

what it represents. It brings together many excellent results from the disciplines that contribute to paleohydrology. Among the topics addressed in the book's 21 chapters are climate change (Lockwood; Thornes); erosion and sedimentation (Walling and Webb); variations in discharge and reconstructions from sediment data (Maizels); the role of magnetic studies in paleohydrology (Oldfield); soils and hydrologic change (Hayward and Fenwick); archeology and alluvial stratigraphy (Limbrej); adjustments of lakes, flood-plains, arroyos, meanders, and river channels to runoff variations (Graf; Lewin; Rotnicki; Kozarski; Brown); ecological responses (Wiltshire and Moore); and the impact of large-scale floods on Mars as well as on Earth (Baker).

Knowledge of the occurrence, flux, and redistribution of water and sediment on Earth is based on engineering time-scale (less than 100 years) measurements and recordings. Some recorded hydrologic data extend back thousands of years in such centers of early civilizations as the Nile Valley and China; however, most of the water and sediment data used in planning, supply, and design throughout the world depend on a relatively short, recent period of direct measurements. Scientists and engineers use these short records, hoping that they are characteristic and representative of longer time series. Recent work indicates, however, that measurements made during short periods may not be representative of longer-term means and variances. The classic example is the division of water under the Colorado River Compact during the 1930's, wherein Colorado River water was allocated on the basis of stream-gaging data from 1896–1930. Long-term streamflow records reconstructed from tree-ring analysis indicate that the period 1907–1930, during which the Colorado River water pacts were completed, contained the longest series of high-flow years in the entire 450-year reconstructed record.

Knowledge of rates and processes well beyond a short time frame is desirable for most hydrologic works and essential for such projects as long-term disposal of radioactive waste. Additional methods for extending water and sediment records into the near future are needed, and paleohydrology is one promising approach.

The book does not cover such important topics as dendrohydrology and the use of paleohydrology in interpreting the rock record beyond the late Quaternary or give a synopsis of the pedigree of current paleohydrology practice (its ori-

gin is far earlier than 1954, a date that is implied in the introductory chapter).

The volume is not the last word on paleohydrology. A great deal of new work has become available since its publication. However, it admirably introduces the subject to a broad audience, and it lays a foundation for the burgeoning use of paleohydrology in many geologic investigations trying to interpret the history of Earth as well as for future hydrologic projects.

JOHN E. COSTA

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Skin

Biochemistry and Physiology of the Skin. LOWELL A. GOLDSMITH, Ed. Oxford University Press, New York, 1983. In two volumes. xl, 1324 pp., illus. \$150.

There is a need for a textbook on skin that achieves a balance between discussions of applied, clinical data and expositions of the underlying basic scientific problems. Many editors state that their purpose is to produce such a book, but few succeed. The several dermatologic textbooks in print all emphasize clinical aspects; available symposium proceedings are narrowly focused or unbalanced and idiosyncratic. I fault the present volumes only to the extent that 99 percent of the organisms they deal with are mammals, including humans. However, in fairness to the contributing authors, any attempt to incorporate all available data on organisms other than mammals would have severely unbalanced many of the chapters.

Part 1 deals with structure. Odland covers the anatomy, histology, and ultrastructure of adult skin with his customary facility, and several other chapters offer additional anatomical details. Holbrook's exquisite electron micrographs do ample justice to the embryogenesis of the non-appendage-bearing skin, but more explicit indications of our ignorance concerning many aspects of appendages would have been appropriate. Similarly, Sengel brings recent advances in embryonic epithelial-mesenchymal interactions to a wide audience but says nothing concerning their continuing involvement in the maintenance of the adult state.

Parts 2 and 3 deal with the epidermis and dermis, covering all topics from the molecular level through dynamic controls of epidermal cell turnover; the chapter on wound healing is rather weak.

The chapters in part 4, on cutaneous appendages and nerves, are all very well done.

Volume 2 begins with part 5, Radiation and the Skin; its five chapters take one from the anatomical to the functional level with great skill and fluidity. Part 6 concerns principles of cutaneous pathophysiology and is organized into subdivisions on vascular and immune aspects, blistering, the nutritional bases of disease, and other pathogens. Briggaman's particularly informative discussion of the epidermal-dermal junction and the chapters on mammalian models for blistering (Lewis and Scott) and heritable diseases (Minor) support the editor's statement that pathology is dealt with only insofar as it spotlights basic scientific problems.

The chapters in parts 7 and 8 address cutaneous pharmacology and biophysical properties; once again the theoretical and experimental bases of fundamental problems predominate, especially in the chapter on percutaneous absorption by Scheuplein and Bronaugh.

Every chapter has an extensive bibliography, and there are many 1982 references. The 27-page index in volume 2 permits ready access to specific topics. There are many fine illustrations, and the electron micrographs are particularly noteworthy.

I anticipate frequent reference to these volumes in my own laboratory, and I recommend them to all who work on skin.

P. F. A. MADERSON

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Books Received

Annual Review of Ecology and Systematics. Vol. 14. Richard F. Johnston, Peter W. Frank, and Charles D. Michener, Eds. Annual Reviews, Palo Alto, Calif., 1983. xii, 503 pp., illus. \$27.

Annual Review of Energy. Vol. 8. Jack M. Hollander and Harvey Brooks, Eds. Annual Reviews, Palo Alto, Calif., 1983. x, 541 pp., illus. \$27.

Annual Review of Information Science and Technology. Vol. 18. Martha E. Williams, Ed. Published for American Society for Information Science by Knowledge Industry Publications, White Plains, N.Y., 1983. xiv, 447 pp. \$45.

Annual Review of Physical Chemistry. Vol. 34. B. Seymour Rabinovitch, J. Michael Schurr, and Herbert L. Strauss, Eds. Annual Reviews, Palo Alto, Calif., 1983. xviii, 669 pp., illus. \$28.

The Behavior of Human Infants. Alberto Oliverio and Michele Zappella, Eds. Plenum, New York, 1983. viii, 304 pp., illus. \$42.50. Ettore Majorana International Science Series (Life Sciences), vol. 13.

Benzodiazepines Divided. A Multidisciplinary Review. Michael R. Trimble, Ed. Wiley, New York, 1983. xiv, 329 pp., illus. \$39.95. From a symposium, London, 1982.

Clinical Electromyography. J. A. R. Lenman and A. E. Ritchie, 3rd ed. Pitman, London, 1983 (U.S. distributor, Urban & Schwarzenberg, Baltimore). xvi, 239 pp., illus. \$37.50.

Drilling Discharges in the Marine Environment. National Academy Press, Washington, D.C., 1983. xii, 180 pp. Paper, \$14.75.

(Continued on page 526)

BOOKS RECEIVED

(Continued from page 486)

Drinking Water and Health. Vol. 5. Safe Drinking Water Committee. National Academy Press, Washington, D.C., 1983. xiv, 157 pp., illus. Paper, \$15.95.

The Drug User. Personality Issues, Factors, and Theories. An Annotated Bibliography. Stanley Einstein. Plenum, New York, 1983. vi, 208 pp. \$75.

L'Enfant et Son Environnement. Une Etude Fonctionnelle de la Première Enfance. Andrée Pomerleau and Gérard Malcuit. Presses de l'Université du Québec, Québec, and Mardaga, Brussels, 1983. xiv, 379 pp. Paper, 1250 BF.

Engineering Approaches for Lake Management. Kenneth H. Reckhow and Steven C. Chapra. Butterworth, Boston, 1983. Two volumes. Vol. 1, Data Analysis and Empirical Modeling. xviii, 340 pp., illus. Vol. 2, Mechanistic Modeling. xvi, 492 pp., illus. The set, \$85. An Ann Arbor Science Book.

Equilibria, Nonequilibrium, and Natural Waters. Vol. 2. Ricardo M. Pytkowicz. Wiley-Interscience, New York, 1983. xviii, 353 pp., illus. \$49.95.

Fuzzy Sets, Natural Language Computations, and Risk Analysis. Kurt J. Schmucker. Computer Science Press, Rockville, Md., 1984. \$32.95.

The GABA Receptors. S. J. Enna, Ed. Humana, Clifton, N.J., 1983. xiv, 343 pp., illus. \$49.50.

Gaseous Loss of Nitrogen from Plant-Soil Systems. J. R. Freney and J. R. Simpson, Eds. Nijhoff/Junk, The Hague, 1983 (U.S. distributor, Kluwer Boston, Hingham, Mass.). x, 317 pp., illus. \$65.50. Developments in Plant and Soil Sciences, vol. 9.

The Genera of Myxomycetes. G. W. Martin, C. J. Alexopoulos, and M. L. Farr. Illustrations by Ruth McVaugh Allen. University of Iowa Press, Iowa City, 1983. xii, 561 pp. \$35. Revision of *The Myxomycetes* (1969).

Hybridomas and Cellular Immortality. Baldwin H. Tom and James P. Allison, Eds. Plenum, New York, 1983. xx, 306 pp., illus. \$35. From a symposium, Houston, Nov. 1981.

Imaging Saturn. The Voyager Flights to Saturn. Henry S. F. Cooper, Jr. Holt, Rinehart and Winston, New York, 1983. xiv, 210 pp., illus., + plates. \$19.95.

Immunobiology of Transplantation, Cancer and Pregnancy. Prasanta K. Ray, Ed. Pergamon, New York, 1983. xvi, 445 pp., illus. \$65.

Mould Allergy. Yousef Al-Doory and Joanne F. Domson, Eds. Lea and Febiger, Philadelphia, 1984. xii, 287 pp., illus. \$28.50.

Myocardial Infarction and Cardiac Death. Erwin Margulies, Ed. Academic Press, New York, 1983. xiv, 220 pp., illus. \$32.50.

Narrow-Gap Semiconductors. R. Dornhaus, G. Nimtz, and B. Schlicht. Springer-Verlag, New York, 1983. x, 309 pp., illus. \$47. Springer Tracts in Modern Physics, vol. 98.

Nature through Tropical Windows. Alexander F. Skutch. Illustrations by Dana Gardner. University of California Press, Berkeley, 1983. xiv, 374 pp. \$19.95.

Progress in Solid State Chemistry. Vol. 14. Gerd M. Rosenblatt and Wayne L. Worrell, Eds. Pergamon, New York, 1983. vi, 312 pp., illus. \$120.

Protective Agents in Cancer. D. C. H. McBrien and T. F. Slater, Eds. Academic Press, New York, 1983. x, 309 pp., illus. \$30. NCR Cancer Research Association Symposia, No. 2. From a symposium, Uxbridge, England, Sept. 1982.

Psychophysiologie Générale et Psychopathologie. Christian Poirel. Masson, Paris, 1983. xii, 185 pp., illus. Paper, 160 F.

Psychosocial Constructs of Alcoholism and Substance Abuse. Barry Stimmel, Ed. Haworth, New York, 1983. x, 110 pp. \$14.95. Also published as *Advances in Alcohol and Substance Abuse*, vol. 2, No. 4.

Quantum Metrology and Fundamental Physical Constants. Paul H. Cutler and Amand A. Lucas, Eds. Plenum, New York, 1983. xii, 658 pp., illus. \$95. NATO Advanced Science Institutes Series B, vol. 98. From an institute, Erice, Sicily, Italy, Nov. 1981.

The Soviet Union Today. An Interpretive Guide. James Cracraft, Ed. University of Chicago Press, Chicago, 1983. x, 348 pp. Paper, \$9.95. Reprinted from *Bulletin of the Atomic Scientist*.

The Tangled Web. Biological Constraints on the Human Spirit. Melvin Konner. Harper and Row, New York, 1983. xvi, 543 pp. Paper, \$8.95. Harper Colophon Books. Reprint, 1982 edition.

Techniques in Molecular Biology. John M. Walker and Wim Gaastra, Eds. Macmillan, New York, 1983. 333 pp., illus. \$29.95.

Textbook of Pulmonary Diseases. Gerald L. Baum and Emanuel Wolinsky, Eds. 3rd ed. Little, Brown, Boston, 1983. xxii, 1368 pp., illus. \$95.

Theoretical Mechanics. E. Neal Moore. Wiley, New York, 1983. xviii, 456 pp., illus. \$29.95.

Personnel Placement

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Academic Administrator, with demonstrated innovative leadership in both academic and business environments. Ph.D. in physiology with teaching and research experience in a number of areas. Box 55, SCIENCE. X

Biochemist, Ph.D. 1980. Postdoctoral experience; graduate and undergraduate teaching experience. Research background in eukaryotic and prokaryotic electron transport systems and terminal oxidases. Expertise in protein purification, enzymology, spectroscopy, and most modern laboratory equipment. Desires challenging industrial research position. Will relocate. Box 99, SCIENCE. X

Biochemist, Plant Pathologist, Ph.D. Molecular biology of host-pathogen interactions. Experienced in cell culture, plant breeding, hybridoma methodology, immunochemistry, and basic protein biochemistry; 5 years of postdoctoral experience; 17 publications. Box 107, SCIENCE. X

Biochemist/Molecular Biologist, Ph.D. plus 6 years of research experience in wide aspects of interferon research, mRNA isolation, purification and translation in xenopus oocyte and in vitro characterization of translated product. Expertise in protein purification, HPLC, enzymology, tissue culture, receptor research, virology, and some knowledge of recombinant DNA technology. Good publication. Seeks academic or industrial position. Box 110, SCIENCE. X

NMR Spectroscopist, Ph.D. (Germany), has to relocate to the United States for family reason. Looking for an industrial or teaching (biophysics, mathematics, or physics) job in New York, New Jersey, or Connecticut area. Speaks and writes fluently: English, German, and French. References. Salary negotiable. Available from 1 October. Will be in the United States from 5 June to 7 July for interviews. Box 112, SCIENCE. 5/4, 11, 18

POSITIONS WANTED

Electron Microscopist, Ph.D., neuroscientist; 4-year postdoctoral, excellent thin sections, freeze fracture, single cell physiology; publications; careful; seeks part-time research position/project. Box 114, SCIENCE. 5/4, 11

Ph.D. (1984), Fuel Science; M.S. environmental engineering. Experiences: coal conversion/utilization, water/air pollution control. Publications, hard-working. Wants entry-level position in R & D or energy/environment management. Box 113, SCIENCE. 5/4, 11

Human Clinical Management. Ph.D. 1977, D.A.B.T. Seven years of industrial experience with major consumer products company. Experience in managing human clinical studies in dermatology, allergy, and gynecology. Seeking additional opportunities in these or related areas. Box 115, SCIENCE. X

Recent Molecular Biology Ph.D.: gene structure and regulation, transposable elements, retroviruses, hormonal control of gene expression, recombinant technology (cloning, sequencing, hybridization, construction of expression and genomic libraries, isolation and characterization of cloned genes, EM). Recent publications, articulate, motivated, postdoctoral in renowned laboratory. Desires hard money position in industry or academe with commensurate reward. Box 109, SCIENCE. X

Research Horticulturist/Agronomist—Ph.D. enjoys working with others on chemical research and development in turf, ornamentals, and agricultural plants. Creative capabilities in fertility, growth regulators, pesticides, and data analysis. Four years of industry experience, management skills, technical training, and teaching expertise. Box 111, SCIENCE. X

Virologist, Ph.D., 7 years of experience in environmental virology, 2 years of experience in clinical microbiology and virology. Seeking academic or research position in environmental or clinical virology, preferably in western United States. R. Floyd, Pathology Department, Baylor College of Medicine, Houston, Texas 77030. 5/4, 11

POSITIONS OPEN

ASSISTANT PROFESSOR OF PHARMACOLOGY

Applications are invited for two tenure-track positions. Excellent research facilities and some research funding available, but successful candidates are expected to generate independent support. The department is interested in neuropharmacology (especially molecular approaches), neurotoxicology, biochemical aspects of drug metabolism, molecular endocrinology, immunopharmacology, and receptor studies. A commitment to medical school teaching in pharmacology is required; the department has an active graduate training program.

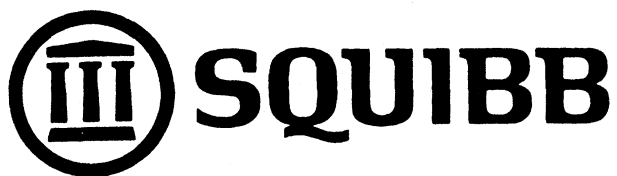
Ph.D. or M.D. degree required; advanced training in pharmacology highly desirable. Uniformed Services University of the Health Sciences is a federally funded school of medicine which trains physicians serving the military forces. Faculty salary structure, benefits, tenure, and promotion policies are similar to those at private or state-funded schools of medicine. Nonsmokers preferred.

Send curriculum vitae, statement of research interests, and names of three referees by 1 June 1984 to: **Dr. L. Aronow, Department of Pharmacology, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Maryland 20814.**

ASSISTANT OR ASSOCIATE PROFESSORSHIP FOR VIROLOGIST

The Immunology/Microbiology Department of Rush Medical College invites applications for a tenure-track faculty position. Applicants must be able to develop or continue a strong research program in viral molecular genetics or pathogenesis. Current departmental investigations in virology involve human and woodchuck hepatitis B, Newcastle disease, and Rous sarcoma viruses; departmental interests generally focus on the chemistry and biology of host-microbial interactions and the inflammatory response. Please send curriculum vitae, description of research interests, and three letters of recommendation by 1 August 1984 to: **Dr. Mark Peeples, Chairman, Selection Committee, Immunology/Microbiology Department, Rush Medical College, 1753 West Congress Parkway, Chicago, Ill. 60612.**

Rush is an Equal Opportunity/Affirmative Action Employer.



RESEARCH ASSOCIATE Cellular Biology

This is an exceptional opportunity to become associated with the Squibb Institute for Medical Research in Princeton, NJ.

This position primarily involves screening a wide variety of microorganisms for pharmacologically active agents. Requirements include a BS in Microbiology (or equivalent) and several years experience in applied microbiology with particular emphasis in the analysis of various microorganisms. Experience with small scale fermentation procedures and bioassays would be a significant plus. The ability to collaborate with scientists in the isolation and screening of microorganisms is essential.

We offer an excellent salary and benefits package fully attuned to the importance of this position. Qualified applicants should send their resume including salary requirements in complete confidence to: **Employment Office, Dept. 998, Squibb Corporation, P.O. Box 4000, Princeton, NJ 08540.** We will accept direct applicant response only. Equal Opportunity Employer.

MOLECULAR BIOLOGISTS

Research and Development of Phillips Petroleum Company is looking for experienced molecular biologists for its expanding Biotechnology Group.

Individuals with the following background and experience are needed: Ph.D. in Molecular Biology or Microbiology with emphasis in expression of cloned genes in yeast, *E. coli.*, and gram positive bacteria. Laboratory experience in the following areas is desired: DNA sequencing, cloning and gene expression.

Phillips Research Center is located in Bartlesville, Oklahoma, a mid-western community which provides excellent cultural, educational, and recreational pursuits. Phillips Petroleum Company also offers competitive salary and benefits package.

Inquiries are kept in strict confidence and answered promptly. Please send resume with salary history to (no agency referrals please):

Jeannie E. Spain
PHILLIPS RESEARCH CENTER
Bartlesville, OK 74004



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POSTDOCTORAL POSITION — CANCER RESEARCH

A one-year postdoctoral appointment in the Cancer Research Department of The Upjohn Company is available beginning September 1984. The goals of this position will be to develop cell lines resistant to anticancer drugs and to study the molecular mechanisms of resistance. There will be opportunities to collaborate with cell biologists and molecular biologists throughout the research division. Applicants should have experience in mammalian cell culture and cell biology, with experience in molecular biology highly desirable. Publication of results will be encouraged.

The Upjohn Company, a leader in the worldwide research, marketing, and production of pharmaceuticals, chemicals, and agricultural products, offers a stimulating environment for research. Kalamazoo is a medium-sized Southwest Michigan community with immediate access to a fine mix of cultural, educational, and recreational pursuits.

For confidential consideration, please send a current c.v. and resume, list of publications, names and addresses of references, and graduate transcripts to: Gerald L. Potratz, Department 16019G, The Upjohn Company, 7000 Portage Road, Kalamazoo, MI 49001.

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PHARMACOLOGIST Section Manager Gastroenterology

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Along with excellent interpersonal skills, the ideal candidate will possess a minimum of 3-5 years' experience in G.I. or smooth muscle research with a Ph.D or M.S. Degree in Pharmacology/Physiology. In addition, the candidate should have exposure to secretion, absorption, digestion, laxatives, antacids or ulcer treatment/prevention.

We are located in Ft. Washington, PA, a desirable suburb of Philadelphia which provides an attractive environment for both professional and personal growth. We provide a salary commensurate with experience and qualifications, relocation assistance and a comprehensive benefits package. Qualified candidates should submit their resume including salary requirements to: KEITH I. JONES

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CELLULAR/MOLECULAR BIOLOGIST

THE UNIVERSITY OF WISCONSIN—MADISON invites applications for a tenure-track faculty position in the general area of structural cellular or molecular biology beginning on or after 1 January 1985. The appointment could be made at the professor, associate professor, or assistant professor level, depending on the qualifications of the candidate. The candidate would be expected to carry on an active research program and serve as director of the High Voltage Electron Microscope (HVEM) Laboratory or, in the case of an appointment at the assistant professor level, be prepared to assume the directorship in the future. The HVEM Laboratory is a National Biotechnology Resource providing specialized instrumentation for biomedical structural research including a 1 MeV electron microscope, facilities for electron crystallography, and with plans for the addition of low-voltage scanning electron microscopy and video-enhanced light microscopy. The candidate's research should be directed at a fundamental biological or biomedical problem and might employ, for example, electron crystallography, image analysis of macromolecular complexes or analysis of cell structure. Depending on the background and research area of the candidate, the appointment would be entirely or in part in the Department of Anatomy, Biochemistry, Oncology, Pathology, Zoology, or in the Laboratory of Molecular Biology. Teaching responsibilities would be determined through the appointing department. Applicants should submit, by 1 July 1984, curriculum vitae, statement of research plans, and names of three references to:

Professor Gary G. Borisy, Chairman
Laboratory of Molecular Biology
1525 Linden Drive
University of Wisconsin
Madison, Wisconsin 53706
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PHYSIOLOGY/ TOXICOLOGY RESEARCH

Battelle Columbus Laboratories, a world leader in contract research and development, has an immediate opening for a research scientist at its Medical Research and Evaluation facility in West Jefferson, Ohio. Research opportunities include *in vivo* and *in vitro* toxicology, physiology, metabolism and pharmaceutical chemistry.

The successful candidate must have a PhD in physiology, toxicology or a related field and 3–5 years research experience. Good communication skills are also required.

Position responsibilities include research protocol preparation, conduction of research experiments, technical staff supervision, administrative planning and sponsor liaison.

Battelle offers a competitive salary, excellent employee benefits, and career growth opportunities. Interested individuals should send resume to Richard Shaw, Employment Dept. L-2.



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POSITIONS OPEN

ASSISTANT PROFESSOR OF IMMUNOLOGY AND INFECTIOUS DISEASES. The Johns Hopkins University invites applications for this position from candidates who have strong interest in the ecology of infectious diseases to participate in a funded study, in Baltimore, of rodent reservoirs of hemorrhagic fever viruses. The appointee will be expected to develop his/her own research program in infectious disease ecology. Curriculum vitae, description of research goals and interests, and the names, addresses, and telephone numbers of three referees should be submitted to: **The Chairman, Department of Immunology and Infectious Diseases, The Johns Hopkins University School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Md. 21205.** *The Johns Hopkins University is an Equal Opportunity Employer.*

ASSISTANT PROFESSORS VIROLOGY, MOLECULAR GENETICS AND IMMUNOLOGY

The Department of Microbiology invites applications for appointments as assistant professors of the Jefferson Medical College, Thomas Jefferson University. Candidates are expected to possess a Ph.D. or M.D., have postdoctoral experience, and a strong record of research achievement in basic virology, molecular genetics, or cell-mediated immunology. The successful candidate will be expected to pursue an independent research program and participate in the medical and graduate programs offered by the department. Send curriculum vitae, names of three references, and a brief statement of research interests to:

Dr. Russell W. Schaedler, Chairman
THOMAS JEFFERSON UNIVERSITY
Department of Microbiology
1020 Locust Street
Philadelphia, Pa. 19107
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Position available in May for **ASSISTANT RESEARCH/ADJUNCT ASSISTANT PROFESSOR OF MEDICINE** (nontenure-track) at the Center for Ulcer Research and Education (CURE). Requires minimum of 4 years of research experience with isolated gastric cells or clusters of cells with specific reference to mechanisms of proton secretion and its regulation. Experience with gastric cells, membrane transport mechanisms, and cell permeabilizing techniques is important. Applicant must have Ph.D. in physiology, 10 years of postdoctoral research experience and at least nine original publications in reviewed journals, some as primary author. Applicant should have minimum of 6 years of experience teaching physiology at university (physiology students, medical students) and will be expected to participate in teaching fellows, graduates, and undergraduates. Salary: approximately \$32,000. Apply: **Dr. George Sachs, Director, CURE, University of California, Los Angeles (UCLA), School of Medicine, Wadsworth VA Center, Building 115, Room 217, Los Angeles, California 90073.** *UCLA is an Equal Opportunity/Affirmative Action Employer. Minority and women candidates are urged to apply.*

ASSISTANT RESEARCH ASSISTANT wanted to research and prepare diagnostic probes for human pathogens for genetic engineering firm. Duties will include use of recombinant DNA technology, design and implementation of experiments, compilation of data, and preparation of research reports and conclusions. Must have Ph.D. in microbiology and genetics, at least 5 years of postdoctoral research in bacterial genetics, publications in the field of bacterial genetics, and experience in safe handling of a wide variety of exotic and pathogenic microorganisms; \$26,000 per year; 40 hours per week, Monday to Friday. Résumés only to: **Box 108, SCIENCE.**

ASSOCIATE DIRECTOR, ENERGY, ENVIRONMENT AND RESOURCES CENTER (EERC), THE UNIVERSITY OF TENNESSEE. Full-time research position, annually renewable. Responsibility: identify research opportunities, obtain funding, and conduct research in electrical utility studies, socioeconomic assessments, and other energy and environmental areas. Required: Ph.D., 4 years of relevant experience, funding track record, and familiarity with Oak Ridge National Laboratory. Send résumé and names of three references by 31 May to: **Director, EERC, University of Tennessee, 327 South Stadium Hall, Knoxville, Tenn. 37996-0710.** *An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

POSITIONS OPEN

YALE UNIVERSITY DEPARTMENT OF PSYCHIATRY

ASSISTANT PROFESSOR position in Department of Psychiatry, Yale University, for genetic epidemiologist. Must have a Ph.D. in chronic disease epidemiology, experience in research on genetics of psychiatric disorders, and minimum of 5 years of clinical experience with psychiatric patients. Preference will be given to candidate with research and clinical experience in affective disorders of adults and children. Must have knowledge of research diagnostic assessments and clinical heterogeneity of psychiatric disorders as well as extensive experience in computer analysis of data. Position involves conceptualization, conduct and statistical analysis of research in genetic-epidemiologic approach to psychiatric disorders. Must be able to teach genetic epidemiology of psychiatric disorders to medical, graduate students, and psychiatric residents. Send résumé and three letters of reference by 18 May 1984 to: **Boris Astrachan, M.D., Department of Psychiatry, Yale University School of Medicine, 25 Park Street, New Haven, Conn. 06519.** Position closes 1 June 1984. *Yale University is an Equal Opportunity/Affirmative Action Employer.*

FLORIDA—CHAIRMAN, BASIC DENTAL SCIENCES. Full-time position in dental school expanding its emphasis in research. Requires D.D.S. or D.M.D. degree; advanced education preferred. Administrative and teaching experience required; also active research program and demonstrated ability to generate extramural support. Responsibilities include minimal teaching, coordination of clinical and basic science educational programs, major commitment to research. Intramural private practice available. Salary and rank commensurate with qualifications. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae by 1 July to: **Dr. A. Lewis Leo, Associate Dean, University of Florida College of Dentistry, Box J-405, JHMC, Gainesville, Florida 32610.**

FLORIDA—CHAIRMAN, ORAL MEDICINE. Full-time position in dental school expanding its emphasis on research. Requires D.D.S. or D.M.D. degree; advanced education preferred. Administrative and teaching experience required; also active research program and capability to attract external research support. Responsibilities include major commitment to research and management of a large department which includes oral pathology, oral radiology, oral diagnosis, and treatment planning. Intramural private practice available. Salary and rank commensurate with qualifications. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae by 1 July to: **Dr. Greg King, University of Florida College of Dentistry, Box J-444, JHMC, Gainesville, Florida 32610.**

Stanford University seeks candidates for a newly endowed **CHAIR, THE HENRY S. KAPLAN PROFESSORSHIP IN CANCER BIOLOGY** at the School of Medicine. We wish to identify a distinguished senior scientist who has demonstrated outstanding scholarship in areas related to cancer biology. The appointee would be expected to assume the directorship of the Cancer Biology Research Laboratory and its associated research training activities.

Please send nominations and information relevant to the applicant's qualifications to the staff assistant for the Search Committee: **Marian Knox, Dean's Office, Room M-119, Stanford University Medical Center, Stanford, Calif. 94305.** *Stanford University is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

THE UNIVERSITY OF MICHIGAN CHAIRMANSHIP OF OBSTETRICS AND GYNECOLOGY

The University of Michigan is seeking an academic leader to direct the patient care, teaching, and research programs of its Department of Obstetrics and Gynecology. Qualifications include: an M.D. degree and Board-certification in obstetrics and gynecology; clinical skills; research expertise in a related area; commitment to teaching; and administrative skills and experience in an academic setting.

Please respond to:

S. Martin Lindenauer
Professor of Surgery
Chairman, Obstetrics and Gynecology
Review and Search Committee
D2240 S.A.C.B. Box 046
University of Michigan Hospitals
1405 East Ann Street
Ann Arbor, Michigan 48109

DEAN OF
THE SCHOOL OF PHARMACY
STATE UNIVERSITY OF
NEW YORK AT BUFFALO

Applications and nominations are invited for this position. The School, established in 1886, offers programs leading to the academic degrees of B.S. in pharmacy, B.S. in health sciences, Pharm.D., M.S., and Ph.D. in biochemical pharmacology, medicinal chemistry, and pharmaceuticals. These areas of study are part of a broad range of academic curricula offered at the University comprising 90 baccalaureate, 100 master's, and 94 doctoral programs, including professional doctorates in law, medicine, and dentistry.

The dean is the chief executive of the School of Pharmacy who reports directly to the Office of the Provost of the University. Responsibilities of this position include fostering and maintaining excellence in the academic, professional, and research programs of the School and coordinating the activities of the School with other units of the University and various clinical sites.

Candidates for this position should have an earned doctorate in pharmacy, one of the pharmaceutical sciences, or a related area. He or she must have scholarly and research achievements commensurate with appointment as a full professor at a major university. A background of successful administrative leadership is necessary. The position requires ability to work effectively with student, faculty, staff, University administration, professional, and alumni groups.

Applications with curriculum vitae, or letters of nomination, should be submitted no later than 1 June 1984 to:

Dr. Ho-Leung Fung, Chair
Search Committee for Dean
School of Pharmacy
State University of New York at Buffalo
513 Hochstetter Hall
Buffalo, N.Y. 14260

The University is an Affirmative Action/Equal Opportunity Employer.

RESEARCH ASSOCIATE POSITION

The Cooperative Institute for Research in Environmental Sciences (CIRES) invites applications for an 18-month appointment as a CIRES research associate to work on the mechanical, electrical, and chemical response of the high latitude upper atmosphere to the energy deposited by precipitating energetic charged particles and by Joule heating from electrical current flow. The salary is \$24,000 plus medical expenses for recent Ph.D. graduates with no experience. Salary is negotiable for experienced applicants.

The work would involve analysis of charged particle observations made by the TIROS/NOAA satellites since 1978. Of particular interest would be the conversion of these observations to parameters of direct relevance to the ionosphere and upper atmosphere such as electrical conductivities and the altitude dependent rate of heat input. Work would also be done on the correlation and association between these observations (and derived parameters) and other observations from space and ground. The ultimate objective is to merge these observations with a variety of existing models in order to create more sophisticated and relevant models of atmospheric behavior in response to this energy input.

Applicants should have a Ph.D. degree or its equivalent in magnetospheric and/or auroral physics, ionospheric physics, or atmospheric physics. A strong background in computer processing and manipulation of large data sets would be very useful. The successful applicant will collaborate with scientists at the National Oceanic and Atmospheric Administration's (NOAA) Space Environmental Laboratory in Boulder, Colorado.

Applicants should submit a letter that describes current research interests, a complete résumé and publications list, and three letters of recommendation from professional references to: Dr. Robert E. Sievers, Director, CIRES, Campus Box 449, University of Colorado, Boulder, Colorado 80309, before 21 May 1984.

The University of Colorado is an Affirmative Action/Equal Opportunity Institution and applications from women and minority group members are especially encouraged.

Entrepreneurial Research Associates/Scientists

Be part of a solid "Start-up" venture

Come join Genencor—an exciting company chartered by Genentech and Corning to advance the science of biotechnology!

■ ENZYMOLOGY/MICROBIOLOGY OPPORTUNITIES

- Characterization, purification, modification and assay of enzymes.
- Elaboration, propagation and preliminary identification of new micro-organisms.
- Strain improvements, media development work with fungal and bacterial cultures.
- Optimization of fermentations, both fungal and bacterial.
- Design, conduct, analyze experiments relating to fermentations of bacterial and fungal cultures. Maintain and schedule fermentation recovery equipment.

BS/MS in biological science, enzymology, microbiology and/or organic chemistry required.

■ BIOCHEMICAL ENGINEERING OPPORTUNITIES

- Obtain & analyze engineering data for process development. Carry out fermentation experiments at laboratory and pilot scale.
- Provide computer system support for R&D. Develop S/W for data acquisition and analysis, process monitoring and control.
- Assist in development of new methodologies for large scale protein recovery. Enzyme assay, electrophoresis, chromatography.

BS/MS in biological science, chemical engineering, protein biochemistry or biochemical engineering required.

Act now and become a key contributor to a vigorous young firm that offers the freedom, the commitment and the opportunity to succeed. Send resume, in confidence, to D. Clark, Human Resources, Genencor, 180 Kimball Way, So. San Francisco, CA 94080. An equal opportunity employer.

GENENCOR

PHARMACOLOGY OPPORTUNITIES

Berlex Laboratories has immediate openings in the
expanding Pharmacology Department.

ANTIARRHYTHMIC PHARMACOLOGY: SECTION HEAD

The Department seeks a Cardiac Pharmacologist with **five or more years of postdoctoral experience in cardiac biology** to lead a drug development program and to develop a vigorous research program leading to a better understanding of cardiovascular disease with emphasis on sudden cardiac death. The successful candidate will have a documented record of research excellence and demonstrated ability to interact with other disciplines of pharmacology. Experience with in vivo electrophysiology methodology and preclinical drug development is preferred.

HEMODYNAMICS PHARMACOLOGY: SENIOR PHARMACOLOGIST

The Department has a challenging career opportunity for a Senior Cardiac Pharmacologist or Physiologist with **one or more years of postdoctoral experience in cardiac biology** to develop a vigorous research program leading to a better understanding of the biology of heart failure and to the discovery of new therapeutic interventions in heart failure. A thorough understanding of the physiology and pathophysiology of cardiac function is essential.

Berlex Laboratories, an ethical pharmaceutical company in Northwest New Jersey, provides an exceptional environment for research, including modern equipment and technical support. These positions provide an excellent salary and benefits package, including relocation assistance. Interested candidates are invited to submit a resume including curriculum vitae and salary history, indicating position of interest, in confidence, to: M. J. Zimmerman, Human Resources Administrator, Berlex Laboratories, Inc., 110 East Hanover Ave., Cedar Knolls, New Jersey 07927. An Equal Opportunity Employer M/F.

BERLEX

Laboratories Inc.

POSITIONS OPEN

BIOCHEMIST. Assistant professor to be assigned to the Marine Biomedical Research Program. Individual should be familiar with isolation and purification of membrane proteins and enzyme kinetics. Preference will be given to persons with experience in obtaining extramural support. Send curriculum vitae and arrange to have three letters of recommendation sent to: **Dr. Thomas C. Cheng, Marine Biomedical Research Program, Medical University of South Carolina, P.O. Box 12559 (Fort Johnson), Charleston, South Carolina 29412; telephone: 803-795-7490.**

DEPARTMENT OF CHEMISTRY UNIVERSITY OF CALIFORNIA, BERKELEY

Applications are invited for a tenured position beginning fall 1984 or later at the level of associate or full professor. We are interested in outstanding candidates with exceptional records of achievement in research and teaching particularly in analytical, biological, inorganic, or organic chemistry.

Candidates should submit curriculum vitae (including a list of publications and a summary of their teaching and research objectives) and request three letters of reference, all to be sent to: **Chairman, Department of Chemistry, University of California, Berkeley, California 94720.** Deadline for receipt of applications is 1 June 1984. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

Position Title: CHEMISTRY.

Description: Full-time temporary faculty appointment (sabbatical leave replacement) for the 1984-1985 academic year. Applications are invited from individuals in all traditional areas of chemistry, including biochemistry and chemical education. Preference will be given to applicants with earned doctorates or previous college teaching experience. Send résumé, original copies of graduate transcripts, and three letters of reference to: **Dr. Eric R. Johnson, Department of Chemistry, Ball State University, Muncie, Ind. 47306.** Credentials should be postmarked prior to 20 May 1984.

Ball State University practices Equal Opportunity in Education and Employment.

TECHNICAL RECRUITER

Cetus Corporation, a leader in biotechnology, has a new position available for an experienced Recruiter.

This will be a highly visible position with responsibility for scientific and technical recruiting, employment procedures, candidate evaluation and related placement activities. Candidate should possess a Ph.D. or M.S. degree in the Life Sciences or related field and have 2-3 years' recruiting and personnel experience in a scientific environment. The ability to interact with the scientific community and excellent communication skills are also required.

This is an ideal opportunity to join an industry leader which offers professional challenge and competitive compensation. Candidates should send resume in confidence to:

**Cetus Corporation
Box TR-SE
1400 Fifty-third Street
Emeryville, CA 94608**



cetus

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POSITIONS OPEN

BIOLOGIST

RESEARCH BIOLOGIST

A major corporation with facilities in Sorrento Valley begins a new development program which creates an opportunity for a trained biologist. Qualified candidates will have laboratory experience in mammalian cell culture studies; large-scale tissue culture work is desirable. Candidates with additional background in enzymology will be given preference.

A graduate degree in microbiology or biochemistry is required.

Along with competitive industrial compensation we offer a very desirable array of benefits. Please include with your résumé pay history and requirements.

BRUNSWICK/TECHNETICS

**4116 Sorrento Valley Boulevard
San Diego, Calif. 92121**

Attention: Alan Locher

Equal Opportunity Employer

DEAN OF ARTS AND SCIENCES—THE PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE

invites applicants for the position of **DEAN OF ARTS AND SCIENCES.** The individual will be responsible for the college's basic science degree programs and course support for health sciences programs, administered by the dean of health sciences. The dean of arts and sciences will be expected to provide academic leadership, foster excellence in teaching and research, promote the growth and development of undergraduate and graduate science degree programs, and assist in the generation of extramural funding. Candidates should provide evidence of scholarly achievement in teaching and research, and should qualify for a tenurable appointment at the rank of professor in one of the academic departments (Biological Sciences, Chemistry, Humanities and Social Sciences, Mathematics and Physics, Pharmacology, and Toxicology) administered by the dean of arts and sciences. Previous administrative experience is necessary. Candidates should be available for appointment by 15 August 1984, or shortly thereafter. Send letter of application, résumé, and names of three references by 30 May 1984 to: **Dr. Murray Zanger, Chairman, Search Committee for Dean of Arts and Sciences, PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCES, 43rd and Kingessing Mall, Philadelphia, Pa. 19104.** *Equal Opportunity/Affirmative Action Employer.*

DERMATOLOGY: Assistant professor, academic position in teaching and laboratory research. Must be fully trained and Board-certified in dermatology; interested in teaching medical students and house staff. Must have published research in laboratory immunology and immunodermatology. California medical license or eligible to apply. Salary related to rank and step of appointment within the established salary schedule of the University of California, San Diego (UCSD), School of Medicine, faculty compensation plan. Reply by 1 July 1984 to: **Irma Gigli, M.D., Division of Dermatology, H-811J, UCSD Medical Center, 225 Dickinson, San Diego, Calif. 92103.** *The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION IN MOLECULAR PHARMACOLOGY.

Division of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital.

Applications are invited for a faculty position at the assistant member or associate member level. Applicants should have demonstrated research capability in the application of techniques of molecular biology to problems of anticancer drug action and tumor resistance to such drugs. They should be prepared to develop a strong, independent research program complementary to the research of other investigators in the division. Senior candidates will be expected to have demonstrated ability to obtain extramural grant support.

Submit curriculum vitae, three letters of reference, and a description of future research plans to:

**Dr. Raymond L. Blakley, Chairman
Division of Biochemical and Clinical Pharmacology
St. Jude Children's Research Hospital
332 North Lauderdale
Memphis, Tennessee 38101**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

ELECTRICAL AND COMPUTER ENGINEERING AND PUBLIC POLICY AT CARNEGIE-MELLON

Joint academic appointment, preferably at the level of assistant professor, in the Department of Electrical and Computer Engineering and the Department of Engineering and Public Policy (EPP). Research interests must include issues of public policy that involve substantive technical content. The areas of digital systems, robotics, and telecommunications are preferred. Send résumé to: **Professor M. Granger Morgan, EPP, Carnegie-Mellon University, Pittsburgh, Pa. 15213.**

The University of Guelph which has recently established a Department of Molecular Biology and Genetics is seeking a **FACULTY MEMBER** with research interests in the molecular biology of development who will participate in the undergraduate and graduate teaching programs. Potential candidates should have had postdoctoral experience and be familiar with tissue culture, cloning, and recombinant DNA procedures. The position is a tenure-track appointment and will be made at the assistant professor level.

Applications are also invited from individuals interested in molecular biology wishing to join a new department and willing to apply for their own salary support from a national funding agency. These individuals would be expected to participate in the functioning of the department.

The individuals who will form the nucleus of this new department include those with research interests in the cell and molecular biology of gene expression, developmental biology, and genetic recombination.

Positions subject to final budgetary approval.

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

Please send curriculum vitae and the names of three referees before 1 July 1984 to: **Dr. Bruce H. Sells, Dean and Chairman of Molecular Biology and Genetics, Search Committee, College of Biological Science, University of Guelph, Guelph, Ontario, Canada N1G 2W1.**

FACULTY RESEARCH ASSOCIATE. Position available beginning 1 July 1984 at the University of Maryland Eastern Shore. Research will involve study of lunar/tidal rhythms in Cancer crabs under National Science Foundation project. Occasional teaching of lectures/laboratories also required. Background in anatomy/physiology/endocrinology of decapod Crustacea, experience with computers (some programming, computerized data acquisition, and so forth), and Ph.D. required. Funding available for 2 years, with opportunity to develop future proposals in related areas. Deadline for application: 31 May 1984; \$18,000 beginning salary plus state of Maryland benefits. Contact: **Steve Rebach, CREAM, University of Maryland Eastern Shore, Princess Anne, Md. 21853.** *An Affirmative Action/Equal Opportunity Employer.*

FLOW CYTOMETER OPERATOR needed for new FACS 440 Shared Instrumentation Facility. Responsibility for design of appropriate sorting conditions with users, for operation of instrument and its computer. Must have facility in handling instruments and cells as well as some familiarity with computers. Experience helpful but not absolutely required. Permanent position; educational benefits. Call or write: **Dr. E. R. Simons, Boston University School of Medicine, Boston, Mass. 02118; telephone: 617-247-6089.**

MARINE ORGANIC GEOCHEMIST

The Chesapeake Biological Laboratory at Solomons, Maryland, a unit of the Center for Environmental and Estuarine Studies of the University of Maryland, is seeking a marine organic geochemist as a part of its effort in building its marine chemistry program. Candidates should have evidence of research experience and a sound publication record, and be eager to participate in graduate education. This is a tenure-track faculty position. Applicants should include a statement of present and future research goals, curriculum vitae, major publications, and names of four potential references. Materials should be addressed to: **Dr. Walter Boynton, Chairman of the Search Committee, Chesapeake Biological Laboratory, Box 38, Solomons, Maryland 20688.** Applications received by 15 June 1984 will be assured of full consideration.

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

**NATIONAL INSTITUTES OF HEALTH
PUBLIC HEALTH SERVICE
DEPARTMENT OF HEALTH AND
HUMAN SERVICES**

The National Institute on Aging (NIA) invites nominations and applications for the position of DEPUTY DIRECTOR. This is a Civil Service position in the Senior Executive Service with a salary range of \$58,938 to \$66,000 per annum. The person selected may be eligible for Physicians' Comparability pay up to \$10,000 per year. A one-year probationary period must be served by the individual selected if not currently in the Senior Executive Service.

The Deputy Director assists the Director in the policy development and coordination of all Institute activities, which include: conducting, fostering and supporting biomedical, social and behavioral research and training pertaining to the aging process and common problems of older people.

Further information about the position and qualifications requirements may be obtained by contacting Mr. Michael P. Lockard at 301-496-5347. A Personal Qualifications Statement (SF-171) accompanied by a current curriculum vitae and bibliography should be submitted to: NIA Personnel, Building 31, Room 2B-63, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland 20205.

APPLICATIONS MUST BE POSTMARKED NO LATER THAN MAY 31, 1984.

ALL QUALIFIED CANDIDATES WILL RECEIVE CONSIDERATION WITHOUT REGARD TO RACE, RELIGION, COLOR, SEX, AGE, NATIONAL ORIGIN, LAWFUL POLITICAL AFFILIATION, MARITAL STATUS, UNION MEMBERSHIP, OR ANY NONDISQUALIFYING PHYSICAL OR MENTAL HANDICAP.

NIH IS AN EQUAL EMPLOYMENT OPPORTUNITY EMPLOYER.

**NATIONAL CANCER INSTITUTE
DIVISION OF CANCER TREATMENT
RADIATION RESEARCH PROGRAM**

Associate Director,
Radiation Research Program

Salary Range—\$58,938 to \$66,000

(Physicians may be eligible for a Physicians' Comparability Allowance up to \$10,000 per year)

Has overall responsibility for the planning, evaluation and coordination of broad national and international radiation research programs designed to determine effectiveness of radiation in cancer treatment, usefulness in diagnosis of cancer and other diseases, and biological effects of exposure to low doses of ionizing and non-ionizing radiations. Administers a \$60 million contract and grant program.

Position information and qualifications requirements may be obtained by contacting:

**Cynthia A. Kauff, PMS
National Cancer Institute
Building 31 Room 3A08
Bethesda, Maryland 20205, 301-496-6503**

Applications (SF-171, CV and Bibliography) must be submitted to above address and postmarked not later than May 31, 1984.

AN EQUAL OPPORTUNITY EMPLOYER

Research Scientist

The Bristol-Myers Company Pharmaceutical Research and Development Division has an excellent opportunity for a Research Scientist to join its Antitumor Biology Department. Selected candidate will participate in a multidisciplinary collaborative research program on development of new IN VIVO experimental tumor models, including human tumor xenografts, and application of existing tumor models for IN VIVO evaluation of drugs for antitumor activity.

To qualify, you'll need a BS or MS degree with 6-8 years experience in tumor biology and IN VIVO antitumor drug testing, OR a PhD from a program focused on IN VIVO experimental tumor models with 0-2 years relevant postdoctoral experience. Specific experience with human tumor xenografts, the subrenal capsule assay and use of radio-isotopes would be advantageous.

We offer an excellent starting salary, comprehensive benefits and a working environment conducive to your professional growth. For prompt, confidential consideration, forward your resume with salary history and requirement, to: EMPLOYMENT RECRUITER



**BRISTOL-MYERS COMPANY
RESEARCH AND
DEVELOPMENT DIVISION**

P.O. Box 4755, Syracuse, New York 13221

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**CENTRE INTERNATIONAL DE RECHERCHES
MEDICALES DE FRANCEVILLE—GABON**



recherche

**CHEF DE DEPARTMENT
ENDOCRINOLOGIE, PHYSIOLOGIE
DE LA REPRODUCTION**

- Docteur en Médecine, expérience de recherches en physiologie des stéroïdes, physiologie de la reproduction, HPLC, dosages radioimmunologiques.
- Recherches sur l'étude des facteurs hormonaux de la stérilité humaine et de la puberté chez les primates,
- Recherches sur la physiologie du cycle menstruel chez le Cynomolgus.

Conditions de travail remarquables. Contrat de 2 ans renouvelable. Excellentes conditions d'expatriation.

**Candidatures à adresser au Directeur Général du
C.I.R.M.F., 28 boulevard de Grenelle, 75015 PARIS
avec curriculum vitae.**

DIRECTOR BIOTECHNOLOGY RESEARCH INSTITUTE MONTREAL

The Organization

The National Research Council is establishing a new biotechnology research institute in Montreal. This new research institute will emphasize the industrial applications of biological sciences and focus on the development of new processes and products. It will foster mission-oriented research and technology transfer to industry and promote communication and collaboration amongst industrial, university, federal and provincial government laboratories.

The Research Areas

The main areas of research will include

- Fermentation and biochemical and process engineering
- Genetic engineering
- Cell fusion
- Enzyme technology

A major large scale fermentation facility will allow pilot scale experimentation with new fermentation methods and economic evaluation. The R&D will focus on agrofood, energy, pharmaceuticals, health care and forestry.

The Position

The Director will report to the Vice-President (Biotechnology) and will be an active contributor to the National Biotechnology Program. The Director will be responsible for planning, organizing, implementing and controlling the Institute's research and development programs and will advise senior management on long term research goals. The Director will also be responsible for establishing close ties with universities and industries and undertaking research projects on a cooperative basis.

The Candidate

The person appointed will have an established reputation for outstanding leadership in research and development and the ability to lead, manage and coordinate the activities of the Institute. Candidates will have many years of research experience in a biotechnology-related discipline and demonstrated ability in research management. Knowledge of both the English and French languages is essential.

The Institute

The Biotechnology Research Institute will be located in downtown Montreal in a new \$60 million, 18,000 m² complex. It will employ 220 people and will host up to 80 researchers from industries, universities and other research organizations. It will have an annual budget of \$35 million.

BENEFITS are fully competitive and SALARY will be commensurate with qualifications and experience.

PLEASE SEND DETAILED RÉSUMÉ IN CONFIDENCE TO:

The Chief
Personnel Services Branch
National Research Council
Ottawa, Ontario, K1A 0R6.

Canada



National Research
Council Canada

Conseil national
de recherches Canada

POSITIONS OPEN

THE HEBREW UNIVERSITY OF JERUSALEM

Faculty Position in Anatomy and Embryology

The Department of Anatomy and Embryology at the Hebrew University-Hadassah Medical School invites applications for a tenure-track faculty position in anatomy and embryology. M.D. and/or Ph.D. and postdoctoral training are required. The Department is engaged in the teaching of gross anatomy, neuroanatomy and neurobiology, and embryology and teratology. Research fields are in the structural and developmental sciences: embryology and teratology, experimental hematology, gene expression, neurobiology (including electrophysiology), oral biology, and vascular pathophysiology. The candidate is expected: (i) to participate in the teaching of anatomy and/or embryology and teratology and/or neuroanatomy (previous teaching experience is desired but not mandatory); and (ii) to develop independent research in one of the fields already present in the department. Send curriculum vitae, list of publications, and three letters of recommendation to **Professor Shlomo Rotshenker, Search Committee, P.O. Box 1172, Jerusalem, Israel.** Deadline date: 30 June 1984.

FISH PHYSIOLOGY. Visiting faculty for spring and fall 1985. Ph.D. in fisheries or related field and research in fish physiology are required. Teaching duties include general physiology and graduate level fish physiology. Send letter of application, résumé, transcripts, reprints, and names, addresses, and telephone numbers of three references to: **University of Alaska-Juneau, Office of Personnel, 11120 Glacier Highway, Juneau, Alaska 99801,** by 1 July 1984. *An Affirmative Action/Equal Opportunity Employer.*

INFECTIOUS DISEASE: Assistant professor of medicine, tenure-track. Stanford University, Department of Medicine, Division of Infectious Diseases, at the Palo Alto Veterans Administration Hospital is seeking applications from candidates who are Board-eligible or Board-certified in infectious diseases, committed to excellence in clinical teaching and patient care, and prepared to develop a vigorous and independent research program. Qualified applicants should submit curriculum vitae, bibliography, statement of research and clinical interests, and names of two references to: **Gary K. Schoolnik, M.D., Division of Infectious Diseases, Stanford University School of Medicine, Stanford, Calif. 94305.** *Stanford University is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

One full-time position at the **INSTRUCTOR OR ASSISTANT PROFESSOR** level in the Department of Psychiatry, University of Michigan, as **staff psychiatrist** with the Adolescent Psychiatry Service. Responsibilities include teaching and supervision of residents, fellows, and medical students in the Inpatient and Partial Hospitalization Programs. Involvement in ongoing research in affective disorders and other projects is desirable. Tenure-track appointment at academic rank appropriate to qualifications and experience. Send curriculum vitae and names of three references to: **Dr. Robert O. Friedel, Professor and Chairman, Department of Psychiatry, N5743, APH, University of Michigan Hospitals, 1405 East Ann Street, Ann Arbor, Michigan 48109.**

The University of Michigan is an Affirmative Action Employer.

NEUROENDOCRINOLOGIST DEPARTMENT OF PHYSIOLOGY QUEEN'S UNIVERSITY

A vacancy will exist commencing 1 August 1984 for an established neuroendocrinologist. The applicant should have the Ph.D. and/or the M.D. degree, several years of teaching experience, and a proven research record. The applicant will be expected to lead an active high quality research programme and to participate in undergraduate and graduate teaching. The facilities for research are outstanding and the appointment is a regular one under tenure regulations. *In accordance with Canadian immigration requirements, priority will be given to Canadian citizens and permanent residents.* Applicants should submit curriculum vitae, a brief statement of their research interests and objectives, selected reprints, and the names of three referees from whom a confidential assessment of research and teaching abilities may be obtained to: **Dr. V. C. Abrahams, Department of Physiology, Queen's University, Kingston, Ontario, Canada K7L 3N6.**

Staff Fellow (Ph.D.)
Salary Range—\$17,000 to \$35,467
(Having less than 3 years professional
Research Experience)

Senior Staff Fellow (Ph.D.)
Salary Range—\$20,688 to \$39,767
(3-7 years Research Experience)

**NATIONAL INSTITUTES OF HEALTH
NATIONAL INSTITUTE OF
ENVIRONMENTAL HEALTH SCIENCES
LABORATORY OF
MOLECULAR BIOPHYSICS**

The NMR Workgroup is seeking a physiologist/biochemist to work in the area of *in vivo* and *in vitro* metabolic analysis using NMR spectroscopy. The successful candidate will be experienced in carrying out surgical procedures on experimental animals including catheterization, surgical implantation of devices, and preparation of organs for perfusion studies. The candidate must have a record of demonstrated research productivity and ability to carry out independent as well as collaborative research, however since the project will include several NMR spectroscopists, extensive experience in the area of NMR spectroscopy is not essential. The initial appointment is for two years, with additional extension possible. Salary commensurate with candidate's qualifications and experience. Send curriculum vitae, bibliography and three letters of recommendation to:

Mr. Bruce Wiggins
NIEHS Personnel Office, P.O. Box 12233
Research Triangle Park, NC 27709

*NIEHS is an Equal Opportunity Employer, women and
minorities are encouraged to apply.*

Post Doctoral Scientist Immunology

Smith Kline & French Laboratories, a leader in pharmaceutical research is seeking a Post Doctoral Scientist to work in an environment designed to foster creative, innovative research and to promote personal and professional growth.

We consider post doctoral studies of major importance in an individual's career and encourage publication of findings in leading journals and a full interaction with the scientific community.

Our post doctoral appointments are of 1 year duration and with mutual agreement, renewable for a 2nd year. The successful candidates will:

- propose, implement, develop and test new clinical assays for Flow Cytometry.
- collaborate with scientists at SmithKline Clinical Labs (SKCL) and Smith Kline & French Labs.
- interact with clinical clients in interpreting Flow Cytometry data released by SKCL.

Candidates are required to have:

- a Ph.D. and/or M.D. with two or more years experience in Cell Biology.
- interest in Clinical Immunology and Flow Cytometry.
- demonstrated experience in publishing scientific data.
- ability to interact with clinicians.

We offer excellent compensation and benefits including an attractive relocation policy. For confidential consideration, send your C.V. to Mr. Walter B. Flagg, **SmithKline Beckman Corporation**, 1590 Spring Garden Street, Philadelphia, Pa. 19101. We are an equal opportunity employer, M/F/H/V.

SK&F
A SmithKline Beckman Company

**HEAD
MATERIALS AND MOLECULAR
RESEARCH DIVISION
AND**

**ASSOCIATE DIRECTOR
LAWRENCE BERKELEY LABORATORY**

The Division Head is responsible for the overall direction of a varied program of basic research in Materials Science and Chemistry. He/She will provide leadership in the generation of new initiatives, in planning the long-range evolution of scientific and technical programs, and in inaugurating those changes required to ensure the long-range health of the Division. The incumbent will manage resources on numerous projects while ensuring cost requirements are met. Duties include meeting the planning and reporting requirements of the sponsoring offices of the Department of Energy. As an Associate Director of the Laboratory, will participate in the planning and decision making of significant issues for the entire Laboratory. Requires a Ph.D. in Physical Science or Engineering and a distinguished record of publication and achievement. Ability to work with the essentials of a number of fields not in his/her own specialty. Requires strong management background including excellent scientific judgement, strong administrative skills, creativity in decision making, problem-solving, and the management of human resources. Please specify Job #A/2827. Send two resumes to: **Lawrence Berkeley Laboratory, One Cyclotron Road, Employment Office Building 90-1042, Berkeley, CA 94720.** Application/resume must be in the Employment Office by 5:00 p.m. on June 1, 1984. An Equal Opportunity Employer M/F/H.



**LAWRENCE
BERKELEY
LABORATORY**

RESEARCH ASSISTANT

The Upjohn Company, a world leader in research development of pharmaceuticals located in Kalamazoo, Michigan has an immediate opening for an assistant in our Atherosclerosis and Thrombosis Research Unit.

Perform standard and specialized coagulation measurements, including special factor assays and assessment of fibrinolysis; perform routine radioimmunoassay procedures for coagulation related factors including platelet and endothelial cell release products; design and implement biochemical analyses of vascular tissues and blood cells for factors related to thrombosis; perform routine immunologic procedures such as production of polyclonal antibodies.

A BS/MS in biological sciences or biochemistry and research experience with large or small laboratory animals; RIA, and coagulation assays are required. Experience with biochemical analysis of vascular tissue and blood formed elements, animal plebotomy and/or drug dosing experience is highly desirable.

Kalamazoo is a mid-sized Southwestern Michigan community offering an excellent mix of cultural/recreational opportunities including lakes, nearby colleges, and a four-season climate. The Upjohn Company offers an excellent salary, benefits, and relocation plans.

For confidential consideration, please call inside Michigan, collect 616/323-6767 or from outside Michigan, toll free 1-800-253-8600, Extension 3-6767, to request an employment application sent to you immediately. Please refer to Ad Number 15991-A when calling.

Upjohn

The Upjohn Company Is An Equal Opportunity Employer M/F

"A Century Of Caring"

POSITIONS OPEN

MOLECULAR GENETICS. Applications are again being invited to fill a tenure-track faculty position with an individual who will initiate a vigorous research program in some aspect of either prokaryotic or eukaryotic molecular genetics/biology. The successful candidate also will be expected to participate in the department's undergraduate and graduate teaching programs. Interested persons should provide curriculum vitae and a résumé of their proposed research program, and arrange to have three letters of reference sent to:

**Molecular Genetics Search Committee
Department of Biological Sciences
Wayne State University
Detroit, Mich. 48202**

PHYSIOLOGIST

An established leader in gastrointestinal motility research to head the surgical research section at VA Medical Center, Wood, Wisconsin. The candidate must have an interdisciplinary background including physiology, electrical engineering, surgery, pharmacology, and computer applications. An established grant record and experience in supervising research fellows and residents is a must for this position. We are looking for an individual who has experience in all areas of gastrointestinal tract including esophagus, stomach, small intestine, colon, biliary tract and sphincters, and must have used in vitro and in vivo techniques of study. Formal training and experience in experimental surgery is a necessary requirement. Send curriculum vitae and bibliography to: **Chief, Personnel Service/05, VA Medical Center, 5000 West National Avenue, Milwaukee, Wisc. 53193.** Note: applicants to call between 8 a.m. to 4:30 p.m., Monday through Friday; **telephone: 414-384-2000.**

PLANT MITOCHONDRIAL DNA POSTDOCTORAL POSITION

Starting immediately for 2 to 3 years to ask why the plant mitochondrial genome is so large by studying its structure and expression in watermelon (330-kb genome size) and muskmelon (2400 kb). Experience in cloning required, sequencing preferred. Send résumé and three references to: **Dr. Arnold Bendich, Botany KB-15, University of Washington, Seattle, Wash. 98195.**

PLANT TISSUE CULTURE/BIOCHEMISTRY MOLECULAR BIOLOGY/MICROBIOLOGY

NPI, a leader in plant biotechnology, has openings for the following:

PLANT CELL AND TISSUE CULTURE—Background in somatic cell genetics and selection desired. Positions at the Ph.D., M.S., and B.S. levels available. **Attention: R. D. Locy.**

BIOCHEMIST/IMMUNOHISTOCHEMIST—Expertise in protein purification enzyme assay, microtechnique, or immunohistochemistry desired. Positions at the postdoctoral or M.S. level available. **Attention: Dr. Eve Wurtele.**

MOLECULAR BIOLOGY—Background in all areas of recombinant DNA technology with particular expertise in the cloning and characterization of prokaryotic or eukaryotic genes desired. Positions at the Ph.D., M.S., and B.S. levels available. **Attention: Dr. Tom Ulrich.**

MICROBIOLOGY—Background in microbiology with coursework or experience in microbial physiology. Positions at the B.S. level available. **Attention: Dr. Mark Stowers.**

NPI is a 10-year-old company in University Research Park adjacent to the University of Utah. Besides an excellent work environment with a rapidly growing biotechnology company, our location provides excellent recreational as well as cultural opportunities for our employees.

Reply to the appropriate person above at: **NPI, 417 Wakara Way, Salt Lake City, Utah 84108.** NPI is an Equal Opportunity Employer.

SENIOR FACULTY, multiyear contract position available for:

NEUROPHYSIOLOGIST BIOCHEMIST MICROBIOLOGIST

Responsibilities include teaching medical students and RESEARCH.

Interested candidates should send curriculum vitae and all supportive evidence (teaching experience and current grant support information and grant track record) to: **SEARCH COMMITTEE, Dr. Arnold L. Nagler, Associate Dean, Preclinical Medical Education, New York College of Osteopathic Medicine, Old Westbury, Long Island, New York 11568.**

POSITIONS OPEN

The University of Calgary NEUROANATOMIST

Applications are invited for a **NEUROANATOMIST** in the Department of Anatomy and the Neuroscience Research Group in The University of Calgary, Faculty of Medicine. Appointment at assistant or associate professor; salary on University scale will be determined according to experience and qualifications. Requires M.D. or Ph.D., at least 2 years of postdoctoral research training, evidence of a productive and fundable neuroanatomical research program, and experience teaching medical and graduate neuroanatomy. Primary duty will be to establish and conduct an original, independent research program of interest to a large and diverse interdisciplinary neuroscience group. Teaching in medical and graduate neuroanatomy will also be required. The position to be funded by successful competition for a scholarship from the Alberta Heritage Foundation for Medical Research.

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.

Applications must be received by 31 May 1984, with appointment to be effective in 1985. Please send curriculum vitae, statement of research interests and career goals, and the names of three referees to:

**Dr. Gregory E. Lucier
Chairman, Neuroanatomy Search Committee
Department of Medical Physiology
The University of Calgary
Faculty of Medicine
3330 Hospital Drive, NW
Calgary, Alberta, Canada T2N 4N1**

INSTRUMENTALLY ORIENTED NMR SPECTROSCOPIST

The Biochemistry Department of the University of Wisconsin-Madison is searching for a Ph.D.-level scientist to serve as the instrumentation specialist of its new NMR facility to be directed by Professor John L. Markley. The salary and responsibilities will be competitive and will depend on the experience and qualifications of the applicant. The ideal candidate will have had extensive experience in RF and digital electronics and will have published on the design of NMR instrumentation and the implementation and evaluation of new NMR techniques. This new position, which is supported by university funds, should provide an excellent opportunity for independent and collaborative research at the frontiers of experimental NMR. The instrumentation specialist will have the opportunity of playing a major role in efforts to establish a national resource for biochemical and physiological applications of NMR spectroscopy in the spacious laboratory under construction.

Women and minority candidates are especially encouraged to apply. Interested candidates should send a complete résumé and have three letters of recommendation forwarded to: **Professor H. F. DeLuca, Chairman, Department of Biochemistry, University of Wisconsin-Madison, 420 Henry Mall, Madison, Wisc. 53706,** before 15 June 1984. *The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.*

PHARMACOLOGY—FACULTY POSITION. THE PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE invites applications for a tenure-track assistant professor position in pharmacology. Candidates should have a Ph.D. in pharmacology or related sciences. Preference will be given to individuals with postdoctoral experience. Candidates must be capable of mounting a vigorous research program and participating in the teaching of pharmacology, toxicology, and graduate students. The position is to be filled on or before 15 August 1984. Applicants should submit curriculum vitae and list of references to: **Dr. Gary R. Lage, Director of Toxicology Programs, PHILADELPHIA COLLEGE OF PHARMACY AND SCIENCE, 43rd Street and Kingsessing Mall, Philadelphia, Pa. 19104.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS in molecular immunology available. Project areas concern the molecular mechanism of lymphocyte mediated cytotoxicity (both at the protein and DNA level) and of complement mediated cytotoxicity (protein and DNA).

Assuming new position at: **The Department of Immunology/Microbiology, New York Medical College, Valhalla (Westchester County), New York 10595.** Interested individuals please send curriculum vitae and references to: **Eckhard R. Podack, M.D., Professor for Immunology/Microbiology,** at above address.

POSITIONS OPEN

PLANT GENETICIST

The Department of Pomology, University of California, Davis, seeks a plant geneticist with an interest in molecular or cellular genetics to fill an 11-month, tenure-track position as assistant professor and assistant geneticist in the Agricultural Experiment Station (83 percent research/17 percent teaching). The individual will be expected to utilize techniques such as gene transfer, restriction fragment polymorphism, in vitro selection, analysis of somaclonal variants, or screening with monoclonal antibodies in developing a research program which contributes to the genetic understanding and improvement of California tree fruit and nut crops. A well-equipped laboratory is available. The individual is also expected to participate in advising students and in teaching the genetic components of departmental courses and to develop courses related to his/her genetic training. A Ph.D. degree in genetics or a related field is required. Submit curriculum vitae, official undergraduate and graduate transcripts, list of publications (and reprints of appropriate papers), a statement of research and teaching interests, and names and addresses of three references to: **Dr. John Labavitch, Search Committee Chairman, Department of Pomology, University of California, Davis, Calif. 95616; telephone: 916-752-0920.** Applications must be received by 1 June 1984. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL ASSOCIATE CELLULAR BIOPHYSICS

Present opening for research on memory and transmembrane signal mechanisms, molecular mobility of cell membrane receptors, cytoskeletal interactions, and molecular responses of eukaryotic cells to electric fields and mechanical stimuli. Modern cell biophysical methods include single channel recording, digital fluorescence video image analysis, fluorescence photobleaching recovery, fluctuation spectroscopy, cell culture and monoclonal antibody procedures. Various interdisciplinary backgrounds suitable, including biophysics, neurobiology, molecular cell biology, and instrumental biochemistry. Send curriculum vitae, bibliography, and references to: **Professor Watt W. Webb, Cornell University, Applied Physics, Clark Hall, Ithaca, New York 14853-0161.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE position available now for ultrastructural studies of blood vessel permeability in the eye. Background in cell biology and experience in electron microscopy and cytochemistry desirable. Send curriculum vitae and names of three references to: **Dr. Edward Essner, Department of Ophthalmology, Wayne State University School of Medicine, 540 East Canfield Avenue, Detroit, Mich. 48201.**

POSTDOCTORAL POSITION IN NEUROSCIENCE OPEN

Funding for 3 years; study cortical microcircuitry using neuroanatomical/neurochemical techniques of light- and electron-microscope histology, autoradiography, HRP histochemistry. Knowledge of visual system, corpus callosum, experience with these techniques desirable. Send curriculum vitae and three letters of recommendation to: **Dr. Andrea Elberger, Department of Neurobiology and Anatomy, University of Texas Medical School at Houston, P.O. Box 20708, Houston, Texas 77025.** Telephone: 713-792-5747.

Equal Opportunity Employer. Women and minorities are encouraged to apply.

POSTDOCTORAL POSITION

A position is available beginning in July 1984 for full-time research on cell biological aspects of photoreceptor membrane turnover. Areas of major emphasis include cell recognition and phagocytosis by pigment epithelium, regulation of phagocytosis and mechanisms of synthesis, and assembly of photosensitive membrane. A Ph.D. or equivalent background in biological, neurological, or biochemical sciences is required. Send résumé and letters of reference to: **Dr. Joseph C. Besharse, Department of Anatomy, Emory University School of Medicine, Atlanta, Georgia 30322.**

Emory University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH SCIENTISTS

Bristol-Myers Company Pharmaceutical Research and Development Division, currently has 2 openings for Ph.D. Research Scientists in a rapidly expanding immunology Cander Research Program located in Syracuse, NY. Post doctoral experience desirable. The successful candidate would be expected to employ state-of-the-art technology in developing lead discovery and development programs designed to investigate T-Cell regulation of immune responses to neoplastic and infectious diseases. An up to date working knowledge of Lymphokine and growth regulatory factor assay systems is a prerequisite. Bristol-Myers provides a scientific environment that encourages publication and career development.

There are also 2 openings for BS/MS level assistant/associate scientists in the immunology research program outlined above. Experience working in an immunology laboratory on Lymphokine/Cytokine assay system is desirable. A working knowledge of animal handling and in vitro tissue culture technique is advantageous.

We offer excellent salaries, all major benefits and a state-of-the-art environment conducive to your professional growth. For prompt, confidential consideration, forward your resume with salary history and requirement, to: **MANAGER OF EMPLOYMENT**



**BRISTOL-MYERS COMPANY
RESEARCH AND DEVELOPMENT DIVISION**

P.O. Box 4755, Syracuse, NY 13221
An equal opportunity employer M/F

DEPARTMENT HEAD

DEPARTMENT OF BIOLOGY MONTANA STATE UNIVERSITY

A diverse Biology Department seeks qualified applicants, with distinguished records of academic achievement, for the position of department head. There are currently 26 faculty, comprising 20.5 FTE's in the department. The distribution of the departmental FTE's, by the major groups, is 11.2 ecologically oriented zoologists and botanists, 4.4 wildlife managers, 2.8 geneticists, and 2.1 biomedically oriented anatomists and physiologists. Up to four vacancies are anticipated within the next 2 years. The department generates substantial credit hours in undergraduate, medical and graduate courses, and offers baccalaureate degree programs in six fields of option, master's programs in biological sciences and fish and wildlife management, and doctorate in biological sciences.

The department head will be expected to:

- 1) Show leadership in developing the professional stature of the department.
- 2) Strengthen and initiate funded research programs in the department in present areas of concentration.
- 3) Maintain an active program of research and scholarly publication.
- 4) Promote a strong, well-balanced curriculum and teaching program at undergraduate and graduate levels.

The position will become available 1 January 1985; starting date is negotiable. Fiscal year appointment; salary open.

Applications, to consist of a description of qualifications as they relate to the position, a résumé, and names and telephone numbers of six references, should be sent to:

**Department Head Search Committee
Biology Department
Montana State University
Bozeman, Montana 59717**

The search committee welcomes nominations of possible candidates. The deadline for first screening is 1 September 1984. Applications will be accepted until a suitable candidate is found.

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

RepliGen

BIOTECHNOLOGY

Repligen Corporation, a rapidly growing biotechnology company involved in the development of a variety of innovative peptide and protein products by both recombinant DNA and conventional biological techniques, seeks qualified candidates at the BS/MS level with at least 2 years' laboratory experience in the following areas:

Protein Chemistry: A minimum of 2 years' experience should include both analytical and preparative protein purification as well as protein characterization.

Molecular Biology: A solid background in microbial genetics is required.

Cell Biology: Experience in cell culture, immunology and RNA techniques would be useful.

Recombinant DNA: Experience in cloning and DNA biochemistry techniques is required.

Successful candidates will be highly motivated individuals who can take advantage of the outstanding growth opportunities at Repligen. Repligen offers a competitive salary, excellent benefits, and equity participation. Submit resume and references to:
**Director of Personnel,
Repligen Corporation,
101 Binney St.,
Cambridge, MA 02142.**

An equal opportunity employer.

BIOCHEMIST/ MICROBIOLOGIST

The Monsanto Agricultural Products Research Division is looking for a qualified Biochemist/Microbiologist.

Within a multi-disciplined environment, you will collaborate with a team of molecular geneticists, biochemists and organic chemists to identify biochemical targets against agronomically important pathogenic fungi and insects.

To qualify for this challenging position, you must have the following combination of experience and research skills:

- Ph.D in Biochemistry or Microbiology or equivalent experience with 2 or more years' post-doctoral or industrial experience
- expertise in biochemical isolation, purification and characterization of enzymes and biologically active proteins from microorganisms
- experience in studying the mechanism of enzyme/inhibitor interactions and the development of screening procedures for antimicrobial components
- in-depth knowledge of *Streptomyces* metabolism in physiology
- knowledge of culture maintenance/bench scale fermentation and/or genetic manipulations of microorganisms a plus.

Submit resume and salary requirements to: **K.K. Kiger; MONSANTO COMPANY; Bldg. 03H; 800 N. Lindbergh Blvd.; St. Louis, Missouri 63167.** An Equal Opportunity/Affirmative Action Employer M/F/H/V.

Monsanto

POST DOCTORAL RESEARCH FELLOW

Sandoz, Inc. is responsible for pharmaceutical products that improve the quality of life. Our developments are the result of research conducted by professionals who specialize in many different fields.

The ideal candidate should possess a Ph.D. degree in the areas of calcium flux, regulation of intracellular calcium concentrations, calcium channels, calcium antagonists or pharmacological regulation of calcium and tissue interactions. The research program will be directed towards elucidation of the interactions between calcium and arterial tissues with a focus towards lipid accumulation and atherosclerotic lesion development.

Positions at Sandoz offer personal satisfaction, professional opportunity/challenge, competitive salaries and excellent benefits package. Conveniently located in northern New Jersey, our campus-like facilities are accessible via major thoroughfares.

For prompt consideration, please forward your resume in confidence to:



SANDOZ, INC.
R&D PERSONNEL
Route 10 (404-5)
East Hanover, NJ 07936
Equal Opportunity Employer M/F

VIROLOGY SENIOR RESEARCH SCIENTIST

Sandoz, Inc. is responsible for pharmaceutical products that improve the quality of life. Our developments are the result of research conducted by professionals who specialize in many different fields.

We are currently seeking a Senior Research Scientist to join a newly formed team of immunologists investigating the field of monoclonal antibodies of human and/or murine origin. This research will involve the construction of hybridomas, production and testing of the antibodies, preclinical and clinical testing of their therapeutic usefulness.

The ideal candidate should possess a PhD or equivalent in virology or a related field with a minimum of 2 years of post-doctoral training in a related research program. A background in the molecular biology and immunology of human herpes viruses is preferred.

Positions at Sandoz offer personal satisfaction, professional opportunity/challenge, competitive salaries and excellent benefits package. Conveniently located in northern New Jersey, our campus-like facilities are accessible via major thoroughfares.

For prompt consideration, please forward a detailed resume, together with a list of relevant publications which have been published in major scientific journals to:



SANDOZ RESEARCH INSTITUTE
SANDOZ, INC.
Personnel Department (403-1)
Route 10
East Hanover, N.J. 07936
Equal Opportunity Employer M/F

POSITIONS OPEN

PHARMACOLOGY FACULTY POSITION CORNELL UNIVERSITY

Applications are invited for a faculty position in the Department of Pharmacology. Responsibilities will include the teaching of basic and/or clinical pharmacology to veterinary and postgraduate students, research, participation in the development of a strong graduate research program, and some administrative duties.

Applicants should have a D.V.M., Ph.D., M.D., or equivalent degree, an excellent research background, and the ability to develop a strong research program.

Current interests in the department include receptor structure and function, ion channels, neuropeptides, electrolyte transport, secretion, the role of calcium in cell activation, thyroid hormone action and metabolism, pharmacokinetics and studies of seizure disorders, allergic reactions, diarrheal disease, and diabetes.

Applications and three letters of recommendation should be sent to: **Dr. Geoffrey W. G. Sharp, Chairman, Department of Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, New York 14853.**

Cornell University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION in gene expression of glutathione S-transferases available 1 July 1984 for individual with background in molecular cloning and/or DNA enzymology. Salary negotiable. Send curriculum vitae and two letters of recommendation by 15 June 1984 to: **Dr. C.-P. David Tu, Biochemistry Program, The Pennsylvania State University, Altoona Laboratory, University Park, Pa. 16802.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION open for the study of breast epithelial cell antigens. Study will use mono- and polyclonal antibodies to characterize breast epithelial antigens in circulation, to correlate with histopathology and clinical history, and to investigate biological behavior. May participate in experimental approaches using antibodies in diagnosis and therapy of breast cancer. Requires: completion of doctoral studies in immunology, cell biology, biochemistry, and/or pathology. *Candidates must be U.S. citizens or possess legal right to work in United States.* Send résumés to: **CHILDREN'S HOSPITAL MEDICAL CENTER, Personnel Department, 51st and Grove Streets, Oakland, Calif. 94609.** Interested candidates may telephone: **Dr. Roberto C. Ceriani** for additional information at 415-428-3515. *Equal Opportunity Employer, M/F.*

POSTDOCTORAL POSITIONS in molecular and cellular biology available as early as September 1984 to study: (i) molecular properties of growth regulation by EGF (Dr. King), and (ii) developmental regulation of gene expression in transgenic mice (Dr. Ross). Experience in protein chemistry, receptors or protein kinase is desired for position (i); a background in molecular or cellular biology is required for the second position. Send curriculum vitae and names of three references to: **Dr. A. Christie King and Dr. Susan R. Ross, Department of Biological Chemistry, University of Illinois at Chicago, 1853 West Polk Street, Chicago, Illinois 60612.**

The University of Illinois at Chicago is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS IN BIOCHEMICAL TOXICOLOGY supported by NIEHS Training Grant available immediately to investigate alcohol metabolism, effects of alcohol on xenobiotic metabolism, and the role of oxygen radicals in chemical carcinogenesis. Send résumé and names of three references to: **Dr. Robert J. Rubin, Department of Environmental Health Sciences, School of Hygiene and Public Health, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, Md. 21205.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study mechanisms of plant tissue senescence in tropical fruit species. Person will be responsible for developing antibody techniques to investigate the role of phytohormones and assimilate partitioning in this process. Training in biochemistry and plant physiology is necessary, preferably in area of plant growth and development. Send curriculum vitae and names of three references to:

Dr. Tom L. Davenport
University of Florida, IFAS
Tropical Research and Education Center
18905 SW 280th Street
Homestead, Florida 33031

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Genentech, Inc., on the **SAN FRANCISCO PENINSULA**, is a rapidly growing and recognized leader in the field of genetic engineering and biotechnology research.

Scientist Molecular Biology

We have an opening in our Molecular Biology department for a Scientist to conduct research on the control of gene expression in mammalian cells. The program focuses on the characterization of promoters and transcriptional enhancers, mechanisms of translational control and gene amplification. You should have a PhD in Molecular Biology and at least 2 yrs. relevant experience in recombinant DNA techniques. (#1073).

Scientist/Sr. Scientist Clinical Assay Development

Our Medicinal Analytical Chemistry group has an opening for a Scientist to be responsible for identification, development and validation of specific clinical assays relating to rDNA produced pharmaceuticals. This includes collaborating with Clinical Research to assure quality of assay methods, interpretation of results and preparation of clinical reports.

You should have general clinical assay experience with emphasis on immunological and immunochemical applications and, preferably, protein biochemistry experience. Ideally, you will have a PhD or MD degree with specialization in clinical immunology and/or biochemistry and several years in a clinical laboratory involved with Assay Development and Validation or Diagnostic and Pharmaceutical Testing environment. (#1080).

Sr. Scientist Pharmaceutical R&D

Be responsible for preformulation studies, formulation/delivery system design, in vitro assessment of delivery characteristics, stability optimization and development of laboratory to pilot scale pharmaceutical manufacture methodology. Along with supervising a small group, you will represent pharmaceutical R&D on one or more research project teams. Relevant PhD (or equiv.) and 3-7 yrs. industrial experience in pharmaceutical R&D is a minimum requirement. (#1052).

Scientist Pharmaceutical R&D

Another position in the same technical area as above requires a relevant PhD (or equiv.) and at least 1 yr. industrial experience in pharmaceutical R&D. (#1050).

Genentech offers excellent salaries and benefits in a most stimulating environment. Please send resume to Human Resources Dept., (with reference number), Genentech, Inc., 460 Point San Bruno Blvd., South San Francisco, CA 94080. An equal opportunity employer m/f/h.

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POSITIONS OPEN

POSTDOCTORAL POSITION. For work on analysis of the alcohol dehydrogenase gene structure in evolution of Hawaiian *Drosophila*. Ph.D. in biology, genetics, or biochemistry; experience with recombinant DNA technology and *Drosophila* chromosome preparation desirable. Available from 1 September 1984 for 1 year. Send résumé and three references by 1 June 1984 to: **Dr. John A. Hunt, Genetics Department, University of Hawaii, Honolulu, Hawaii 96822.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL OR RESEARCH ASSOCIATE POSITION(S) in plant molecular genetics. Applicants with background in molecular biology/biochemistry and experience with recombinant DNA techniques and protein biosynthesis preferred. Applications should be sent to: **Dr. A. A. Szalay, Boyce Thompson Institute for Plant Research, Cornell University, Tower Road, Ithaca, New York 14853.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE to study mechanisms of host defense or pathogenesis in parasitic infection. Experience in cellular immunology or cell membrane biochemistry desired. Send curriculum vitae and names of references to:

Dr. F. Kierszenbaum
Department of Microbiology
Michigan State University
East Lansing, Mich. 48824-1101
An Equal Opportunity/Affirmative Action Employer

THREE POSTDOCTORAL/RESEARCH ASSOCIATE POSITIONS AVAILABLE

These positions are for work on: (i) the regulation of intestinal electrolyte transport by Ca^{2+} , calmodulin and cyclic AMP, (ii) the control of insulin secretion, and (iii) the biophysics or molecular biology of ion channels.

Candidates should have a Ph.D. or equivalent degree with experience in biochemistry, molecular biology, biophysics, physiology, or pharmacology. Applications including curriculum vitae and the names of three referees should be sent to either:

Dr. Geoffrey W. G. Sharp, Director
Division of Biological Sciences
Cornell University
Ithaca, N.Y. 14853

or for position (iii):

Dr. Robert E. Oswald
Department of Pharmacology
New York State College of Veterinary Medicine
Cornell University
Ithaca, N.Y. 14853

Cornell University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE: To study mechanism of neurotoxic disease (toxic neuropathy) using morphologic techniques. Skills in EM necessary. Available immediately. Send curriculum vitae to: **Dr. A. B. Sterman, Department of Neurology, School of Medicine, Health Sciences Center, T12-020, State University of New York (SUNY), Stony Brook, Stony Brook, N.Y. 11794.** SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer. AK Number 80-84.

STEROID-REGULATED GENES

POSTDOCTORAL FELLOW to clone and characterize steroid hormone-regulated genes of uterus and tissue culture cells, study effects on chromatin structure, and examine activities of anti-estrogens on system. Ph.D. must have recombinant DNA experience. NIH-level stipend. Send curriculum vitae, transcripts, and three letters of recommendation to: **Dr. Fred R. Frankel, 249 Johnson Pavilion, University of Pennsylvania, Philadelphia, Pa. 19104.**

STAFF OFFICER

The National Academy of Sciences has an immediate opportunity to organize and manage a conference of Pan American officials on food quality control and food safety. The incumbent will assist a committee in planning all phases of the conference, preparation of background documents, and conference proceedings. Applicant should have a Ph.D. or equivalent in the food and nutrition sciences, or a related discipline, plus at least 3 years of experience in one of these fields. Experience in organizing international conferences and familiarity with Latin American countries is desirable. Please submit résumé as soon as possible to: **Dr. Sushma Palmer, Commission on Life Sciences, National Academy of Sciences, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** An Equal Opportunity Employer, M/F/H.

POSITIONS OPEN

POSTDOCTORAL POSITION in cell and molecular biology available immediately in Department of Cell Biology, Mayo Clinic. Area of research involves regulation of specific gene expression by peptide growth hormones. Applicants with expertise in any of the following areas will be considered: recombinant DNA methodology, DNA-mediated gene transfer, mammalian embryo microinjection, and oviduct implantation. Send curriculum vitae and two letters of recommendation to: **Dr. Michael J. Getz, Department of Cell Biology, 501 Guggenheim, Mayo Clinic, Rochester, Minn. 55905.** An Equal Opportunity/Affirmative Action Institution.

POSTDOCTORAL RESEARCH ASSOCIATE POSITION available 1 June 1984 with assured support for 3 years. Research involves microstimulation and chronic single unit recording techniques, measurement of eye position using the search coil technique, autoradiographic tracing techniques, behavioral control of saccadic and pursuit eye movements, and extensive use of laboratory computers. Salary range: \$17,500 to \$21,000, depending upon experience. Submit curriculum vitae and three letters of reference to: **Dr. David L. Sparks, Department of Physiology and Biophysics, University of Alabama in Birmingham, Birmingham, Ala. 35294.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH POSITION is available in endocrinology, metabolism, hormone action, and phospholipid metabolism. Contact: **Robert V. Farese, M.D., Associate Chief of Staff for Research and Development (151), James A. Haley Veterans Hospital, 13000 North 30th Street, Tampa, Fla. 33612.** Telephone: 813-972-2000, extension 566. A federal position—U.S. citizenship required. An Equal Opportunity Employer.

RESEARCH ASSISTANT PROFESSOR

The Department of Physiology and Biophysics at the Medical College of Virginia is seeking an individual for an academic position at the level of research assistant professor who will work conjointly within the Department of Medicine and have responsibilities which will include teaching, research, and service. Teaching responsibilities will include cellular and systems physiology that will be taught to both professional students and graduate students. Research will involve the role of the oxygen-free radicals system as mediators of myocardial dysfunction at both a cellular and subcellular level.

Qualifications for this individual should include a Ph.D. in physiology with 1 to 2 years of postdoctoral research experience in the field of cardiac muscle pathophysiology. The candidate should have demonstrated expertise in the field of oxygen metabolism. It is preferred that the candidate have 1 to 2 years additional teaching experience.

Send curriculum vitae and names of three references to:

Dr. F. Norman Briggs
Department of Physiology and Biophysics
Medical College of Virginia
Richmond, Va. 23298
An Equal Opportunity Employer

SENIOR ECOLOGIST

The Appalachian Environmental Laboratory, University of Maryland, is searching for an established ecologist, associate/full professor, preferably with a fisheries/wildlife interest. Demonstrated leadership in funded research, commitment to graduate teaching, and the desire to continue an innovative research program are expected. Salary negotiable. Send letter of application, description of research interests, curriculum vitae, and names, addresses, and telephone numbers of five references to: **Dr. John B. Genys, Chairman, Search Committee, Appalachian Environmental Laboratory, University of Maryland—CEES, Frostburg, Maryland 21532.**

Closing date is 15 June 1984, or until a suitable candidate is found. An Equal Opportunity/Affirmative Action Employer.

VETERINARY ANATOMY

Applicants are solicited for a tenure-track faculty position to teach gross anatomy to veterinary and graduate students. The applicant would be expected to develop a strong research program in their area of expertise. Research interest in cell biology (biotechnology) preferred. Excellent research and teaching facilities. Send curriculum vitae, names of three references, and brief statement of research interests to: **R. W. Henry D.V.M., B.S., College of Veterinary Medicine, University of Tennessee, P.O. Box 1071, Knoxville, Tenn. 37901-1071.** An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE

We are trying to understand the interactions of biological compounds with solvent water, and how their strength and directional character affect living processes [*Science* 222, 1087 (1983)]. We are also trying to work out some of the transition state theory for enzyme action and drug design, in the synthesis of derivatives of adenosine, ether lipids, pyrophosphoric acid derivatives, and proteins. If you have a good background and ability in organic chemistry, and would like to join in either of these efforts as a postdoctoral research associate, contact: **R. V. Wolfenden, Department of Biochemistry, University of North Carolina, Chapel Hill, N.C. 27514.** Equal Opportunity/Affirmative Action Employer.

COURSES

ELECTRON MICROSCOPY (TEM/SEM): Biological Applications. Designed for professional and laboratory personnel who desire practical hands on training in basic techniques of TEM and SEM. Graduate credit and/or certificate awarded. Tuition: \$750. Date: 9 to 27 July 1984. For further information and registration form, contact: **Dr. Dan Scheirer, Department of Biology, Northeastern University, Boston, Mass. 02115; telephone: 617-437-2260.**

REQUEST FOR PROPOSALS

REQUEST FOR PROPOSAL: A detailed feasibility study of plans to establish a medium-sized optical observatory in southwest Colorado. We are seeking experienced professional consultation on: (i) site development, (ii) instrument design, construction, and set-up, (iii) prospective utilization by the astronomical research community, and (iv) institutional impacts. For further information and application materials, contact: **Dr. Robert A. Freeman, Room 14a L, Fort Lewis College, Durango, Colo. 81301.** Telephone: 303-247-7383.

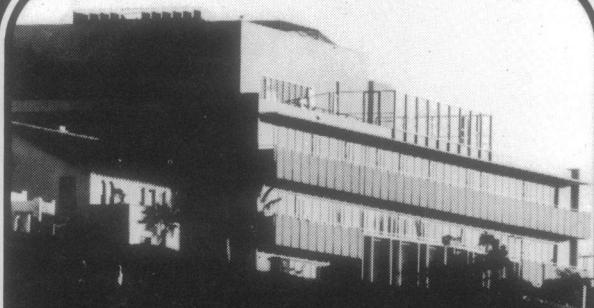
FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP: A postdoctoral position is available for candidates interested in immunology and with experience in molecular genetics, especially in gene transfer techniques, to work in a laboratory specializing in molecular analysis of cellular interactions in the immune response. Send résumé and letters of reference to: **Drs. Charles A. Janeway, Jr., and Donal B. Murphy, Department of Pathology, Yale University School of Medicine, New Haven, Conn. 06510.**

TWO POSTDOCTORAL FELLOWSHIPS IN: Membrane events in B lymphocyte activation. Molecular interactions of surface Ig with cytoskeletal proteins. Please send résumé to: **Dr. Bruce Woda, Pathology.** It influences on HLA-DR synthesis, expression, cycling, and function. Please send résumé to: **Dr. Robert Humphreys, Pharmacology.** Stipend: \$16,000 plus benefits. Reply before 15 June 1984. **University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605.** An Equal Opportunity Employer.

TRAINING PROGRAM

TRAINING PROGRAM: Environmental Impact on Lung Structure and Function. Applications are invited for pre- and postdoctoral NIH traineeships dealing with environmental effects on lung at the molecular and cellular levels and on the lung as an organ of immunological defense. Interdepartmental basic science program in the School of Medicine at State University of New York (SUNY), Stony Brook, and biology or experimental medicine at Brookhaven National Laboratory. Predoctoral studies begin August 1984 and lead to Ph.D. in basic medical sciences. Postdoctoral positions for M.D.'s or Ph.D.'s available immediately and also on 1 July 1984. Stipends and benefits according to NIH and university guidelines. Postdoctorals should respond with curriculum vitae, three letters of reference, and major research interest to: **Aaron Janoff, Ph.D., Program Director, Department of Pathology, SUNY, Stony Brook, Stony Brook, N.Y. 11794.** Predoctoral applicants contact: **C. McDevitt, Ph.D.,** at the same address for forms and information. **SUNY, Stony Brook, is an Affirmative Action/Equal Opportunity Educator and Employer.** AK Number 74-84.



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PHYSIOLOGY/PHARMACOLOGY

Ph.D. in Physiology/Pharmacology with 2-5 years of research experience in renal/cardiovascular physiology, including *in vitro* and *in vivo* renal/cardiovascular experimental techniques.

PEPTIDE CHEMISTRY

Ph.D. in Organic Chemistry or Biochemistry with 2-5 years experience in state-of-the-art techniques involved in the synthesis and characterization of natural peptides and peptide analogs.

NUCLEIC ACID CHEMISTRY/MOLECULAR BIOLOGY

Ph.D. in Biochemistry or Organic Chemistry with 2-5 years experience in nucleic acid chemistry and chemical modification of nucleotides. Experience in modern molecular biology including nucleic acid hybridization techniques desirable.

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INVITATION OF NOMINATIONS FOR KUWAIT ANNUAL PRIZES

The Kuwait Prizes were institutionalized to recognize distinguished accomplishments in the arts, humanities and sciences. The prizes are awarded annually in the following categories:

- A. Basic Sciences
- B. Applied Sciences
- C. Economics and Social Sciences
- D. Arts and Letters
- E. Arabic and Islamic Culture

The prizes for 1984 will be awarded in the following fields:

- A. Marine Biology
- B. Water Resources Development
- C. Agriculture and Economic Development in the Arab World
- D. Folklore
- E. Navigation in Arab Heritage

BACKGROUND

1. Two prizes are awarded in each field: A prize to recognize the output of a distinguished Kuwaiti and a prize to recognize the output of a distinguished Arab.
2. Nominations for these prizes are accepted from academic and scientific centers, learned societies, past recipients of the prizes, and peers of the nominees. No nominations are accepted from political entities.
3. The output submitted must have been published during the last ten years.
4. Each prize consists of a cash sum of K.D. 10,000/(U.S. dollars 35,000), a Gold Medal, and a Certificate of Recognition.
5. Nominators must clearly state what distinguished work qualifies their candidate for consideration.
6. The results of KFAS findings regarding the selection of winners are final.
7. The papers submitted for nominations will not be returned regardless of the outcome.
8. Each winner is expected to deliver a lecture concerning the contribution for which he was awarded the prize.

Nominations, including complete curriculum vitae and updated lists of publications by the candidates and four copies of each paper published, should be addressed before October 31, 1984 to:

Director General
Kuwait Foundation for the Advancement of Sciences
P.O. Box 25263 Safat, KUWAIT

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