

place in a very short time, only a few million years just at the onset of sea floor spreading. This conclusion has prompted another model, discussed by Mutter and Zehnder, involving accelerated mantle convection in the narrow lithosphere gap created beneath the rift. Such enhanced convection could produce an initial burst of magmatism that would decay as the gap widened and sea floor spreading separated the continents.

The distribution of volcanism does not rule out either of the two hypotheses or the possibility that both mechanisms operated in different areas, one near the hot spot and the other farther away.

The mantle processes in the two hypotheses are expected to be different and to yield distinctive geochemical signatures. The earliest magmatic rocks should contain the clearest signal of partial melting under the influence of either a hot spot or accelerated convection. However, these volcanics have not been sampled owing to the present limitations of deep drilling. Available geochemical data do not eliminate either hypothesis, but it should be noted that so far only the top 5 percent of the relevant magmatic accumulations have been sampled.

Thus many questions remain to be resolved in even this most intensely studied of all magmatic rifts. The data presented in the volume constitute an important step toward understanding this class of rifts. Geologists and geophysicists interested in all aspects of rifts and continental margins will want a copy of it.

JEFFREY KARSON

Department of Geology, Duke University,
Durham, NC 27706

Some Other Books of Interest

Global Volcanism 1975–1985. The First Decade of Reports from the Smithsonian Institution's Scientific Event Alert Network (SEAN). LINDSAY MCCLELLAND, TOM SIMKIN, MARJORIE SUMMERS, ELIZABETH NIELSEN, and THOMAS C. STEIN, Eds. Prentice-Hall, Englewood Cliffs, NJ, and American Geophysical Union, Washington, DC, 1989. vi, 655 pp., illus. \$44 from Prentice-Hall; \$42 from American Geophysical Union (to members \$29.40).

The Smithsonian Institution's Scientific Event Alert Network consists of over 1000 correspondents (scientists and others) who have since 1975 provided the Smithsonian with reports of volcanic events observed in various parts of the world. The reports are then compiled into the monthly *SEAN Bulletin* and redistributed "in the hope that timely information will both increase volcanological understanding and facilitate study

while events are still new." For this volume the reports from the network's first decade have been brought together with further editing and revision. The information is arranged geographically according to the sequence used in the *Catalogue of Active Volcanoes of the World* initiated in 1950. There are 20 divisions, beginning with Italy and Africa, including a number of island groups, and concluding with Earth's atmosphere and Io. Within the divisions information is presented chronologically, volcano by volcano, with sources of reports, literature references where available, and "information contacts." Preceding this 576-page main section is an introductory section providing guidance for the use of the work (including the caveat that the reports remain preliminary) and a summary of volcanic events occurring in the decade covered (a discussion of "highlights" and a complete chronology, with page references). A concluding section defines abbreviations, gives addresses of 696 information contacts, and provides a detailed index to the text. Many of the reports include maps, photographs, or other illustrations, and the endpapers of the volume provide convenient summaries of basic information and a world map showing the locations of volcanoes active in the last 10,000 years.—K.L.

Radioactivity and Health. A History. J. NEWELL STANNARD. Raymond W. Baalman, Jr., Ed. U.S. Department of Energy Office of Scientific and Technical Information, Washington, DC, 1988 (available from Battelle Memorial Institute Pacific Northwest Laboratory, Richland, WA). xlviii, 1963 pp., illus. \$67.50.

This very thick book, prepared under contract between the Department of Energy and the Battelle Pacific Northwest Laboratories by a radiologist whose own work in the field spans much of its history, is an account of knowledge of the biological effects of ionizing radiation from the discovery of radium to about 1980. The author characterizes the book as "a history of research facts, measurements, and ideas and the people who developed them," presenting research findings and conclusions "largely as the investigators saw and reported them" except where the work under discussion was "markedly iconoclastic or obviously wrong." The work is based on over 100 personal interviews and literature searches including unpublished or little-known materials. The emphasis is on work done in the United States. The arrangement of material is thematic and chronological. The opening four chapters are devoted to naturally occurring radioactive elements. Chapter 1 deals with radium, whose "biomedical effects . . .

were center stage for much of the earlier twentieth-century work with radionuclides" and whose isotopes "continue to supply important bench-mark information." It includes accounts of the much-written-about case of the luminous dial painters and of work on radium-226 at Chicago, Rochester, MIT, and Harvard during and after World War II. Chapters on uranium, radon and its decay products, and polonium and thorium follow similar patterns, the radon chapter being concerned mainly with effects on uranium miners. Man-made radioisotopes are the subject of the next section of the book, with some account of the earliest work by Rutherford and Lawrence and chapters devoted to fission products (1939–1950), plutonium and the transplutonic elements (1940–1950), and post-World War II research on these isotopes, project by project. Section 3 deals with inhalation toxicology (radioactive dusts and particles, respirable gases), an early specialty of the author's. Environmental matters—radioecology, fallout from nuclear weapons tests, transport of radionuclides, testing and standard setting—are taken up in section 4. Section 5 consists of chapters on laboratory and field instrumentation by H. L. Andrews and R. L. Kathren. Finally, the development of therapy for exposure and of nuclear medicine is traced, and the text concludes with considerations of "unfinished business" in the field and what we have learned from Chernobyl. Each chapter begins with an outline, capsule chronology, and overview and has its own reference list, and each group of chapters has a preface. Appendixes and three indexes provide access to information about particular persons, places, and institutions, and the text itself contains some 500 tables and figures, listed at the beginning of the book.—K.L.

Books Received

Applied Bioactive Polymeric Materials. Charles G. Gebelein, Charles E. Carraher, Jr., and Van R. Foster, Eds. Plenum, New York, 1988. x, 334 pp., illus. \$69.50. Polymer Science and Technology, vol. 38. From a symposium, New Orleans, LA, Aug.-Sept. 1987.

Applied Biosensors. Donald L. Wise, Ed. Butterworths, Stoneham, MA, 1989. xiv, 354 pp., illus. \$59.95. Biotechnology, vol. 11.

Biochemistry of the Algae and Cyanobacteria. L. J. Rogers and J. R. Gallon, Eds. Clarendon (Oxford University Press), New York, 1989. xiv, 374 pp., illus. \$90. Proceedings of the Phytochemical Society of Europe, vol. 28. From a meeting, Aberystwyth, U.K., April 1987.

Charles Conley Memorial Volume. M. R. Herman et al., Eds. Cambridge University Press, New York, 1989. iv, 409 pp., illus. \$69.50. *Ergodic Theory and Dynamical Systems*, vol. 8* (1988).

Dust in the Universe. M. E. Bailey and D. A. Williams, Eds. Cambridge University Press, New York, 1989. xlv, 570 pp., illus. \$69.50. From a conference, Manchester, U.K., Dec. 1987.

Electronics for Physics Experiments Using the Apple® II Computer. John W. Snider and Joseph Priest. Addison-Wesley, Reading, MA, 1989. xiv, 289 pp., illus., + floppy disk in pocket. Paper, \$27.75.

Products & Materials

Freeze Dryer Without a Compressor

The model DC-41A is a freeze dryer that sublimates water from a frozen sample with a molecular sieve and a standard vacuum



pump. The molecular sieve can be recharged in any oven and is not subject to the mechanical problems that refrigerated units with compressors experience. Yamato USA. Circle 459.

HPLC Columns

Aminex columns for high-performance liquid chromatography (HPLC) are designed for biotechnology applications such as monitoring cell metabolites, analyzing for specific biochemical compounds, and analyzing for radiolabeled compounds. The columns are available dedicated to carbohydrate analysis, alcohol analysis, organic acid analysis, or organic base analysis. The carbohydrate analysis columns, for example, resolve simple and complex carbohydrates associated with glycoproteins, cell culture media, microbial metabolism, urine, and pharmaceutical matrices. Also, these columns can resolve and quantitate compounds such as

neutral sugars, N-acetylated sugars, radiolabeled sugars, alditols, and sugar alcohols. Columns may also be custom-packed with resins that optimize resolution of specific compounds. Bio-Rad Laboratories, Chemical Division. Circle 435.

Statistical Comparison Software

Data Statistics Comparison is a menu-driven software package for comparing paired sets of data. The program automatically generates histograms and scattergrams and performs calculations for 20 statistical parameters. As data are entered, intercept, slope, correlation coefficient, and *t* statistics are calculated and displayed on the screen. All data, comparative statistics, and graphs can be printed for a permanent record of results. Data Statistics Comparison operates on IBM PC and compatible computers. Helena Laboratories. Circle 453.

DNA Sequencing System

FASTaq is a DNA sequencing system requiring only a single incubation procedure. The system is based on *Thermus aquaticus* polymerase, which actively catalyzes polymerization at temperatures greater than 70°C. To use, the scientist mixes a template with *lacZ* primer and radiolabeled nucleotide, distributes the solution to reaction tubes, and incubates it. Repeated heating and cooling to anneal the primer to the template are not necessary. With ³⁵S, results are achieved within 24 hours; with ³²P, results occur within 6 hours. International Biotechnologies. Circle 452.

Nonparametric Statistical Tests

DISFREE is a software program for performing nonparametric statistical analyses. The program contains 89 tests, each with separate versions for large and small sample sizes. Included are two-sample tests of heterogeneity (such as Wilcoxon's rank-sum test, the rank-sum test for ordinal-scale data, McNemar's test for variables with two categories, Lehman's test for variables with more than two categories, and Bowker's test for nominal-scale data), two-sample tests of dependence (such as Pitman's randomization test for interval-scale data, Spearman's rank correlation test, and the rank correlation test for censored data), and tests for heterogeneity for three or more samples (such as the Kruskal-Wallis test, the Patel-

Hoel test for interaction, the rank-sum test for ordinal scale data, and the Pitman-Welch test for interval scale data). DISFREE is based on Joachim Krauth's 1988 book *Distribution-Free Statistics: An Application-Oriented Approach*. The program operates on IBM PC computers with a minimum of 256 kilobytes of random access memory. \$395. Biosoft. Circle 455.

Cell-Culture Bioreactor

A 7-liter multiport cell-culture bioreactor with a round bottom is available. It has a 30-mm port, a 3/4-inch port, five 18-mm ports, two 12-mm ports, and ten 10-mm ports, allowing insertion of sensors and accessories. The bioreactor, which can be autoclaved, is about 550 mm tall and has a diameter of 220 mm. Applikon. Circle 448.

Literature

The Invertoscopes is a 24-page color brochure describing applications in materials sciences for a line of inverted microscopes. Carl Zeiss. Circle 469.

Immunological Reagents: 1989 Product Guide is a catalog of gold conjugates, human leukocyte markers, a monoclonal typing kit, antibodies, and other immunological reagents. Serotec (United Kingdom). Circle 470.

Catalogue 3 features 1200 products for immunology, cell biology, biochemistry, and molecular biology. Accurate Chemical & Scientific. Circle 471.

1989 Electrophoresis is a catalog of reagents and equipment for protein and DNA electrophoresis, including two-dimensional electrophoresis systems, staining methods, and precast mini, intermediate, and standard gels. Integrated Separation Systems. Circle 472.

High Purity Solvents & Products for Chromatography is a 40-page catalog with sections about sample preparation; high-performance liquid chromatography (HPLC) columns; solvents for HPLC, gel permeation chromatography, and spectrophotometry; and clean-room processing and precision cleaning. Baxter Healthcare, Burdick & Jackson Division. Circle 474.

Laboratory Ultrafiltration Products for Improved Biological Recovery is a brochure describing a line of ultrafiltration products for processing quantities from 0.2 ml to 200 liters. Millipore. Circle 475.

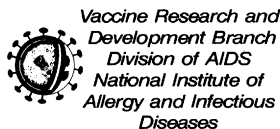
Scientific Apparatus and Reagents is a 144-page catalog of laboratory equipment and supplies. Thomas Scientific. Circle 484.

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.

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Edited by
Morton S. Roberts

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ANATOMY FACULTY POSITION (tenure-path) at the assistant professor level. All fields will be considered, although neuroscientists and cell biologists are especially encouraged. Candidates should have evidence of independence and promising research in cellular and/or molecular areas, enjoy collaboration, and have teaching ability/potential in anatomy. Excellent salary and start-up available. Applicants should send three or more personal references and their curriculum vitae to: **Dr. Richard Wiggins, Chair, Department of Anatomy, West Virginia University School of Medicine, 4052 HSN, Morgantown, WV 26506.** *Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF MARICULTURE—Full-time teaching position in a newly developing M.S. in mariculture program. Closing date: 10 August 1989. Starting date 28 August 1989. Candidates must have a Ph.D. in some aspect of mariculture; at least 2 years of postdoctoral teaching experience; and some experience in commercial mariculture operations. Candidates should have the ability to supervise students; aid in program development and direction; and must demonstrate the ability to work cooperatively with state and private regional mariculture facilities and personnel. To apply, include a letter of application, current résumé, copies of all transcripts, and request three letters of reference to: **Dr. Steve Barnes, College of Science and Technology, Corpus Christi State University, 6300 Ocean Drive, Corpus Christi, TX 78412.** Review of applications will begin 10 August 1989, and continue until a suitable applicant is hired. *Corpus Christi State University is an Equal Opportunity/Affirmative Action Employer.*

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Applicants should send a statement of research interests, résumé, and names of at least three references to: **Professor Adam M. Dziewonski, Chairman, Search Committee, Department of Earth and Planetary Sciences, Harvard University, 20 Oxford Street, Cambridge, MA 02138.**

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The college of pharmacy at Southeastern University of Health Sciences invites applications for full-time non-tenure-track position in pharmaceuticals. Applicants must have a strong background in physical pharmacy, pharmaceuticals, nuclear pharmacy and pharmacokinetics. The individual selected will be expected to accept responsibility for instruction at both undergraduate and graduate levels, develop dosage-forms laboratory, and conduct independent research on some aspect of pharmaceuticals. Candidate must possess a Ph.D. in pharmaceuticals with at least 1 year of teaching experience in pharmaceuticals course and instructing dosage-forms laboratory. Salary is commensurate with experience, with a maximum of \$41,000. Qualified applicants are invited to submit their credentials and three letters of recommendations to: **Dr. Joseph Norwood, Dean, Southeastern University of Health Sciences, School of Pharmacy, 1750 N.E. 168 Street, North Miami Beach, FL 33162.**

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CHIEF OF SURGICAL PATHOLOGY: The Department of Pathology of the University of California, San Diego (UCSD), is seeking a Chief of Surgical Pathology. The candidate will be responsible for the overall administrative, professional and operational activities of surgical pathology. This position includes service, teaching and research. The applicant should qualify for appointment as either associate professor or professor of pathology (in residence) and will be expected to recruit several surgical pathologists. Salary and level of appointment will be commensurate with the qualification of the candidate and based on University of California pay scale. Application with curriculum vitae and three names of referees should be sent to: **Kurt Benirschke, M.D., Professor of Pathology, UCSD Medical Center H-720A, 225 Dickinson Street, San Diego, CA 92103-1990** by 22 August 1989. *Affirmative Action/Equal Opportunity Employer.*

28 JULY 1989

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CHAIRPERSON CHEMISTRY AND BIOCHEMISTRY

The Department of Chemistry and Biochemistry of the University of Maryland at College Park is seeking nominations and applications of scientists qualified to serve as departmental chairperson. The Department consists of 45 faculty (with several open positions) and 200 graduate students. Research programs include analytical chemistry, biochemistry, environmental chemistry, inorganic chemistry, nuclear chemistry, organic chemistry, and physical chemistry. Departmental researchers actively collaborate with scientists at the NIH, Naval Research Laboratory, National Institute of Standards and Technology, USDA, and the University's Centers of Biotechnology. Applicants should have a Ph.D. and have demonstrated outstanding abilities in research and teaching in chemistry or biochemistry. Evidence of administrative ability is also required. Appointment will be made at the professor level, with the earliest starting date of 1 January 1990. Letters of application should include curriculum vitae and the names, addresses, and telephone numbers of four references. Send by 1 October 1989 to: **Dr. Shain-dow Kung, Chair of the Search Committee, Center for Agricultural Biotechnology, 1206 H. J. Patterson Hall, University of Maryland, College Park, MD 20742. Telephone: 301-454-6056. An Equal Opportunity/Affirmative Action Employer.**

CHIEF, TEXAS SALTWATER FISHERIES PROGRAM. Desire Ph.D., major coursework in fisheries sciences, management/related fisheries field. One-year top-level supervisor, involved in collecting fisheries data. Have extensive administrative and technical experience in responsible position involving fisheries research, planning management. Salary: \$38,796 plus benefits; staff of 101; budget, \$4 million. Send curriculum vitae, five references to: **Dr. Gary C. Matlock, Smith School Road, Austin, TX 78744. Additional information: 512-389-4857.**

DIRECTOR OF RESEARCH, Georgetown University Medical Center. The Georgetown University Medical Center invites applications from individuals with M.D. or Ph.D. degrees for the newly created position of "Director of Research." Applicants should be established scholars with strong research credentials and administrative experience. This individual will be primarily responsible for the development of a strong research program at this Medical Center and will report directly to the Vice-President of the Medical Center on this and related issues. The successful applicant will also serve as Associate Dean to the Graduate School and will interact with the Graduate School on educational matters of importance to the Medical Center. In addition to the administrative duties, the individual selected for this position is expected to maintain an active research program. Salary is competitive. Interested individuals should submit their complete curriculum vitae, a statement documenting research and administrative experience and names of five references to: **Dr. Gary R. Pearson, Department of Microbiology, 3900 Reservoir Road, N.W., Washington, DC 20007, by 15 August 1989. Georgetown University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

CHAIRPERSON DEPARTMENT OF HUMAN ANATOMY

The School of Medicine, University of California, Davis, invites applications and nominations for the position of Chairperson of the Department of Human Anatomy. The department currently comprises ten tenure-track faculty, is housed in a modern laboratory building, offers graduate training in cell biology, anatomy, and related disciplines, and is responsible for the teaching of gross, neuro- and microscopic anatomy and aspects of cell biology in the medical curriculum. Candidates must have a distinguished record of scholarship and professional achievement in some area of cell biology, as evidenced by publications and grant awards. They also must have leadership and administrative abilities and an interest in the departmental teaching mission. A commitment is required to building a strong, independent, extramurally funded research program in modern cell biology as well as to augmenting departmental research in this area; an opportunity to appoint a number of new faculty members if available. Implementation plans have been approved for four Biological Science Centers on the Davis campus, including a Center for Neurobiology and a Center for Molecular, Cell and Developmental Biology. Applicants should submit a letter of application, curriculum vitae, a summary of research goals, and the names of five references to: **Dr. FitzRoy E. Curry, Search Committee Chairperson, c/o Office of the Dean, School of Medicine, University of California, Davis, CA 95616. This position will be "Open Until Filled"; applications must be received by 16 October 1989. The University of California, Davis, is an Affirmative Action/Equal Opportunity Employer.**

ENDOWED OSCAR M. COHN '34 PROFESSOR OF BIOCHEMISTRY AND CHAIR, DEPARTMENT OF BIOCHEMISTRY DARTMOUTH MEDICAL SCHOOL

Applications and nominations are invited for an endowed professorship and chairperson of the department of biochemistry at Dartmouth Medical School. The department has responsibilities for the education of undergraduate, medical, and graduate students. The current department consists of 14 faculty members, and is well funded from federal sources. We are seeking candidates who have an outstanding record of research achievement in any field of biochemistry or molecular biology, and who are able to provide strong leadership to an already excellent department. Candidates should have a doctorate degree in a relevant discipline, experience in an academic center, and credentials for appointment as a professor. Interested individuals should forward curriculum vitae and the names and addresses of three references to: **Dr. Edward Bresnick, Chairman of the Biochemistry Search Committee, Department of Pharmacology and Toxicology, Dartmouth Medical School, Hanover, NH 03756. All applications will be reviewed by 31 August 1989. Dartmouth Medical School is an Affirmative Action Employer and encourages the application of women and minorities.**

FACULTY POSITION: MOLECULAR VIROLOGY OF PAPILLOMAVIRUSES. The Division of Molecular Virology at Baylor College of Medicine invites applications for a tenure-track faculty position; rank dependent upon qualifications. An innovative scientist is sought with training and research interest in molecular aspects of gene expression or pathogenesis of papillomavirus infections. Applicants should have a Ph.D. with at least 2 years of productive postdoctoral experience in molecular virology. The successful applicant is expected to establish an independent research program and to participate in graduate training in an expanding academic department. Newly renovated laboratories, well-equipped support facilities, and opportunities for clinical collaborations are available. Current faculty research activities focus on the molecular basis of viral replication, viral and cellular oncogenes, viral pathogenesis, viral vectors for gene therapy, and modern approaches to viral vaccines. Send curriculum vitae, names/addresses of at least three references, and a description of current research activities and future plans by 1 September 1989 to: **Dr. Janet Butel, Head, Division of Molecular Virology, Baylor College of Medicine, One Baylor Plaza, Houston, TX 77030. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

CLINICAL/MOLECULAR MICROBIOLOGIST POSITION, Mayo Clinic in the Bacteriology Laboratory, Department of Laboratory Medicine and Pathology. Incumbent will direct a special tests area in the clinical laboratory and be expected to develop applications of molecular biology to clinical diagnostic testing. Applicants must have a doctorate (M.D. or Ph.D.), appropriate postgraduate experience, and interact well with clinicians. Please send curriculum vitae and names of three references to: **George G. Klee, M.D., Ph.D., Chairman, Clinical Microbiology Search Committee, Division of Laboratory Medicine, Mayo Clinic, Rochester, MN 55905. An Equal Opportunity/Affirmative Action Employer.**

CONSULTANT ON DYNAMICAL SYSTEMS THEORY

Full-time position for dynamical systems theorist for approximately 3 months with the possibility of intermittent consulting during the subsequent year, to lead an independent research program in global-conflict modeling and related areas of dynamical systems theory. Requires Ph.D. in theoretical physics, mathematics, or closely related area, and mastery of dynamical systems theory as demonstrated by a substantial publications record. Also requires demonstrated mastery of Cray operating systems and Unix-based scientific workstations, the ability to write research-level computer codes in FORTRAN, 5 years of related experience, and familiarity with Richardson equations as a basis for global-conflict modeling, preferably with a publications record in the field.

Working conditions include office space, secretarial support, SUN 4/110 workstation, Apple Macintosh personal computer, and high-speed access to the Internet. Salary: \$5000 per month.

Send curriculum vitae, including record of relevant publications, to:

**Personnel Director
Santa Fe Institute
1120 Canyon Road
Santa Fe, NM 87501**

FACULTY POSITION IN MOLECULAR BIOLOGY

Division of Reproductive Endocrinology and Infertility at Albert Einstein College of Medicine is seeking applications from molecular biologists for a faculty position at Assistant Professor level with salary in \$30's. The successful candidate will join an established multi-disciplinary program in the area of mammalian spermatogenesis, fertilization and embryogenesis [*Science* **225**, 342 (1984); *Proc. Natl. Acad. Sci. U.S.A.* **83**, 5713 (1986)]. Candidate should have Ph.D., at least 2 years of postdoctoral experience, a productive research record, and be capable of developing a strong research program in the area of gene expression and growth factors action. Send curriculum vitae, and names of three references to: **Dr. Rajesh K. Naz, Ullmann Reproductive Immunology Lab #123, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, NY 10461.**

FACULTY POSITION IN PHARMACOKINETICS SOUTHEASTERN COLLEGE OF PHARMACY

The Southeastern College of Pharmacy invites applications and nominations for a full-time (12-month) faculty position in pharmacokinetics. The successful candidate must have an in-depth understanding of pharmacokinetic theory and will have research interests in some aspects of applied pharmacokinetics. A Ph.D. degree in pharmacokinetics, pharmaceuticals with at least 1 year of teaching experience in pharmaceuticals, chemical engineering or other appropriate discipline, or a Pharm.D. degree with relevant research experience is expected. Candidates who are skilled in computer-based pharmacokinetic modeling or who have a strong background in data analysis are encouraged to apply. A professional degree in pharmacy is desirable but not essential. Candidates should be dedicated to excellence in teaching and will be expected to make serious scholarly contributions to their area of specialization. Salary and rank are commensurate with qualifications. Interested individuals should submit a letter of application and curriculum vitae, and arrange to have three letters of recommendation forwarded to: **Fred F. Farris, Ph.D., Associate Dean for Pharmaceutical Sciences, Southeastern College of Pharmacy, 1750 N.E. 168 Street, North Miami Beach, FL 33162.**

Southeastern College is an Equal Opportunity Employer

NEUROGENETIC CORPORATION



Neurogenetic Corporation is a rapidly growing biotechnology company involved in the design of novel therapeutic agents for the treatment of neurological and psychiatric disorders.

Several staff scientist positions are now available for research scientists with 2 or more years of postdoctoral experience and the following qualifications:

MOLECULAR MODELING: Biophysics or chemistry Ph.D. with experience in computer aided molecular modeling and/or computational chemistry for the purpose of drug design. Areas of application will include both proteins and small organic molecules.

MEDICINAL CHEMISTS: Ph.D. degree with experience in synthetic organic chemistry or in the discovery and use of natural products for drug design; applications are sought at both senior (group leader) and staff scientist levels.

Neurogenetic Corporation occupies modern, well-equipped laboratories in a suburban environment near New York City. We offer a stimulating multi-disciplinary research environment, competitive salaries and benefits, and opportunities for stock ownership. Applications, which will be kept confidential, should include a Curriculum Vitae and three references. Apply to:

Human Resources Department
Neurogenetic Corporation
215 College Road
Paramus, NJ 07652

An equal opportunity employer

NATIONAL INSTITUTES OF HEALTH FELLOWSHIP IN BRAIN LIPID METABOLISM

The Laboratory of Neurosciences, National Institute on Aging, Public Health Service, National Institutes of Health, invites applications for a Staff Fellowship position to study brain lipid metabolism in relation to development and aging. Research opportunities include:

- 1.) Examination of incorporation of precursors of brain lipids in animals in vivo, using quantitative pharmacokinetic and autoradiographic techniques
- 2.) Applying methods for subcellular and chemical fractionation of brain lipids
- 3.) Examining intermediary brain lipid metabolism
- 4.) Examining lipid composition of the human brain in relation to aging and Alzheimer's disease.

The position is that of a Staff Fellow, Senior Staff Fellow or Medical Staff Fellow, with salary commensurate with qualifications. Appointments vary in duration from 2 to 7 years and are tenure-track. The position is located in Bethesda, Maryland, and is available immediately.

Applications are invited from qualified individuals having a Ph.D., M.D., or combined degrees, and pertinent research experience. Applications from women and minorities are invited. Interested candidates should submit their Curriculum Vitae and two letters of recommendation to:

Dr. Stanley I. Rapoport, M.D.
Chief, Laboratory of Neurosciences
National Institute on Aging, NIH
Building 10 Room 6C103
9000 Rockville Pike
Bethesda, Maryland 20892



NIH IS AN EQUAL OPPORTUNITY EMPLOYER

An *Uncommon* Opportunity

MICROBIOLOGIST

Marion Laboratories is an "uncommon company", a leader in the rapidly expanding, high technology segment of the health care industry. We currently have a position available in our Analytical Department for an experienced Microbiologist.

The successful candidate will possess an M.S. or Ph.D. in Microbiology and have experience in developing methods for the isolation, cultivation, and characterization of microorganisms from environmental sources. The successful candidate will also have excellent written and verbal communication skills.

We offer an excellent total compensation and benefits package including bonus, stock options, profit sharing, comprehensive group health, dental and life insurance. Please send a detailed resume, including salary history to: **Marion Laboratories, Inc., Recruiting and Placement, Dept. SRKS, 10236 Marion Park Drive, Kansas City, MO 64137.** Equal Opportunity Employer.

**Marion
Laboratories, Inc.**

The *Uncommon* Company

Scientist Drug Metabolism/ Pharmacokinetics

Smith Kline & French Laboratories, a world-wide leader in pharmaceutical research, is seeking a scientist to join our rapidly expanding Pharmacokinetics group.

The scientist will design and direct clinical and preclinical pharmacokinetic and drug metabolism studies and perform pharmacokinetic and statistical data analysis. The position offers substantial opportunity for collaboration with other scientists involved in the discovery and development of novel therapeutic agents. As part of multi-disciplinary project teams, the scientist will be expected to provide the drug metabolism perspective to fellow research scientists. Since the scientist will assume a high degree of project related responsibility, the position will also draw heavily upon individual scientific initiative, independence and innovation. Excellent interpersonal and communication skills are critical. Publication and presentation of research findings are strongly encouraged.

Candidates should possess a Ph.D. or Pharm.D. in Pharmacy, Pharmaceuticals, Pharmacology or a related field. An in-depth understanding of pharmacokinetic principles and demonstrated ability to apply those principles in metabolism is required as well as strong bioanalytical skills.

Based in a state of the art research facility in suburban Philadelphia near Valley Forge, PA, SK&F provides a stimulating, collegial atmosphere with extensive scientific resources available to each scientist. We offer an attractive compensation/benefits/relocation package. For confidential review, please forward your CV to Liz McKendry, L0081, Smith Kline & French Laboratories, P.O. Box 1539, King of Prussia, PA 19406-0939. We are an equal opportunity employer. M/F/H/V.

SK&F
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POSITIONS OPEN

EXERCISE PHYSIOLOGIST, Ph.D.

The Miriam Hospital, an affiliate of the Brown University Program in Medicine, is seeking a Ph.D. or equivalently trained person to be Associate Director of the Human Performance Laboratory and to participate in independent and collaborative clinical exercise physiology research. Candidates must qualify for a position on the Brown University medical faculty as an assistant or associate professor of medicine (research). If hired at the associate level, the candidate must be a scholar who has attained national recognition through significant research contributions in peer-reviewed journals. The position requires a doctoral degree in physiology, biochemistry, epidemiology, or exercise physiology; research experience in human exercise physiology or a related discipline; the ability to supervise a clinical research exercise laboratory; familiarity with statistical principles and data analysis. Preference will be given to individuals with documented research experience in lipid physiology, cardiovascular control mechanisms, glucose regulation, or cardiac rehabilitation. Facilities include a GCRC-funded outpatient metabolic kitchen, full animal care facilities, and 1800 square feet of laboratory space. Presently funded projects include studies of lipid metabolism in athletes, the effect of exercise on diabetes during pregnancy, and the effect of lipid-lowering diets in heart disease. *The Miriam Hospital is an Equal Opportunity/Affirmative Action Employer and actively solicits applications from minorities and protected groups.* Please send curriculum vitae by 8 September 1989 to: **Paul D. Thompson, M.D., Director of Preventive Cardiology, Brown University, The Miriam Hospital, 164 Summit Avenue, Providence, RI 02906.**

FACULTY POSITION MOLECULAR AND CELLULAR IMMUNOLOGY UNIVERSITY OF CALIFORNIA, BERKELEY

The University of California at Berkeley is seeking an immunologist to join the Division of Immunology in the Department of Molecular and Cell Biology. The appointment may be at the level of assistant, associate, or full professor depending on the candidates' experience and achievements. Minimum qualifications include: a Ph.D. and postdoctoral training in immunology or related field; evidence of independent research in molecular and cellular immunology; and effective communication skills. Duties include participation in graduate and undergraduate instruction in immunology and maintenance of a strong research program to provide training for graduate students and postdoctoral fellows, and involvement in the administration of the newly formed Division of Immunology.

Applications/nominations along with curriculum vitae, statement of research interests and representative reprints, and the names of three references should be sent by 1 September 1989 to:

Dr. Marian E. Koshland
Chairperson, Search Committee
Life Sciences Annex, Box 439
University of California
Berkeley, CA 94720

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

THE HEBREW UNIVERSITY— HADASSAH MEDICAL SCHOOL JERUSALEM FACULTY POSITIONS

The Faculty of Medicine invites applications for two tenure-track faculty positions and for Allon Fellowship candidates leading to tenure-track positions in basic medical sciences. Preference will be given to candidates who utilize modern molecular approaches in the following areas: Medical and general microbiology, human genetics, parasitology, biotechnology, cell biology and physiology. Ph.D. and/or M.D. degree and postdoctoral training are required. Excellence in research and teaching will be of prime importance in the decisions of the Search Committee. Candidates are expected to develop independent research. Curriculum vitae, list of publications, research plans, and three letters of recommendation addressed to the Dean should reach: **Mrs. D. Abramson, Office of the Dean, POB 1172, 91010 Jerusalem,** not later than 31 October 1989.

PROTEIN BIOCHEMIST

Merck Sharp & Dohme Research Laboratories is currently offering an excellent career opportunity for a protein biochemist/molecular biologist to join the expanding Department of Cellular and Molecular Biology. Research in this department is applied to the analysis and expression of genes of potential pharmaceutical interest.

Responsibilities for this position will include recombinant protein purification and characterization employing techniques such as HPLC, FPLC, radio-immunoprecipitation, ELISA, gel electrophoresis and immunoblotting.

An M.S. or B.S. degree in Biochemistry, Molecular Biology or the equivalent, with at least 2 years of broad and significant experience in protein biochemistry is required. Experience in recombinant DNA technology and general molecular biological procedures is desired.

Merck Sharp & Dohme Research Laboratories are located in Rahway, New Jersey approximately 25 miles from New York City. Our salaries, benefits, and growth potential are excellent.

Interested candidate should submit resume and three letters of recommendation to **Susan R. Jenkins, Merck & Co., Inc., P.O. Box 2000, Rahway, New Jersey, 07065.**

Merck & Co., Inc.



DIRECTOR RESEARCH & DEVELOPMENT

Progressive and innovative reference lab in the Midwest invites applications for a Director of Research and Development. Qualified candidates will possess Ph.D. degree in biological/chemical sciences, immunology or molecular genetics. Previous PCR, gene probes and/or polystyrene latex particle experience is helpful. This full-time position will direct and supervise lab technologists' activities to develop new assays and tests for high volume production lab. Post-doctoral experience not required. Competitive salary commensurate with experience and education. Send resume to: **Osborn Laboratories, Inc., c/o Personnel Solutions, Inc., 4501 College Blvd. Ste. 210, Leawood, KS 66211. EOE**

Agricultural Biotechnology Research

Postdoctoral Associate

CIBA-GEIGY's Agricultural Division has an excellent opportunity for a Postdoctoral Associate in our genetic engineering and crop improvement program. Long recognized as one of the world's foremost producers of crop protection chemicals, we have made a major commitment to biotechnology research at our facility in Research Triangle Park, NC.

Candidates will have the opportunity to propose their own research projects in either basic research or technical areas. Topics of particular interest in the basic research area include the studies of genes involved in stress and pathogen responses, nitrogen metabolism and membrane transport. In the technical area, topics include the isolation of Arabidopsis genes by chromosome walking, T-DNA or transposon gene-tagging.

Individuals with plant molecular biology training or experience in Arabidopsis genetics, cell biology or tissue culture are encouraged to apply.

You will find that CIBA-GEIGY offers exceptional career support and advancement opportunities, as well as a competitive salary and generous company-paid benefits. Please forward your resume, including three letters of professional reference, in confidence, to: **Dr. Mary-Dell Chilton, CIBA-GEIGY Corporation, Agricultural Division, P.O. Box 12257, Research Triangle Park, NC 27717.** We Are An Equal Opportunity Employer M/F/H/V.

Science Serving Mankind

CIBA-GEIGY

Vaccine Immunologist

ImmuLogic is a growing company with laboratories in Cambridge, Massachusetts and Palo Alto, California. We are dedicated to the creation of novel therapeutic and diagnostic products which modulate and monitor the human immune system. We employ state-of-the-art techniques and proprietary knowledge in immunology, biochemistry and molecular biology to develop products in the vaccine, allergy and autoimmune disease areas.

We are presently seeking a vaccine immunologist to add to the research staff in our Cambridge headquarters. This individual will play a key role in the development of vaccines for infectious diseases and conduct independent and collaborative research studies of *in vivo* and *in vitro* models of the immune response. Extensive experience in immunology with a background in animal models of antibody production, vaccine development, monoclonal antibody technology and cytotoxic T cell activation is desired. A Ph.D. with postdoctoral experience is required.

ImmuLogic provides an outstanding working environment and modern laboratory facilities. We have a first rate support network of academic advisors and collaborators, an active postdoctoral program, and we support and encourage the publication of important research findings. ImmuLogic offers competitive salary and benefits as well as equity participation through an incentive stock option program.

Please send curriculum vitae and list of publications to:
ImmuLogic Pharmaceutical Corporation
One Kendall Square, Building 600
Cambridge, MA 02139
Attn: Human Resources Department

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IMMULOGIC
Pharmaceutical Corporation

POSTDOCTORAL POSITION

Retinoid Molecular & Developmental Biology

Hoffmann-La Roche, an international leader in pharmaceutical and medical research and development, is seeking a Postdoctoral Fellow to study the molecular mechanisms underlying retinoid-induced alterations in mammalian embryonic development.

The successful candidate will apply recombinant DNA technology to isolate and characterize developmentally-important, retinoid-responsive genes in mouse embryos, and will participate in ongoing research projects investigating the role of the nuclear retinoid-receptors in the process of cell differentiation. A background in molecular biology is required; experience in developmental biology is desirable.

For immediate consideration, please send your curriculum vitae including a list of publications, and the names of three references, to: **Dr. Joseph F. Grippo, Roche Research Center, Hoffmann-La Roche Inc., Nutley, New Jersey 07110.** We are an equal opportunity employer.



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**UNIVERSITY OF CALIFORNIA
DAVIS
DIRECTOR
of the
INSTITUTE FOR ENVIRONMENTAL
HEALTH RESEARCH**

Applications are being sought for the position of Director of the Institute for Environmental Health Research. This organized research unit, one of several on campus, will have the responsibility for the development and coordination of campuswide programs in toxicology and related areas. The Director will hold a joint administrative and academic 11 month appointment in an appropriate department as a tenured faculty member. The Director reports directly to the Vice Chancellor for Research.

Applicants should be nationally and internationally recognized for their scholarship in toxicology or closely related area, should have demonstrated ability to secure funding for research development, and an ability to provide strong leadership. The incumbent will be expected to deal effectively with diverse groups including faculty, students, administrators, industry and government. Commitment to the affirmative action goals of the campus is essential.

In addition to the development of a strong research and academic program in the Director's area of expertise, the incumbent will be responsible for strategic planning and further development of campuswide programs in toxicology, for the administration of facilities of the Institute (approximately 40,000 sq. ft.) and for the enhancement of the campus' numerous programs in toxicology.

Letters of application are requested as soon as possible and preferably by 1 October 1989. A curriculum vitae and names and addresses of three references should be submitted with the application. Requests for confidentiality will be honored. The position will remain open until filled. Applications should be submitted to:

**ROBERT D. GREY, DEAN
DIVISION OF BIOLOGICAL SCIENCES
376 MRK HALL
UNIVERSITY OF CALIFORNIA
DAVIS, CA 95616
(916) 752-6764
(FAX) (916) 752-2604**

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Equal/Opportunity Employer.*

PEPTIDE CHEMISTS

MAGAININ SCIENCES INC. is a rapidly developing Pharmaceutical company. We are seeking scientists at all levels to expand our drug research and development efforts in one of our core technologies:

PEPTIDE CHEMISTRY

Opportunities are at the B.S., M.S., postdoctoral training and Ph.D. staff levels. Candidates should have interest in drug discovery and host defense peptides, good communication skills and training and research experience in:

- (•) structure activity studies
- (•) isolation, characterizations and synthesis of peptides.

Applicants should submit a curriculum vitae, description of research interests and salary requirements to: **Dr. W. Lee Maloy, Director of Peptide Chemistry, Magainin Sciences Inc., 550 Pinetown Road, Fort Washington, PA 19034.**

Magainin Sciences Inc. is located in new state-of-the-art facilities in suburban Philadelphia. We offer excellent salaries, benefits and the opportunity to change the future of therapeutics.



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National Center for Biotechnology Information

National Library of Medicine
National Institutes of Health
Public Health Service

Postdoctoral Fellow & Senior Scientist Positions

The National Center for Biotechnology Information was recently established by Public Law 100-607 with responsibility to:

- Create automated systems for knowledge about molecular biology, biochemistry, and genetics;
- Perform basic research into advanced methods of analyzing and interpreting molecular biology information;
- Enable biotechnology researchers and medical care personnel to use the systems and methods developed; and
- Coordinate efforts to gather biotechnology information worldwide.

Researchers studying biosequence analysis, protein structure & function, and molecular evolution, as well as scientists with experience in database technology, software development, and algorithm design will be considered.

Staff Fellow and Senior Scientist positions are available for U.S. Citizens, Fogarty Visiting Fellow, Associate & Scientist positions for foreign nationals.

Salary ranges from \$20,000 - \$74,303.

CV and names of 3 references should be sent to:

Dr. David J. Lipman, M.D.
Director, NCBI
National Library of Medicine, NIH
Building 38A, 8N-803
8600 Rockville Pike
Bethesda, MD 20894



NIH IS AN EQUAL OPPORTUNITY EMPLOYER



ICRISAT

needs a

Plant Pathologist

at Lilongwe, Malawi

The International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) seeks applications for the post of Plant Pathologist to join the SADCC/ICRISAT Regional Groundnut Improvement Program which is based at the Chitedze Agricultural Research Station, 14 km from Lilongwe, Malawi. The Pathologist will be responsible for taking over an on-going research program at the research station and organizing regional trials, in cooperation with the breeder, and supporting National Agricultural Research Systems to carry out their own research on fungal and viral diseases. The Pathologist will work with other members of the program in Malawi, currently one breeder, but soon to expand, as well as members of the Legumes Program at ICRISAT Center, Hyderabad, India, and at the ICRISAT Sahelian Center in Niger. There are purpose-built laboratory, glasshouse and office facilities at Chitedze, and field facilities are made available within the Chitedze Agricultural Research Station.

Essential Qualifications. A PhD in plant pathology with several years' experience in the field of host-plant resistance and a record of scientific achievement, particularly with legumes and including both mycology and virology. Ability to work with national and international scientists, a willingness to travel frequently in Southern Africa, and good command of English. Working knowledge of Portuguese or Spanish an advantage.

The position is at principal staff level. Salary offered according to qualifications and experience; first year probationary. ICRISAT provides an attractive package of benefits, including leave travel, educational and housing assistance, and medical and other benefits. To respond to changing research needs the appointee could be transferred later to other ICRISAT locations.

Lilongwe is a modern capital city, with good connections by air, and a pleasant climate. There is a wide range of services available, including an international school.

Send resume and names of three referees within 30 days of the date of the advertisement to: Director General, ICRISAT, Patancheru, A.P. 502 324, India.

BIOLOGY RESEARCH SCIENTISTS Drug Discovery

Fisons Pharmaceuticals, an international pharmaceutical research and development organization, announces 2 openings for Senior Research Scientists in the Biology Department at its U.S. research facility in Rochester, NY. Both positions offer challenging opportunities for highly motivated scientists wishing to join experienced multidisciplinary research teams dedicated to the discovery of innovative drugs.

Biochemical Pharmacologist

The successful candidate for this position will develop in vitro isolated tissue systems to characterize drug actions on receptor-effector coupling mechanisms. Primary responsibility includes evaluation of drugs potentially useful to treat neurological diseases. Qualified applicants must have a Ph.D. degree in Pharmacology or Biochemistry with at least 2 years of post-doctoral training and experience using in vitro tissue assays.

Neurocardiologist/Behavioralist

Specific responsibilities include development of innovative procedures to evaluate drug effects on animal behavior and performance, as well as supervision of cardiovascular and neurological assessments of new drug candidates. The successful candidate will also contribute to interdisciplinary research into stroke and epilepsy. Competitive candidates will have a Ph.D. degree in Physiology, Pharmacology or Neuroscience and at least 5-10 years of relevant experience, as well as a record of research excellence. Other essential attributes include strong communication skills, supervisory expertise, and an ability to coordinate and expedite research documentation.

Please forward resume, in confidence, with salary history to: Suzanne Nietzsche, Fisons Pharmaceuticals, P.O. Box 1710, Rochester, NY 14603.

FISONS

Fisons Pharmaceutical Corporation

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Fisons is a smoking restricted company.

Research Scientist

Cystic Fibrosis Research Development Program

An independent staff position is available for an individual currently working in the area of protein structure or possibly a related area of molecular science. The position provides the opportunity to interact with members of a Research group working on a major children's disease in which significant advances are currently being made at the molecular level.

New lab space and start up assistance are available. The HSC Research Institute is affiliated with the University of Toronto and academic cross appointments are possible. Our aim is to fill this position by the beginning of 1990. Please submit a resume and 3 letters of reference, quoting file #D071, to: Dr. Jack Riordan, Director, Cystic Fibrosis Research Development Program, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario, Canada M5G 1X8



THE HOSPITAL
FOR SICK CHILDREN

Research Scientist Bioseparation Applications

At Millipore, we've brought the world valuable innovations for use in scientific and medical applications. Our continued efforts are sure to produce even more breakthroughs in the field of analysis and purification.

In this position, you will conduct product characterizations, competitive evaluation and application development studies on membrane-based chromatography products. Your specific responsibilities will include preparing experimental plans, performing laboratory analysis and experiments as well as compiling, analyzing and reporting experimental results. This position involves frequent contact with customers and Marketing in developing product applications.

Successful candidates will possess a PhD in Biochemistry, or closely related discipline and 2 or more years' relevant experience including a high-level of expertise in HPLC and FPLC equipment, affinity and ion exchange chromatography, protein electrophoresis, quantitative protein assays and immunoassays. Excellent communications, organizational and written skills are necessary as is the ability to work independently.

Interested candidates should forward a resume, including salary requirements, to: Employment Department, Millipore Corporation, 80 Ashby Road, Bedford, MA 01730. An equal opportunity employer.

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1515 BROADWAY
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The Science Of Success

RepliGen Corporation is a leader in the application of Biotechnology to the health care market. We are currently developing an AIDS vaccine, AIDS therapeutic and diagnostic products, cancer therapies, and novel bioprocess reagents. We take pride in the high caliber of our scientific staff and our collaborations with major research institutions and corporate partners in Europe and the United States. The expansion of our effort has created the following opportunity:

PROTEIN CHEMISTRY

This scientist will participate in mapping the neutralizing domains of HIV by designing peptides and using recombinant HIV proteins. He/she will be studying structure-function aspects of HIV proteins. This position requires a Ph.D. with 0-4 years' postdoctoral experience. Knowledge of protein purification is a plus.

RepliGen Corporation offers a competitive salary, excellent benefits, and equity participation. Please submit a cover letter, resume, and references to: Barbara Fleming, Recruiter, RepliGen Corporation, One Kendall Square, Bldg. 700, Cambridge, MA 02139. An Equal Opportunity Employer.

RepliGen

KRUG INTERNATIONAL Technology Life Sciences Division

KRUG International, the support contractor for the NASA Biomedical Laboratories at the Johnson Space Center, seeks outstanding applicants for the following positions to perform and/or direct space-flight-related research.

SUPERVISOR, BIOTECHNOLOGY LABORATORIES

Ph.D. in cell biology with an engineering background or Ph.D. in biomedical engineering with extensive knowledge of cell biology required.

ENDOCRINOLOGIST/PHYSIOLOGIST

Ph.D. with research experience in fluid and electrolytes required. Research will focus on hormonal and/or biochemical mechanisms of acute and chronic volume changes, correlating these changes with physiological parameters.

PHARMACOKINETICS RESEARCH SCIENTIST

Ph.D. or M.S. with significant experience in pharmaceuticals or related field. Experience in pharmacokinetic data analysis required; familiarity with statistical/mathematical methods of data evaluation helpful.

CELL BIOLOGIST

Ph.D. in cell biology with extensive knowledge of cell biology, familiarity with state-of-the-art tissue culture techniques, and knowledge of cell physiology and/or molecular biology required.

ANALYTICAL CHEMIST

Ph.D. in analytical chemistry and at least 2 years experience with GC/MS (preferably analysis of organics in air) required. Familiarity with LC/MS desirable.

All applicants must possess excellent written and verbal communication skills. Please submit letter of application, curriculum vitae, 3 letters of recommendation and statement of salary history to: Ms. June Richmond, Human Resources Manager, KRUG International, Technology Life Sciences Division, P.O. Box 58827, Houston, TX 77258. Closing date for applications is August 11th, 1989.

KRUG International is an Equal Opportunity Employer M/F/H/V. Employment eligibility verification required.

POSITIONS OPEN

FACULTY POSITIONS WASHINGTON UNIVERSITY SCHOOL OF MEDICINE MOLECULAR BIOLOGY AND MOLECULAR IMMUNOLOGY

Full-time tenure-track appointments at the rank of assistant professor are available at the Washington University School of Medicine. Faculty with experience in molecular biology and molecular immunology are sought. Applicants should have a Ph.D. and/or M.D./Ph.D. with a minimum of 2 years of postdoctoral experience. Molecular biology candidates should have a research interest in either cell adhesion, cell migration, matrix formation, growth factors, or visual transduction. Molecular immunology candidates should have an interest in either cytokines/regulatory molecules, cell traffic, antigen presentation, microbes, tumors or autoimmunity. Applications should include the following: (i) curriculum vitae, (ii) bibliography and selected reprints or manuscripts, (iii) statement of research objectives and approaches proposed, and (iv) names and addresses of at least three people who can provide recommendations. Submit all materials to: **Dr. H. J. Kaplan, Chairman, Department of Ophthalmology and Visual Sciences, Washington University School of Medicine, 660 South Euclid Avenue—Box 8096, St. Louis, MO 63110.** The Washington University School of Medicine is an Equal Opportunity/Affirmative Action Employer.

FORENSIC TOXICOLOGIST

The Department of Laboratory Medicine is seeking applicants for the position of state toxicologist with an appointment as clinical assistant professor. Doctoral degree, 5 years of experience in forensic toxicology, certified or eligible for certification as DABFT. Will direct the State Toxicology Laboratory and Breath Alcohol Testing Program. Send curriculum vitae and three references by 15 August 1989 to: **Vidmantas A. Raisys, Ph.D., Department of Laboratory Medicine SB-10, University of Washington, Seattle, WA 98195.** The University is an Affirmative Action/Equal Opportunity Employer.

THREE JUNIOR FACULTY POSITIONS CELLULAR AND MOLECULAR PHYSIOLOGY

Applications are solicited for three tenured-track positions at the rank of assistant or associate professor (term appointments) in the Department of Cellular and Molecular Physiology, Yale University School of Medicine. Candidates must hold an M.D., Ph.D., or equivalent degree with experience and interest in cellular and/or molecular physiology. Opportunities are available for both collaborative and independent research for graduate and medical student teaching.

Qualified women and minority group members are encouraged to apply. Complete curriculum vitae including publications and the names and addresses of three references should be sent to:

Walter F. Boron, M.D., Ph.D.
Chairman, Department of Cellular and
Molecular Physiology
333 Cedar Street
P. O. Box 3333
New Haven, CT 06510

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

MOLECULAR BACTERIOLOGY DEPARTMENT OF MICROBIOLOGY UNIVERSITY OF VIRGINIA

Applications are invited for a tenure or tenure-track position in prokaryotic molecular biology at the **ASSOCIATE OR FULL PROFESSOR** level. Position will include a joint appointment and a key role in the Molecular Biology Institute. Candidates will be expected to maintain an active, independent research program, and to engage in limited teaching of graduate and medical students. Available are well-equipped laboratory and support facilities, and well-funded graduate and postdoctoral training programs. Applicants should submit curriculum vitae, a statement of current and planned research, and the names of three referees to: **Dr. Robert R. Wagner, Box 441, University of Virginia School of Medicine, Charlottesville, VA 22908.**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

INSTRUCTOR. M.D. or Ph.D. with experience in long-term bone marrow culture, colony assays, molecular biology and retroviral vectors to participate in project involving the development of gene therapy approaches to autologous bone marrow transplantation. Curriculum vitae to: **Karel A. Dicke, M.D., Chief, Oncology/Hematology, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, NE 68105.** An Affirmative Action/Equal Opportunity Employer.

INSTRUCTOR. M.D. or Ph.D. with experience in pharmacokinetics and molecular biology of oncogenes is needed to participate in project involving the therapeutic potential and anti-sense oligonucleotides for cancer using both in vitro and animal model systems. Curriculum vitae to: **Karel A. Dicke, M.D., Chief, Oncology/Hematology, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, NE 68105.** An Affirmative Action/Equal Opportunity Employer.

MEDICAL IMAGING POSITION. Stanford University. The Department of Electrical Engineering of Stanford University invites applications for a tenure-track faculty position in the areas of medical imaging and image processing. The appointment will be in the Department of Electrical Engineering, at the Junior Level. The candidate will be expected to perform research, teach a broad spectrum of courses, and develop courses in his/her area of expertise. Candidates with an expertise in magnetic resonance imaging, with an emphasis on novel image acquisition and processing techniques, are of special interest. A broad background in image science will be a positive factor, as will also a strong background in stochastic signal processing. A previous record of innovative research and publications in these areas is desirable. *Stanford University is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and minority groups.* Please send your curriculum vitae, publications list, and the names of at least three professional references to: **Professor Albert Macovski, Chair, Search Committee, Durand Building Room 120, Stanford University, Stanford, CA 94305.**

MOLECULAR BIOLOGIST POSTDOCTORAL OR JUNIOR FACULTY LEVEL

Dual appointment at McLean Hospital/Harvard Medical School within a multidisciplinary laboratory group. Research involves the expression and regulation of proteolytic enzymes in neural cells, the role of proteolysis in cytoskeleton-membrane interactions, and the relationship of these processes to Alzheimer's disease. Candidate will have the opportunity to interface with a new molecular biology program currently being established at this center.

Demonstrated past experience in molecular cloning and related molecular genetic techniques is required, though previous background in neuroscience is not essential.

Send curriculum vitae and letters of references to: **Ralph A. Nixon, Ph.D., M.D., Mailman Research Center, McLean Hospital, 115 Mill Street, Belmont, MA 02178.**

NMR SCIENTISTS—The Department of Diagnostic Radiology at Yale University School of Medicine is seeking two suitably qualified scientists to undertake research in the area of NMR imaging and spectroscopy. The successful candidates will be expected to participate in, and further develop, the existing research programs in NMR imaging and spectroscopy, particularly in the areas of fast imaging and quantitation of blood flow. One appointment will be at the rank of assistant professor, and candidates should have a Ph.D. in physics, engineering, or similar and relevant postdoctoral experience, and be familiar with NMR applications in biomedicine. The second appointment will be a postdoctoral research fellowship for 2 years. A Ph.D. in physics, chemistry, or engineering is required. Applications for either position, including curriculum vitae and the names of two referees, or inquiries, should be sent to: **Dr. J. C. Gore, Director of NMR Research, Department of Diagnostic Radiology, Yale University School of Medicine, 333 Cedar Street, New Haven, CT 06510.** Yale University is an Equal Opportunity/Affirmative Action Employer; applications from women and minority groups are encouraged. Application deadline is 21 September 1989.

POSITIONS OPEN

MOLECULAR IMMUNOLOGIST

A tenure-accruing faculty position at the assistant/associate professor level is available for an individual holding a Ph.D. and/or M.D. degree with established credentials and research interests in the area of molecular immunology. The successful applicant is expected to develop an independent research program supported by extramural funding, and to participate in graduate and postdoctoral training programs. Rank and salary will be competitive and commensurate with qualifications and experience. Anticipated starting date will be 1 January 1990. Please send curriculum vitae, a statement of research interests and plans, and three letters of references by 1 November 1989 to: **Edward K. Wakeland, Ph.D., Division of Basic Sciences, Department of Pathology and Laboratory Medicine, University of Florida, Box J 275 JHMC, Gainesville, FL 32610.**

An Affirmative Action/Equal Opportunity Employer.

MOLECULAR PHARMACOLOGY. Mayo Medical School invites applications for a tenure-track **FACULTY POSITION** in the Department of Pharmacology, available 1 January 1990. Candidate should have primary interests in pharmacology and be pursuing these interests with the methods of molecular biology. Mayo will provide generous space and start-up funds in addition to an attractive package of salary and benefits. Academic rank will be determined by qualifications; established investigators are also encouraged to apply. Submit curriculum vitae with names and addresses of three or more referees to: **Stephen Brimijoin, Ph.D., Department of Pharmacology, Mayo Medical School, Rochester, MN 55905.** An Equal Opportunity/Affirmative Action Employer.

The Department of Chemistry at the University of Virginia is seeking an outstanding individual for a position in **ORGANIC/BIOORGANIC CHEMISTRY**. This appointment is expected to be made at the assistant professor level (tenure-track), though exceptional senior applications will be considered. Candidates with a commitment to excellence in research and teaching are encouraged to send curriculum vitae containing a list of publications, a concise outline of research plans, and arrange to have three letters of recommendations sent to: **Robert E. Ireland, Chairman, Department of Chemistry, University of Virginia, McCormick Road, Charlottesville, VA 22901.** The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW

Immunology—Molecular Neurobiology HHMI—San Francisco—University of California, San Francisco (UCSF). A position is available immediately in a laboratory studying tachykinin receptor function, gene structure, and regulation. Applicants should have an M.D./Ph.D. or Ph.D. Experience with recombinant DNA techniques is essential. Send curriculum vitae, statement of interests, and three letters of reference to: **Dr. Donald G. Payan, U-426, University of California, San Francisco, 3rd and Parnassus, San Francisco, CA 94143.**

POSTDOCTORAL FELLOWSHIPS

Postdoctoral fellowships are available immediately in the Biological Response Modifier Division of the Hipple Cancer Research Center under the guidance of **Dr. Sohan L. Gupta**. Candidates should have a Ph.D. with background and experience in biochemistry, molecular biology, or related areas. Studies will include interferon receptors and interferon-mediated regulation of cellular gene expression and the underlying biochemical mechanisms. A working experience with nucleic acids and recombinant DNA techniques is desirable.

The Hipple Cancer Research Center's Postdoctoral Fellowship Program offers outstanding opportunities for young scientists to gain significant training in the Cancer Center's innovative research environment. We provide competitive compensation and liberal benefits. Interested candidates should send curriculum vitae, statement of research interests, and the names of three references to: **Search Committee, Hipple Cancer Research Center, 4100 South Kettering Boulevard, Dayton, OH 45439-2092.**

The Hipple Cancer Research Center is an Equal Opportunity/Affirmative Action Employer providing a smoke-free environment.

BIOCHEMIST/ ENZYMOLOGIST

Careers In A World Class R&D Community.

Unilever Research U.S., Inc., the American research facility of Unilever, a leading worldwide consumer products company, has an immediate opening for a Biochemist in our Enzyme Technology Group located in Edgewater, New Jersey.

The selected candidate will contribute actively to our R&D programs directed toward the role of enzymes in household products. Qualified applicants should have a Ph.D. in Biochemistry or a related area of chemistry with experience in the analysis/characterization of enzymes and modern methods of protein purification. Additional experience in either protein stabilization or molecular modeling/x-ray crystallography would be beneficial.

As a member of the Unilever team, you will work with state-of-the-art instrumentation in an exciting, growth-oriented organization, and will also have the opportunity to interact with scientists associated with Unilever's European Research Laboratories. If you wish to be considered for this position, please send your resume to:

Mr. Jim Conti, Manager, Employee Relations.



Unilever Research U.S., Inc.

45 River Road, Edgewater, New Jersey 07020

An Equal Opportunity Employer M/F

DIRECTOR, IMMUNOASSAY RESEARCH

Put your immunoassay research expertise
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IGEN, Inc., a dynamic and innovative leader in the field of biotechnology, continues to grow while developing new products from basic research. We currently seek a Director, Immunoassay Research to lead our progressive team of scientists.

Responsibilities include directing a multidisciplinary team of organic chemists, electrochemists and immunochemists in researching new, proprietary chemistries and formats using IGEN's Electrochemiluminescent technology.

Qualified candidates will have a Ph.D. in Immunochemistry or a related field and greater than five years experience beyond post-doctoral Immunoassay research on non-isotopic technology. Experience with chemiluminescence a plus.

IGEN, Inc. offers a challenging work environment which fosters career growth and development, an excellent salary and a full benefits package. Send resume with salary history, in confidence to: IGEN, Inc., 1530 East Jefferson Street, Rockville, MD 20852, Attn: Human Resources Dept.



IGEN Inc.

Equal Opportunity Employer

RESEARCH SCIENTISTS AND ASSOCIATES PHARMACOLOGY

Amgen is an innovative leader in the application of biotechnology for the discovery and development of human therapeutic products. Our continued progress in a number of research programs has resulted in a need for creative scientists at the Ph.D. and BS/MS levels in our Pharmacology Group.

RESEARCH SCIENTISTS

Dept. #410

Candidates for Research Scientists positions must have a Ph.D. in Pharmacology or Biopharmaceutics and a minimum of two years' post-doctoral experience in the absorption, distribution, metabolism and excretion of drugs (preferably polypeptides and proteins). Previous experience in computerized pharmacokinetics modeling programs and knowledge of protein and peptide separation techniques are essential. Previous industrial experience is highly desirable.

RESEARCH ASSOCIATES

Dept. #411

Candidates for Research Associates positions should have a BS or MS in Pharmacology or a related discipline and *in vivo* research experience including small animal surgery and blood and tissue sampling. Experience in radiotracer and immunoassay techniques, statistical analysis of data and familiarity with the use of computers in recording and analyzing data are desirable.

Amgen offers an excellent compensation and benefits package as well as the unique opportunity to contribute to stimulating and challenging research programs on the leading edge of biotechnology. If you have the necessary qualifications and would like to be a part of a company that places a high priority on its human resources, please send a C.V., in confidence, to:

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AMGEN

POSITIONS OPEN

PEDIATRIC HEMATOLOGY-ONCOLOGY FELLOWSHIP available. Involves research in regulation of cell growth and mechanisms of signal transduction in normal and neoplastic tissues. Requires 2 years of molecular biology research experience in growth factors and oncogenes, board certification in pediatrics, and board eligibility in pediatric hematology-oncology. *If not U.S. citizen, indicate visa status.* Salary commensurate to experience. Send résumé to: **Dr. Henry Friedman, Box 2916, Duke University Medical Center, Durham, NC 27710.**

PHARMACOLOGIST, GS-13 SALARY: \$41,121

U.S. government organization seeks individual to manage pharmaceutical products through the development process to include ultimately new drug application approval. Activities to be coordinated include: Formulation, clinical studies, toxicology, regulatory affairs, packaging, producibility, quality control, user testing, and reliability. Incumbent will coordinate efforts from both in-house laboratories and contractors. Experience in pharmaceutical product and/or regulatory affairs helpful. Requires travel within and outside the continental United States. Contact: **Patricia Shafer, Directorate of Personnel, Fort Detrick, Frederick, MD 21701-5000. Telephone: 301-663-2007.**

Equal Opportunity Employer.

POSTDOCTORAL FELLOW. Position open immediately in the Department of Biology, Princeton University, to study the immunobiology and transformed phenotype of oncogene-induced macrophage tumor cell lines. A Ph.D. in immunology and experience with tissue culture techniques required. An individual is sought who is trained in classical immunology and is motivated to learn modern molecular genetics techniques. Send curriculum vitae, a brief statement of career goals, and three references to: **Dr. Michael Cole, Department of Biology, Lewis Thomas Laboratory, Princeton University, Princeton, NJ 08544.**

POSTDOCTORAL FELLOW/ RESEARCH ASSOCIATE— BIOMECHANICS AND NEURAL CONTROL OF MOVEMENT, SENSORY MOTOR PERFORMANCE PROGRAM, REHABILITATION INSTITUTE OF CHICAGO

A position is available for a postdoctoral fellow to study biomechanics and neural control of movement in normal and disordered human subjects. Qualifications include a doctoral degree in either biomedical engineering, physiology, neuroscience, or other relevant disciplines. Salary will be in accordance with experience and qualifications. The Sensory Motor Performance Program is a joint venture of Northwestern University and the Rehabilitation Institute of Chicago, devoted to the study of movement and its disturbances in neurological disorders. Please send curriculum vitae, statement of research interest, and names, addresses, and telephone numbers of three references to: **Dr. William Z. Rymer, Director of Sensory Motor Performance Program, Rehabilitation Institute of Chicago, 345 East Superior Street, Room 1406, Chicago, IL 60611. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available immediately for research on DNA adducts formed by chemical carcinogens. Experience in DNA adduct research or analytical techniques desirable. A recent Ph.D. in biochemistry, chemistry, toxicology, or a related field required. Competitive stipend. Send inquiries and curriculum vitae to: **Employment Office, Chemical Industry Institute of Toxicology, P. O. Box 12137, Research Triangle Park, NC 27709. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION available to characterize ecdonucleotidases on vascular cells. Experience in kinetics, purification of membrane-associated proteins, immunologic characterization of proteins, protein-protein interactions and high-performance liquid chromatography of nucleotides and nucleosides desirable. Salary: \$20,000 to \$22,000 depending on experience. Send résumé and names of three references to: **Dr. Linda L. Slakey, Department of Biochemistry, University of Massachusetts, Amherst, MA 01003. Deadline for applications is 15 August 1989. Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

U.S. DEPARTMENT OF AGRICULTURE AGRICULTURAL RESEARCH SERVICE

POSTDOCTORAL POSITION available immediately to study neuroendocrine and biochemical mechanisms involved in copper-carbohydrate interaction at CNS, pituitary-hypothalamus-adrenal axis, cardiac and pancreas level. Knowledge of neuroendocrinology, physiology, biochemistry and nutrition and skill in receptor methodology desirable. Salary \$28,852 to \$34,580. Send application marked 9E009, curriculum vitae, and letters of references to: **Dr. Sam Bhatena, CNL, Building 307, Room 311, Beltsville, MD 20705. For details, call: 301-344-2422. An Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately to study cell cycle control [see PNAS 85, 2101 (1988)] and cellular aging [see J. Bact. 171, 37 (1989)] in budding yeast. Current research includes the cloning (J. Biol. Chem., in press) and characterization of genes whose expression is age-related and the isolation of mutants with an altered life span (reproductive capacity). This is a fully-funded position for someone who wishes to broaden their expertise in molecular biology in an excellent research atmosphere. The Medical Center is located close to the historic French Quarter, and the New Orleans lifestyle is pleasant and affordable. Send a biographical sketch, including a bibliography, a brief summary of past research, and the names, addresses, and telephone numbers of three references to: **Dr. S. Michal Jazwinski, Department of Biochemistry and Molecular Biology, Louisiana State University Medical Center (LSUMC), 1901 Perdido Street, New Orleans, LA 70112. LSUMC is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE POPULATION ECOLOGY/ CONSERVATION BIOLOGY

Two-year postdoctoral position available to conduct research on the population dynamics of spotted owls. The investigator will be responsible for developing models to simulate the species' response to environmental and demographic uncertainty as well as the significance of spatial structure to long-term population persistence. The ideal candidate will have demonstrated experience in population modeling and biomathematics, and have an interest in collaborative research involving diverse investigators. Investigator will be assigned to the Pacific Southwest Forest and Range Experiment Station, Arcata, California. Starting salary is \$28,852 and applicants must be available prior to 1 October 1989. Applications will be accepted until 15 September 1989. *USDA Forest Service is an Equal Opportunity Employer. Women and minorities are encouraged to apply.* Send résumé and the names of three references to: **Dr. Barry R. Noon, Redwood Sciences Laboratory, 1700 Bayview Drive, Arcata, CA 95521.**

Postdoctoral and graduate stipends available 1 January 1990, in the **Department of Wildlife and Fisheries Sciences, Texas A&M University, College Station, TX 77843.** Contact individual listed for more details: 409-845-5777.

POSTDOCTORAL RESEARCH ASSISTANT

• Population genetics and molecular systematics of wildlife species—**J. W. Bickham and R. L. Honeycutt.**

GRADUATE RESEARCH ASSISTANTSHIPS

- M.S./Ph.D.—Molecular evolution and systematics—**R. L. Honeycutt.**
- M.S./Ph.D. (three)—Fish physiology, especially in context of aquaculture—**W. H. Neill and L. V. DiMichele.**
- M.S./Ph.D. (two)—Foraging dynamics and nutritional ecology of wild ungulates—**K. L. Risenhoo-ver.**
- Ph.D.—Simulation modeling of animal/habitat interactions—LISP/Smalltalk/Modula-2/GIS—**L. J. Folse.**
- M.S./Ph.D.—Ecology of biological invasions: Effect of imported red fire ants on native vertebrates in Texas—**W. E. Grant.**
- M.S./Ph.D.—Human dimensions in wildlife management: Integrated management of natural resources for recreational activity on Texas private land—**C. E. Adams.**
- M.S./Ph.D. (two)—Human dimensions in fisheries management: Recreational market for private fisheries in Texas and integrated natural resource use in Galveston Bay—**R. B. Ditton.**

POSITIONS OPEN

POSTDOCTORAL POSITION available to study the kinetics and mechanism of protein folding including the use of site-directed mutagenesis on any one of several different proteins, protein fragments, and peptides. Send curriculum vitae and names of three references to: **Dr. Carl Frieden, Washington University School of Medicine, Department of Biochemistry and Molecular Biophysics, 660 South Euclid, Box 8094, St. Louis, MO 63110. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION MOLECULAR BIOLOGY

Challenging postdoctoral position available immediately to study the molecular biology and expression of genes involved in yeast carbohydrate metabolism. A strong background in molecular biology is desirable. Projects involve recombinant DNA, PFGE, PCR, PAGE, Western blotting, hybridizations and mutagenesis. Laboratory is well equipped and well funded. Send curriculum vitae with names, addresses, and telephone numbers of three references to: **Dr. Julius Marmur, Albert Einstein College of Medicine, Department of Biochemistry, 1300 Morris Park Avenue, Bronx, NY 10461. Telephone: 212-430-3024. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITIONS

We are seeking scientists with background in protein chemistry or cell biology to join a research team studying the structures and biological functions of diverse proteins that undergo novel post-translational lipid modifications in cultured mammalian cells.

The Weis Center for Research offers competitive salaries and a comprehensive benefits program. The Research Center is a modern, completely equipped basic science facility affiliated with a major medical center. It is located in an attractive semi-rural area within driving distance from New York, Philadelphia, and Washington, D.C. Interested candidates should send curriculum vitae and names of three references to: **Dr. William A. Maltese, Weis Center for Research, Geisinger Clinic, 26-16 North Academy Avenue, Danville, PA 17822. Equal Opportunity Employer M/F/H/V.**

POSTDOCTORAL POSITIONS IN MAMMALIAN MOLECULAR GENETICS

Three projects are being pursued: (i) Transmission ratio distortion of mouse haplotypes. (ii) Regulation of haploid-expressed genes. (iii) Meiotic gene conversion. The Case Western Reserve University Department of Genetics is the home of the Markey Center for Developmental Genetics, featuring remodeled laboratories and a staffed transgenic mouse facility. Send curriculum vitae and letter of interest to: **Dr. John Schimenti, Case Western Reserve University, School of Medicine, 2119 Abington Road, Cleveland, OH 44106.**

POSTDOCTORAL TRAINING IN EPITHELIAL BIOLOGY

Multidisciplinary program studying mechanisms and regulation of ion transport, secretion, and inflammatory damage using cell lines of primary culture of human epithelia, electrophysiology, quantitative fluorescent microscopy, and molecular biology. Competitive stipends available up to \$30,000 per year. Send résumé to: **Ulrich Hopfer, M.D., Ph.D., Department of Physiology and Biophysics, Case Western Reserve University, Cleveland, OH 44106. Case Western Reserve University is an Equal Opportunity Employer/Affirmative Action Employer.**

REPRODUCTIVE SCIENTIST

The Department of Obstetrics and Gynecology is seeking an experienced Ph.D. investigator in the area of reproduction to join the faculty as an assistant/associate professor in a tenure-earning track. Send curriculum vitae with bibliography by 30 November 1989 to:

**William N. Spellacy, M.D.
Professor and Chairman
Department of Obstetrics and Gynecology
University of South Florida, College of Medicine
4 Columbia Drive, Suite 514
Tampa, FL 33606**

*The University is an Affirmative Action/
Equal Opportunity Employer*

DNA Synthesis Chemist

The Chemical Sciences Department of Monsanto's Central Research Laboratories has an immediate opening for a Biochemist or Chemist at the B.S./M.S. level.

The position involves synthesis of oligonucleotides by solid-phase methods and purification of the resulting products by HPLC. Experience with HPLC methods-development and troubleshooting is essential. Experience in DNA synthesis is preferred, but peptide synthesis would also provide a good background.

The successful candidate will have responsibility for the operation of a Pharmacia Gene Assembler and two Waters HPLC units, one for an ion exchange, the other for reverse phase. The HPLC units are controlled by an IBM personal computer. Large-scale DNA synthesis (10 micromoles) will be common, as will modifications to standard protocols to incorporate unusual DNA bases. DNA prepared must be of the highest purity for further chemical and physical studies.

Qualified applicants should submit resumes and the names of references to: Dr. Jim Bashkin; MONSANTO COMPANY; 800 N. Lindbergh Blvd.; Mail Zone Q3B; St. Louis, MO 63167. Monsanto company is an Equal Opportunity Employer M/F/H/V.

Careers for
people with ideas

Monsanto

Post-Doctorate Experimental Psychologists/ Behavioral Pharmacologists

Two Industrial Post-Doctoral Fellowships for research in drug discovery program in cognition function and anti-psychotics. This will combine behavioral testing and central nervous system pharmacology. This multidisciplinary research program is directed towards identifying drugs to enhance learning and memory processes for Alzheimer's Disease and other types of cognitive deficiencies as well as drugs to treat psychotic behavior. Candidates should have a Ph.D and appropriate behavioral pharmacology or experimental psychology training in learning and memory processes.

Du Pont provides competitive compensation and relocation benefits. Our mid-Atlantic location offers a wide range of academic, cultural, and recreational activities. Interested candidates should send their resumes and references to: Professional Staffing, Employee Relations Dept., Room X-51718, Du Pont Company, Wilmington, DE 19898



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U.S. Citizenship or Permanent Visa Required
and meet other appropriate IRCA requirements



RHÔNE-POULENC AG COMPANY

ENVIRONMENTAL TOXICOLOGIST

Rhone-Poulenc Ag Company, Rhone Poulenc Inc. and Stauffer Chemical Company are the rapidly growing subsidiaries of one of the largest diversified chemical companies in the world. Our corporate Toxicology Department, located at our center at Research Triangle Park, NC is expanding again and has an opening for an Environmental Toxicologist to meet the increasing challenges of our crop protection business, as well as our other business areas.

This entry-level position is available immediately. The successful candidate will assist in establishing and maintaining aquatic and avian toxicology programs for U.S. products, provide technical expertise to Marketing and Registration groups, assist in the design, monitoring and reporting of contracted laboratory and field studies, and assist in the preparation of regulatory-compliance documentation. A Ph.D. in Environmental Toxicology or a related discipline is required with 0-2 years of industrial or post-doctoral experience.

We offer a competitive salary and benefits, attractive location and a chance to join a growing and dynamic organization with opportunities for career and personal growth. Please send resume, including salary requirements to:

Human Resources Department

**RHÔNE-POULENC AG COMPANY
PO Box 12014
Research Triangle Park, NC 27709**

An Equal Opportunity/Affirmative Action Employer

ASSISTANT RESEARCH INVESTIGATOR Radiopharmaceuticals

Squibb Corporation, a Fortune 200 company, is an internationally recognized leader in the research, marketing and manufacturing of innovative pharmaceuticals.

Currently, we have a position available at our New Brunswick, NJ facility for an individual to supervise the acquisition and management of radiopharmaceutical data. You will also supervise two biological technicians and be responsible for laboratory administration.

Our successful candidate will have an MS in Biology and 1 to 3 years experience or a BS in Biology with 3 to 5 years experience. Exposure to small animal surgery, computers and radioisotopes is preferred. Familiarity with computer spread sheets and regulations for bio-

logical and radioactive materials would be a plus.

We offer a competitive compensation package and participation in our comprehensive benefits program. Interested candidates should submit their resume including salary history to: **Squibb Technical Operations, Dept. LH/E04189, P.O. Box 191, New Brunswick, NJ 08903.** An equal opportunity employer.



SQUIBB

POSITIONS OPEN

TWO POSTDOCTORAL POSITIONS PLANT BIOLOGY

Available September 1989 or until filled. Interested applicants could work in one of three areas: (i) patch clamp studies of light-activated proton pump in stomatal guard cells; (ii) gas exchange studies of stomatal regulation in selected agricultural crops; (iii) sensory transduction of the blue light response in guard cell protoplasts. Previous experience in the respective fields preferred. Please send curriculum vitae, letter with research interests, and names of three references to:

Professor Eduardo Zeiger
Department of Biology
University of California, Los Angeles
Los Angeles, CA 90024-1606

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

RESEARCH SPECIALIST

Ph.D. in basic science with emphasis on geriatrics; prefer 3 years of experience in recombinant DNA methodology and mRNA isolation plus experience with in situ hybridization and mammalian cell culture techniques. Responsibilities include investigation of oncogenesis of thyroid carcinoma and other hormone-related cancers. Initial studies will include expression and possible rearrangements of various oncogenes in tumors and tumor cell lines. Research also focusing on biology in aging endocrine glands. Apply to: **Ernest L. Mazzaferri, M.D., Professor and Chairman, Department of Internal Medicine, Ohio State University, 1654 Upham Drive, Columbus, OH 43210.** *Affirmative Action/Equal Opportunity Employer.*

SENIOR RESEARCH ASSOCIATE for university in central Ohio to develop and coordinate laboratory research in isolation, structural elucidation and synthesis of antitumor natural products; supervise staff consisting of postdoctoral and graduate researchers and technicians; design experimental procedures; analyze and evaluate data; author scientific publications and present research papers at scientific meetings. No experience required in the above-described job but applicants will qualify with Ph.D. in medicinal chemistry and 4 years of research experience in medicinal chemistry (at least three of the 4 years in structural determination and stereocontrolled synthesis of antitumor natural products and in operating superconducting NMR (nuclear magnetic resonance) spectrometer; at least one of the 4 years of research experience in medicinal chemistry at the postdoctoral level with bioorganic chemistry emphasis and using radioisotope techniques). Forty hours per week; 8:00 a.m. to 5:00 p.m.; \$30,000 per year. Qualified applicants reply by résumé (no calls) to: **C. Bussard, JO#1197616, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.**

U.S. ARMY CHEMICAL RESEARCH, DEVELOPMENT AND ENGINEERING CENTER (CRDEC) TECHNICAL DIRECTOR SENIOR EXECUTIVE SERVICE SALARY RANGE: \$68,700 to \$80,700

The chemical research, development, and engineering center is seeking a senior-level executive with the demonstrated ability to plan and direct the activities of a complex technical and scientific organization involved in chemical-biological defense, and chemical retaliatory capability programs. As the senior civilian at the CRDEC, the Technical Director exercises technical authority over the execution of center missions and shares responsibility for the planning, direction, integration, and evaluation of command programs with the Deputy Commanding General for Chemical. Demonstrated ability to establish and maintain relationships on national and international levels concerning scientific and engineering problems, state-of-the-art, and management innovations is essential. A Ph.D. or equivalent in the chemistry, physical sciences, biological sciences, or related engineering disciplines is desired.

For further information and application forms please contact: **Mr. Bernard Michel** at 301-671-2734/3114, no later than 11 August 1989.

*An Equal Opportunity Employer
U.S. citizenship required.*

POSITIONS OPEN

PROGRAM DIRECTOR IN BIOLOGY

The Department of Biology at Emory University seeks a person to head a program of new undergraduate initiatives funded by the Howard Hughes Medical Institute, to begin 1 January 1990. The initiatives include new advanced laboratory courses, a summer program for entering minority students interested in biology, and faculty and curriculum development. The candidate should have a Ph.D., a strong background in biology, knowledge of current research and practice in undergraduate science education, and experience in instruction and faculty development. Experience in grant writing would also be helpful. The position is a 12-month appointment for a period of at least 5 years; salary is commensurate with qualifications and experience. Send curriculum vitae, a statement of your interests and experience in teaching and science education, and have three letters of recommendation sent to: **Dr. Gray F. Crouse, Chairman, Department of Biology, Emory University, Atlanta, GA 30322.** Review of applications will begin immediately, and the position will remain open until filled. *Emory is an Equal Opportunity/Affirmative Action Employer.*



SCIENCE ITEM WRITERS

Opportunity for present or former science teachers (undergraduate college experience preferred) to work part-time at home writing questions for a testing program administered nationally by American College Testing (ACT). In addition to a strong background in science, the work requires precise writing to meet exacting standards.

For additional information, write as soon as possible to: **Editorial Manager, Test Development Department (S), ACT National Office, 2201 North Dodge Street, P.O. Box 168, Iowa City, IA 52243.** Please identify areas of specialization—biology (botany, zoology), chemistry (biochemistry, general), physical science (astronomy, earth science, geology, meteorology, mineralogy, oceanography), or physics. Include résumé to indicate formal education and teaching experience.

ACT is an Equal Opportunity/Affirmative Action Employer.

SCIENTISTS—BIOMEDICAL RESEARCH

Several staff scientist positions exist at the U.S. Army Medical Research Institute of Infectious Diseases, Department of the Army. These openings are competitive Federal Civil Service positions and applicants must be U.S. citizens.

\$48,592 through \$55,072 per annum.

CHIEF, DEPARTMENT OF ANTIVIRAL STUDIES: Selectee will administer an intra and extramural research and development program on antiviral drugs against arboviruses and hemorrhagic fever viruses. Program emphasis is on in vitro screening of potentially active compounds, synthesis of chemical analogues, in vivo testing and development of animal models, toxicologic and pharmacokinetic studies, clinical testing in humans (including field trials), and application of molecular virology to drug development. Candidates may have background in virology, biochemistry, or physiology. Experience in drug development is desirable.

\$41,121 through \$48,529 per annum.

AEROBIOLOGICAL SCIENTIST: Selectee will serve as principal investigator/team leader for planning, coordinating, conducting, evaluating and participating in research involving biological aerosols and equipment used for testing pathogenesis and effectiveness of vaccines, drugs and treatment regimes. Collaboration with intra and extramural scientists will be encouraged.

The Institute, which has excellent facilities, is a leading medical research facility engaged in the development of drugs and vaccines against militarily important diseases. All research is unclassified and publication is encouraged. The Institute is located in Frederick, Maryland, in a semi-rural setting, with ready access to the metropolitan areas of Washington, D.C., and Baltimore, Maryland.

Application procedures: For specific job information, application forms and procedures, contact:

Mr. Raymond J. Mangold
Directorate of Civilian Personnel
Fort Detrick, Frederick, MD 21701-5000
Telephone: 301-663-2007
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POSITIONS OPEN

RADIOBIOLOGISTS—Memorial Sloan-Kettering Cancer Center is seeking scientific investigators in the broad areas of radiation biology, radiation biophysics, and hyperthermia. Recruitment will be at both the senior and junior levels. The intent is to develop a strong research program in radiation sciences as it pertains to cancer, in collaboration with other investigators in radiation physics and oncology.

Preference will be given to persons who have demonstrated interest in integrating molecular biological approaches to radiation sciences.

Please send curriculum vitae and names of two references to: **Dr. C. Clifton Ling, Chairman, Department of Medical Physics, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, Room SM11, New York, NY 10021.**

Memorial Sloan-Kettering is an Equal Opportunity/Affirmative Action Employer.

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Forward résumé to: **M. J. Jamar, The Conservation Foundation, 1250 24th Street, N.W., Washington, DC 20037.** Positions are based in Washington, D.C., and available immediately. *Equal Opportunity Employer.*

CONFERENCE

**CONFERENCE ON:
PRESYNAPTIC RECEPTORS—
AN EXAMINATION OF DIFFERENT VIEWS**
Sponsored by the New York Academy of Sciences
Adam's Mark Hotel, Philadelphia, PA
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For further information: **Conference Department, The New York Academy of Sciences, 2 East 63rd Street, New York, NY 10021.** Telephone: 212-838-0230.

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**DSRV ALVIN
SILVER JUBILEE SYMPOSIUM
16, 17, AND 18 OCTOBER 1989
WOODS HOLE OCEANOGRAPHIC
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Submersible users will make presentations assessing 25 years of research conducted with DSRV *Alvin*. F. Grassle is the Convener. Invited speakers are: R. Aller, J. Childress, D. Cohen, J. Delaney, J. Edmond, R. Flood, F. Grassle, H. Jannasch, V. Kaharl, J. Lupton, C. Neuman, F. Sayles, V. Tunnicliffe and B. Walden. Topics to be discussed include hydrothermal vents, bottom experiments, sea floor structure, biology, and new instrumentation. There will be ample time for discussion of research and future use. For information, contact: **Kathleen Lilly, WHOI, Woods Hole, MA 02543.** Telephone: 508-548-1400; extension 2293.

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Candidates should hold an MD and preferably a PhD as well, plus an additional five to ten years of experience. Both clinical and laboratory research experience are highly desirable.

Ideal candidates will have training in the evaluation of drugs for psychiatric or metabolism/endocrine disorders, although other specialties will be considered. Management experience with research teams and excellent interpersonal skills are essential.

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MATRIX BIOSYSTEMS is a rapidly expanding San Francisco Bay area biotechnology company focused on the development of diagnostic assays and therapeutics for connective tissue disorders. We take pride in the high caliber of our scientific staff, and our collaboration with major research institutions in Europe and the United States. Matrix Biosystems has created the following opportunities:

• Director of Research

We are looking for a candidate with an outstanding record of scientific accomplishment as well as several years of experience supervising a research team in an industrial environment. This individual must have an extensive research background in the matrix biochemistry of cartilage and bone. Qualified applicants should have a Ph.D. in biochemistry or a related field, and five plus years relevant experience.

• Director of Development

We are seeking an individual with a proven track record of success in building and leading monoclonal based assay development teams. Qualified candidates should have a Ph.D. and have held a similar level position in the industry. A background in connective tissue research is preferred.

• Protein Chemists

Opportunities exist for those with experience in the field of connective tissue research. These positions require experience with isolation, purification, and characterization of cartilage/bone specific macromolecules. We have openings at the B.S., M.S., and Ph.D. levels.

• Monoclonal Antibody Specialists

We are looking for individuals with experience in developing and testing monoclonal antibodies. Familiarity with an up-to-date hybridoma development techniques, antigen presentation, immunoassay creation, and immunochemistry is required. Positions are available for scientists with B.S., M.S., and Ph.D. degrees.

MATRIX BIOSYSTEMS offers competitive salaries and equity compensation, as well as opportunities for personal and professional growth. For confidential consideration, please send your curriculum vitae to **MATRIX BIOSYSTEMS**, Dr. Saeid Seyedin, c/o Avalon Ventures, 1020 Prospect Street, Suite 405, LaJolla, CA 92037.

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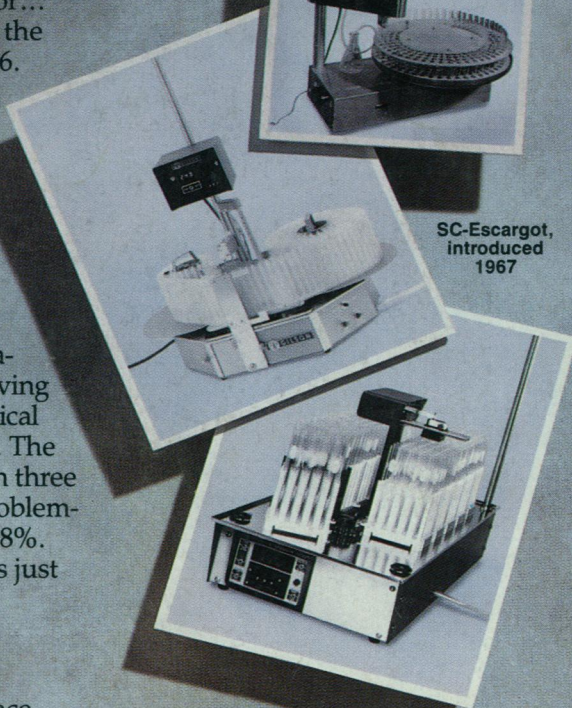
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