in Neurophysiology. Knowledge of electronics and computer science is also desired. The selected individual will assist in the design and execution of pharmacological studies using electrophysiological techniques aimed at the identification of drugs for the treatment of central nervous system disorders.

If you are interested in joining a challenging and professional environment that is dedicated to making major contributions in health care, consider Searle. We offer an excellent salary and benefits package including relocation assistance. Applicants should submit their curriculum vitae, description of relevant experience and the names of three references to: Sheila Copeland, Searle R&D Division, 4901 Searle Parkway, Skokie, IL 60077.

Meeting Bound? Searle Cardiovascular Scientists will be present at the American Heart Association Meeting on Nov. 17-20, 1986. Contact Sue Garthwaite or Mike Sanguinetti during that time at the Dallas Hilton for an interview.

Equal Opportunity Employer M/F/H

SEARLE

POSITIONS OPEN

DIRECTOR IMAGE ANALYSIS/COMPUTER CORE FACILITY

The Laboratory of Neurobiology, Cornell University Medical College, is seeking an individual with experience in quantitative image analysis, interactive computer graphics, and UNIX system management. Computer facilities include MicroVAX-II, SUN-3 workstations, DeAnza 8500, IBM PC-AT's and peripherals supporting a variety of research applications. This individual will supervise the activities of the Computer Core, develop new applications, and meet with investigators regarding their computer needs. Ph.D. or M.S. desired. Send résumé to: L. Tucker, Ph.D., Laboratory of Neurobiology, Cornell University Medical College, 411 East 69 Street—KB429, New York, NY 10021. *Equal Opportunity Employer.*

ETHOLOGIST: Beloit College, a strong liberal arts college with about 1000 students, seeks a one-semester sabbatical leave replacement to teach ethology and an introductory biology course in the spring 1987 semester. Ph.D. or A.B.D. preferred. Send curriculum vitae and three letters of recommendation to: Dr. John R. Jungck, Beloit College, Department of Biology, Beloit, WI 53511, by 5 December 1986. *Beloit College is an Equal Opportunity/Affirmative Action Employer.*

University of Alberta Department of Genetics Experimental Population Geneticist

A vacancy is available for an experimental population geneticist at the assistant professor level. Candidates with interests in human populations will be accorded particular consideration. The tenure-track appointee will be expected to teach in courses on human and population genetics. Candidates should have a Ph.D. and postdoctoral research experience. Establishment of an independent research program will be an integral part of the appointee's duties.

Genetics currently has thirteen faculty, housed in a modern research facility in the Faculty of Science; research emphasis is molecular biological. The University of Alberta, Alberta's senior university, has 25,000 students. Heavy emphasis on biosciences is found in the Faculties of Science, Medicine, and Agriculture. Collaborative opportunities for research are available within the Faculty of Medicine, particularly. Edmonton is a city of 500,000, a supply centre for agriculture and petroleum industries and Alberta's capital.

The appointment will commence 1 July 1987. Salary will be in the range \$31,612 to \$45,340, commensurate with qualifications. An appropriately qualified appointee may be eligible for substantial research establishment funding from the Alberta Heritage Foundation for Medical Research.

Applicants should send curriculum vitae, reprints of four (or more) recent research publications, and the names and addresses of at least three referees to:

Dr. David Nash
Chairman
Department of Genetics
University of Alberta
Edmonton, Alberta
Canada T6G 2E9

The closing date for applications is 31 December 1986.

The University of Alberta is an Equal Opportunity Employer, but priority will be given to Canadian citizens and permanent residents of Canada.

FACULTY FOR EUROPE AND ASIA

The University of Maryland anticipates openings for faculty to teach undergraduate science courses on U.S. military bases overseas. Requirements include the Ph.D. or two M.A.'s, recent college teaching experience, U.S. citizenship, and competence to teach in two of the following fields: astronomy, biology, chemistry, computer science, geology, mathematics, and physics. Renewable annual appointments begin August 1987. Frequent travel and the cost of schooling make these positions difficult for those with children. Send résumé to: Dr. Lois A. Mohr, The University of Maryland University College, College Park, MD 20742-1642. *Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

EUKARYOTIC MOLECULAR BIOLOGIST

Applications are invited to fill a tenure-track assistant professorship in biology in a growing department with increasing emphasis in molecular biology. We prefer candidates with postdoctoral training and research interests which will complement existing programs in developmental biology. The successful candidate will be expected to teach in the undergraduate and graduate programs and to implement a research program which will attract extramural funding. Applications should include curriculum vitae, the names, addresses, and telephone numbers of three references and a brief description of your current and proposed research program. Review of applications will begin 1 December 1986. Please submit your application to: Dr. P. Dennis Smith, Chairman, Eukaryotic Molecular Biology Search Committee, Department of Biology, Southern Methodist University, Dallas, TX 75275. *SMU is an Equal Opportunity/Affirmative Action/Title IX Employer.*

UNIVERSITY OF CONNECTICUT HEALTH CENTER FACULTY POSITION

Applications are invited for a tenure-track faculty position in the Department of BioStructure and Function. Responsibilities will include teaching of dental, medical and graduate students, student advising, research, and participation in enhancing a strong graduate research training program. The position is available at any level although preference may be given to more established investigators. Applicants must have a research doctorate, should be firmly committed to a career in teaching and have a strong research program in which excellence and independence have been demonstrated. Individuals who are investigating the phenomenon of information transfer via receptor-mediated signals are especially encouraged to apply.

Current interests in the department include macromolecular structure and function, epithelial-mesenchymal interactions in development, the molecular biology of chondrogenesis, transepithelial transport of ions, neural mechanisms in gustation, neuromotor mechanisms of orofacial function, biological regulation of mineralization, regulation of leukocyte metabolism and secretion, and mechanisms of cell attachment and aggregation during development.

Applications containing curriculum vitae, a list of publications, three representative publications, a description of research interests, and three named references should be sent to: Dr. Marvin L. Tanzer, Head, Department of BioStructure and Function, University of Connecticut Health Center, Farmington, CT 06032. Closing date for applications is 31 December 1986.

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

FACULTY POSITION FACULTY OF REHABILITATION MEDICINE UNIVERSITY OF ALBERTA

Applications are invited for full-time, tenure-track appointments in the Department of Physical Therapy and the Department of Occupational Therapy at the University of Alberta, for July 1987. The University of Alberta offers B.Sc. and M.Sc. degrees in physical therapy and occupational therapy. Qualified candidates must possess a doctoral degree. Salary will be commensurate with qualifications at either the assistant professor range of \$31,612 to \$45,340, or the associate professor range of \$39,620 to \$57,236.

Responsibilities include undergraduate and graduate teaching, research and scholarly work, and administrative duties. A strong clinical background would be an asset.

Qualified applicants should send curriculum vitae, state their teaching and research interests, together with the name of three referees to:

Dr. Martha C. Pipper, Dean
Faculty of Rehabilitation Medicine
316 Corbett Hall
University of Alberta
Edmonton, Alberta, Canada T6G 2G4

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

The deadline for receipt of applications is 30 January 1987.

POSITIONS OPEN

The Department of Geology is soliciting applications for an anticipated **TENURE-TRACK FACULTY POSITION IN GROUND WATER HYDROLOGY** to begin August 1987. Areas of related interest within the 23-member department include hydrogeology, low temperature geochemistry, isotope geochronology, and environmental chemistry. The successful candidate is expected to develop a strong research program, and teach graduate and undergraduate courses that complement the existing hydrogeology—low temperature geochemistry areas of specialty.

Send letters of application accompanied by curriculum vitae, description of research interests in ground water modeling, and names of three referees to: Professor Frank T. Caruccio, Ground Water Search Committee, Department of Geology, University of South Carolina, Columbia, SC 29208. Closing date for applications is 31 December 1986.

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

FACULTY POSITION— VERTEBRATE BIOLOGY

The Department of Biology invites applications from vertebrate biologists with some training in modern cellular biology. The department seeks a teacher committed to high quality undergraduate education who will maintain a vigorous research program. Preference will be given to candidates with interests in ecology, systematics, or evolutionary biology (including paleobiology).

Hiring will be at the assistant professor level, and an earned doctorate is required. The position is a 9-month, tenure-track appointment beginning September 1987.

Send a letter describing research interests and long-term goals, reprints of published work, three letters of recommendation, and transcripts of all college work by 1 January 1987 to: Dr. Robert A. Martin, Head, Department of Biology, Berry College, Mt. Berry, GA 30149. *Equal Opportunity Employer.*

GEOPHYSICIST BAYLOR UNIVERSITY

The Geology Department at Baylor University seeks applications for the W. M. Keck Foundation professorship in geophysics (a tenure-track position at associate or full-professor level) to begin in January 1987 or August 1987. A Ph.D. is required. The primary responsibility would be to teach undergraduate and graduate courses in geophysics with emphasis on seismic interpretation. The person will be expected to initiate a research program and to direct B.S. and M.S. theses in geophysics, as well as teaching geophysics to geology majors. Send letter of application with complete curriculum vitae and names of three references to: Dr. Harold Beaver, Chairman, Geology Department, Baylor University, Waco, TX 76798.

Baylor University is a private institution, an Equal Opportunity Employer, and is affiliated with the Baptist General Convention of Texas.

DEPARTMENT OF SPEECH PATHOLOGY AND AUDIOLOGY University of Alberta

SPEECH-LANGUAGE PATHOLOGIST: A tenure-track position is available 1 July 1987 at the rank of assistant professor. The applicant must hold a Ph.D. degree in speech-language pathology or related discipline and specialize in child language disorders. Specific interest in the language disorders of school age children is preferable. Proven research and university teaching ability is required and certification by the American Speech-Language-Hearing Association is desirable. Salary will be commensurate with qualifications (annual minimum of \$31,612). Deadline for applications is 30 January 1987. *The University of Alberta is an Equal Opportunity Employer but, in accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents of Canada.* Please apply by sending curriculum vitae, names of three referees, and a statement of teaching and research interests to:

Martha Pipper, Ph.D.
Dean, Faculty of Rehabilitation Medicine
316 Corbett Hall
University of Alberta
Edmonton, Alberta, Canada T6G 2G4



ENDOWED PROFESSORSHIP IN CANCER OR IMMUNOLOGY

The University of Cincinnati and the State of Ohio have created an endowed professorship in the area of Mammalian Gene Regulation (Cancer) and/or Molecular Immunology. This professorship, named the Ohio Eminent Scholar, is designed to add an outstanding scientist to the Department of Microbiology and Molecular Genetics in the College of Medicine. The department has well established programs in molecular genetics and the Eminent Scholar will fulfill a pivotal role in expanding strength and interactions in the named area(s). The University of Cincinnati is a comprehensive university in the state system. Curriculum vitae should be sent to:

Dr. Jerry B. Lingrel
Department of Microbiology and
Molecular Genetics
University of Cincinnati
College of Medicine
Cincinnati, Ohio 45267-0524

Affirmative Action/Equal Opportunity Employer

SENIOR CHEMIST

Sigma Diagnostic, a world renowned manufacturer of diagnostic reagents, is seeking a PhD biochemist or clinical chemist to add to its research and development staff. The successful candidate will have one to two years of experience in clinical chemistry laboratory. Candidates with industrial experience developing diagnostic reagents will be preferred. Excellent opportunity for a Senior Chemist with a desire to grow into a supervisory position. Full company paid benefits. Send resume to:

Personnel Department
SIGMA
CHEMICAL COMPANY
P.O. Box 14508
St. Louis, MO 63178

Equal Opportunity Employer, M/F

RADIATION BIOLOGIST

Oak Ridge National Laboratory's Biology Division is seeking applicants with Ph.D. or equivalent in radiation biology, with a research emphasis on the mechanisms of induction of cancer. Persons with experience in molecular biology, molecular pathology, *in vitro* cell transformation, genetics and related disciplines are encouraged to respond. The successful applicant will be expected to instigate their own research as well as collaborate in ongoing projects of the Radiation Carcinogenesis Program.

ORNL offers an excellent benefits package and a generous relocation program plus a stimulating working environment. Salary commensurate with experience. Qualified applicants should forward resume, publications list, copy of academic transcripts and names of three references to R. Julian Preston (Chairman, Appointment Committee), Oak Ridge National Laboratory, Biology Division, Building 9207, P.O. Box Y, Oak Ridge, TN 37831.

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An Equal Opportunity Employer

DEAN/PHARMACY—The University of Kentucky invites applications for the position of Dean of the College of Pharmacy. College programs include B.Sc. and Pharm.D. professional programs, as well as Ph.D. programs in the Pharmaceutical Sciences. In addition to a strong commitment to pharmacy education, research and service, and eligibility for appointment to a senior academic rank in the College, applicants should have excellent interpersonal skills, experience in leadership, management and administration, and a demonstrated capacity for creativity. The position is available after January 1, 1987. Nominations, or a letter of application including curriculum vitae, should be sent to: **Office of the Chancellor for the Medical Center, University of Kentucky, A301 Medical Plaza, Lexington, Kentucky, 40536-02231, Attention: H.B. Kostenbauder, Ph.D., Chairperson.** Applications should be received by December 15.

*Affirmative Action/
Equal Opportunity Employer*

Group Leader

The Agricultural Research Division of American Cyanamid Company currently has an opening for a Group Leader in the Department of Animal Industry Discovery and Biotechnology.

This individual will be responsible for coordinating the research activities of a group of 17 scientists in the Biochemistry and Physiology Section and will be responsible for developing multidisciplinary programs aimed at identifying novel agents for enhancing animal productivity. Close collaboration with our Molecular and Cellular Biology Section in these efforts is expected.

The successful applicant should have a Ph.D. in Biochemistry, Physiology or Animal Science, an established record of research excellence and experience in coordinating the research activities of several scientists. A broad based knowledge of the animal agricultural industry is essential. A working knowledge of genetic engineering and previous management experience is highly desirable.

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



American Cyanamid Company

Agricultural Research Division
P.O. Box 400
Princeton, New Jersey 08540
An Equal Opportunity Employer M/F/H

POSITIONS OPEN

FACULTY POSITIONS

Two tenure-track positions available August 1987. Rank and salary commensurate with qualifications and experience. A MICROBIAL MOLECULAR GENETICIST and a VIROLOGIST sought to establish graduate research and teaching programs in respective subject areas. Responsibilities also include undergraduate teaching. Forward curriculum vitae, reprints, transcripts, statement of research goals, and three letters of recommendation to: **Dr. G. Alex Marsh, Chairman, Department of Biological Sciences, Florida Atlantic University (FAU), Boca Raton, FL 33431.** Deadline 15 February 1987. *FAU is an Affirmative Action/Equal Opportunity Institution.*

TENURE-TRACK FACULTY POSITIONS

Two state-funded positions are available in the Department of Basic Pharmaceutical Sciences at the University of South Carolina. Faculty rank and salary are negotiable, commensurate with experience; a tenured, full professorship is possible. Preference will be given to applicants having a Ph.D. in pharmacetics, pharmacology, or physical chemistry with a research interest in basic pharmacetics or pharmacokinetics. Responsibilities include undergraduate/graduate level instruction, development of a strong research program, and graduate student supervision. Submit résumé and names of three references to: **Dr. J. Roberts, Chairman, Department of Basic Pharmaceutical Sciences, College of Pharmacy, University of South Carolina, Columbia, SC 29208.** Telephone: 803-777-7824. *Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS—MEDICINAL AND NATURAL PRODUCTS CHEMISTRY

The Division of Medicinal and Natural Products Chemistry of the College of Pharmacy at The University of Texas at Austin invites applications for two tenure-track positions at the assistant or associate professor levels, to be filled by September 1987. All areas of research interest will be considered, including molecular biology, bioorganic and natural products chemistry, biotechnology, physical methods of characterization, or synthetic medicinal chemistry. The selected candidates will be expected to develop or have established a rigorous research program. Participation in undergraduate medicinal chemistry courses and development of graduate courses in the area(s) of research expertise are expected. A Ph.D. with postdoctoral experience is required, and a background in pharmacy is desirable. Send résumé and the names of three references to: **Dr. Patrick J. Davis, Head, Division of Medicinal and Natural Products Chemistry, College of Pharmacy, The University of Texas at Austin, Austin, TX 78712-1074.** *The University of Texas is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS IN MOLECULAR GENETICS

The Department of Biochemistry of The University of Texas Health Center at Tyler is seeking individuals to fill faculty positions in the area of molecular genetics. Individuals with research expertise in the area of mammalian gene expression and regulation will be given primary consideration, but all applicants in related areas will be seriously considered. We seek investigators with promise of, or with a proven record of, productivity and extramural funding. Salary is completely funded by the University of Texas and will be commensurate with the level of the individual appointment. The investigators will be expected to build strong, sponsored research programs on a full-time basis, with no teaching responsibilities. We are especially interested in individuals around whom a strong molecular biology program could be developed. Rank will be dependent on research experience and peer recognition.

Please send curriculum vitae, a statement of research goals, and names, addresses, and telephone numbers of at least three references to: **Dr. Richard G. Painter, Department of Biochemistry, University of Texas Health Center at Tyler, P.O. Box 2003, Tyler, TX 75710.** *The University of Texas Health Center at Tyler has a strong commitment to Affirmative Action Employment practices.*

POSITIONS OPEN

THREE FACULTY POSITIONS VIRGINIA COMMONWEALTH UNIVERSITY

The Department of Biology anticipates three tenure-track positions available in mid-August 1987. One of these appointments will be at the senior level. Candidates must have a Ph.D. and postdoctoral experience; teaching experience is highly desirable. Successful candidates are expected to develop an active research program, direct graduate student research in our M.S. program, and teach undergraduate and graduate courses. One position is in **molecular genetics** of prokaryotic systems and involves development of a graduate course in DNA technology and participation in undergraduate genetics. Two positions in the plant sciences will complement our new Plant Biotechnology Research Laboratory. We seek a **plant biologist** with research interests in the whole plant, to teach plant physiology, morphology, and a related course in his/her expertise. We also seek a **plant molecular biologist** with a research focus on gene transfer in plant tissue culture and interest in teaching plant science courses at the cell/molecular level. Applicants should submit curriculum vitae, names and addresses of three references, a statement of research and teaching interests, and indicate the position for which they wish to be considered by 5 December 1986 to: **Dr. Stanley R. Webb, Department of Biology, 816 Park Avenue, Virginia Commonwealth University, Richmond, VA 23284.**

Virginia Commonwealth University is an Equal Opportunity/Affirmative Action Employer.

GROSS ANATOMIST

Department of Surgery, University of California, San Diego (UCSD): Tenure-track assistant professor position open to teach gross anatomy at the UCSD School of Medicine beginning 1 July 1987. This is mainly a teaching and research position, with some administrative responsibilities. It requires interest and ability to teach in the Medical School Core Gross Anatomy course and to offer and participate in elective teaching. The candidate must have a Ph.D. in anatomy and research competence of a degree to allow independent productivity and effective cooperative undertakings with others. Send curriculum vitae and names of three academic references to: **N. A. Halasz, M.D., Professor and Head, Division of Anatomy, UCSD Medical Center, 225 Dickinson Street, San Diego, CA 92103.** Position closes 28 February 1987. Salary per published UC scale. *UCSD is an Equal Opportunity/Affirmative Action Employer.*

IMMUNOLOGIST—Applications are invited for a 12-month, tenure-track position at the assistant or associate professor level. Postdoctoral and molecular biology experience is preferred. Applicants at the associate rank should have an established record of extramural funding and scholarly activity. The successful candidate will commit to the application of basic immunology to commercial avian species, will be expected to develop a relevant and productive research program in avian immunology, and teach and advise graduate students. Deadline for application is 15 December 1986, or until a suitable applicant is found. Application, including curriculum vitae, official transcripts, statement of research interests and goals, and three letters of reference should be mailed to: **Dr. J. E. Marion, Head, Department of Poultry Science, North Carolina State University, Raleigh, NC 27695-7608.**

IMMUNOLOGIST/MOLECULAR BIOLOGIST

The University of Missouri—Rolla (UMR) invites applications from qualified individuals for a tenure-track position at the assistant/associate professor level to begin fall semester 1987. Candidates must have the Ph.D. degree, with demonstrated capability to teach and conduct independent research. Postdoctoral research experience is desirable. The successful candidate will be expected to participate in a rigorous undergraduate core curriculum and to develop advanced coursework and conduct research. Applications, including current curriculum vitae, copies of recent publications, and three letters of recommendation should be sent to: **Chairperson, Life Science Search Committee, Life Sciences Department, 105 Schrenk Hall, University of Missouri—Rolla, MO 65401.** Deadline for receipt of applications is 1 January 1987. *UMR is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

HEAD

Department of Physics and Astronomy

Western Kentucky University is seeking a department head for physics and astronomy beginning 1 July 1987. Candidates must have the Ph.D. or equivalent, a significant record of scholarly achievement, effective teaching, and external funding. A strong commitment to excellence in teaching and involvement of undergraduates in research is expected. The 12-member department presently offers a B.S. degree in physics and a variety of courses in support of the university's general education and science programs. Research interests of current faculty include astrophysics, biophysics, nuclear physics, optical physics, physics education, and radiological physics. Candidates should submit curriculum vitae, including lists of publications and external grants awarded; a letter of application; and arrange for four persons to send reference letters (include names, addresses, and telephone numbers), no later than 21 January 1987 to: **Office of Academic Affairs, Physics and Astronomy Head Search, Western Kentucky University, Bowling Green, KY 42101.** *An Affirmative Action/Equal Opportunity Employer.*

LABORATORY DIRECTOR

Tenure-track position: Reproductive biologist to direct in vitro fertilization laboratory—Ph.D. level position to direct laboratory and conduct research in new IVF-ET program. Experience in tissue culture and sterile technique mandatory. Previous IVF-ET experience preferable. Salary negotiable. For more information, send curriculum vitae to: **Sandra Ann Carson, M.D., Department of Obstetrics and Gynecology, University of Tennessee, 956 Court Avenue, Room D324, Memphis, TN 38163.** *An Equal Opportunity/Affirmative Action Employer.*

LABORATORY ENGINEER: Required: M.S. in image and photographic science or imaging and photographic engineering with master's thesis in digital image processing; B.S. in physical, life or mathematics science; proficiency in Fortran and C computer languages and in use of photographic camera systems and computer image output devices; 1 year prior experience in photographic (chemical film) processing. Duties include laboratory engineering functions within an image-processing facility, maintaining a scientific darkroom facility, and supervisory responsibilities. Salary range: \$19,707 to \$20,361 per year. *Equal Opportunity Employer, M/F.* Résumé to: **H. Block, Job Service, 18 South Avenue, Rochester, NY 14604.**

MEDICAL RESEARCHER will perform complicated drug administration, surgery, and supervise breeding of laboratory animals for the purpose of performing medical research into specific diseases. Will also monitor and keep detailed records to document the progress and results of experiments. Must have a B.S. degree in medical studies or a related field. Prior experience in handling, breeding, and husbandry of pathogen-free mouse colony. Must also have prior experience in mouse surgery, thymectomy, and preparation and use of carcinogens. Forty hours per week. \$18,000 per year. Must have 2 years of experience in job or related field. Work and interview site: **San Jose, CA.** Please send this ad and your résumé to: **MLU number 8261, P.O. Box 9560, Sacramento, CA 95823-0560,** not later than 22 November 1986.

MOLECULAR BIOLOGIST. The Departments of Ophthalmology and Microbiology of the University of Southern California School of Medicine offer a tenure-track appointment in ocular molecular biology (assistant/associate professor). The candidate should be well trained and productive in some aspect of basic molecular biology and willing to participate as a consultant in vision research involving application of the methods of molecular biology. Areas of special interest include extracellular matrix, receptors, oncogene sequencing, vitronectin, and the molecular biology of developing cells. Send résumé to: **Stephen J. Ryan, M.D., Professor and Chairman, USC Ophthalmology, Doheny Eye Foundation, 1355 San Pablo Street, Los Angeles, CA 90033.** *Equal Opportunity Employer/Affirmative Action.*

CABM FACULTY

N.J. Center for Advanced Biotechnology and Medicine Faculty Positions in Biomolecular Structure, Molecular Genetics, Molecular Pharmacology and Cell and Developmental Biology.

The CABM is a recently established research and teaching center sponsored jointly by the N.J. Commission on Science and Technology, Rutgers University and the University of Medicine and Dentistry of New Jersey. A 100,000 sq. ft. facility to house approximately 175, including 18 new faculty and their postdoctoral fellows and students, is being constructed on the Busch Campus between the Waksman Institute and the Robert Wood Johnson Medical School. In addition, several supporting network laboratories, including protein chemistry and cell sorting, as well as satellite facilities for the preparation of cell products and for clinical research are being developed to promote interactions among research groups in the two Universities and in industry. The Center is seeking investigators with research and teaching interests in biomolecular structure (e.g. X-ray crystallography, protein folding), molecular genetics (e.g. oncogenes, regulation of gene expression), molecular pharmacology (e.g. receptors, hormone action), and cell developmental biology (e.g. neurosciences, immunobiology). Interested candidates should send C.V. and the names of three referees to Aaron J. Shatkin, Director or Robert M. Namovicz, Executive Officer, CABM, c/o Waksman Institute, P.O. Box 759, Piscataway, NJ 08854. An equal opportunity/affirmative action employer m/f/h/v.



Molecular and Cell Biology

Several openings for junior or senior faculty in molecular and cell biology are available at the Worcester Foundation for Experimental Biology. Areas of particular interest are oncogenes and growth control, gene regulation (at all levels), the cytoskeleton (including motility, mitosis and intracellular transport), membrane and cell surface biology, and molecular and cellular aspects of development. However, the primary criterion is scientific excellence rather than area of research.

These are institute-backed appointments with highly competitive salaries, liberal set-up funds and excellent support facilities. The Worcester Foundation's wooded campus is 38 miles west of Boston.

Send a curriculum vitae, names of references, and a synopsis of current and planned research. Please do not send reprints or manuscripts.

Send materials to: **MCB, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Massachusetts 01545.** We anticipate filling these appointments by July-September, 1987.



**WORCESTER
FOUNDATION FOR
EXPERIMENTAL
BIOLOGY**

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

Fermentation Scientists

MYCOGEN CORPORATION is a rapidly growing biotechnology company specializing in the development of crop protection products. We currently have the following positions/openings in our expanding fermentation group.

MICROBIAL PHYSIOLOGIST: MS/PhD with minimum of 2 years industrial fermentation development experience. Will develop and refine fermentations of recombinant strains of *Pseudomonas* and assist with scale-up to manufacturing level. Previous experience with fermentation of recombinant organisms preferred. Job Ferm-1

FUNGAL PHYSIOLOGIST: MS/PhD with minimum of 2 years industrial fermentation development experience. Will study the development/physiology of fungi in submerged culture. Previous experience with fungi or streptomycete fermentations preferable. Job Ferm-2

PRODUCTION SUPERVISOR: Will supervise in-house pilot operation and assist with scale-up and supervision of manufacturing processes. Previous large-scale fermentation experience required. Job Ferm-3

MYCOGEN offers competitive salaries and benefits and an exceptional working environment. An application can be made by sending a resume complete with salary history and names of three references to:



**Personnel Department
Mycogen Corporation
5451 Oberlin Drive
San Diego, CA 92121**

An Equal Opportunity Employer

U.S. PATENT AND TRADEMARK OFFICE

POSITION:

Microbiologist/Patent Examiner

Opportunity involves the scientific and legal evaluation of patent applications involving recombinant DNA, molecular immunology, molecular genetics, cell biology or clinical chemistry.

QUALIFICATIONS:

A full 4-year or longer professional curriculum in an accredited college or university leading to a Bachelor's Degree or higher with specific study in Molecular Biology, Biochemistry, Immunology or Cell Biology.

A Ph.D. is preferred. An equivalent M.S. degree with relevant research experience will be considered.

Research Experience in any of the following areas would be beneficial: DNA cloning, gene expression, sequencing techniques, hybridoma technologies, monoclonal antibody applications, cell culture, immunoassays, hybridization techniques, diagnostics and automation of clinical analysis.

SALARY:

Dependent upon experience and qualifications.

LOCATION OF POSITION:

Arlington, VA

For further information contact:

**Nancy Strother
Patent and Trademark Office
Office of Personnel, C&E
CPK 1, Suite 700
Washington, D.C. 20231
703-557-1244**

POSITIONS OPEN

MOLECULAR BIOLOGIST. The Department of Poultry Science at the University of Georgia is seeking applications for a 12-month, tenure-track faculty appointment initially budgeted at 80 percent research and 20 percent teaching. Applicants should have ability and background to develop an independent research program, funded in part by external funds, designed to apply monoclonal antibody, recombinant DNA, or other genetic engineering techniques to avian systems with an emphasis on immunology. Teaching responsibilities will involve the advising of both undergraduate and graduate students, as well as formal classroom instruction. Collaboration with other faculty members and interaction with poultry and agri-business industries in accomplishing the overall mission of the department will also be expected. Deadline for receipt of applications is 1 December 1986. Please submit a brief résumé, official transcripts, list of publications, and the names of four references to: **Dr. Jerry A. Cherry, Professor and Head, Department of Poultry Science, University of Georgia, Athens, GA 30602.**

MOLECULAR BIOLOGIST

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE, Ph.D. or M.D., with experience in nucleic acid biochemistry, recombinant DNA, and tissue culture. Project concerns structure, regulated expression, and analysis of disease-causing mutations in genes for steroidogenic cytochrome P-450 enzymes. Send curriculum vitae and letters of reference to: **Dr. Walter L. Miller, Laboratory of Molecular Biology, Room 677-Science, University of California, San Francisco, CA 94143.**

MOLECULAR BIOLOGIST. Assistant professor, tenure-track. Appointee will be expected to develop a strong research program in the molecular genetics, physiology, or biochemistry of plant-parasite interaction, teach a graduate course in the molecular basis of plant-parasite interaction, cooperate effectively with colleagues in other disciplines, and obtain extramural funding. Preference will be given to candidates with postdoctoral experience. Deadline: 1 February 1987. Available as soon as a suitable candidate is found. Send curriculum vitae, statement of research interests, and names of four references to: **Dr. John H. Hill, Molecular Biology Search Committee, Department of Plant Pathology, 351 Bessey Hall, Iowa State University, Ames, IA 50011. Affirmative Action/Equal Opportunity Employer.**

MOLECULAR CELL BIOLOGY AND MOLECULAR GENETICS

Tenure-track positions in the Molecular Biology Institute in the above two areas. One position is available to start in July 1987 and one position will be available in 1988. We seek outstanding candidates in these two areas who will develop independent research programs, contribute to undergraduate and graduate teaching, and interact effectively with colleagues in the Molecular Biology Institute.

Please submit résumé, statement of research interests, representative reprints, and names of three references to:

**Dr. William Clark
Search Committee Chair
Molecular Biology Institute
University of California, Los Angeles (UCLA)
Los Angeles, CA 90024**

UCLA is an Affirmative Action/Equal Opportunity Employer.

MOLECULAR IMMUNOLOGIST The University of Chicago

Ben May Laboratory for Cancer Research

The Ben May Laboratory for Cancer Research of the University of Chicago is seeking applicants for a faculty position with a joint appointment in one of the basic science departments. Candidates should have sufficient research experience to demonstrate both significant accomplishment and outstanding promise. We are committed to developing a strong program in the fundamental aspects of the control of growth and differentiation of lymphocytes. Letters of application including curriculum vitae, bibliography, a brief statement indicating research interests, and the names of three references should be sent to: **Dr. Frank Fitch, Director, Ben May Laboratory for Cancer Research, The University of Chicago, 5841 South Maryland Avenue, Chicago, IL 60637.**

POSITIONS OPEN

MOLECULAR NEUROBIOLOGIST

Applications are invited from candidates with the Ph.D., M.D., or equivalent degree and significant postdoctoral experience for a tenure-track position at the assistant professor level beginning in fall 1987. The appointee will teach in a team-taught course in gross anatomy for medical students. The applicant must have demonstrated the potential for development of a productive research program in the area of molecular neurobiology. Send curriculum vitae and the names of at least three references to: **Chairman, Department of Anatomy and Cell Biology, Emory University, Atlanta, GA 30322. Emory University is an Equal Opportunity/Affirmative Action Employer.**

OCEANOGRAPHER—Position available with company specializing in applied oceanography for an M.S. or Ph.D. physical oceanographer with recognized capabilities in hydrographic (CTD/XBT) data collection and analysis. Opportunity to participate in major West Coast continental shelf circulation study with publication potential. Good communication skills and willingness to participate in a variety of data collection and analysis projects in a business environment are required. Send résumé to or call: **Bruce Magnell, EG&G WASC Oceanographic Services, 77 Rumford Avenue, Waltham, MA 02154. Telephone: 617-891-7204. Equal Opportunity Employer.**

Trinity College (CT) Department of Chemistry invites applications for a position in **ORGANIC CHEMISTRY** to begin 1 September 1987. Candidates should have the Ph.D. and be prepared to teach courses in elementary and advanced organic chemistry, and introductory chemistry. Research with undergraduate student participation is expected. Other duties will include student advising and participation on college committees. The Chemistry Department is certified by the American Chemical Society and offers majors in chemistry and biochemistry. The position pending approval of the college will be tenure-track and carry the rank of assistant professor. *Applications from members of groups affected by Affirmative Action guidelines are invited.* Submit résumé, at least three letters of recommendation, transcripts from postsecondary institutions, and a statement of teaching and research objectives to: **Professor Ralph O. Moyer, Jr., Chairman, Department of Chemistry, Trinity College, Hartford, CT 06106, no later than 1 February 1987. Affirmative Action/Equal Opportunity Institution.**

PHYSIOLOGY/MOLECULAR BIOLOGY

The Department of Zoology at the University of Maryland invites applications for two tenure-track positions, at the assistant professor level, beginning fall 1987. The positions are for a physiologist and a molecular biologist. The areas of particular interest are neurobiology and endocrinology. However, outstanding individuals in other related areas are encouraged to apply. Applicants should have a Ph.D. in an appropriate area and relevant postdoctoral experience. Each position requires the development of a vigorous extramurally funded research program and participation in teaching at the undergraduate and graduate levels. Teaching responsibilities for one of the positions will include a course in human anatomy and physiology for non-majors. Applications should be received by 19 December 1986. Send curriculum vitae, representative reprints, a statement of research interests, and have at least three letters of recommendation forwarded to: **Dr. Sidney K. Pierce, Physiology/Molecular Biology Search Committee, Department of Zoology, University of Maryland, College Park, MD 20742. Affirmative Action/Equal Opportunity Employer.**

PLANT PHYSIOLOGIST—Botany Department seeks a plant physiologist to fill a tenure-track assistant professor position starting September 1987. Applicants should have postdoctoral experience and commitment to both teaching and research. The area of specialization is open, but preference will be given to outstanding applicants with expertise in biophysical aspects of plant physiology or in plant hormone research. Submit curriculum vitae, three letters of reference, and a statement of research goals by 15 January 1987 to: **Dr. Thomas J. Leonard, Physiologist Search, Department of Botany, University of Wisconsin-Madison, Madison, WI 53706. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

PLANT PATHOLOGIST-IN-CHARGE INTERREGIONAL PROJECT 2 (IR-2)

This is a full-time, tenure-track research position at the assistant, associate, or full professor level in the Department of Plant Pathology, Washington State University, and is located at the Irrigated Agriculture Research and Extension Center, Prosser, Washington. The successful candidate will be expected to conduct innovative research in the following areas: (i) develop reliable methods and techniques for indexing deciduous fruit tree clones to detect viruses, viroids, and fastidious prokaryotes, (ii) investigate factors which affect the efficiency and reliability of detection techniques, (iii) develop and utilize methods for eliminating viruses from infected fruit tree clones when healthy sources are not available, and (iv) adapt modern methodology to the culture and preservation of virus-free clones.

The person filling this position will serve as plant pathologist-in-charge of the IR-2 repository program which currently has an operating budget of approximately \$210,000 (including salaries). These duties include administration of the virus-free fruit tree repositories that currently include over 1000 clones; direct a technical staff of four persons to assemble, establish and maintain virus-free clones of commercially important fruit tree cultivars; and distribute virus-free materials to cooperating agencies worldwide.

A doctorate in plant pathology/virology is required. For consideration at the higher academic ranks, extensive experience in virology with emphasis in modern detection technology is necessary, and evidence of the ability to conduct a productive research program is also required. A background or experience in pomology is desirable, but not required.

Send résumé, transcripts, and three letters of recommendation to: **Dr. G. I. Mink, Irrigated Agriculture Research and Extension Center, Washington State University, P.O. Box 30, Prosser, Washington 99350-0030. Telephone: 509-786-2226. Closing date is 2 February 1987.**

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

PLANT POPULATION GENETICIST. Tenure-track assistant professor, fall 1987. Preference given to candidates who integrate theoretical, field, and experimental approaches. Send curriculum vitae, three reprints, a concise statement of research objectives, and three letters of recommendation to: **Dr. Alan P. Smith, Chairman, Search Committee, Department of Biology, University of Miami, Coral Gables, FL 33124. Deadline 15 January 1987. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITIONS available now in Cell-biological research on hormone secretion and action. Skills desirable in any of the following areas: Cell culture; protein chemistry; kinases and 2-D electrophoresis; phospholipid metabolism; arachidonate metabolism; receptor-ligand interactions; cytosolic calcium; regulation of gene expression. Send curriculum vitae and names of three references to: **Jack L. Kostyó, Ph.D., and Sumer B. Pek, M.D., 7726 Medical Science II Building, Box 0622, University of Michigan Medical School, Ann Arbor, MI 48109.**

POSTDOCTORAL POSITION AVAILABLE. A postdoctoral position is available immediately at the Oak Ridge National Laboratory to join well-established interdisciplinary group of biologists and physicists studying basic mechanisms of the action of ionizing radiation on DNA. Work will include irradiation of oligonucleotides in aqueous solution, analysis of fragmentation products, and correlation of results with predictions calculated with Monte Carlo computer simulation model. Appointment is for 2 years. Other well-qualified persons would also be considered for a temporary appointment. Salary dependent on qualifications. Interested individuals are invited to write for information to: **Training Office, University of Tennessee-Oak Ridge Graduate School of Biomedical Sciences, Biology Division, P.O. Box Y, Oak Ridge National Laboratory, Oak Ridge, TN 37831, or contact J. E. Turner, telephone: 615-574-6217, or R. J. M. Fry, telephone: 615-574-1252. An Equal Opportunity/Affirmative Action Employer.**

NIOSH ANNOUNCES RESEARCH AWARDS



FOR Ph.D. & M.D. SCIENTISTS

The National Institute for Occupational Safety and Health announces outstanding opportunities for research in:

- applied psychology
- bioacoustics
- ergonomics
- health physics
- epidemiology

The National Research Council in cooperation with the National Institute for Occupational Safety and Health, Division of Respiratory Disease Studies in Morgantown, West Virginia will offer competitive research awards in 1987 for independent scientific research. Recipients will be free to work on problems of their own choice as guest investigators at NIOSH. This program is open to experienced senior scientists as well as to recent PhD and MD graduates. Stipends begin at \$26,350 for recent graduates and are appropriately higher for seniors. Relocation reimbursement and funds for professional travel on tenure are available, and a health insurance program is offered.

For further information and application materials please write to:

Associateship Programs (JH608/NI-2)

National Research Council

2101 Constitution Avenue, N.W.
Washington, D.C. 20418

**Deadlines for application are
January 15, April 15 and August 15.**

FACULTY POSITIONS IN MOLECULAR BIOLOGY AND BIOCHEMISTRY

Applications are invited for tenure-track faculty positions at the assistant or associate professor level in the Department of Molecular Biology at the Northwestern University Medical and Dental Schools. Applicants should have a Ph.D. degree in molecular biology, biochemistry, genetics, or a related area or an M.D. or D.S. degree and also have several years of postdoctoral training. Candidates having research interest and experience in the mechanisms of hormone action, in the regulation of eucaryotic cell differentiation and development, in membrane structure and function, or in protein structure and function are especially encouraged to apply. The successful applicants will be expected to establish vigorous independent research programs and to participate in the teaching of graduate, medical and/or dental courses and in the training of graduate and postdoctoral students. Applicants should send complete curriculum vitae, a brief description of previous research and teaching interests (three to four pages), a bibliography and reprints of significant published work or preprints of manuscripts in press, and recommendations from at least three references by 15 December 1986, to:

Dr. Robert H. Rownd
Professor and Chairman
Department of Molecular Biology
Northwestern University
Medical and Dental Schools
303 E. Chicago Avenue
Chicago, Illinois 60611

Northwestern University is an equal opportunity/affirmative action employer and invites applications from all qualified individuals.

We are Alpha Therapeutic, a leader in the manufacture and worldwide distribution of quality pharmaceutical products. We are currently enjoying a dynamic period of growth and are looking forward to challenging and rewarding new product development programs. That, coupled with our sound financial base, makes Alpha an exciting place to work.

CLINICAL PROJECT MANAGER

Minimum PhD in a biomedical science is required, as is 3-5 years R & D experience in clinical or laboratory environment. Strong interpersonal and verbal and written communication skills necessary; micro PC experience a plus.

SCIENTISTS

MS or PhD in Biochemistry/Immunology or equivalent preferred. Protein separation/purification experience a plus and experience with monoclonal antibodies preferred. Will be involved with new product development/improvement, including planning and producing clinical lots.

CLINICAL RESEARCH ASSOCIATES

BS in Physical or Biological Sciences required. Will assist in the development of clinical protocols and maintain effective communications with clinical investigators. Experience in academic or industrial research, laboratory or clinical, is preferred. Familiarity with computers is required.

REGULATORY SPECIALIST

Requires BS in Chemistry/Biological Sciences with a minimum 2 years experience in health care Q.C., regulatory affairs or R & D.

For immediate consideration please send your resume to **Dave Calliham, Human Resources**, indicating for which position you are applying.



THERAPEUTIC CORPORATION

**5555 Valley Blvd.
Los Angeles, CA 90032**

Equal Opportunity Employer M/F

Virogenetics Corporation

Albany, NY

The Virogenetics Corporation has been formed as a joint venture between the Institut Merieux and Health Research Incorporated (the non-profit research subsidiary of the NYS Department of Health). Virogenetics is involved in the development of therapeutic and diagnostic products for the human health care and veterinary markets.

Product development is currently under way within the context of strong basic research initiatives in cell biology, virology, immunology, and protein chemistry. Immediate openings are available at the PhD level in all of these disciplines. A major

focus is research and development of human animal vaccines utilizing viral vectors, with an emphasis on genetically engineered pox virus.

Compensation will be commensurate with qualifications. A comprehensive benefit package is included.

Please send a resume and references, along with salary history to:

**Director of Research
Virogenetics Corporation
Room 1315, Corning Tower,
Empire State Plaza
Albany, NY 12237**

An affirmative action/equal opportunity employer.

POSITIONS OPEN

HORMONE RECEPTORS

Position available immediately for a **POSTDOCTORAL FELLOW or RESEARCH ASSOCIATE** to use the molecular recognition hypothesis of complementary peptides [*Proc. Natl. Acad. Sci. U.S.A.* **82**, 1372 (1985); *Biochem. Biophys. Res. Commun.* **139**, 367-374 (1986)] for identification and characterization of hormone receptors. Experience in recombinant DNA or peptide chemistry helpful, but not essential. Salary up to \$25,000, depending on qualifications and training. Send curriculum vitae, reprints, statement of experience and goals, and list of three references to:

Professor J. D. Neill
Department of Physiology and Biophysics
University of Alabama at Birmingham
Birmingham, AL 35294

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION is available immediately for a Ph.D. synthetic organic chemist in synthesis of new chelating agents for Tc-99m as part of a multidisciplinary research project in developing new radiopharmaceuticals for nuclear medicine imaging. Salary will start at \$17,000 per year. Send curriculum vitae to: **Hank F. Kung, Ph.D., Building 5, VA Medical Center, Buffalo, NY 14215.** *State University of New York (SUNY)—Buffalo is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITION

One postdoctoral position is open immediately to study cell-wall assembly of a filamentous mold, *Neurospora crassa*. The current project centers around the isolation of the $\beta(1-3)$ glucan synthase and chitin synthase genes using recombinant DNA techniques. Experience with enzymology and protein purification or with gene cloning is required. Salary is negotiable with experience. Please send curriculum vitae and the names of three references to: **Dr. Claude P. Selitrennikoff, Department of Cellular and Structural Biology, University of Colorado Health Sciences Center, Denver, CO 80262.**

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

POSTDOCTORAL POSITION (NIH Institutional training grant) to support research on growth regulation by epidermal growth factor (EGF), its receptor and postreceptor steps controlling mitogenesis. The approaches involve techniques of cell biology, biochemistry, and molecular biology. Opportunities exist for collaboration with several other laboratories whose research is focused on EGF or other peptide growth factors. Inquiries or applications, including curriculum vitae, and names of three references, should be addressed to: **Dr. Graham Carpenter, Departments of Biochemistry and Medicine, Vanderbilt University School of Medicine, Nashville, TN 37232. Telephone: 615-322-6678.**

POSTDOCTORAL POSITION

Position available immediately to investigate immunologic abnormalities in chronically transfused iron-overloaded patients, some of whom have developed AIDS as a consequence of therapy. The research will focus on B-cell and NK defects, the role of iron/transfusion in their development, and the contribution to, and modulation by, the development of AIDS. The candidate should be highly motivated and trained in cellular immunology. Minimum of 2 years; salary commensurate with experience. Send curriculum vitae and three letters of reference to: **Dr. Robert W. Grady, Department of Pediatrics, Cornell University Medical Center, 525 East 68 Street, New York, NY 10021.** *Equal Opportunity Employer.*

POSTDOCTORAL POSITION IN TUMOR BIOLOGY. Available immediately, for Ph.D. in biochemistry, cell, or molecular biology to participate in ongoing study on B cell-derived lymphokines, in particular B cell growth factor, interleukin 1, and tumor necrosis factor. Send curriculum vitae and three letters of reference to: **David Benjamin, M.D., University of Oklahoma Health Sciences Center, Division of Oncology, P.O. Box 26901, Oklahoma City, OK 73190.**

POSITIONS OPEN

POSTDOCTORAL POSITION available January 1987 to study the function and mechanism of transcriptional activation of **insulin-like growth factor II** in hepatocellular carcinomas from Hepatitis B virus carriers. Background in molecular biology, biological carcinogenesis, and/or virology is desired. Send résumé and names of three references to: **Dr. Charles E. Rogler, Liver Research Center, Department of Medicine, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461.**

POSTDOCTORAL POSITION available immediately for the isolation, purification, and identification of the products of vitamin K metabolism in liver mitochondria. Further studies will include isolation and purification of the related proteins. Experience in protein purification preferred. Starting salary: \$22,000. Interested candidates should send curriculum vitae and names of three references to:

Dr. Myrtle Thierry-Palmer
Department of Biochemistry
Morehouse School of Medicine
Atlanta, GA 30310-1495

POSTDOCTORAL POSITIONS

Postdoctoral positions available in the areas of molecular endocrinology (thyroid protein structure/function) and molecular biology (viral genome structure determination). Individuals with experience in nucleic acid and/or peptide sequencing techniques are especially encouraged to apply. Send curriculum vitae and the names of three references to: **Dr. Allen B. Rawitch (molecular endocrinology) or Dr. Radha Padmanabhan (molecular biology), c/o Department of Biochemistry, University of Kansas Medical Center, Rainbow Boulevard at 39th, Kansas City, KS 66103.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS available immediately for studies on protein phosphorylation, protein kinases, and short- and long-term regulation of tyrosine hydroxylase in the nervous system. Experience in enzymology, or molecular biology preferred. Salary commensurate with experience. Send curriculum vitae and the names of three evaluators to: **Robert Roskoski, Jr., Department of Biochemistry and Molecular Biology, Louisiana State University Medical Center, 1100 Florida Avenue, New Orleans, LA 70119.** *LSUMC is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS

Postdoctoral training is available in molecular, cellular, and nutritional aspects of carcinogenesis in the Eppley Institute for Research in Cancer and Allied Diseases of The University of Nebraska Medical Center. Research programs include for example: chemistry of formation and metabolism of nitrosamides, nitrosamines, and hydrazines; mechanisms of carcinogenesis of polycyclic hydrocarbons and other carcinogens; lymphomagenesis; cell differentiation; and growth factors; biochemical genetics, particularly as relates to susceptibility and resistance to cancer development; mutagenesis and DNA repair; molecular biology of cancer; viruses and cell immortalization and transformation; toxicology of food additives; and oncogenes and cancer. The Eppley Institute is well equipped for both in vitro and in vivo work. Postdoctoral applicants should have a Ph.D. in chemistry, biochemistry, microbiology, pharmacology, or related disciplines. Stipends are competitive. Please submit curriculum vitae, three letters of recommendation, and summary of research interests to: **Dr. Edward Bresnick, Director, Eppley Institute for Research in Cancer and Allied Diseases, University of Nebraska Medical Center, Omaha, NE 68105.** Refer to position number 689 in all correspondence. *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSISTANT PROFESSORSHIP, non-tenure-track, for a Ph.D. in immunology or molecular biology. Emphasis on B cell lymphokine biology and biochemistry and receptor activity/function in B cells. Available immediately. Send curriculum vitae and three letters of recommendation to: **David Benjamin, M.D., University of Oklahoma Health Sciences Center, Division of Oncology, P.O. Box 26901, Oklahoma City, OK 73190.**

POSITIONS OPEN

POSTDOCTORAL POSITION available immediately to study growth factors synthesized by endothelial cells, their mode of action, and regulation of their biosynthesis. A Ph.D. or M.D. degree is required. Experience in protein purification, molecular biology, and/or tissue culture is desirable. Funding is available via a training grant. Send curriculum vitae and arrange for three letters of recommendation to be sent to: **Dr. Larry Witte, Columbia University, Physicians and Surgeons, Department of Medicine, 630 West 168 Street, New York, NY 10032.**

Three POSTDOCTORAL POSITIONS in the MOLECULAR BIOLOGY OF PLANT STRESS RESPONSES to study stress recognition mechanisms, identify genes involved, and study their regulation. Specific projects are flexible within areas of drought, salt, and heat stresses. *Arabidopsis* and *Dunaliella* are likely model systems. Experience in recombinant DNA work is expected; previous plant or stress experience not essential. Send curriculum vitae, publications, and letters of reference to: **Dr. Cecil Stewart, Botany Department, Iowa State University, Ames, IA 50011.** Telephone: 515-294-1063.

POSTDOCTORAL POSITION. Two-year position available immediately to study application of idiotypic manipulation as a potential vaccine and related basic immunology of the antibody response. M.D. or Ph.D. in immunology, biochemistry, molecular biology, or related field. Salary range \$20,000 or \$26,000 plus benefits, depending on experience. Send curriculum vitae and names of three references to:

Dr. Suzanne Epstein
FDA/CDB/OBRR/DBB
Building 29, Room 522, HFN-870
8800 Rockville Pike
Bethesda, MD 20892

POSTDOCTORAL POSITION. For work on analysis of the alcohol dehydrogenase gene structure in evolution of Hawaiian *Drosophila*. Ph.D. in biology, genetics, or biochemistry; experience with recombinant DNA technology and *Drosophila* chromosome preparation desirable. Available from 1 January 1987. Send résumé and three references by 15 December 1986 to: **Dr. John A. Hunt, Genetics Department, University of Hawaii, Honolulu, HI 96822.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION: Available July 1987 to study the regulation of neuron-specific gene expression using DNA and genomic clones for Synapsin I. Background in molecular biology/mammalian cell culture/genetics an advantage. Send curriculum vitae to: **Dr. L. J. DeGennaro, Department of Neurology, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, MA 01605.** *An Affirmative Action/Equal Opportunity Employer.*

RESEARCH ASSISTANT MOLECULAR BIOLOGY

The Department of Obstetrics and Gynecology at Rush-Presbyterian-St. Luke's Medical Center has a postdoctoral position available immediately for an individual to investigate the human papillomavirus replication and expression in human cancers. A Ph.D. in molecular biology or virology is required. Previous experience in tissue culturing methods is highly desired. Send curriculum vitae, names of three references, and a brief statement of professional goals to: **Dr. George Willbanks, Professor and Chairman, Department of Obstetrics and Gynecology, Rush University, 600 South Paulina, Chicago, IL 60612.** *Equal Opportunity Employer, M/F.*

POSTDOCTORAL/RESEARCH ASSOCIATE position available immediately for study on physiological and structural aspects of salt secretion. Research focus includes ion transport mechanisms in isolated cells or cultured cell layers, neurohormonal activation, and intracellular effector interaction involving Ca, PI, and cAMP. Background related to any of these areas desirable. Send curriculum vitae and names of three references to: **Dr. Stephen A. Ernst, Department of Anatomy and Cell Biology, University of Michigan, Medical Sciences 2, Ann Arbor, MI 48109.**

FOOD AND DRUG ADMINISTRATION

CENTER FOR DRUGS AND BIOLOGICS

Research fellowships in Retrovirology/AIDS available immediately for M.D. or Ph.D. in the Division of Blood and Blood Products. Position also available in Blood Bank Laboratory. Salary range for Ph.D. \$26,381-\$40,105; M.D. \$31,044-\$47,788.

Submit curriculum vitae.

Position information and qualifications requirements may be obtained from:

Ms. Dotti Boyer
Parklawn Bldg. Room 4B-44
5600 Fishers Lane
Rockville, MD 20857
(301) 443-6233

AN EQUAL OPPORTUNITY EMPLOYER

AUSTRALIA CSIRO

**DIVISION OF HORTICULTURAL RESEARCH
BRISBANE/ADELAIDE AUSTRALIA
RESEARCH SCIENTIST/RESEARCH FELLOWS
A\$28,107-A\$41,339**

FIELD: Reproductive Biology of Woody Plants

RESEARCH FELLOW—POSITION NO. A2995

To undertake research on the reproductive biology of tropical and sub-tropical crop species, particularly floral initiation, pollen pistil interactions and fruit development. **LOCATION:** Brisbane, Queensland. **QUALIFICATIONS:** A PhD or equivalent qualification with specialist training in microscopic techniques. Experience in floral development and pollination phenomena desirable. **TENURE:** A term of three years, with the possibility of a further term. Australian Government superannuation benefits available.

RESEARCH SCIENTIST AND RESEARCH FELLOW POSITION NOS. A2983 AND A2982

Two positions are offered. A2983 is an indefinite appointment. A2982 is for three years with the possibility of a further term. Australian Government Superannuation benefits available.

To undertake research on the control of plant development, particularly the balance between vegetative and reproductive growth, flowering and fruit set in perennial horticultural species. **LOCATION:** A2983—Brisbane; A2982—Possible training in Adelaide followed by transfer to Brisbane. **QUALIFICATIONS:** A PhD or equivalent in a relevant field plus demonstrated research ability. Experience in modern methods of hormone analysis and plant growth desirable. **APPLICATIONS:** With personal particulars, details of qualifications and experience, names of at least two professional referees and quoting the relevant number for the position you wish to be considered to be sent to:

Dr JV Possingham, Chief
CSIRO Division of Horticultural Research
GPO Box 350, Adelaide SA 5001, Australia
By 4 weeks from date of publication.

CSIRO is an equal opportunity employer

Research Scientist

ALZA Corporation, located in the heart of the beautiful San Francisco Bay Area, is the world leader in the development of therapeutic systems: pharmaceutical products based on rate-controlled, continuous, programmed administration of medication.

We are looking for a talented, well-trained Ph.D. with a background in physical biochemistry and protein chemistry and 2-4 years of post-doctoral experience, capable of setting up a challenging, new research program. A good understanding of biological membranes, peptidase activities and familiarity with animal models is useful.

ALZA encourages and provides an excellent environment for professional growth and we offer an outstanding benefits package. Salary and title are commensurate with background and experience. Send your resume to: ALZA, Employment Dept., 950 Page Mill Road, P.O. Box 10950, Palo Alto, CA 94303-0802. We are an equal opportunity employer.

alza

DIRECTOR ELECTROPHORESIS RESEARCH

FIELD INVERSION TECHNOLOGIES has been established in the St. Louis area to develop novel products related to analytical and preparative electrophoresis. F.I.T.C. has venture capital backing and is assembling a cadre of scientists and managers. The following position is now open:

Director of Research — This individual, working with leading academic scientists, will develop new technology upon which future F.I.T.C. products are based. This position requires scientific creativity and the ability to translate this vision into useful results. The successful candidate will have a Ph.D. and 5-10 years additional experience in a molecular biology discipline. Expertise in gel electrophoresis of nucleic acids and proteins is a must; experience in gene mapping, RFLP's or protein purification is desirable.

This position offers competitive salary and benefits, as well as equity participation. Qualified candidates with a desire to be part of a start-up company with an entrepreneurial philosophy should submit a detailed resume to **G.R. Johnson, 8000 Maryland Avenue, Suite 1190, Clayton, MO 63105.**

|||||
FIELD INVERSION TECHNOLOGIES CORPORATION
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Equal Opportunity Employer M/F

Life on the Edge.

International Biotechnologies, Inc. (IBI), specializing in innovative products and systems designed specifically for Molecular Biology research applications, currently has several openings at our New Haven, Connecticut facility:

SALES REPRESENTATIVES - (inside and field) to support our expanding product lines. Ideal candidates will have at least one year of hands-on lab experience in molecular biology, strong interpersonal skills and a desire to pursue a challenging sales career. Contact: A. Grebe

QUALITY CONTROL TECHNICAL SPECIALIST - B.S. or M.S. molecular biology with some hands-on lab experience preferred. Testing all biological and reagent products; emphasis on functional testing; ongoing R & D New assays. Contact: M. Keefe

DNA SYNTHESIZER TECHNICAL SPECIALIST - to provide technical support to our customers on both instrument and chemistry. The ideal candidate will have experience with running or supporting a synthesizer lab and be familiar with most manufacturer's units. B.S. or M.S. Chemistry or Biochemistry and understanding of the use of synthetic DNA is essential. Industry experience a plus but not necessary. Contact: J. Rue

**Interested candidates should send their resume to:
Personnel Department, IBI, P.O. Box 9558,
New Haven, Connecticut 06535.**

IBI

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION in developmental neurobiology available immediately. Experience in neuroanatomical and behavioral techniques applied to rodent development. Send curriculum vitae and three references to: **Dr. Saul M. Schanberg, Department of Pharmacology, Box 3813, Duke University Medical Center, Durham, NC 27710. Duke University is an Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE position available to study bacterial chemotaxis with emphasis on structure and function of transmembrane receptor proteins. Experience in molecular genetics or protein biochemistry desirable. Send curriculum vitae and three letters of recommendation to: **Dr. Gerald L. Hazelbauer, Biochemistry/Biophysics Program, Washington State University, Pullman, WA 99164-4660. Washington State University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE. A position is available to study peroxidase-mediated activation of mutagens in mouse lymphoma cells. Experience in cell culture essential and limited experience in mammalian mutagenesis and/or DNA adduct quantitation desirable. Research will involve interaction with investigators at the National Institute of Environmental Health Sciences. Salary and fringes competitive; opportunity for advancement. Qualified applicants should send curriculum vitae and arrange for three letters of recommendation to be sent to: **Dr. Arthur Bull, Oxford Biomedical Research, P.O. Box 522, Oxford, MI 48051.**

POSTDOCTORAL/RESEARCH ASSOCIATE position in neuroscience available for 3 years to study gliogenesis and myelinogenesis in the central nervous system. The research involves the study of neuroglial cell lineages and the regulation of myelination employing myelin-deficient mutants. Both in vivo and in vitro studies are presently underway utilizing a combination of immunocytochemical, autoradiographic, ultrastructural, and biochemical methodologies. Individuals interested in the study of neuroglia are encouraged to apply, including those with expertise in molecular biology or genetics. Please submit curriculum vitae along with the names of several references to: **Dr. Robert P. Skoff, Department of Anatomy, Wayne State University, School of Medicine, Detroit, MI 48201. Wayne State University is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE: To work on fungal and bacterial diseases of potato. Immediate focus on evaluation of potato genotypes for resistance to Verticillium wilt, epidemiology of *Colletotrichum cocco-*des, and biological control. Must have Ph.D. in plant pathology with a minimum of 3 years of postdoctoral experience involving field experimentation, disease resistance screening, diseases caused by *Colletotrichum* sp., and experience with bacteriophages. Forty hours per week, 8 a.m. to 5 p.m. Salary: \$21,000 per year. Contact: **Idaho Job Service, 155 North Maple, P.O. Box 9, Blackfoot, ID 83221. Telephone: 208-785-2200. Job Order Number: 0116920. An Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE. Position available immediately for Ph.D. in biochemistry or related areas to work on calcium signaling in cells and mechanism of inositol 1,4,5-trisphosphate. [(See *Nature* 320, 395, 461-464 (1986)]. Membrane biochemistry, protein chemistry, and cell culture experience advantageous. Send résumé and two reference letters to: **Dr. Donald L. Gill, Department of Biological Chemistry, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, MD 21201. Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE in biochemistry to study the structure of plasma proteins involved in blood coagulation and platelet adhesion. Involves protein purification, chemical and enzymatic modification, and use of monoclonal antibodies. Salary dependent upon relevant experience. Send curriculum vitae to: **E. P. Kirby, Ph.D., Department of Biochemistry, Temple University Medical School, 3401 North Broad Street, Philadelphia, PA 19140. Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL/RESEARCH ASSOCIATE to work on the immunogenetics of the acute leukemias in rapidly expanding Medical Center. Project involves some knowledge of C1g and Raji cell assays, agarose block electrophoresis, SDS-polyacrylamide gel electrophoresis, and electroblotting (Western blot). Experience with monoclonal antibodies desired. Work would involve close collaboration with molecular biologist and hematologist. Send curriculum vitae, three letters of reference to: **Dr. Harold R. Schumacher, Department of Pathology, 2160 South First Avenue, Loyola University Medical Center, Maywood, IL 60153. Loyola University is an Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH POSITION. We seek candidates for a postdoctoral position in the Laboratory of Molecular Biology of Retroviruses. Please send curriculum vitae and cover letter to: **Eli Gilboa, Ph.D., Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021. Equal Opportunity Employer, M/F/H/V.**

PREDOCTORAL AND POSTDOCTORAL RESEARCH ASSOCIATE

positions available immediately through the **Nitrogen Availability Program at Michigan State University (MSU).** The program is directed by an interdepartmental group of eleven faculty in the Departments of Biochemistry, Botany and Plant Pathology, Chemistry, Crop and Soil Sciences, Genetics, Microbiology, and the MSU-DOE Plant Research Laboratory. The unique interdisciplinary nature of the program invites research associates to initiate innovative research emphasizing biotechnological approaches to the principal biological processes affecting nitrogen availability in plants: biological nitrogen fixation, denitrification, and ureolysis. Competitive starting salaries commensurate with experience. Interested parties with strong potential for innovative basic research and/or degree(s) in molecular biology or one of the indicated disciplines should contact: **Dr. Kenneth Nadler, Director, NITROGEN AVAILABILITY PROGRAM, Department of Botany and Plant Pathology, Michigan State University, East Lansing, MI 48824. Telephone number: 517-353-5167. Michigan State University is an Affirmative Action/Equal Opportunity Institution.**

PROFESSOR OF PHARMACOLOGY YALE UNIVERSITY

The Department of Pharmacology and The Comprehensive Cancer Center, Yale University, seek to hire a senior scientist in the tenure-track at the rank of professor. Qualified applicants will be those with an outstanding record of innovative and productive research in the field of anticancer and/or antiviral drug action. The individual we seek will utilize modern techniques of molecular and cell biology to study fundamental aspects of cancer cell biology with a view toward development of new approaches to chemotherapy, immunotherapy, or gene therapy. A commitment to excellence in teaching and involvement in our educational programs for medical and graduate students is expected. Applications will be accepted until 31 December 1986 and should include a letter of interest, a current curriculum vitae, and the names of three references. Send to: **Dr. John Perkins, Chairman, Department of Pharmacology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510.**

Yale University is an Equal Opportunity/Affirmative Action Employer.

PROJECT LEADER/ VICE PRESIDENT OF R&D

Small Silicon Valley biotechnology firm looking for person with Ph.D. and 2-4 years of postdoctoral experience in genetics, immunology, or microbiology to lead technical group in the development of novel cell separation and tissue culture techniques related to the diagnosis of human genetic disorders. Applicants should be proficient in flow cytometry and other cell separation techniques, monoclonal antibody development, and mammalian tissue culture methods. Subexpertise in karyotyping and DNA/RNA hybridization methods also desirable.

Please submit curriculum vitae to: **Aspen Diagnostics, Personnel Director, 2438 Wyandotte Street, number C, Mountain View, CA 94043.**

POSITIONS OPEN

PREDOCTORAL AND POSTDOCTORAL POSITIONS

Fellowships are available for training in genetic toxicology. Specific research areas include: mechanisms of mutagenesis and carcinogenesis; DNA repair; metabolic fate of xenobiotics; regulation of membrane-bound activating enzymes; application of artificial intelligence systems to structure-function-activity relationships and risk assessment. Applicants must be U.S. citizens or permanent residents. Contact: **Dr. Helen B. Evans, Department of Environmental Health Sciences, Case Western Reserve University, Cleveland, OH 44106. Telephone: 216-844-3530.**

PROTEIN BIOCHEMIST Research Area

BIOPHYSICAL AND BIOCHEMICAL BASIS OF CATARACT FORMATION IN THE EYE LENS

Fundamental research on prevention and reversal of cataract by protein modification both in vitro and in vivo. Experiments involve characterization, separation, and ligand binding to lens proteins. Also, physicochemical studies of the phase diagram of protein water-solution. Experimental techniques will include chromatography, electrophoresis, centrifugation, high performance liquid chromatography, and spectroscopy (absorption, fluorescence, and quasielastic light scattering). The candidate will strongly interact with other postdoctoral fellows, graduate students, undergraduate students, and supervise one technician. Excellent verbal and written communication skills are needed. Salary is excellent: its level will depend upon the qualifications of the candidate. Starting date is flexible preferably late 1986 or early 1987. **Requirements:** Ph.D. in biochemistry or chemistry. Experience in lens research is desirable. **Contact:** **Professor George B. Benedek, Department of Physics, Room 13-2005, Massachusetts Institute of Technology, Cambridge, MA 02139, telephone: 617-253-4828; or Dr. John Thomson, Department of Physics, Room 13-2014, Massachusetts Institute of Technology, Cambridge, MA 02139, telephone: 617-253-6804.**

PROTEIN CHEMIST

An opportunity is available for a biochemist with experience in protein structure studies. Candidate must have a doctoral degree in biochemistry and a minimum of 5 years of experience in the field of protein chemistry. Must be accomplished in the preparation of proteins and peptides by modern HPLC methods and the analysis of their composition and primary sequence. Must be experienced in the use of gas phase sequencer. Must be experienced in the use of computers to predict structure. Position is located in the Division of Medical Genetics, Department of Pediatrics, University of Southern California at Childrens Hospital of Los Angeles. Joint appointment in biochemistry is available. Excellent opportunities are available for collaboration and extension of interests to challenging cell biologic questions of protein translocation and membrane integration. Salary, academic rank, and tenure status are determined by experience and record of productivity. Send curriculum vitae, representative publications, statement of research interests, and names of three references to: **John A. Barranger, M.D., Ph.D., Head, Division of Human Genetics, Childrens Hospital of Los Angeles, 4650 Sunset Boulevard, Los Angeles, CA 90027.**

Childrens Hospital of Los Angeles and the University of Southern California are Affirmative Action Employers.

RESEARCH ASSISTANT—For experiments in molecular biology including cloning, sequencing, and expression of human granulocyte genes. Candidate will be expected to develop a research area related to the interest of the laboratory and to develop independent projects. Candidate must be familiar with the current literature of molecular biology, and will be expected to remain current through participation in laboratory meetings, divisional seminars, and attendance at national meetings. M.S. degree in microbiology or biochemistry, plus 2 years of experience. Salary \$18,000 per year. Qualified applicants contact: **Dr. Thomas A. Rado, BOX 178, SCIENCE.**

An Equal Opportunity Employer

AIDS RESEARCH

Murex Corporation is a biotechnology company with research programs established in novel diagnostics and therapeutics product developments. Breakthroughs in our AIDS research program have created a need for new scientific positions in our Atlanta facilities to accomplish new product development and manufacturing. We are seeking to add the following persons to our professional staff:

R & D Manager

Ph.D. level with 3-5 years diagnostic product development experience. Excellent communication, research planning and follow through skills are required.

Scientists

All levels with immunology or infectious disease research experience desired. We offer an excellent scientific environment, competitive salaries and benefit packages to successful candidates.

Murex is located in the greater Atlanta, Georgia area and has modern, fully-equipped R & D facilities. We offer an exceptional opportunity for your continued professional and personal growth. For confidential consideration, please send your resume to:

Contact

Ms. Sandy Knighten, Murex Corporation, P.O. Box 2003, Norcross, GA 30091.

murexTM

Protein Chemist

A research position is currently available in our Reproductive Biology group for an imaginative Protein Chemist. Applicants should have a Ph.D. degree, extensive experience in protein purification, and expertise in modern analytical techniques. Qualified candidates with or without a reproductive biology background are invited to apply.

Cal Bio is a rapidly growing biotechnology company engaged in the development of health care products. We offer a stimulating research environment with a competitive compensation and benefits package. Qualified candidates should submit curriculum vitae and names of three references to: California Biotechnology Inc., Human Resources, Dept. MF-KT, 2450 Bayshore Parkway, Mountain View, CA 94043. We're an equal opportunity employer.

CAL  **BIO**



The Howard Hughes Medical Institute

and

The National Institutes of Health

again announce

The Program for Research Opportunities for Medical Students

1987-88

HHMI-NIH Research Scholars can spend 9-12 months in one of the 1,000 research laboratories located at the NATIONAL INSTITUTES OF HEALTH, Bethesda, MD.

Salary, fringe benefits and travel will be provided.

Further information and application forms may be obtained by writing to the Howard Hughes Medical Institute, Research Scholars Program, 9101 Old Georgetown Road, Bethesda, Maryland 20814.

Applications invited from students in all American Medical Schools.

Your request for the application information should be received by December 31, 1986.

Final deadline for return of all application materials is January 15th, 1987.

POSITIONS OPEN

RESEARCH ASSOCIATE/ POSTDOCTORAL POSITION

Available now to study the immune responses to synthetic peptides and mechanisms to enhance the immune response to peptides. Studies involve peptide synthesis and purification, conjugate synthesis, cellular and humoral immunology, and related techniques; for example, chromatography, ELISA's, cell separations, and so forth. A background in either chemistry/biochemistry or immunology is necessary. Candidate should have Ph.D. and previous research experience. Appointment level based on experience. To apply send curriculum vitae and the names of three references to:

Dr. Lorne Babiuk or Dr. Patrick Frenchick
Veterinary Infectious Disease Organization (VIDO)
University of Saskatchewan
124 Veterinary Road
Saskatoon, Saskatchewan,
Canada S7N 0W0
Telephone: 306-966-7465



AMERICAN BIOGENETICS

RESEARCH SCIENTISTS

American Biogenetics Corporation, specializing in the genetic engineering and biodesign of microorganisms which produce specialty chemicals, has positions available for highly motivated research scientists. American Biogenetics is seeking to fill positions in:

● PROTEIN CHEMIST/ENZYMOLOGIST

To chemically modify and stabilize enzymes for commercial processes. Successful applicants must possess a Ph.D. and have at least 2 years of postdoctoral or equivalent experience.

● FERMENTATION CHEMIST/BIOCHEMICAL ENGINEER

To scale up fermentation of both bacterial and yeast cultures for pilot scale studies. Successful applicants must possess an advanced degree and/or equivalent experience. American Biogenetics offers a challenging and creative working environment and excellent opportunities for personal and scientific development. American Biogenetics is located in a desirable coastal area of Southern California.

Send curriculum vitae and the names of three references to: G. Wesley Hatfield, Ph.D., American Biogenetics Corporation, 19732 MacArthur Boulevard, Suite 130, Irvine, CA 92715.

RESEARCH SCIENTIST—Conduct original research on intrinsic and extrinsic factors regulating axon guidance and ordered connectivity of amphibian retinal ganglion cells during development and optic nerve regeneration. Apply advanced technical skills in: (i) amphibian embryo microsurgery, cell and organ culture, histology, and tissue processing; and (ii) 2-D gel electrophoresis, immunocytochemistry, and immunoassay; publish and report on results. Minimum of 1 year of postdoctoral experience in developmental neurobiology, and 1 year of experience in job offered. Applicant must possess a Ph.D. in biological sciences. Forty hours per week; \$18,500 per annum. University of Oregon. Send résumé and references by 21 November 1986 to: Dr. Philip Grant, Department of Biology, University of Oregon, Eugene, OR 97403. An Affirmative Action/Equal Opportunity Institution.

RESEARCH FACULTY POSITION

Applications sought for a position at the level of research assistant professor (non-tenure-track) in the Department of Pharmacology at the University of Missouri-Columbia. Applicants must have a Ph.D. or M.D. degree with several years of experience in purification, characterization and functional studies in insulin receptors, beta-adrenergic receptors, and Ca²⁺-channel proteins from cardiac myocytes and erythrocytes. Salary commensurate with experience. Please submit complete curriculum vitae and names of three references by 24 November to: Dr. H. D. Kim, Professor and Chairman, University of Missouri Medical Science Building, Department of Pharmacology, Columbia, MO 65212.

The University of Missouri in Columbia is an Equal Opportunity and Affirmative Action Employer.

POSITIONS OPEN

RESEARCH ASSISTANT PROFESSOR: PROTEIN BIOCHEMISTRY. The University of Southern California, School of Dentistry, is accepting applications for a full-time position involving research and teaching at the graduate/specialist level. Minimum Ph.D. in protein biochemistry with evidence of: ability to maintain an active research program; attract outside funding; and excellence in teaching. Preference for applicants with experience in enamel protein biochemistry. Submit application prior to 1 January 1987 to: Dr. H. Landesman, The University of Southern California, School of Dentistry, University Park MC-0641, Los Angeles, CA 90089-0641.

SCIENTIST: SEND RESUME TO: Employment Security Department, ES Division, Attn: AEC Number 45799, Olympia, WA 98504. **JOB DESCRIPTION:** Responsible for designing, planning, and executing experiments. Must critically evaluate experimental results and help design new experiments based on that evaluation. Must interact and collaborate with other scientific personnel in the areas of virology, molecular biology, and immunology. Must report and communicate scientific ideas and experimental findings in formal/informal presentations. Must develop and maintain contacts with members of the scientific community outside of employer's organization as a source of additional expertise. Responsible for mammalian recombinant DNA cloning, expression and mapping genetic analysis, and gene expression systems in human vaccinia virus. Responsible for working in bio-safety containment environments handling highly infectious agents. **REQUIREMENTS:** Ph.D. in biochemistry (molecular virology), plus 2 years of academic or private research experience in molecular virology. **SALARY:** \$35,560 per annum, no overtime. **POSITION OFFERS:** Prevailing working conditions, 40 hours per week, Monday through Friday, position in Seattle, WA. On-the-job training not offered. Equal Opportunity Employer.

SCIENTIST, R&D. Develop isodilysis for steroid hormones and their active metabolites. Purify human corticosteroid-binding globulin and sex hormone binding globulin; develop monoclonal antibodies to set up ELA's; isolate plasma membranes of ovaries and testes; use autoantibodies to pull out plasma membrane antigens to treat autoimmune primary infertility in patients, and so forth. Minimum: Ph.D. in endocrinology or related field; strong background in development of steroid hormone assay, including filter binding assay and isodilysis radioimmunoassay required, as well as familiarity with membrane preparation and membrane binding studies, purification of steroid-binding proteins, and iodination and radioactive waste manipulation. Salary: \$30,000 per year. Job site/interview: Mountain View, CA. Send ad with résumé to: Job number CW8543, P.O. Box 9560, Sacramento, CA 95823-0560, no later than 30 November 1986.

Positions available immediately to study the molecular biology of growth factors, growth factor receptors, and their genes. Our new Biotechnology Center located in Rockville, MD, near Washington, DC, has positions available for **SCIENTISTS FOR POSTDOCTORAL FELLOWS** for individuals with B.S. or M.S. with 2 to 3 years laboratory experience. The research involves cloning of new receptor genes, analysis of structure/function relationship by genetic engineering methods, and expression in eukaryotic cells. Experience in recombinant DNA methodology is required. Interested individuals are invited to submit their résumés to: Meloy Laboratories, Inc., 6715 Electronic Drive, Springfield, VA 22151, Attention: Personnel JS.

SENIOR STAFF SCIENTIST. Applicants are invited to submit résumés for a senior staff scientist position to study the role of growth factors and their receptors in tumor cells at our new Biotechnology Research Center (Meloy Laboratories, Inc.) in Rockville, MD. Applicants must have Ph.D. and 5 years of postdoctoral experience in techniques in receptor biology, protein biochemistry, cell culture, and molecular biology, including expression of foreign genes in mammalian cells. Salary \$30,000 per annum. Qualified individuals are required to submit their curriculum vitae to: Personnel Department, Meloy Laboratories, Inc., 6715 Electronic Drive, Springfield, VA 22151, Attention: JS/KR.

POSITIONS OPEN

SEA TURTLE BIOLOGIST

The University of Florida, Department of Zoology, seeks a faculty member who will serve as **associate director** for the newly established CENTER FOR SEA TURTLE RESEARCH. This appointment is a 9-month, tenure-track line at the associate or advanced assistant professor level, beginning August 1987. Academic rank and salary are commensurate with qualifications and experience. Duties include administration of the center, research, and teaching. Research must include some aspect of sea turtle biology. Applications should name four references and indicate administrative experience and research interests, and include appropriate reprints, to: Center for Sea Turtle Research, Department of Zoology, University of Florida, Gainesville, FL 32611, by 10 January 1987. The University of Florida is an Equal Opportunity/Affirmative Action Employer.

SENIOR FACULTY POSITION

The Department of Biochemistry and Molecular Biology at the University of Texas System Cancer Center, M. D. Anderson Hospital and Tumor Institute, is seeking an outstanding, established scientist who uses the tools of molecular biology to study aspects of differentiation or development. The appointment will be to a full professorial position with a named chair and endowment. The Department of Biochemistry and Molecular Biology currently consists of 11 faculty members at all levels who are interested in differentiation or development. Qualified individuals should send their curriculum vitae and summary of research interests by 15 December 1986 to: Dr. William J. Lennarz, Department of Biochemistry and Molecular Biology (Box 117), The University of Texas System Cancer Center, 6723 Bertner Avenue, Houston, TX 77030. An Affirmative Action/Equal Opportunity Employer.

DEPARTMENT OF BIOLOGICAL SCIENCES FORDHAM UNIVERSITY SENIOR FACULTY POSITION

Pending university authorization we seek a molecular biologist working on the regulation of eukaryotic gene expression at the transcriptional level. The candidate should have an established research program and a strong record of research productivity and funding. It is expected that he/she will contribute significantly to the further development of the department's cell/molecular biology program. Salary is highly competitive and we desire an individual whose credentials would justify appointment as full professor. Curriculum vitae, supporting materials, and names of three references should be sent to: Dr. Sergio Abreu, Chairman, Department of Biological Sciences, Fordham University, Bronx, NY 10458. The deadline for receipt of applications is 31 December 1986.

Fordham University is an Equal Opportunity/Affirmative Action Employer.

SYNAPTIC TRANSMISSION

POSTDOCTORAL AND GRADUATE STUDENT positions to study Ca permeation, localization, buffering, and extrusion in relation to basic secretory mechanisms in presynaptic terminals. Techniques will include fluorescent Ca indicators, image processing, and voltage clamping of pre- and postsynaptic currents in squid giant synapse and various neuromuscular junctions. [See: Soc. Neurosci. Abstracts 12, 817; J. Physiol. 369, 143-181; *ibid.* 323, 173-193. Interview at Society of Neuroscience meeting.] Send three letters of reference, curriculum vitae, publications, and research interests to: Dr. Milton Charlton, Physiology Department, MSB, University of Toronto, Toronto, Ontario, Canada M5S1A8. Telephone: 416-978-6355.

ASSISTANTSHIPS

ASSISTANTSHIPS

MEDICAL SCIENTIST TRAINING PROGRAM offers assistantship for a select number of individuals for an integrated program in basic and clinical medical science leading to a combined M.D./Ph.D. degree in 6 to 7 years. Contact: Director, Medical Science Training Program, College of Graduate Studies, Medical University of South Carolina, Charleston, SC 29425.

DIRECTOR OF RESEARCH

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On behalf of our client, a major new British Life Science company engaged in research and production of novel therapeutic and biological agents, we present a unique opportunity for an ambitious professional in an exciting and challenging environment.

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Applicants should have the capability or potential to manage multi-disciplinary programmes involving molecular biology, pharmacology, synthetic chemistry and biochemistry. Evidence of high standards, energy, motivation and communication ability is required. The blend of relevant experience and maturity is unlikely to exist in candidates under 35 – however younger candidates with exceptional potential will be considered.

The rewards for the job include a top level salary, share options, a company car and other quality benefits.

Applicants are invited to submit a full curriculum vitae and publication list to Grant Jenkins, Consultant Partner, at:

Search And Selection Limited
Management Consultants

Suite 3, Council Hall, Penn Road, Beaconsfield, Buckinghamshire, HP9 2PP

RESEARCH OPPORTUNITIES IN CANCER THERAPEUTICS

The Dow Chemical Company, in Midland, Michigan, is a recognized world leader in the chemical industry. Expanded research efforts in the area of cancer therapeutics and immunotherapy have created an immediate need within the Biotechnology Laboratory in the Central Research Department for qualified researchers in the following areas:

MOLECULAR BIOLOGY/ EUKARYOTIC GENE CLONING

The successful candidate will have a Ph.D. and two or more years of post doctoral experience in genetic engineering. Experience in cDNA cloning, preparation and screening of genomic libraries, eukaryotic expression vectors, and DNA sequencing is required. Research efforts will be directed toward protein design for application in our biotech-based cancer therapeutic program.

The above candidates must also possess strong communication skills and a desire to carry out independent research while functioning as part of an interdisciplinary research team.

The Dow Chemical Company offers a stimulating work environment and a competitive salary and benefits package.

Send resume to:

Technical Recruiting

Department G-1

P.O. Box 1655

Midland, MI 48641-1655



The Dow Chemical Company is an Equal Opportunity Employer.

MOLECULAR GENETICISTS

GENEX CORPORATION is seeking senior-level molecular geneticists to direct and participate in interdisciplinary research programs for the development of genetically engineered animal vaccines, human pharmaceuticals, and proteins of industrial interest. The successful candidates will have hands-on experience in techniques of gene cloning and expression of heterologous proteins, excellent written and oral communication skills, and the ability to supervise the research of junior staff members.

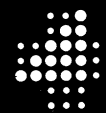
Candidates with 2-5 years postdoctoral experience and a documented record of achievement in initiating and successfully completing innovative research programs are preferred. However, mature individuals with less experience but outstanding records are encouraged to apply.

GENEX CORPORATION provides an outstanding research environment in suburban Washington, D.C., and excellent salary and benefits. A curriculum vitae, together with a brief description of your scientific background and letters from three professional references should be submitted to:



Dept. MG
16020 Industrial Drive
Gaithersburg, MD 20877
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Career Opportunities



Micro Scan, a unit of Baxter Travenol Diagnostics Inc., develops and manufactures sophisticated computer controlled electronic instrumentation and disposables used in the clinical microbiology laboratory.

Our growth and expansion have created the following opportunities:

Manager of Microbiology

We are seeking an individual with experience in clinical microbiology, antibiotic sensitivity testing and rapid identification systems. Computer literacy strongly preferred. Ph.D in Microbiology required.

Immunology Project Leader

Ideal applicants will possess a Ph.D in Immunology with microbiology experience and exposure to immunochemistry. Knowledge of immunoassay development and surface matrix chemistry required.

Micro Scan offers an excellent salary and complete benefits portfolio. Our congenial work atmosphere is conducive to your professional growth and advancement. For immediate consideration, submit resume and salary history (note: principals only, please) indicating area of interest, to: **Director of Employee Relations, Micro Scan, 1584 Enterprise Blvd., West Sacramento CA USA 95691.** We are an equal opportunity employer m/f/h.

Micro Scan



POSITIONS OPEN

WEST AFRICA—Tufts University seeks applied **VETERINARY EPIDEMIOLOGIST** for livestock project in Niger. Work involves establishment of animal health care delivery system, training trainers of veterinary auxiliaries, establishment of drug supply, application of computer assisted monitoring, and related extension and diagnostic activities. Position based in Niamey with advisory role to government of Niger, and extensive fieldwork. Requires French proficiency, experience with computers and systems analysis, and overseas experience, preferably with nomadic people. Entails appropriate faculty appointment at Tufts University School of Veterinary Medicine. Send curriculum vitae with names and addresses of three references to: **Dr. Albert Sollod, Niger Integrated Livestock Production Project, 108 Bromfield Road, Tufts University, Medford, MA 02155. An Equal Opportunity Employer.**

MEETING

1987 HISTOCHEMICAL SOCIETY MEETING, 3 TO 5 APRIL 1987: FAIRMONT HOTEL, NEW ORLEANS, LOUISIANA. Abstract forms in November 1986 *Journal of Histochemistry and Cytochemistry*. Deadline: 16 January 1987, **Dr. Edward W. Gresik**, Program Chairman, Mount Sinai School of Medicine, New York City. The meeting will feature four symposia: (i) Cellular and Molecular Probes in Cytochemistry; (ii) Use of Fluorogenic Dyes in Biomedical Research; (iii) Ultrastructural Immunocytochemistry—Theory and Advances in Postembedding Staining; (iv) Immunocytochemistry and Advances in Diagnostic Pathology. The Vector Young Investigator awards for travel expenses and the Ralph D. Little Award will be presented at the meeting. Young investigators and students are encouraged to apply when they submit abstracts. The Histochemical Society welcomes new members. Membership forms can be obtained from: **Dr. C. Oliver, Laboratory of Oral Biology/Physiology, Building 30 Room 211, National Institute of Dental Research, National Institutes of Health, Bethesda, MD 20205.**

GRADUATE STUDIES

COLLEGE OF GRADUATE STUDIES, Medical University of South Carolina, offers programs leading to Ph.D. and M.D./Ph.D. degrees in anatomy, biochemistry, biometry, basic and clinical immunology and microbiology, molecular and cellular biology and pathobiology, pathology, pharmaceutical sciences, pharmacology, and physiology. Salary: \$9000 assistantships available to highly qualified students. Contact: **Dean, College of Graduate Studies, Medical University of South Carolina, 171 Ashley Avenue, Charleston, SC 29425.**

GRADUATE PROGRAM

The University of New Mexico (UNM) School of Medicine and Los Alamos National Laboratory (LANL) have developed a multidisciplinary Ph.D. PROGRAM. Students have access to faculty and facilities of the Departments of Anatomy and Pathology at the UNM School of Medicine and the Life Sciences division at LANL. The principal areas of research are cell biology, immunology, neurobiology, and biochemistry. Graduate stipends begin at \$7200 per annum. For further information and application forms, contact: **Dr. D. E. Van Epps, Department of Pathology, University of New Mexico Medical School, Albuquerque, NM 87131.**

DOCTORAL PROGRAM

DOCTORAL PROGRAM IN MOLECULAR AND CELLULAR BIOLOGY AND PATHOBIOLOGY (MCBP)

Interdisciplinary program leading to Ph.D. degree seeks qualified candidates interested in fundamental molecular and cellular biology and its application to disease. Assistantships of \$9000 are available on a competitive basis. Contact: **Director, MCBP Program, College of Graduate Studies, Medical University of South Carolina, Charleston, SC 29425.**

PROGRAM

AIDS SCREENING PROGRAM

The AIDS Program, National Institute of Allergy and Infectious Diseases in collaboration with the Department of Antiviral Studies, United States Army Medical Research Institute of Infectious Diseases, has established an in vitro screening program to evaluate compounds potentially effective in preventing the replication of HTLV-III/LAV/HIV. Interested parties who have synthetic or natural substances and wish to participate in this program should be willing to provide the following information:

- 1) The precise nature and composition of the substance or, if proprietary, a willingness to reveal that information under an agreement of confidentiality.
- 2) Data regarding the substance's or substances' known biological, chemical, physical, or physiological properties.
- 3) Data (if known) regarding the in vitro activity of the substance or substances against other viruses or evidence to suggest that it might be active against the virus associated with AIDS.
- 4) Data from animal or human studies, if any, indicating its safety, tolerance, and efficacy.
- 5) A statement of willingness, if any, by an organization to supply material or to cooperate in the preparation of adequate amounts of material for study purposes.

Proposals should be submitted in writing to:

Dr. John J. McGowan
Preclinical Development Program
Treatment Branch
AIDS Program
Westwood Building, Room 753
National Institute of Allergy
and Infectious Diseases
Bethesda, MD 20892

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with a doctorate-level degree in science the opportunity to earn the doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **Dr. D. M. Chauncey, Ph.D.-O.D. Program Director, The New England College of Optometry, 424 Beacon Street, Boston, MA 02115; telephone: 617-266-2030, extension 147.**

GRADUATE TRAINING

GRADUATE TRAINING PROGRAM IN NEUROSCIENCE—The Neuroscience Program at The Milton S. Hershey Medical Center of The Pennsylvania State University has assistantships available in September 1987. This interdepartmental program is designed to confer a Ph.D. degree with a major in neuroscience after 4 years of study. A master's degree program is also available. Participating faculty have established research programs in molecular biology of the nervous system, neurophysiology, neuroendocrinology, behavioral science, neuropharmacology, and cerebral metabolism. Interested candidates are invited to apply to: **Dr. Robert Page, Chairman, Neuroscience Program, The Milton S. Hershey Medical Center, The Pennsylvania State University, P.O. Box 850, Hershey, PA 17033. An Equal Opportunity/Affirmative Action Employer.**

FELLOWSHIPS

FREE RADICALS IN TOXICOLOGY

An integrated program of interdisciplinary collaborations which provides extensive training and research opportunities. Postdoctoral fellowships available under NIEHS program project for work on free radicals in the following areas: cytotoxicity and genotoxicity of quinones, **Dr. Paul Hochstein**; lipid peroxidation mechanisms and membrane structure, **Dr. Alex Sevanian**; mitochondrial energetics and exercise biochemistry/physiology, **Dr. Kelvin J. Davies**; hormonal and neurotransmitter control of metabolism, **Dr. Timothy M. Chan**; mechanisms of chemical carcinogenesis and tumor promotion, **Dr. Joseph R. Landolph**. Contact any of the named investigators at: **Institute for Toxicology, University of Southern California, 1985 Zonal Avenue, Los Angeles, CA 90033.**

FELLOWSHIPS

C. H. BEST FOUNDATION POSTDOCTORAL FELLOWSHIPS

In diabetes research, molecular endocrinology, molecular biology, differentiation, reproductive biology, immunology, structure and function of membranes, or lipid metabolism. Tenable in the Banting and Best Department of Medical Research for 2 years after 1 July 1987 with a competitive stipend. Available to new Ph.D.'s or candidates with less than 2 years of postdoctoral training by 30 June 1987. Send curriculum vitae, transcripts, and three letters of reference preferably before 30 November 1986 to: **Dr. Terry Delovitch, Fellowship Committee Chairman, Banting and Best Department of Medical Research, University of Toronto, Toronto, Ontario, Canada M5G 1L6.**

Dr. Terry Delovitch
Search Committee Chairman
C. H. Best Institute
University of Toronto
Toronto, Ontario, Canada M5G 1L6

PREDOCTORAL FELLOWSHIPS

The Waksman Institute of Microbiology of Rutgers, The State University of New Jersey, invites applications for Charles and Johanna Busch Predoctoral Fellowships: \$10,000 a year with tuition remission, renewable for a maximum of 4 years. Areas of research: Cellular, molecular, and developmental genetics; viral, prokaryotic, and eukaryotic molecular biology; plant molecular biology; production and chemistry of microbial products and biologically active molecules. Applicants should have outstanding undergraduate records and high GRE scores. Application forms may be obtained by writing to: **Dr. Hubert A. Lechevalier, Chairman, Fellowships Committee, Waksman Institute of Microbiology, Rutgers, The State University of New Jersey, P.O. Box 759, Piscataway, NJ 08854-0759.**

POSTDOCTORAL FELLOWSHIPS are available for work on hemopoiesis in a group consisting of experienced hematologists and molecular biologists. The aim of the research is to characterize the differentiation of hemopoietic cells. M.D. or Ph.D. in biochemistry, molecular biology, or virology required. No prior knowledge of hematology required. Stipend range dependent on experience. Send curriculum vitae and names of references to: **Dr. Shirley Ebbe, Attention: Jacquie Schilling, Lawrence Berkeley Laboratory, Employment Office M.S. 90-1012, 1 Cyclotron Road, Berkeley, CA 94720.** Please specify Job Number B3920. *An Affirmative Action Equal Opportunity Employer, M/F/H.*

Washington University
School of Medicine
St. Louis, MO

POSTDOCTORAL FELLOWSHIP in immunology and cell biology of the human mucosal immune system. Applications are invited for a 2-year postdoctoral position to join a well-established research group on studies of human intestinal B-cell function in normal controls and patients with Crohn's disease and ulcerative colitis. Characterization of cells and factors involved in immunoregulation of IgA and IgG subclass secretion will be carried out at the cellular and molecular levels. Applicants should have a good background in immunobiology, immunochemistry, and/or biochemistry. Send curriculum vitae and the name, address, and telephone number of three references to:

Richard P. MacDermott, M.D.
Division of Gastroenterology
Washington University School of Medicine
660 South Euclid—Box 8124
St. Louis, MO 63110

MARKETPLACE

COLLECTED PERSPECTIVES IN CANCER RESEARCH

Cancer Research announces a new publication, *Collected Perspectives in Cancer Research: 1983-1985*. Leading scientists examine various aspects of the cancer problem in articles reprinted from the journal's acclaimed "Perspectives" series. Price, \$8/copy (plus \$2 outside US/Canada) payable to: **WAVERY PRESS, E/LA-4, Easton, MD 21601.**

Half the media believe that M.D.s are the only comprehensive health-care professionals in America.

Yet 25 million Americans visit another type of fully-trained and licensed physician or surgeon for medical care. Their doctor is a D.O. or osteopathic physician.

The D.O. has essentially the same qualifications, medical education, internship, licensure and specialties as an M.D. They are equal with M.D.s under the laws of all 50 states, they serve as commissioned officers in the medical corps of all armed forces plus the Veterans Administration and Public Health Service. And they're recognized by the A.M.A. as physicians.

Yet there is great misunderstanding about the existence and role of osteopathic physicians in our society. That's why the American Osteopathic Association is calling attention to D.O.s in this message and striving to communicate their philosophies, distinctions and service to the American people.

Some facts:

- Osteopathic medicine was founded by a physician, Andrew Taylor Still, seeking options to the rudimentary drugs and surgery of the late 1800s.
- Central to osteopathic medicine is the body's musculoskeletal system and its importance to a patient's well-being. This system includes the bones, muscles, tendons, tissues, nerves, and spinal column—about 60% of the body mass.
- Osteopathic medicine views the human body as a single, individual organism—a basic tenet of Hippocrates.
- There is a fundamental concern with the whole body, preventive medicine, holistic medicine, proper diet and keeping a patient fit.
- Today's osteopathic physician typically offers primary care (86% are in family practice, general practice, internal medicine and gynecology).

- Today's osteopathic physician typically practices in smaller towns and rural areas (55% do).

- Fourteen percent of the profession is board certified in a full range of 18 medical specialties, including surgery, anesthesiology, emergency medicine, psychiatry, obstetrics, pediatrics, radiology and other fields.

- Today's D.O. provides comprehensive medical care, including preventive medicine, diagnosis and appropriate use of drugs, surgery, manipulation and hospital referral.

- Osteopathic manipulation of the musculoskeletal system is a viable and

- 50 million patient-visits are made to D.O.s annually.

- D.O.s are fully licensed to practice in every state. Strong concentrations of D.O.s are found in Michigan, Pennsylvania, Ohio, New Jersey, Florida, Texas and Missouri.

- 15 colleges of osteopathic medicine (about half state supported) now enroll nearly 6,500 medical students.

- 25% of osteopathic medical school students are women; women

You Probably Think All Doctors Are M.D.s. If So, You're Wrong!

proven technique for many "hands-on" diagnoses and treatments. It can provide an alternative to many drug therapies.

- Sports medicine is a natural outgrowth of osteopathic medicine, with concern for the musculoskeletal system, manipulation, diet, exercise and fitness. Many professional sports team physicians, Olympic physicians and personal sports medicine physicians are D.O.s.

- Osteopathic medicine is the fastest-growing health care field today.

- The D.O. is entitled to practice medicine and surgery in all its branches along with the M.D. and should be included in any discussion of "physician" when the reference is to providers of unlimited, comprehensive medical care. Comparison to physicians with limited practice rights is inappropriate.

Some Statistics:

- 21,000 D.O.s practice in America today, with 30,000 expected by 1990.

- 5% of all U.S. physicians and 10% of all U.S. military physicians are D.O.s.

- 25 million Americans visit D.O.s annually.

have been enrolled in osteopathic medical schools since their inception in 1892.

- 215 osteopathic hospitals offering 28,000 beds serve people in 30 states.

Osteopathic Medicine—proud to be a major force in America's health care delivery system.

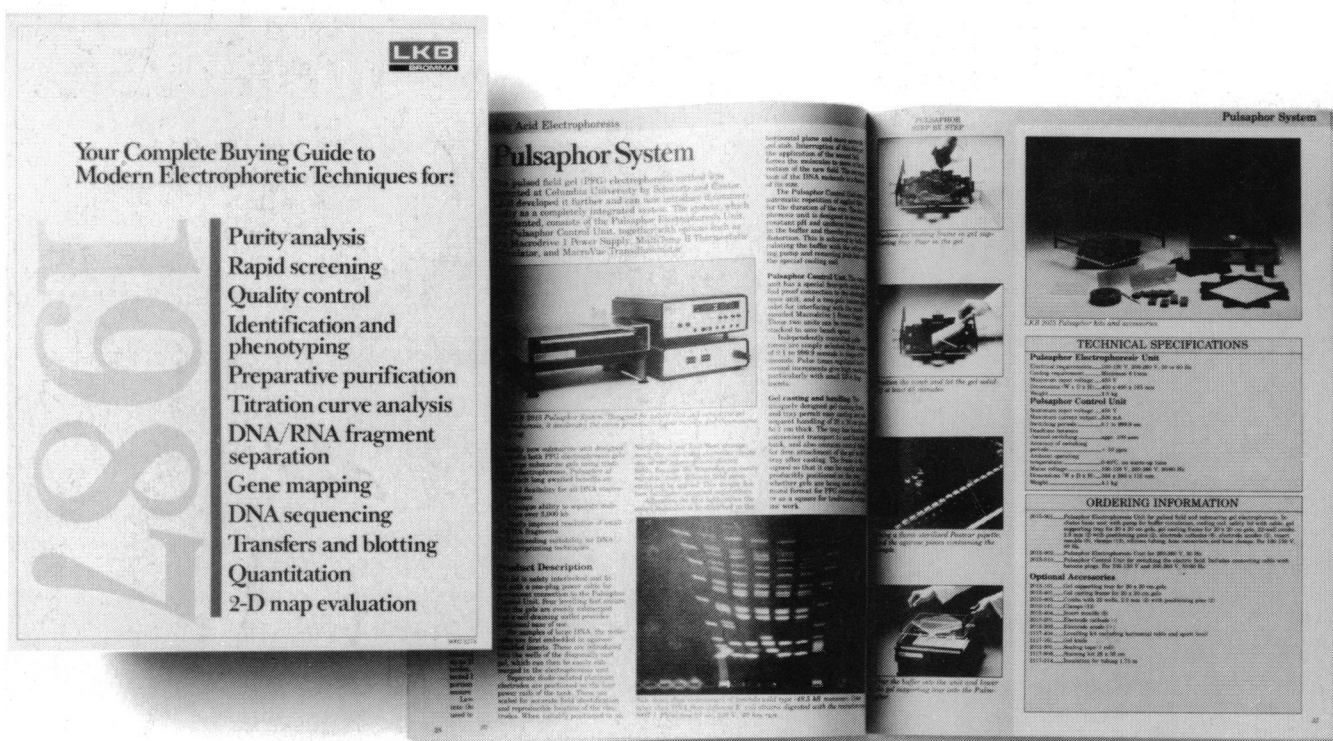


The American Osteopathic Association is ready to fulfill your editorial queries about the profession and its contribution to U.S. health care. Information packets are available by mail and questions will be answered by phone. Please contact any osteopathic medicine state society or:

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