

idealist thinking into Britain; and he emphasizes the Continental influence on other British idealists like Peter Mark Roget, Martin Barry, John Goodsir, Edward Forbes, and, above all, Richard Owen. In considering biogeography Rehbock notes that Alexander von Humboldt, A. P. de Candolle, and other Europeans set the stage for British biogeographical thinking, much as Continental idealists had prepared the way for British transcendental anatomists. Rehbock describes the biogeographic thinking of Charles Lyell, John Fleming, H. C. Watson, and others, but this section of the book is dominated—perhaps excessively—by Edward Forbes. Rehbock credits Forbes with adapting botanical methods of biogeography to the study of invertebrates, extending the range of investigation by offshore dredging, and introducing historical theories of migration to account for modern distribution.

Rehbock provides a useful account of British idealist theorizing. Readers interested in biogeography will prefer the more comprehensive account provided by Janet Browne in *The Secular Ark* (Yale University Press). However, Rehbock has established some important general features of British natural history in this period. Despite the significant devotion to empiricism in Britain, a number of thinkers attempted to illuminate their discipline theoretically, and, in doing so, they showed considerable receptiveness to the thought of continental Europe. Yet, as Rehbock makes clear, these early-19th-century naturalists looked at the world with divided minds, applying formal explanations to one class of phenomena and historical explanations to the other.

In some ways Rehbock might have been more vigorous in developing these insights. In discussing Forbes, Rehbock relates his routine empirical work to his historical theorizing, but many other figures do not fare as well. Similarly, there are hints in the book—for example, J. D. Hooker's quoted remark about "dirty species mongers"—that philosophical naturalists looked down on purely empirical workers, but one finds no systematic investigation of the social status of the two groups in British science. Greater attention to the relationship between practice and theory might have paid dividends. It would doubtless have enriched Rehbock's basic observation that different scientific specialties adopted different modes of reasoning about nature. In order to succeed fully, comparative studies require the systematic marshaling of evidence on related issues. Pointing to

intellectual influence, as Rehbock has done with Continental and British naturalists, is one good way to interpret historical events, but it needs to be supplemented by other explanatory strategies.

WILLIAM MONTGOMERY

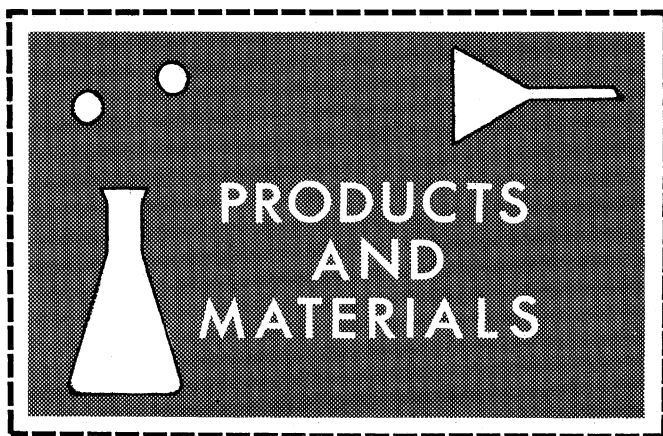
*American Philosophical Society,
Philadelphia, Pennsylvania 19106*

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(Continued on page 1322)



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The MSJ-T fermentors automate the production of large batches of plant or animal cell cultures. They are designed to accommodate cell suspensions or microcarrier beads. Models are available in vessel sizes of 10, 20, 30, 40, 50, 70, and 90 liters. The microprocessor-based Bio-processor automates control of pH, dissolved oxygen, temperature, and other parameters including steam sterilization of vessel and medium. Bioengineering Associates. Circle 609.

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DNA Sequencing System

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lengths from 20 centimeters to 1 meter. Both models offer adjustable upper buffer reservoirs and a gasket system of silicone tubing to ensure lead-free direct contact of buffer and gel. Ports on the upper and lower reservoirs facilitate recirculation of buffer. Accessories are available for both models including cooling plates, spacer sets, and glass plates. American Bionuclear. Circle 607.

Chromatography Cartridge

The DEAE ZetaPrep 100 offers an ion chromatography medium in cartridge form. Flow rates may be maintained from 25 to 50 milliliters per minute. Protein binding capacity is approximately 4 to 6 grams of bovine serum albumin. Cartridge form offers convenience and ease of use and a unique flow pattern. Buffers and solutions enter the outside cylindrical surface, penetrate the spiral wrapped layers to the core, and flow out the top of the cartridge and housing. Models are available in standard and autoclavable constructions. AMF Cuno Division. Circle 608.

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The Mighty Small vertical electrophoresis apparatus measures 10 centimeters high by 11 centimeters wide. It casts a gel 8.3 by 7.3 millimeters in thicknesses of 0.5, 0.75, and 1.5 millimeters. The unit is designed to draw heat away from the cell and distribute it throughout the buffer. This is accomplished by sealing the gel sandwich against the vertical upper buffer chamber so that the inside plate of the sandwich serves as a wall of the buffer chamber. A heat-conductive aluminum oxide plate separates the buffer and the gel. Patented T-shaped spacers ensure alignment of gel sandwiches. Hoefer Scientific Instruments. Circle 615.

Preparative Electrochemistry

The Electroprep System enables the operator to produce organic materials at up to 200 millimoles per hour. Operation is automated in constant current or controlled voltage modes. The cell offers a wide choice of electrodes to suit applications, specialized geometry, and a choice of interchangeable separators. The 3-ampere output of the power supply suits cell geometry. The system comprises the model 1000 cell, the model 550 power source, the model 920 electrolytic pump, and the model 721 coulometer. The coulometer can integrate from a few mill coulombs to 20,000 coulombs with an accuracy of ± 0.5 percent and drift of less than 0.1 percent per hour. Eco Instruments. Circle 611.

Spectrophotometers

Response spectrophotometers are made for biomedical research. They feature three microprocessors to allow the user to make up to 40 measurements per second, process the data, and display the results. The operating menu/library requires no previous computer training. The MTOS-86 is a multitasking operating system for the 8086 microprocessor. It oversees and manages the operation of the Response spectrophotometers. Gilford Instruments. Circle 614.

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Glass pH Electrodes

Four new Ross electrodes are now available. They include model 81-04 with a rugged bulb for routine pH measurement where rough handling may be expected; model 81-35 for measuring pH on flat surfaces; model 81-63 with a spear tip for insertion into soft samples; and model 81-66 with a retractable sleeve junction for easy cleaning. They all provide readings stable to 0.01 pH in less than 30 seconds. Drift is less than 0.002 pH per day. Orion Research. Circle 623.

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Gene Analysis System

The Riboprobe vector-enzyme system analyzes the structure, location, and function of genes. The user may rapidly synthesize quantities of single-stranded nucleic acid probes with high specific activity. As little as 0.5 picomole of probe may be detected after a 48- to 72-hour exposure and 5 picograms may be detected within 4 hours. In S_1 type mapping experiments, as little as 0.1 picogram of probe may be detected under standard conditions. Promega Biotec. Circle 625.

Cuvette Stirring System

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bath can maintain water triple point cells for 6 weeks or longer. Yellow Springs Instrument. Circle 630.

Literature

Photochemical Reactors describes five models for experimental requirements in preparative and mechanistic photochemistry. Applied Photophysics. Circle 632.

Planchet Counter characterizes the Accucount system for alpha, beta, and gamma counting with low cross talk. Baird. Circle 633.

HPLC, Electrophoresis, Chromatography and Immunochemistry catalog lists supplies and apparatus for all these techniques. Bio-Rad Laboratories. Circle 634.

Universal Titrator is devoted to the Metrohm system that adjusts speed of titration to the slope of the titration curve. Brinkmann Instruments. Circle 635.

New Titles features the 64th edition of the *Handbook of Chemistry and Physics* and several dozen new handbooks, texts, and monographs. CRC Press. Circle 638.

Immunoperoxidase Staining Methods is a handbook of technique, apparatus, and materials for these chemical and biological methods. Dako. Circle 639.

Nuclear Radiation offers information on detection, measurement, and analytic instrumentation including applications and specifications. EG&G Ortec. Circle 640.

Electrochemical Instrumentation introduces a computer-based system that performs a-c impedance analysis and many other instruments. EG&G Princeton Applied Research. Circle 641.

Sterile Laboratory Disposables illustrates and specifies characteristics of centrifuge tubes, transfer pipettes, specimen cups, and more. Elkay Products. Circle 643.

Water Analysis Guide is a wall chart for bacteriological procedures in the laboratory or classroom. Gelman Sciences. Circle 645.

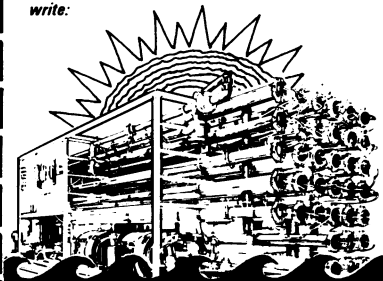
Whole Rat Catalog lists specialized equipment for research involving rodents. Included are chapters of respiration and metabolism, animal surgery, housing experimentation, environment, and reference texts. Harvard Bioscience. Circle 649.

Genetically Standardized Mice is a 233-page handbook from a firm that has distributed more than 2 million rodents of 700 different strains annually. Jackson Laboratory. Circle 651.

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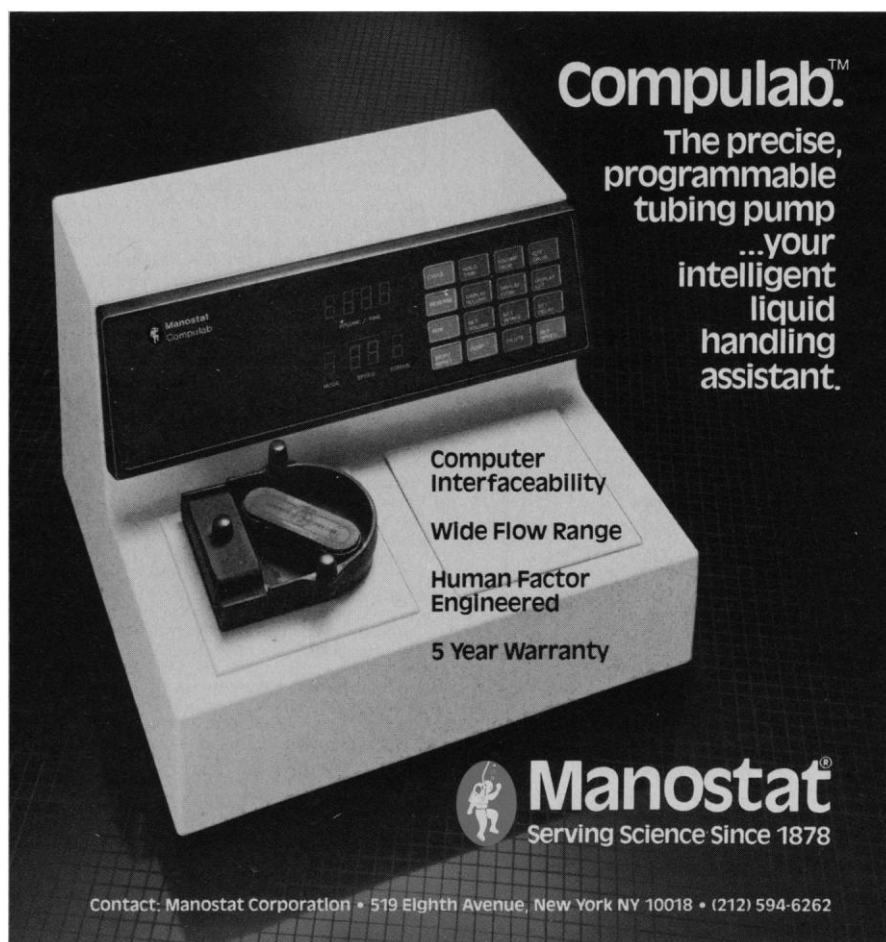
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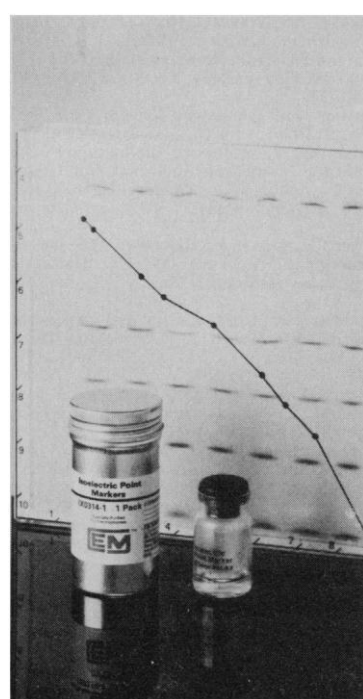


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(Continued from page 1287)

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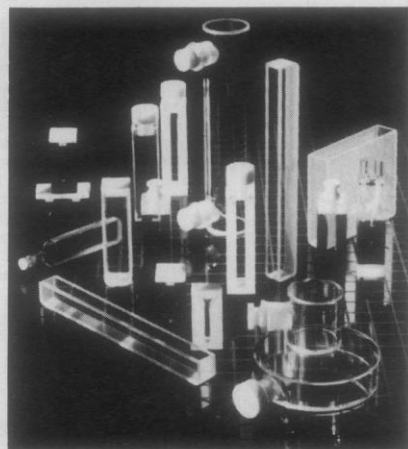
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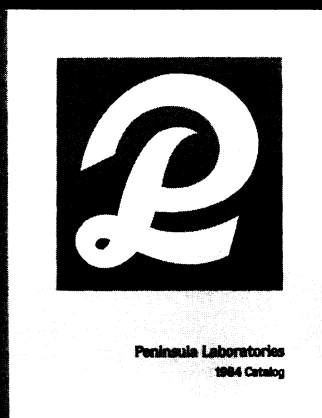


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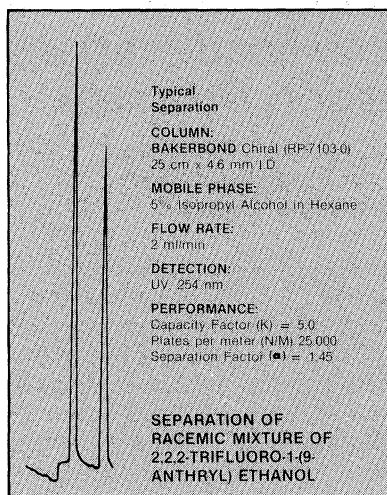
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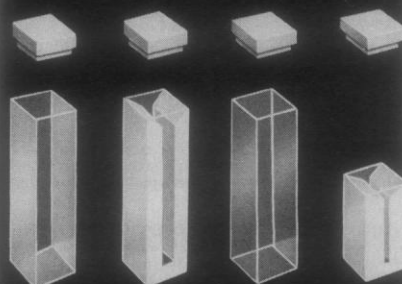
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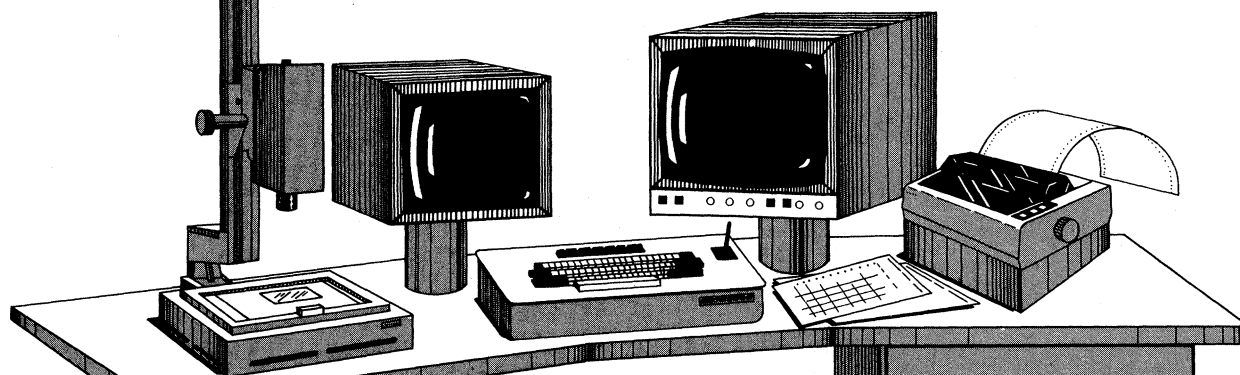
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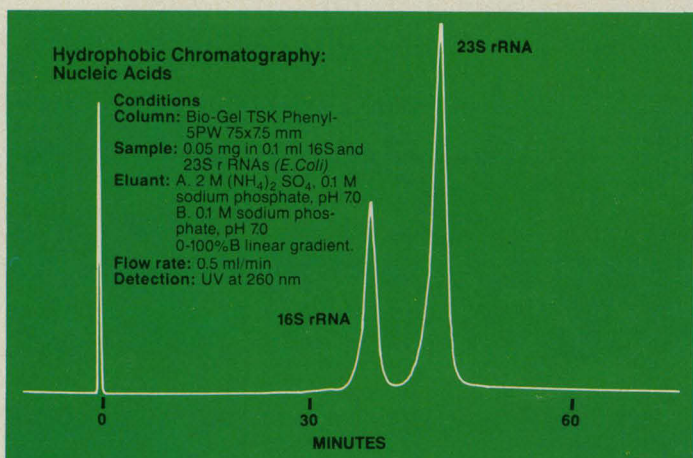
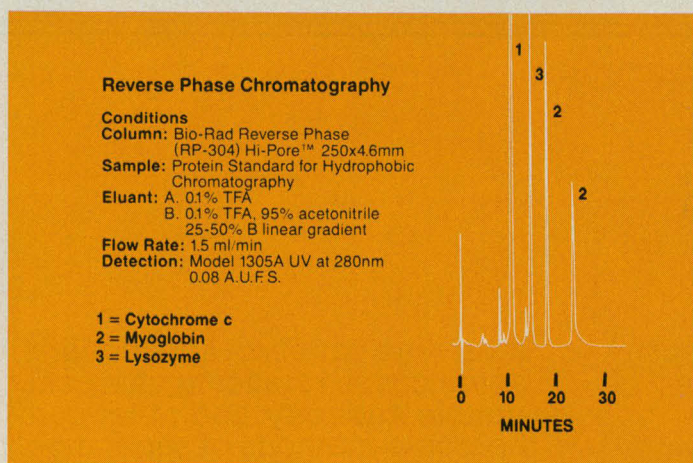
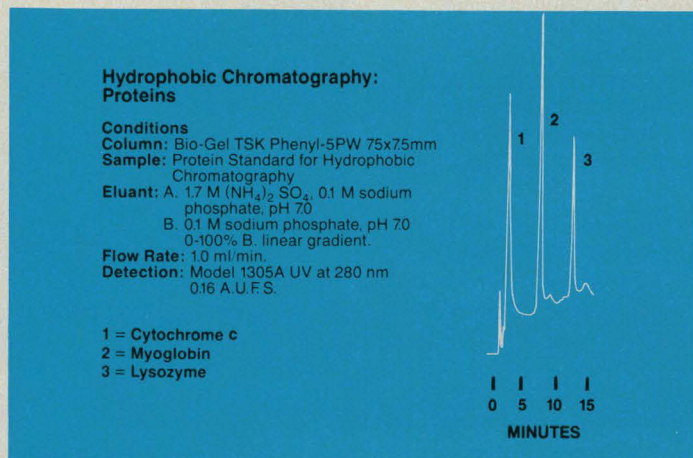
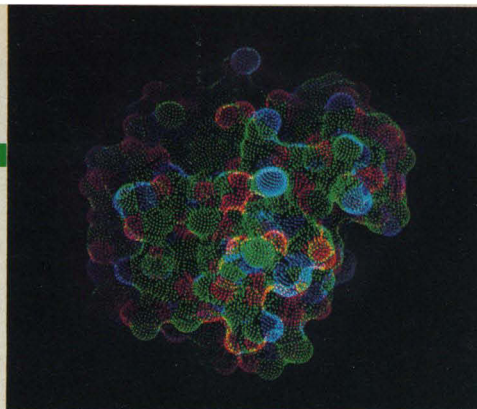
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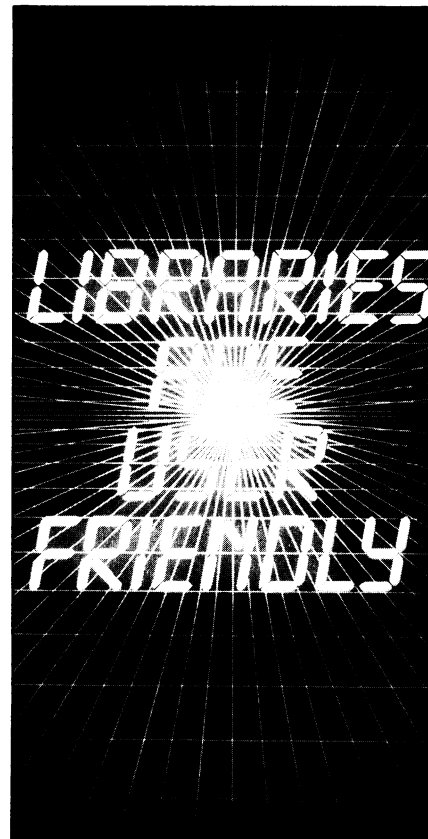
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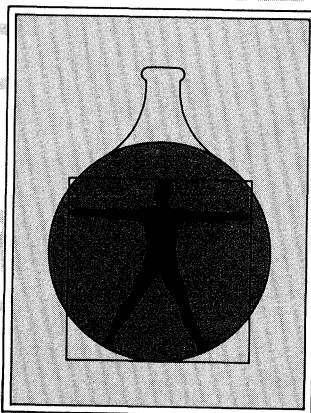
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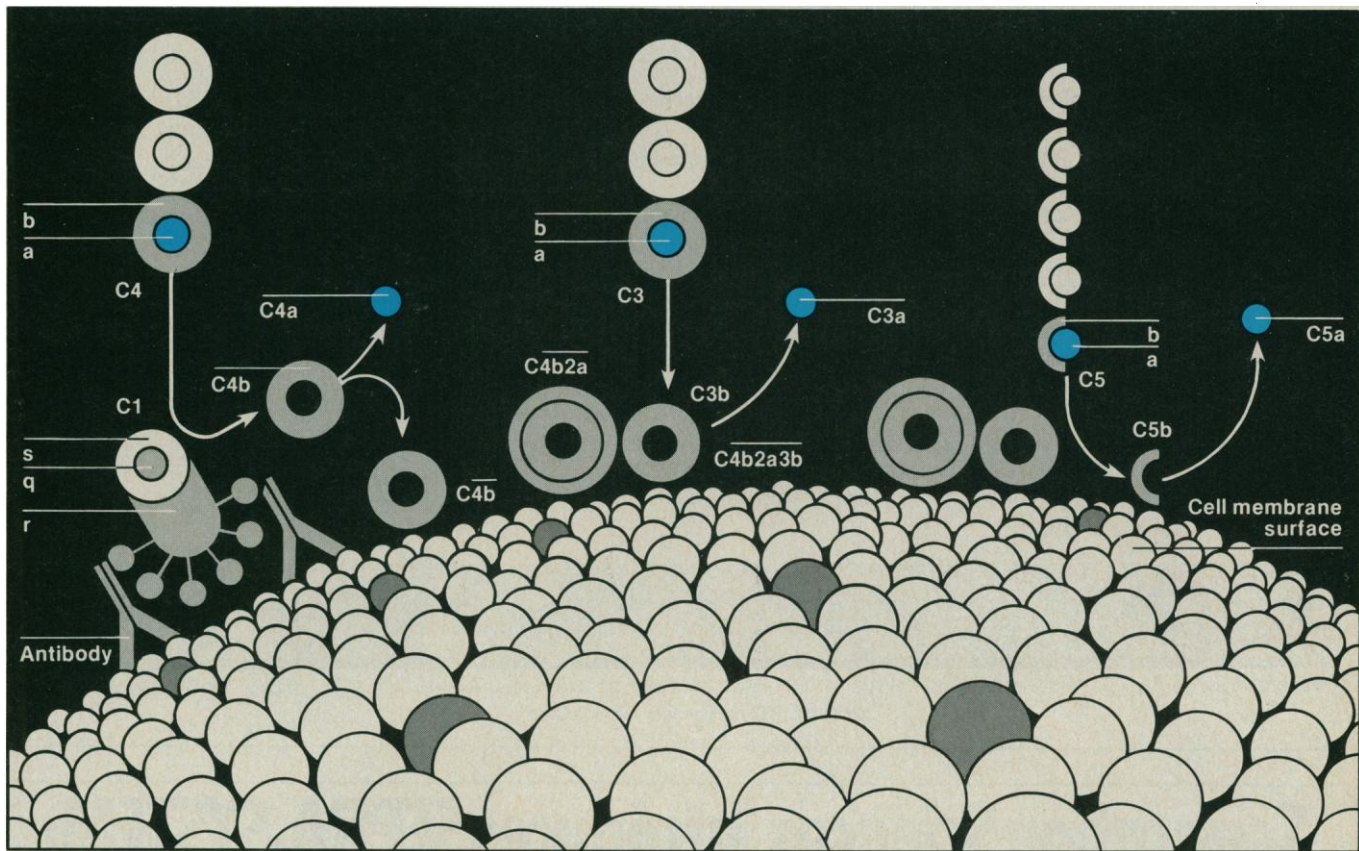


Illustration C3, C4, C5 activation in the classical complement cascade: Activated C1 (C1s), which binds to antigenic sites on the cell surface, cleaves C4 by limited proteolysis to yield C4a which is released to the fluid phase and C4b which binds to the surface of the cell. C4b2a cleaves C3 to yield C3a and C3b. The latter binds to the cell surface. Complexes of C4b2a and C3b form a C5 convertase (C4b2a3b) that cleaves C5 to yield C5a, and C5b which binds to the cell surface.

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- (1) Hugli, T E, and Chenoweth, D E, "Biologically Active Peptides of Complement: Techniques and Significance of C3a and C5a Measurement," *Laboratory and Research Methods in Biology and Medicine*, (ed. R M Nakamura, W R Dita, E S Tucker III; Alan R. Liss, Inc, 1980), pp.443-460.
- (2) Gorski, J P, "Quantitation of Human Complement Fragment C4a in Physiological Fluids by Competitive Inhibition Radioimmunoassay," *J. Immunol. Methods*, (47,1981), pp. 61-73.

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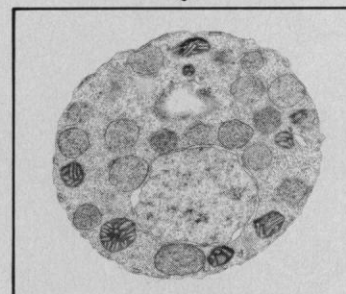
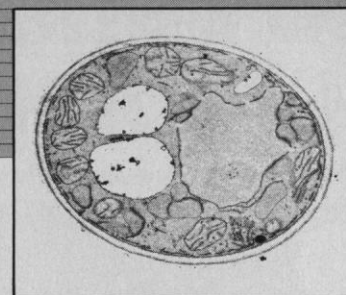
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POSITIONS OPEN

UNIVERSITY OF CALIFORNIA, IRVINE COLLEGE OF MEDICINE DEPARTMENT OF RADIOLOGICAL SCIENCES

Applications are invited for a post at the **ASSISTANT RESEARCH SPECIALIST** level in the **DEPARTMENT OF RADIOLOGICAL SCIENCES, DIVISION OF RADIATION ONCOLOGY** at the University of California, Irvine (UCI), College of Medicine (Martin Colman, M.D., Chief). Responsibilities include teaching at undergraduate and graduate levels and research. The applicant must have a Ph.D. in radiation biology and several years of experience in working with mammalian cells in culture. Experience in working with experimental animals is desirable. The successful applicant will work together with the faculty of the Division of Radiation Oncology on a variety of research topics. Applicants with demonstrated experience in assessing the effects of radiation on mammalian cells in culture including cell killing, cell transformation, DNA damage measurement will be given preference. *UCI is an Equal Opportunity/Affirmative Action Employer.* Applications, including curriculum vitae and copies of any publications, should be sent to the following address before 13 April 1984:

Richard M. Friedenber, M.D.
Professor and Chairman
Department of Radiological Sciences
University of California, Irvine
College of Medicine
101 City Drive South
Orange, California 92668

ASSISTANT STAFF (equivalent assistant professor, \$22,000 to \$29,500) and **POSTDOCTORAL FELLOWS** (\$16,500 to \$18,500). Require Ph.D. in molecular biology, biochemistry, immunology, or physiology for basic research on vasoactive substances, hypertension, electrolytes transport, or nephron microperfusion. Contact: **Dr. Oscar Carretero, Henry Ford Hospital, Hypertension Research Division, 2799 West Grand Boulevard, Detroit, Michigan 48202; telephone: 313-876-2010.**

ASSOCIATE OR ASSISTANT PROFESSOR: PLANT PHYSIOLOGY. Tenure-track appointment to begin 1984-1985 academic year. Ph.D. required; postdoctoral experience preferred. Successful applicant will (i) teach plant physiology, general biology (one quarter), and advanced course in area of specialty; (ii) direct M.S. and Ph.D. students; and (iii) maintain extramurally funded research program in plant physiology which may relate to either biotechnology or physiological ecology. Applications, including curriculum vitae, a statement of professional objectives, and three letters of recommendation, should be sent by 20 April to: **Plant Physiology Search Committee, Department of Biological Sciences, Michigan Technological University, Houghton, Michigan 49931.**



Michigan Technological University is
an Equal Opportunity Educational Institution/Equal Opportunity Employer.

BIOCHEMIST—Sabbatical leave. Candidate will receive training and conduct research on immunochemical detection of N-nitrosamines-DNA adducts and develop sensitive RIA and ELISA. One-year appointment with part-time financial support. State-of-the-art facility in cancer research. Send curriculum vitae to: **Dr. Andre Castonguay, American Health Foundation, 1 Dana Road, Valhalla, N.Y. 10595.** An Equal Opportunity Employer.

BIOCHEMIST
Active program in collagen fibrillogenesis, fibrosis, and wound healing. Candidates should have a background in connective tissue research. Faculty rank commensurate with background and qualifications. Please send curriculum vitae to: **Dr. Raul Fleischmajer, Department of Dermatology, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029.** An Equal Opportunity Employer.

BIOLOGIST. Temporary position for 1984-1985 academic year; master's degree minimum. Teaching responsibilities: anatomy and physiology, embryology, histology or cell biology, senior research. Salary: \$18,000. Send résumé, transcripts, and three letters of recommendation by 20 April 1984 to: **Dr. Michael A. Kolitsky, Chair, Department of Biological Sciences, California Lutheran College (CLC), 60 West Olsen Road, Thousand Oaks, Calif. 91360.** CLC is an Equal Opportunity Employer.

Growth Opportunities In Biotechnology

Syntex Medical Diagnostics is a newly created division of Syntex Diagnostics, chartered to develop high technology immunochemical products for use by physicians for immediate, reliable "in-office" testing. Drawing upon the expertise of Syntex in pharmaceuticals and Syva in diagnostic immunology, Syntex Medical Diagnostics will develop tests for therapeutic drug monitoring, infectious disease detection, hormones, and clinically relevant proteins.

We are now forming a core development group to further refine these exciting applications of advanced medical technology. This is a unique opportunity, in that it offers the challenges and excitement of a start-up venture, yet the backing, resources, and benefits of an established corporation.

Opportunities currently exist for:

- **Sr. Biochemists** for the development and scale-up of new immunodiagnostic tests for therapeutic drugs. Minimally, an MS in biochemistry is required, with 4 years' development experience. Two or more years' experience in the supervision of technical personnel are highly desirable.
- **Sr. Process Engineer** to design and implement a system for control of all variables involved in product manufacture, while investigating new and more efficient processes and materials. An MS in chemical or biochemical engineering is required, with two years' experience in process control and automation.

- **Development Biochemists** to be involved in all aspects related to the development and scale-up of new immunodiagnostic products for the healthcare industry. A BS in chemistry or biochemistry is required, along with 2-4 years' experience with biochemical methods. Experience with process development and/or development of immunochemical assays is highly desirable.

- **Development Immunochemists** for the preparation and evaluation of conjugates, processing of antisera, monoclonal antibody development and immunoassay evaluation. Requires BS/MS in biochemistry or biology with 2-4 years' experience in immunochemical methods. Tissue culture and hybridoma experience highly desirable.

Syntex Medical Diagnostics offers qualified candidates an exceptional research environment, along with excellent compensation and comprehensive benefits.

To apply, send a complete resume to Syntex Medical Diagnostics, P.O. Box 10058, Dept. NS/BT, Palo Alto, CA 94303. All inquiries will be treated with utmost discretion. We are committed to an equal opportunity hiring policy, m/f/h/v.



Syntex Medical Diagnostics

Cardiovascular Pharmacology

Ortho Pharmaceutical Corporation is a Johnson & Johnson Company recognized worldwide for excellence and innovation in the health care industry. We currently seek an individual with a PhD in Pharmacology, cardio/renal research or equivalent, plus 0-2 years post doctoral research in cardiovascular/renal pharmacology to develop drug discovery research programs. Responsibilities include initiation of research proposals and development of new methodologies to meet research objectives and evaluation of chemicals for biological activities/specificity.

At Ortho Pharmaceutical you will find an extremely professional environment where we encourage staff scientists to publish their findings. You can expect a highly competitive salary and excellent benefits as well as the opportunity to advance both professionally and personally. For consideration, forward your resume with salary requirements in confidence to: Mrs. Bea Allen, Dept. 8 at the address indicated below or

DROP BY OUR BOOTH AT THE FASEB MEETING
in St. Louis, MO, April 2-5.

ORTHO PHARMACEUTICAL CORPORATION
Route 202, Raritan, NJ 08869

A Johnson & Johnson Company

An Equal Opportunity Employer m/f



POSITIONS OPEN

BACTERIAL GENETICIST POSITION

BACTERIAL GENETICIST: Tenure-track faculty position at **ASSISTANT** or **ASSOCIATE PROFESSOR LEVEL** in the Department of Medical Microbiology and Immunology, University of Kentucky College of Medicine. Candidates should possess a strong background in genetics and research experience and interests in some aspect of the organization or expression of prokaryotic genes. The successful candidate will be expected to develop a strong independent research program and to participate in the Microbiology Graduate Program. The position includes a liberal start-up package in an expanding department with major strengths in immunology and molecular biology. Appointment is on a 12-month basis with modest teaching responsibilities, salary commensurate with experience, and a negotiable starting date. Applicants should send current curriculum vitae, a summary of research plans, and the names of at least three references to: **Susan C. Straley, Ph.D., Chairman, Search Committee, Department of Medical Microbiology and Immunology, MS-409 Medical Center, University of Kentucky College of Medicine, Lexington, Kentucky 40536-0084.** *The University of Kentucky is an Equal Opportunity Employer, M/F.*

BIOLOGY FACULTY POSITION. Assistant professor, beginning 1 September 1984. Luther College seeks a person with Ph.D. and commitment to teaching. Teaching responsibilities in general biology, introductory anatomy, and invertebrate zoology. Send curriculum vitae, transcripts, and three letters of reference to: **Roger M. Knutson, Chair, Biology Department, Luther College, Decorah, Iowa 52101.** *Equal Opportunity Employer.*

CELLULAR NEUROBIOLOGY. Postdoctoral fellowship available, to participate in studies of synapse elimination at the neuromuscular junction in neonatal mammals and/or studies on a steady electric current generated by muscle. Techniques include electrophysiology, organ culture, use of ion selective microelectrodes, and histology. Send inquiries to: **Dr. William Betz, Department of Physiology, University of Colorado School of Medicine, Denver, Colo. 80262.** *An Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON DEPARTMENT OF BIOLOGY

Applications and nominations are invited for the position of chairperson of the Department of Biology at Tennessee Technological University. The Department of Biology, with a faculty of 15, offers B.S. degrees in biology and wildlife management and an M.S. degree in biology. Candidates must have an earned Ph.D. in a biological science and a distinguished record of scholarly activity, including excellence in teaching and an active research program in some area of the biological sciences. They must have demonstrated leadership abilities, be able to interact effectively with faculty and students, and have demonstrated ability to generate extramural support. Salary will be commensurate with qualifications and experience. Candidates should be available to assume the position by 1 September 1984.

Nominations and applications, with résumés and names and telephone numbers of references, will be accepted until 1 May 1984. Materials should be sent to: **Dr. Gordon E. Hunter, Chairman, Search Committee, College of Arts and Sciences, Box 5065, Tennessee Technological University, Cookeville, Tenn. 38505; telephone: 615-528-3134.** *Tennessee Technological University is an Equal Opportunity/Affirmative Action Employer.*

CHAIRMAN DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS

Applications are invited for the position of chairman, Department of Physiology and Biophysics, Howard University College of Medicine, Washington, D.C. We are seeking an individual with an active research program in physiology, teaching experience in medical physiology, and administrative skills. This is a 19-member department with a Ph.D. program and teaching responsibilities to medical, dental, and allied health students. Please address letters of inquiry, curriculum vitae, and three letters of reference before 1 May 1984 to:

**The Search Committee
Department of Physiology and Biophysics
Howard University College of Medicine
520 W Street, NW
Washington, D.C. 20059**

Pharmaceutical Research

Ph.D. Level
Ann Arbor, Michigan

Continued expansion at the Warner-Lambert/Parke-Davis Pharmaceutical Research Division has resulted in the establishment of the following employment opportunities in the Pharmacology Department. All positions are located in Ann Arbor, Michigan at our modern research facilities, adjacent to the University of Michigan campus, which are exclusively devoted to the discovery and development of new drugs.

Qualified applicants will have the equivalent of a Ph.D. and up to five years postdoctoral experience as detailed below, with a documented record of research excellence. In addition, we are seeking individuals with outstanding communication skills who have the capacity to assume leadership roles in a team approach to drug discovery.

Pharmacology/Neurochemistry

The successful candidate will be trained in neurochemical techniques and possess a research interest in cerebrovascular disorders. Specialized training in receptor binding, neuropeptide synthesis and radioimmunoassay is desirable. Will participate in existing programs as well as initiating own programs based on biochemical mechanisms.

Pharmacology/Neurology/Migraine

Qualified applicants will have postdoctoral experience in cerebrovascular pain physiology and/or pharmacology. Although this position will emphasize a vascular approach to migraine, it is essential that the candidate be able to understand and collaborate with others concerning the neurophysiology and biochemistry of the disease.

Pharmacology/Neurology/Epilepsy

Experience with intracellular neurophysiologic techniques is required for this position involving drug discovery efforts relating to various convulsant disorders. The selected individual will be required to utilize neurophysiologic techniques recording from cells derived from tissue culture and brain slices.

Pharmacology/Osteoporosis

The successful candidate will have three to five years postdoctoral experience in the field of calcium (bone) metabolism and will participate in the initiation of a new program aimed at the discovery of drugs for the treatment of osteoporosis.

Interested, qualified candidates should forward curriculum vitae together with references and salary requirements to: **Ms. D. Love, Human Resources Supervisor, Dept. #984, Warner-Lambert/Parke-Davis, Pharmaceutical Research Division, 2800 Plymouth Road, Ann Arbor, Michigan 48105.** Please indicate whether planning to attend the April, 1984 FASEB meeting. *An Equal Opportunity Employer M/F/H*

**WARNER
LAMBERT**

POSITIONS OPEN

CELL/MOLECULAR BIOLOGIST

The Department of Cell Biology, Yale University School of Medicine, is accepting applications for tenure-track positions at the assistant or associate professorial levels with a starting date no later than 30 December 1984. Candidates with experience and interest in applying techniques and concepts of molecular genetics, including genetic manipulations, to problems of eukaryotic cell and developmental biology are encouraged to apply, although highly qualified investigators in other areas of cell biology, such as interactions between membranes and the cytoskeleton and/or the extracellular matrix will be considered. It is anticipated that successful candidates will establish independent, externally funded research programs and be willing to collaborate with other members of the department whose focus of interest relates to membrane structure and function. Involvement in teaching of cell biology-histology to medical students and participation in the supervision and teaching of graduate students is expected. Candidates must hold the degree of Ph.D. or M.D. and have at least 2 years of postdoctoral experience. Applicants should submit their curriculum vitae, statement of research and teaching interests, and names of at least three references before 1 July to:

Dr. James D. Jamieson, Chairman
Department of Cell Biology
Yale University School of Medicine
P.O. Box 3333
New Haven, Conn. 06510-8002

Yale University is an Equal Opportunity/Affirmative Action Employer.

COASTAL DYNAMICIST at Stony Brook: Position with tenure at advanced associate professor or beginning full professor level to be available mid-January 1985, for a physical oceanographer specializing in coastal ocean dynamics, with a strong interest in analytical and numerical modeling. Must have demonstrated ability to attract research support. Position carries full support for the academic year. Candidates should send résumé and the names of three individuals from whom letters of reference may be obtained to: **Dr. Donald W. Pritchard, Associate Director for Research, Marine Sciences Research Center, State University of New York (SUNY), Stony Brook, Stony Brook, N.Y. 11794.** Deadline for applications is 1 May 1984. *SUNY, Stony Brook, is an Equal Opportunity/Affirmative Action Employer. AK Number 47-84A.*

DIRECTOR—DIVISION OF ASTHMA AND ALLERGIC DISEASES

The Department of Medicine at Case Western Reserve University is accepting applications for the position of director of a new Division of Asthma and Allergic Diseases. The director's responsibilities will include implementation of new clinical and research programs in asthma and allergic disorders. The position requires proven leadership ability, outstanding clinical skills, the capability of generating external research funds, and expertise in the management of large-scale clinical and research programs. A record of teaching excellence and professional achievement befitting the rank of full professor are essential. Interested applicants should submit curriculum vitae to: **Charles C. J. Carpenter, M.D., Chairman, Department of Medicine, University Hospitals, 2074 Abington Road, Cleveland, Ohio 44106.** *Case Western Reserve University is an Equal Opportunity Employer.*

OCCIDENTAL COLLEGE

One-Year Faculty Position in Geology

Applications are invited for a position in the Geology Department for the 1984-1985 academic year. Ability to teach undergraduate courses in introductory geology, mineralogy, igneous geology, field geology, and/or related subjects is necessary. Research or applied experience, while not essential, is desirable. Salary and rank will be commensurate with degree level and experience.

Occidental College is an Equal Opportunity Employer, and encourages applications from qualified women and minorities.

For consideration, send résumé and letters of reference to:

Dr. William J. Morris
Department of Geology
1600 Campus Road
Occidental College
Los Angeles, Calif. 90041

RESEARCH MICROBIOLOGIST

Westvaco Corporation, a Fortune 500 leader in the paper and wood-based chemicals field, has an immediate opening at our research center in suburban Washington, D.C. We are seeking a creative microbial physiologist to conduct imaginative exploratory research in our biotechnology program.

The successful candidate will have a Ph.D. in microbiology or biochemistry. One to five years additional experience would be helpful. A demonstrated knowledge of microbial physiology, fermentation, and metabolite analysis is essential. Knowledge of enzymology and an interest in recombinant methodology are desirable. The position will involve work with an interdisciplinary group of researchers.

In addition to a competitive salary and excellent benefits program, we will provide the facilities, support, encouragement and atmosphere to bring out your best. Please send your resume in confidence to:

Westvāco

Charles W. Walker
Recruiting Coordinator
Westvaco Research Center
11101 Johns Hopkins Road
Laurel, MD 20707

An Equal Opportunity Employer M/F

U.S. AGENCY FOR INTERNATIONAL DEVELOPMENT AND THE ASIAN INSTITUTE OF TECHNOLOGY are seeking expressions of interest from qualified individuals having requisite academic training, knowledge and experience in remote sensing techniques, as well as in the developing countries of Asia. Four remote sensing experts will be offered individual one year contracts commencing August 1984 to support the operations of the Center in the areas of training, research and demonstration. The United States Agency for International Development is funding and will approve these contracts under the Regional Remote Sensing Project, 498-0253.

The Center is seeking four U.S. remote sensing experts in the following areas:

1. Natural and wild land resources mapping, inventory and analysis using remote sensing techniques as applied to developing countries of Asia.
2. Digital image analysis of remotely sensed data emphasizing hardware/software interface configuration, software development for various appropriate applications, and system analysis.
3. Land use specialist, knowledgeable in applying remotely sensed and ancillary data to the analysis of urban and rural land use planning and development, especially for the settings of developing countries of Asia.
4. Geographic Information System Specialist with formal training and academic backgrounds and practical experience in the field. Some knowledge of photogrammetry and digital terrain modeling and cartography would be useful.

The goal of the Asian Regional Remote Sensing Training Center is to assist the Asian countries to improve management of their natural resources. The purpose of the Center is to provide training, short-term courses, and formal advanced degree education through longer term enrollment which will assist Asian national resource agencies in the use of satellite imagery and computer technology to solve development problems.

The Center is housed at the Asian Institute of Technology, a prestigious center of excellence located outside of Bangkok, Thailand. The Institute presently offers advanced degrees in computer applications, water resources, geotechnical, transportation, structural engineering, construction, industrial engineering, management, agricultural and food engineering, human settlement development, and other various disciplines. The Institute was founded in 1959 and became fully independent in 1967 under a charter granted by the Royal Thai Government.

The Institute is located on a 400-acre campus, has dormitories which can accommodate up to 600 students, cafeterias, sport facilities, a medical center, a conference center with a 600-seat auditorium, simultaneous translation facilities, dining rooms and hotel rooms which can accommodate 120 guests. The Institute is financed by several countries and private institutions. Its Board of Trustees consists of 40 members from 21 countries and its present enrollment, from over 20 countries across Asia, amounts to more than 400.

The Center is physically and administratively incorporated into the existing Institute, with remote sensing staff and trainees able to avail themselves of the Institute's facilities. The Center is a joint undertaking with financial and technical cooperation among the United States Agency for International Development, the Thai National Research Council, and the UN Economic and Social Commission for Asia and the Pacific.

Remote sensing students and trainees attend the Center from Thailand, Indonesia, Malaysia, the Philippines, Bangladesh, Sri Lanka, Nepal, Pakistan, and China. The language of instruction is English. Included in the training at the Center are environmental and natural resources problem solving and formal course work. Landsat image and data archives are being established, and an interface with the Thailand Landsat receiving station has been developed. Remote sensing publications are being added to the Institute's existing library. A newsletter has been developed and is being distributed throughout the region describing remote sensing activities of the Center and of the region.

The Center will negotiate individual contracts for the selected applicants to support the operation of the Center in the areas of training and research and demonstration in accordance with the Agency for International Development contracting rules and procedures. Remuneration of the experts will be funded by the Agency for International Development.

Remote sensing experts, from U.S. universities, research centers, and private industries, are encouraged to apply on an individual basis for the staffing of the Center. The individuals will be subject for approval by the Board of Trustees and may be provided faculty status at the Institute. As such, applications will be evaluated in terms of acceptability by the Institute.

Some Asian faculty is in place at the Center. The U.S. experts work closely with Asian counterparts through the currently projected end of the Agency for International Development's supported project life in August 1985. After this time, Asian faculty will continue to operate the Center for the Institute.

The Agency for International Development's current project emphasis is on the short-term (4 months) training to produce qualified technicians in image analysis. The Institute's longer term thrust is to develop a remote sensing program offering advanced degrees in related areas. The U.S. experts must be able to accommodate both somewhat disparate objectives, bearing in mind that the overall goal the Center is trying to achieve is improved resource management for the region. The U.S. experts will be expected to take part in developing and revising appropriate course curriculum to suit the needs of the region, and the experts will be expected to do some travel in the region for promotional and demonstration purposes. The experts should have experience in developing countries and be specially sensitive to Asian cultures as well as the role of science and technology in meeting basic human needs and developmental aspirations of Asian countries.

Expressions of Interest setting forth full curriculum vitae, including academic, training and job experience, as well as anticipated salary benefits, should be sent in three (3) copies to: Dr. Kaew Nualchawee, Director, Asian Regional Remote Sensing Training Center, Asian Institute for Technology, G.P.O. Box 2754, Bangkok 10501, Thailand.

Under separate cover, please provide an additional copy to: Project Manager, Regional Remote Sensing Training Center Project O/PES, USAID BOX 47, APO San Francisco 96346.

Expressions of interest received after April 30, 1984, may be ineligible for consideration.

Technical details about the Center are available by writing: Dr. Charles K. Paul, Manager, Remote Sensing Program, CODE S&T/PNR, Room 503D, SA-18, U.S. Agency for International Development, Washington, D.C. 20523.

1/13/84

POSITIONS OPEN

COMPUTER BIOLOGICAL SCIENTIST. Non-tenure-track position of lecturer beginning September 1984. Candidates should have a Ph.D. in a life science and broad training in software applications, but consideration will also be given to applicants with Ph.D. in computer science and strong biological training. Responsibilities will include teaching computer methods to faculty, staff, and students; organizing an IBM microcomputer network; developing and implementing software to be used in departmental administration; and assisting faculty in the design and application of software in their research. Send curriculum vitae and references by 1 May to:

**Computer Scientist Search
Department of Molecular Biology
Princeton University
Princeton, N.J. 08544**

Princeton University is an Equal Opportunity/Affirmative Action Employer, M/F.

ALABAMA NATIONAL CYSTIC FIBROSIS BASIC RESEARCH CENTER

The Schools of Medicine and Dentistry are seeking a senior individual to develop a strong Cystic Fibrosis Basic Science Research Program. The principal focus of this Center will be molecular and cell biology with the purpose of understanding the basic etiology and pathogenesis of the disease. Nomination, curriculum vitae, and application should be submitted to:

**Antonietta D. Hyche
Administrative Officer
University of Alabama School of Medicine
Dean's Office—MEB 306
Birmingham, Alabama 35294**

An Equal Opportunity/Affirmative Action Employer

DIRECTOR, NEUROSCIENCES PROGRAM UNIVERSITY OF ALABAMA SCHOOL OF MEDICINE

Applications are being accepted for the position of director, Neurosciences Program, University of Alabama School of Medicine, University of Alabama in Birmingham. The director coordinates the research activities of about 30 scientists, who also participate in the teaching and patient care activities of the medical school. The director should be an active scientist with a background of accomplishments in the area of neurosciences. Please submit applications or nominations and curriculum vitae to:

**Antonietta D. Hyche
Administrative Officer
University of Alabama School of Medicine
Medical Education Building, Room 306
Birmingham, Alabama 35294**

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ELECTRON MICROSCOPIST

Challenging position in structural biology laboratory. Responsibilities include supervision of EM facility as well as carrying out specific research projects; maintenance of Philips 301 EM and accessory equipment; scheduling and teaching EM usage. Knowledge of specimen preparation and photographic techniques helpful. Strong background in physics desirable. B.S./B.A. required.

Please send your résumé to:

**Dr. Carolyn Cohen
Rosenstiel Basic Medical Sciences Research Center
Brandeis University
Waltham, Mass. 02254**

The Department of Biology, University of California at San Diego, invites applications for a tenure-track **FACULTY POSITION**, available September 1984, in the area of **EVOLUTIONARY BIOLOGY**. The interests of the appointee should complement those of the existing population biology group. Possible areas of interest include plant ecology, marine invertebrate ecology, plant/insect and parasite/host coevolution, population genetics, and quantitative genetics. Applicants who combine quantitative/theoretical skills with experimental field and/or laboratory studies will be favored. The appointee must have had postdoctoral training and is expected to conduct a vigorous research program. Salary and rank will be commensurate with qualifications and experience. Appointment at the assistant professorial rank is preferred. Submit curriculum vitae, three letters of reference, and a brief statement of research interests by 16 April 1984 to: **Dr. Sandra Vehrencamp, Population Biology Search Committee, Biology C-016, University of California at San Diego, La Jolla, California 92093.** *The University of California at San Diego is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

The Sepulveda VA Medical Center and the University of California, Los Angeles (UCLA), School of Medicine, seek a **DIRECTOR** for their Geriatric Research, Education and Clinical Center who is well recognized in a field of investigation of relevance to geriatric medicine. The individual should be a physician with the interest and experience to lead the development of UCLA's programs in gerontology and geriatrics in the San Fernando Valley. Address inquiries to: **Stanley G. Korenman, M.D., VA Medical Center, 16111 Plummer Street, Sepulveda, Calif. 91343.**

ENVIRONMENTAL FACULTY POSITIONS AVAILABLE

Summer faculty positions on 30-day environmental field research/training courses for students 17 to 26: Whales/Gulf of Maine, Tropical Forests/Ecuador, Aquaculture/Hawaii, Volcanology/Italy, Coral Reef Ecology/Caribbean, Ungulates/Greece. **Field director** and faculty for 12-week semester Wildlife Biology and Management/Kenya and Marine Biology and Management/Caribbean starting January 1985. Develop curriculum, syllabus, logistics part-time in 1984: direct program on-site. Qualifications: extensive field teaching and research; advanced degree, preferably Ph.D. in biological sciences, thorough working knowledge of site and logistics, Northeast residency preferred. Send curriculum vitae and letter noting special qualifications by 30 April to: **School for Field Studies, Room 3, 50 Western Avenue, Cambridge, Mass. 02139.**

FACULTY POSITION AT SCRIPPS INSTITUTE OF OCEANOGRAPHY/ INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS (IGPP)

Applications are invited for a tenure-track faculty position in the broad field of fluid dynamics which includes, for example, oceanography, both theoretical and observational, numerical modeling of fluids, and the dynamics of the earth's core. This appointment, as is the case for all other faculty positions at IGPP, will be made jointly with the teaching department of Scripps or another department at the University of California, San Diego. Qualifications include a Ph.D. in one of the sciences (including engineering), demonstrated competence in original research (presumably through publication in refereed journals), and in teaching at both the undergraduate and graduate level, which includes an appropriate command of both spoken and written English. Qualified applicants at all levels will be considered. Salary will be commensurate with the individual's qualifications. Please send applications and nominations to:

**Professor Freeman Gilbert
University of California, San Diego
Institute of Geophysics and Planetary Physics
A-025
La Jolla, Calif. 92093**

Responses must be received by 20 April 1984.

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

FRESHWATER BIOLOGIST: A tenure-track position for a freshwater biologist at the associate professor rank is available beginning August 1984. Salary is competitive. The applications of candidates whose research specialties include environmental aspects of freshwater biology will be given preference. Candidates must have Ph.D. The appointee will be expected to carry out strong independent research programs and supervise student research. Teaching responsibilities will include instruction in freshwater biology, plus a course in the appointee's area of specialty. Applications will be accepted until 1 July 1984. Send letter of application, curriculum vitae, transcripts, and three letters of recommendation to: **James S. Norwood, Biology Department, East Texas State University, Commerce, Texas 75428.** *East Texas State University is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

Ph.D. or Postdoctoral GASTROINTESTINAL SCIENTIST, entry level. Gastrointestinal tract specialization with understanding of GI function and disorders required. Degree may be in biochemistry, pharmacology, or GI physiopathology, so long as above requirements are met. U.S. citizens or permanent residence visa holders only. Send résumé and publication list to: **Dr. T. J. Logan, Manager, Ph.D. Recruiting, Procter & Gamble Company, P.O. Box 39175, Cincinnati, Ohio 45247.** *An Equal Opportunity/Affirmative Action Employer.*

HOFFMANN-LA ROCHE

Postdoctoral Fellows/ Research Associates PHARMACOLOGY

Hoffmann-La Roche is a world leader in the development and manufacture of pharmaceuticals, vitamins and fine chemicals. You will find our commitment to research and our long record of scientific breakthroughs provide an ideal environment for your own significant contributions to medical progress.

We have excellent opportunities for highly qualified Postdoctoral Fellows/Research Associates in the following research areas:

- **Insulin Receptors in Obesity**
- **Phospholipid Metabolism in Cells or Cellular Membranes**
- **Epithelial Transport of Electrolytes in the Intestine**

Roche offers excellent benefits and the opportunity to work with some of the keenest scientific minds in the field. Send your resume with salary history to: Dr. Ann. C. Sullivan.



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from people who care*

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Superior Quality Congenial Atmosphere Professional Growth Rewarding Careers

We offer career opportunities for talented individuals, due to continuing growth and diversity of departments. Our job transfer program enables employees to transfer laterally or upgrade into the areas of the laboratory environment.

Our excellent location offers ideal weather conditions and employee parking but, best of all, we offer excellent salaries and a comprehensive benefit package.

Learn more about us and what we can do together. We are at the forefront.

For further information on career opportunities at Becton Dickinson Monoclonal Center, Inc., and FACS Systems, call or write: **Becton Dickinson Immunocytometry Systems, Inc., 2375 Garcia Avenue, Mountain View, CA 94043**, attn: Connii Randall-Fuller, Manager, Employment. Or phone (415) 940-6014. An equal opportunity employer.

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Caring for people is our business

**BECTON
DICKINSON**

Scientists

Positions are available in our Cambridge laboratory for Ph.D. level scientists with expertise in cell biology and immunology.

You will be part of a group which will carry out a research program in the areas of cell culture, immunology, and mammalian gene expression. In addition, this group will function to develop new immunological and cell culture assay systems to monitor the level and quality of various mammalian gene products which are produced in bacterial and animal cells.

The successful candidates will possess a Ph.D. degree with at least two years postdoctoral experience and an appropriate record of research productivity as documented by publications. A solid background in biochemistry is preferred.

Biogen is a biotechnology company with laboratories in the United States and Switzerland, developing commercial applications of molecular biology in the areas of agriculture, chemicals, pharmaceuticals and energy. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment.

Biogen offers an attractive compensation and benefits package.

Please send your resume accompanied by the names and addresses of at least three references whom we may contact on your behalf to: **Nanci Pye, Manager of Human Resources, Dept. ICB-10, Biogen, 14 Cambridge Center, Cambridge, MA 02142.**

BIOGEN

POSITIONS OPEN

FACULTY POSITION AVAILABLE, New York University, Department of Applied Science. Assistant professor, tenure-track, effective September 1984, in atmospheric/oceanic science. Candidates must have a Ph.D. in a related discipline and demonstrate capability for original research. Specific areas of interest are: carbon dioxide, acid rain, energy conversion, geochemistry, atmospheric transport, radiation, and mathematical modeling. Duties will include graduate teaching and research. Applications must include curriculum vitae. Please provide three references. Letters of reference and applications should be sent to: **Professor Victor Zakkay, Chairman, Department of Applied Science, New York University, 26-36 Stuyvesant Street, New York, New York 10003.** *NYU is an Equal Opportunity/Affirmative Action Employer.*

Biological Sciences Collegiate Division The University of Chicago LECTURER/SENIOR LECTURER IN BIOLOGY

The Biological Sciences Collegiate Division seeks to appoint a qualified individual at the level of lecturer or senior lecturer beginning 1 July 1984. The person in this position will have the responsibility for coordinating the laboratory offerings for the common year course in introductory biology. Teaching at the introductory level will be a part of this position. In addition, this person will be responsible for providing logistic support to the advanced laboratory courses in the college. We seek an individual with demonstrated teaching skills. The individual must be able to work closely with the faculty, as well as be able to supervise independently the laboratory function. This is a renewable position. Ph.D. required. Apply with curriculum vitae and three letters of reference not later than 20 April 1984 to:

**The Master, Biological Sciences
Collegiate Division
The University of Chicago
Harper Memorial Library
1116 East 59th Street
Chicago, Ill. 60637**
Equal Opportunity Employer

POSITIONS OPEN

FACULTY POSITION RETINAL CELL BIOLOGIST

The Eye Research Institute of Retina Foundation invites applications from retinal cell biologists with expertise in retinal anatomy. Preference given to applicants with established independent research programs who will interact with other investigators in faculty. Adjunct appointment within the Department of Ophthalmology, Harvard Medical School, is available. Academic rank and salary are commensurate with experience. Send curriculum vitae, bibliography, and names of three references to: **Dr. John Weiter, Search Committee Chairperson, Eye Research Institute, 20 Staniford Street, Boston, Massachusetts 02114.** *An Equal Opportunity Employer.*

A Board-eligible or -certified Ph.D. **GENETICIST** is sought for an assistant research scientist faculty position in the Section of Pediatric Genetics at the University of Michigan. Functions will include supervision of a six-person cytogenetics/prenatal diagnosis laboratory and augmentation of current research programs in human molecular cytogenetics. Extension of an initial 3-year appointment will depend upon academic productivity and incremental clinical revenue or external funding. A letter of interest, curriculum vitae, and names of three references should be sent to: **Golder N. Wilson, M.D., Chairman of Search, Department of Pediatrics, K2015 Holden, Ann Arbor, Mich. 48109.** *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

POSTDOCTORAL POSITION available after 1 July to study mechanism of action and resistance to anticancer agents with focus on drugs that alter DNA. Current areas of investigation include nuclear and mitochondrial DNA damage and repair and drug transport across membranes. Candidates with experience in areas of DNA repair, protein purification, molecular biology, tissue culture, or drug transport are especially encouraged to apply. Send curriculum vitae and names of three references to: **Dr. Warren Ross, Box J-267, J. Hillis Miller Health Center, Gainesville, Fla. 32610.**

POSITIONS OPEN

INSTRUCTOR OR ASSISTANT PROFESSOR OF PHARMACOLOGY. Tenure-track position available in July 1984. Applicants should have a Ph.D. or M.D. degree and 1 to 3 years of postdoctoral experience and be qualified to assume teaching responsibilities in medical pharmacology and to conduct an active research program. A background in molecular pharmacology is preferred, but applicants qualified in other areas may apply. Send curriculum vitae to: **Dr. D. E. McMillan, Chairman, Department of Pharmacology and Interdisciplinary Toxicology, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Ark. 72205.**

The University of Arkansas for Medical Sciences is an Affirmative Action/Equal Opportunity Employer.

MUSEUM CURATORIAL ASSISTANT. Applications are sought for a curatorial assistant with a background in invertebrate paleontology for a temporary appointment (one year) to assist in curating a newly acquired invertebrate fossil collection. Salary: \$16,000. Apply before 13 April to: **Dr. Edward C. Wilson, Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, Calif. 90007; telephone 213-744-3320.** *An Equal Opportunity Employer.*

POSTDOCTORAL FELLOW position available immediately to study and develop techniques assaying short-term effects of ultraviolet radiation in skin of human and experimental animals. Previous experience in photobiology or photochemistry desirable, but not necessary. Send curriculum vitae with names of three references to: **Dr. Vincent A. DeLeo, Department of Dermatology, Columbia University, 630 West 168 Street, New York, N.Y. 10032.** *An Affirmative Action/Equal Opportunity Employer*

POSTDOCTORAL FELLOW. Organic chemist with interest in biochemistry/molecular biology to investigate the mechanisms of carcinogenicity and organotropism of certain arylamines and/or nitroalkanes. Available immediately. Send curriculum vitae to: **Dr. Emerich Fiala, Naylor Dana Institute for Disease Prevention, Valhalla, N.Y. 10595.** *Equal Opportunity Employer.*

ASSISTANT VICE PRESIDENT FOR INFORMATION PROCESSING

University of Minnesota

The person selected for this new position will be the principal line officer for units and activities related to computing and telecommunications and will report to the Vice Presidents for Academic Affairs and Finance and Operations. The primary emphasis of the position will be on planning, coordination, and management of these activities to serve the academic and administrative needs of the University.

Leadership and line responsibility for the University Computer Services, the Administrative Data Processing Division, and a new Department of Telecommunications Services to be established are major responsibilities of this position.

Candidates must have, as a minimum, a master's degree (Ph.D. preferred) in engineering, science, mathematics, management information systems, or comparable technical discipline; a minimum of 5 years of experience in planning and management in the area of computer and/or telecommunications technology. Significant experience in a research university; understanding of and experience in conducting or supporting academic research, undergraduate and graduate education, or comparable experience in private or governmental laboratories.

Applications and nominations for this position are solicited and applicants should forward a résumé, three letters of evaluation, and a personal statement in regard to the position on or before 25 April 1984 to:

**Dr. A. J. Linck, Associate Vice President for Academic Affairs
and Chair, Search Committee
213 Morrill Hall
100 Church Street, SE
University of Minnesota
Minneapolis, Minnesota 55455**

This is an administrative position of the University, with faculty benefits. Faculty rank and tenure status are possible in an appropriate academic department, depending on qualifications.

Salary: negotiable and commensurate with qualifications and experience.

The University is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

NATIONAL SCIENCE FOUNDATION

National Science Foundation (NSF), Division of Ocean Sciences, is seeking candidates for the position of **ASSISTANT/ASSOCIATE PROGRAM DIRECTOR IN THE OCEANIC BIOLOGY PROGRAM.** The position is excepted from the competitive civil service and will be filled by September 1984 on a 2-year rotational basis. The per annum salary ranges from \$30,000 to \$45,000 for the assistant program director and \$35,000 to \$55,000 for the associate program director. The program supports fundamental research into the biology of the oceans. The incumbent will provide technical expertise in proposal evaluation, administration of research grants, program planning, and budgeting. Applicants should have a Ph.D. in oceanography or marine biology, or equivalent experience. In addition, for the assistant program director, 3 to 4 years of successful scientific research experience beyond the Ph.D. is desirable, and for the associate program director, 4 to 6 years of successful scientific research experience is desirable. Experience in an academic research institution is highly desirable, as is at-sea and/or laboratory experience in biological research. Applicants should refer to Announcement Number EX 84-28S when submitting résumés (including current salary) to: **The National Science Foundation, Personnel Administration Branch, Room 212, 1800 G Street, NW, Washington, D.C. 20550, attention: Timothy Connelly.** For further information, **telephone: 202-357-7840.** Hearing impaired individuals should call: **TDD 202-357-7492.** *NSF is an Equal Opportunity Employer.*

**Public Information Officer
National Optical
Astronomy Observatories
Tucson, Arizona**

This is an attractive and challenging position to head an office of public information within the National Optical Astronomy Observatories, a unit comprising U.S. national observatories on Kitt Peak, Arizona; in Chile; and in New Mexico. We require an aggressive, knowledgeable professional preferably with an advanced degree who has substantial experience working with the national media and demonstrated ability in scientific writing in a research or academic environment. The Public Information Officer reports to the Director, NOAO.

This position will function in a vigorous and enterprising scientific atmosphere and carries a corresponding promise of personal satisfaction. Responsibilities include working with scientific staff and visiting astronomers to develop news releases and articles for local and national media, and provision of other public information services. Ability and willingness to travel are essential.

We offer an excellent salary and benefits package including, after one year, a fully vested retirement plan. For immediate and confidential consideration, please send your resume and salary requirements, with names of three references to:

**Judy Ruffino
Personnel Manager
P.O. Box 26732
Tucson, AZ 85726**

An EEO/AA Employer

BIOGEN

A leading biotechnology company with laboratories in the US and Switzerland, is looking for its Geneva laboratories for

an IMMUNOLOGIST

with several years experience in the area of cell mediated immunity, T-cell hybridomas and lymphokines,

2 PROTEIN CHEMISTS

with experience in large scale protein purification and/or strong background in conformational studies of proteins,

a MICROBIOLOGIST

with extensive experience in fermentation research and development.

We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment. If this offer appeals to you, then reply to:

Personnel Manager, BIOGEN S.A., Route des Acacias 46, 1227 Geneva, Switzerland.

Please send your resume and a list of three individuals who may be contacted for references on your behalf. All replies will be evaluated in confidence.

National Institutes of Health National Cancer Institute

SUPERVISORY MICROBIOLOGIST/BIOLOGIST/CHEMIST

The National Cancer Institute has an opening for Chief of the Chemical and Physical Carcinogenesis Branch of the Carcinogenesis Extramural Program.

Duties include planning, developing, directing and managing a national extramural program of basic and applied research concerned with the occurrence and inhibition of cancer caused or promoted by chemical or physical agents, acting separately or together, or in combination with biological agents.

The position requires extensive knowledge of the scientific basis of chemical and physical carcinogenesis research; experience in planning, administration and evaluation of research carried out under the grant, contract and cooperative agreement mechanisms, experience with effective personnel management and supervision as well as experience in dealing with interrelationships between governmental, educational, industrial, and private research concerns.

In addition to three years of appropriate experience, minimum educational requirements include a 4 year course of study in an accredited college or university leading to a

bachelor's degree with major study in chemistry or biology. A doctorate or equivalent training in molecular biochemistry, pharmacology or biology is desirable.

This is a Civil Service Career-Conditional Appointment under the Merit Pay System at the GS-15 level with a salary range of \$50,252 to \$63,652 depending upon the qualifications of the applicant selected. Benefits include Civil Service Retirement, life and health insurance. This is a supervisory position and may require the incumbent to serve a one year probationary period. U.S. citizenship is required.

Submit application (SF-171, Personal Qualifications Statement), current performance appraisal and names of 3 references to:

**Ms. Rados, Cancer Personnel Office
Bldg. 31, Rm. 3A-35, 9000 Rockville Pike
Bethesda, MD 20205, Tel: 301/496-6864**

Applications must be received or postmarked by April 6, 1984.

NIH is an equal opportunity employer.

Biological Materials Institute

GROWING INTERNATIONAL BIOTECHNOLOGY COMPANY SEEKS ENERGETIC SENIOR SCIENTISTS WITH POST-DOCTORAL EXPERIENCE TO DEVELOP AND DIRECT RESEARCH PROGRAMS IN THE AREA OF BIOLOGICAL MATERIALS

CARBOHYDRATE CHEMIST

to develop research program in the isolation, characterization, and modification of polysaccharides. Experience in biochemistry and synthesis of carbohydrates strongly desired.

SEPARATIONS ENGINEER

to develop and scale-up isolation and purification processes for biological materials. Experience in recovery of fermentation-derived polysaccharides and proteins desired.

MOLECULAR BIOLOGIST

to develop research program for strain improvement of industrial micro-organisms. Experience in microbial genetics and physiology, and familiarity with microbial recombinant DNA techniques required.

BIOPOLYMER RHEOLOGIST

to develop program for characterization and functional performance analysis of biological polymers. Experience with advanced rheological instrumentation desired.

POSITIONS ARE ALSO AVAILABLE FOR QUALIFIED RESEARCH SCIENTISTS IN THE ABOVE AREAS.

The positions offer the opportunity to work with new and expanding technology and to interface extensively with internationally recognized scientists in many biotechnological fields.

Excellent salary and benefits, commensurate with experience.

Please send C.V., including personal publications and salary history, in confidence to:

Genzyme Corporation
75 Kneeland Street
Boston, MA 02111

Attention: Martha Boyd



FELLOWSHIP IN SPORTS MEDICINE

Lenox Hill Hospital's Institute of Sports Medicine and Athletic Trauma is offering the Dr. James A. Nicholas Post Doctoral Fellowship in Sports Medicine to candidates with Ph.D. or M.D. degrees within the last two years. The research fellowship offers a salary of \$22-\$25,000 per year and is renewable after one year. Applicants should send CV, 2 letters of recommendation & an outline of research interest in sports medicine. Finalists will be contacted to submit a research grant proposal utilizing additional funding, facilities, personnel & resources. Application deadline is May 1, '84. Contact Mr. P. Rosenthal,

LENOX HILL HOSPITAL

130 East 77 St
New York, N.Y. 10021

an equal opportunity employer

POSITIONS OPEN

COLLEGE SCIENCE LABORATORY TECHNICIAN

Position available 1 July 1984. Duties: prepare and assist in lecture demonstration experiments, prepare laboratory reagents, receive and store all apparatus and chemicals, distribute equipment and reagents to students and staff, service laboratory courses and research, maintain student records, prepare student laboratory lockers, and keep laboratories in good order. Required: B.A./B.S. degree and some experience as a laboratory technician. Previous experience serving biochemistry laboratory courses; ability to repair and service equipment and apparatus desirable. Salary: dependent on experience. Send résumé to:

Professor Reuben L. Baumgarten
Chair, Department of Chemistry
Herbert H. Lehman College/
City University of New York
Bronx, New York 10468

An Equal Opportunity/Affirmative Action Employer

OCEANOGRAPHER. United States Minerals Management Service is recruiting oceanographers at the GS-12 and GS-13 grade levels who possess: an in-depth knowledge of physical oceanography and marine climatology, including the design and management of studies, transfer of information, and modeling of results; an ability to organize, direct, and coordinate complex research activities with particular emphasis on activities related to physical oceanography and marine climatology; a knowledge of federal procurement laws and regulations; a knowledge of federal and state legislative procedures and their potential impact on the Environmental Studies and Offshore Leasing Programs; an ability to track and evaluate progress of work and expenditures for multimillion dollar oceanographic contracts with complex substantive content and tight deadlines; and an ability to work effectively with other agencies and groups whose views may not conform with established policy. Interested applicants should submit a Personal Qualifications Statement, SF-171, to: Chief, Staffing and Classification Branch, Mail Stop 634, U.S. Minerals Management Service, 12203 Sunrise Valley Drive, Reston, Va. 22091.

PLANT PHYSIOLOGIST, assistant/associate professor biology (tenure-track), is sought to develop a teaching and research program at Utah State University. The position is 35 percent teaching and 65 percent research (Agricultural Experiment Station supported) on an 11-month contract.

Candidate for this position must have strong interest in teaching a general plant physiology course for undergraduates and a water relations course for graduate students. The development of a second graduate course of interest to the department and the successful applicant would be expected.

The candidate should be an organismal plant physiologist. An interest in water relations or stress physiology will be given a high priority. The development of a vigorous research program supported by extramural funding would be expected.

Qualifications: Ph.D. degree. Candidates with experience beyond the Ph.D. degree will be given preference. Rank and salary will be commensurate with experience.

Closing date: 15 April 1984. Position available 1 July 1984.

Send applications and curriculum vitae to:
Raymond T. Sanders, Chairman
Search Committee
Department of Biology, UMC 53
Utah State University
Logan, Utah 84322

Each applicant should arrange to have letters from three referees sent to the above address.

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

THREE POSTDOCTORAL POSITIONS IN MOLECULAR IMMUNOLOGY: (i) Design and synthesis of a novel class of anti-inflammatory agents: peptide inhibitors of complement-system enzymes, (ii) Complement-mediated vesicle lysis for sensitive detection of antigens, and (iii) Complement-mediated killing of tumor cells by monoclonal antibodies. A background in either peptide synthesis and purification, protein purification, enzymology, immunochimistry and/or tumor immunology is required. Dr. Lynn Caporale or Dr. Carl-Wilhelm Vogel, Department of Biochemistry, Georgetown University Medical Center, 4000 Reservoir Road, NW, Washington, D.C. 20007.

POSITIONS OPEN

PLANT PHYSIOLOGIST

Position for plant physiologist available immediately at Kennedy Space Center, Florida. Ph.D. with minimum of 3 years of postdoctoral training or comparable experience and familiarity with proposal writing, experimental design and conduct required. Experience in gravitropic research with higher plants desired. Successful candidate will be expected to develop research to investigate the response of higher plants to gravity and their interaction with other environmental factors. Deadline for receipt of application is 6 April.

Send résumés to: **The Bionetics Corporation, BIO-1, Kennedy Space Center, Florida 32899.** *The Bionetics Corporation is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately for study of the effects of the lipid environments on the function of integral membrane enzymes. Strong background in enzymology required. Send résumé and names of three references to:

David Zakim, M.D.
Director, Division of Digestive Diseases
Cornell University Medical College
1300 York Avenue, F-231
New York, N.Y. 10021

POSTDOCTORAL POSITION—NEUROPHARMACOLOGY. The fellow will join an established group studying the effects of ethanol on neurochemistry and behavior. The project involves investigation of the role of neuropeptides in ethanol tolerance. Candidates should have experience in biochemical methods (HPLC, GC, receptor assays), small animal surgery, and behavioral testing techniques. Position available immediately. Salary: \$16,000 to \$19,000 per year. Send curriculum vitae and three letters of reference to: **Dr. P. L. Hoffman, University of Illinois at Chicago, Health Sciences Center, Department of Physiology and Biophysics, P.O. Box 6998, Chicago, Ill. 60680.** *Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS IN CARDIOLOGY. Two positions are available: (i) to study the biochemical alterations in the myocardium associated with various loading conditions of heart, and (ii) to examine the quantitative fine structural changes that occur as a result of various hemodynamic loads placed on the heart. Background in (i) cardiac biochemistry or (ii) cardiac ultrastructure preferred. Send curriculum vitae and names of three references to: **Dr. George Cooper, IV, Division of Cardiology, Department of Medicine, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, Pa. 19140.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION—Ph.D.

Available July 1984 for the study of cellular mechanisms in the development of retinal proliferative diseases. Sponsored conjointly by the Departments of Ophthalmology and Anatomy and Cell Biology. This is a unique opportunity to participate in clinically oriented research on a cellular and biochemical level under the guidance of both an experienced ophthalmic clinician-investigator and a cell biologist. Practical experience in cell culture, HPLC, and protein biochemistry is preferred.

Interested candidates send curriculum vitae and three letters of reference to: **Mark Blumenkranz, M.D., Department of Ophthalmology, University of Miami School of Medicine, P.O. Box 016880, Miami, Florida 33101.**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL RESEARCH

Tumor Biology

Genentech, Inc., a recognized leader in the field of biotechnology research, has a challenging position at the postdoctoral research level involving the study of biological functions of lymphokines. Research will involve a molecular biological approach to understand mechanisms of lymphokine actions at the cellular level. Ability to perform routine techniques in molecular biology, biochemistry, and cell biology to study the regulation of gene expression in eukaryotic cells as applied to the understanding of the molecular basis of cell differentiation required.

We offer excellent salaries and benefits in a stimulating environment. For immediate consideration, please send résumé to: **Human Resources Department Number E, GENENTECH, INC., 460 Pt. San Bruno Boulevard, South San Francisco, Calif. 94080.** *An Equal Opportunity Employer.*

Synthetic Peptide Chemists

BIOSEARCH, a leader in the field of automated chemical systems, is looking for innovative scientists to help staff its peptide synthesis department. As a successful candidate, you should have your PhD in organic chemistry with 5 years' relevant experience in the field of synthetic peptide chemistry.

We are located in the San Francisco Bay Area, a center for high technology. We offer you an excellent compensation package which includes stock options. More importantly, we offer you the opportunity to pursue a rewarding career participating in the rapid evolution of synthetic chemical systems. Send your resume to:



BIOSEARCH

Director of Personnel
2980 Kerner Blvd.
San Rafael, CA 94901
An equal opportunity employer.



BioTechnica International, Inc.

85 Bolton St., Cambridge, Massachusetts 02140 (617) 864-0040

SCIENTIFIC PLANNING AND PRODUCT DEVELOPMENT

BioTechnica International, Inc., an innovative biotechnology company located in Cambridge, Massachusetts, has a single opening for a highly skilled scientist at the Ph.D. level (Masters level acceptable if the candidate has unusual qualifications) to work on the development of new scientific programs and products. This position requires someone of exceptional creativity and an interest in the business end of biotechnology as well. The position will not involve laboratory work. The candidate must possess high-level academic skills in at least two of the following areas:

- molecular biology
- biochemistry or microbial physiology
- enzymology or protein chemistry
- physical biochemistry of proteins
- biochemical engineering
- polymer chemistry

Prior experience with process economics or marketing is desirable but not necessary. The key qualification is scientific excellence.

Please send a letter of application with curriculum vitae and names of three references to: **Director of Administrative Services BioTechnica International, Inc., 85 Bolton Street Cambridge, MA 02140**

Scientists

Positions are available in our Cambridge laboratory for scientists with experience and skills in the specialty area of:

Protein Chemistry and Protein Purification

Candidates should have expertise in one of the following areas:

- enzymology
- protein structural chemistry
- peptide chemistry
- sequence analysis

Positions are available at the Ph.D. level. Masters degree recipients who have considerable experience in these technical areas are also encouraged to apply.

Biogen is a biotechnology company with laboratories in the United States and Switzerland, developing commercial applications of molecular

biology in the areas of agriculture, chemicals, pharmaceuticals and energy. We offer a challenging scientific career with the opportunity to interact with talented colleagues in a stimulating environment.

Biogen offers an attractive compensation and benefits package.

Please send your resume and a list of three individuals whom we may contact for references on your behalf to: **Nanci Pye, Manager of Human Resources, Dept. PC-12, Biogen, 14 Cambridge Center, Cambridge, MA 02142.**

All replies will be evaluated in confidence. Biogen is an equal opportunity employer.

*Biogen is a service mark of Biogen N.V. for the provision of research and consultation services relating to all aspects of biotechnology including genetic engineering, fermentation, microbiological conversion, and the purification and processing of the products of biotechnology.

BIOGEN

BIOCHEMIST

San Francisco Bay Area

Stauffer Chemical Company has an immediate opening in its genetic engineering group located in the San Francisco Bay Area.

Candidates should have a BS or MS in Biochemistry, with one year research experience that includes at least one of these areas: plant biochemistry, hormone action, cDNA techniques, cell culture.

Qualified candidates are invited to send a resume containing the names and addresses of three (3) references to: **K.D. MacLaren, Stauffer Chemical Company, 1200 So. 47th St., Richmond, CA 94804.** We are an affirmative action employer, M/F



FACULTY POSITIONS

COLLEGE OF AGRICULTURE AND FOOD SCIENCES

KING FAISAL UNIVERSITY

AL-HASA, SAUDI ARABIA

1. **Lecturer:** Specialization in Agricultural climatology to teach courses in Agricultural Climatology—Development of Water Resources and Ground Water Hydrology.
2. **Assistant/Associate Professor:** Specialization in Farm Power and Machinery to teach courses in Agricultural Workshops, Surveying, Land Leveling Operations and Machinery and Agricultural Process Engineering.
3. **Assistant/Associate Professor:** Specialization in Agricultural Engineering (Farm Power Machinery) to teach subjects in Agricultural Mechanization, Pest Control Machinery, Poultry and Animal Production Equipments, and Stress Analysis and Properties of Matter.
4. **Assistant/Associate Professor:** Specialization in Rural Sociology to teach courses in Principles of Development of Local Rural Sociology.
5. **Assistant/Associate Professor:** Specialization in Horticulture (Tissue Culture) to teach Horticulture Crop Physiology and Genetics and Tissue Culture.
6. **Assistant/Associate Professor:** Specialization in Animal Breeding to teach subjects in Poultry and Animal Breeding and Dairy and Beef Production.
7. **Assistant/Associate Professor:** Specialization in Meat Science and Technology to teach courses in Meat Technology, Technology of Animal Products, and Fish Technology and Preservation.
8. **Assistant/Associate Professor:** Specialization in Fish Diseases and Parasites to teach courses in Fish Diseases and Fish Sciences.
9. **Assistant/Associate Professor:** Specialization in Analytical (Chromatography or Spectroscopy) Chemistry to teach courses in General and Analytical Chemistry. Experience in Computer-aided Chemistry is preferred.

MINIMUM REQUIREMENTS: Ph.D. degree for Assistant or Associate Professor positions; M.S. degree for Lecturer positions; Publications in professional journals; minimum of two years teaching experience at the University level for Assistant Professor positions and four years teaching experience for Associate Professor positions. Must be fluent in both Arabic and English. All faculty members are expected to conduct research in their area of interest.

If qualified, application forms may be obtained at the following address:

Dean, College of Agriculture and Food Sciences
King Faisal University
c/o U.S. Recruiting Office
2425 West Loop South, Suite 540
Houston, Texas 77027

Additional information, specifically on benefits, may be obtained when applying for positions.

DEADLINE FOR RECEIVING APPLICATIONS IS APRIL 15, 1984.

POSITIONS OPEN

POSTDOCTORAL POSITION available for molecular biologist to work on genetic aspects of tumor metastasis. Background in somatic cell genetics and cancer biology helpful. Send applications, including curriculum vitae and at least three references, to: **Dr. Ann F. Chambers, Ontario Cancer Foundation, London Clinic, 391 South Street, London, Ontario, Canada N6A 4G5.**

POSTDOCTORAL RESEARCH APPOINTMENTS. Studies of glycoproteins, glycopeptides, oligosaccharides, and polysaccharides by carbon-13 NMR. State-of-the-art NMR equipment. The newest HPLC and other equipment for separations. Opportunities to combine biochemical training with magnetic resonance spectroscopy. Opportunities for collaborative arrangements with researchers at the Indiana University Medical School. Salary commensurate with experience. Positions will be open until filled. Send curriculum vitae and names of three references to: **Professor Adam Allerhand, Department of Chemistry, Indiana University, Bloomington, Ind. 47405.** *Indiana University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately to study the bioenergetic and biochemical properties of isolated secretory granules and the role of Ca^{2+} in exocytosis. A Ph.D. in biochemistry, cell biology, or related discipline is required. Annual salary is \$15,000 or commensurate with experience. Send curriculum vitae and names of three references to: **Dr. Peter W. Reed, Department of Pharmacology, Vanderbilt University School of Medicine, Nashville, Tenn. 37232.** *Vanderbilt University is an Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available immediately for biochemist/neuroscientist to study GABA-gated chloride channel complexes in cultured cerebral neurons (*J. Biol. Chem.* 259, 1753). Background in membrane protein isolation, ion transport, or tissue culture preferred. Appointment as research associate in biochemistry renewable for additional years. Send curriculum vitae and names of three references to: **Dr. Eugene M. Barnes, Jr., Department of Biochemistry, Baylor College of Medicine, Houston, Texas 77030.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH ASSOCIATE position available immediately to Ph.D. biochemist to study the role of calmodulin in cellular regulation. Candidates with a strong background in enzymology or protein chemistry are preferred. Please send curriculum vitae and three letters of recommendation to: **Dr. Wai Yiu Cheung, Department of Biochemistry, St. Jude Children's Research Hospital, Memphis, Tennessee 38105.**

Equal Opportunity Employer

POSTDOCTORAL RESEARCH ASSOCIATE, DIABETES. Three-year position in diabetes research, particularly pancreatic islet research, available. Individuals with experience in enzyme purification, metabolic studies, or cell culture preferred. Annual salary about \$20,000. Send curriculum vitae and names of references to: **Dr. Michael J. MacDonald, University of Wisconsin Medical School, Room 3459, 1300 University Avenue, Madison, Wis. 53706.**

POSTDOCTORAL RESEARCH POSITION immediately available for a candidate holding M.D. and/or Ph.D. with expertise in electrophysiology. Project involves study of mechanisms of action of antiepileptic drugs with a variety of modern neurophysiological techniques applied to mammalian CNS maintained in vitro. Opportunity exists for collaboration with biochemical pharmacologists using radioligand binding, autoradiography, and HPLC analyses. Support for 2 years with option for third. Salary competitive. Send curriculum vitae and two letters of reference to: **Director, Neuropharmacological Research, Department of Neurology, Box 394, University of Virginia Medical Center, Charlottesville, Virginia 22908.**

POSTDOCTORAL—RESEARCH ASSOCIATE position available immediately to study neurite outgrowth in vitro. Ph.D. and experience in cell and organ cultures required. One year of guaranteed support; possibility of additional years. Deadline: 16 April. Send curriculum vitae and references to: **Philip Grant, Department of Biology, University of Oregon, Eugene, Ore. 97403.** *Affirmative Action/Equal Opportunity Employer/Institution.*

POSITIONS OPEN

POSTDOCTORAL RESEARCHER

The Ohio State University College of Veterinary Medicine is seeking a postdoctoral researcher to investigate metabolic pathways of drugs in horses. This individual develops analytical methods for detecting, identifying, and quantitating drugs and/or drug metabolites in biological fluids. This individual also collects and analyzes data and prepares reports.

Candidates must have a Ph.D. in analytical chemistry, pharmaceutical analysis, or related disciplines. Knowledge of analytical and instrumental methods is required. Knowledge of pharmacokinetic methods of analysis is desired.

Starting salary: \$16,000 to \$22,000.

Qualified candidates should apply by 15 May 1984 to:

**Professional Employment Services
The Ohio State University
Lobby, Archer House
2130 Neil Avenue
Columbus, Ohio 43210**

An Equal Opportunity/Affirmative Action Employer

VISITING PROFESSOR OF MEDICAL MICROBIOLOGY. A temporary appointment to present about 20 lectures to medical students on bacterial pathogens, and to supervise a laboratory for 5 weeks, 5 hours weekly. Appointment may be made at any academic level for the months of May and June 1984. An office and laboratory space can be provided. Furnished campus housing is also available. To apply or to request more specific information, contact:

**Chairman
Department of Microbiology and Molecular Genetics
College of Medicine
University of California
Irvine, Calif. 92717**

An Affirmative Action/Equal Opportunity Employer

THE DEPARTMENT OF PHARMACOLOGY, University of California, Los Angeles (UCLA), School of Medicine, invites applications for a position as **PROFESSOR OF PHARMACOLOGY.** Candidates should have an M.D. or Ph.D., with teaching and research experience in cardiac or vascular smooth muscle regulation and control and a record of productivity in the field. Send curriculum vitae and bibliography to: **Department of Pharmacology, UCLA School of Medicine, Center for Health Sciences, Los Angeles, California 90024; attention: CV Search.** *The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.*

RESEARCH ASSOCIATE/CELLULAR IMMUNOLOGY. The Department of General Surgery, Mount Sinai Medical Center, Miami Beach, Florida, is seeking candidates with a strong background in cellular immunology to direct research in an active tumor immunology laboratory. Activities include monitoring reactivity to biologic response modifiers, as well as development of monoclonal antibodies against murine colon tumors. The position carries a dual appointment at Mount Sinai and the University of Miami Comprehensive Cancer Center. Candidates should have a Ph.D. with 2 to 3 years of experience. Salary is negotiable. Curriculum vitae and three letters of reference should be submitted to: **Marc Wallack, M.D., Chairman, Department of General Surgery, Mount Sinai Medical Center, 4300 Alton Road, Miami Beach, Florida 33140.** *An Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE. Two excellent positions in established research laboratory. One for a person with at least 1 year of postdoctoral experience or extensive graduate training in molecular biology/genetics to characterize genes coding for tumor-associated immunosuppressive proteins. Another for a person with experience in receptor biochemistry and/or protein kinases to work in characterization of leukocyte chemoattractant receptors. Send a copy of curriculum vitae, bibliography, and three letters of reference to: **Dr. Ralph Snyderman, Professor of Medicine and Immunology, Box 3892, Duke University Medical Center, Durham, N.C. 27710.**

DIRECTOR

Mote Marine Laboratory, Sarasota, Florida

The Board of Trustees of the Mote Marine Laboratory (MML), Sarasota, Florida invites applications and nominations for the position of Director, Mote Marine Laboratory.

The MML is an independent, nonprofit marine laboratory, founded in 1955 and presently located on seven acres of waterfront property adjacent to the Gulf of Mexico. The Laboratory has a core of 8 Ph.D.-level Senior Staff Scientists, 8 M.S.-level Senior Staff Biologists and Chemists, and a supporting staff of 64 biologists, chemists, and technicians, in addition to an administrative and maintenance staff of 18 full-time employees. Present MML research programs include: benthic ecology; toxicology; estuarine and coastal ecology; water chemistry; sedimentology and hydrography; plankton ecology; biomedicine; bioactive substances; red tide; and biology and behavior of elasmobranchs and teleosts.

The applicant must be a marine scientist, possess a Ph.D. degree, have a distinguished record of achievement in research and administration, and be recognized as a leader in his field. The Director's responsibilities will include coordinating the present research programs of the Laboratory and developing additional basic research programs of high quality with Staff Scientists and Visiting Investigators.

Salary and benefits are competitive and will depend on the applicant's qualifications. Deadline for applications is April 30, 1984.

Candidates must be available to assume the position by 1 September 1984. Nominations and applications should be accompanied by resumes and letters detailing the candidate's qualifications and professional goals. The names, addresses and telephone numbers of at least three references should be included. Applications and inquiries should be directed to:

**Dr. S. R. Galler, Chairman
Search Committee
Mote Marine Laboratory
1600 City Island Park
Sarasota, Florida 33577
(813) 388-4441**



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Columbia University announces

Axel Licenses Now Available

Columbia University is now offering licenses for commercial development of pioneering genetic engineering techniques developed by Dr. Richard Axel and colleagues. Each license gives non-exclusive rights under the recently issued U.S. patent #4,399,216 on methods for introducing virtually any gene into cultures of animal and other eucaryotic cells. These cells can be used for the production of proteins, such as growth factors and viral proteins for vaccines, that cannot be produced efficiently, or at all, in bacterial cell cultures. Licenses also grant rights under three pending U.S. patent applications and all foreign applications.

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COLUMBIA UNIVERSITY
Office of Science and Technology Development
630 West 168th Street, New York, NY 10032
(212) 694-4026

SCIENTISTS and TECHNICIANS

Bethesda Research Laboratories is seeking B.S., M.S. and Ph.D. applicants qualified in the following areas:

- Extraction Manipulations and Characterization of DNA and RNA
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- Cell culture immunochemistry and monoclonal antibody techniques
- Microbial physiology and fermentation (Ph.D.)

These positions offer competitive salary and benefits and a growth opportunity for dedicated scientists interested in the challenges of industrial applications.

We invite your inquiry. Send your resumé in confidence to:



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Biochemist

Staff position in a rapidly growing research group. Candidates should have expertise in carbohydrate chemistry and lipopolysaccharide structure of gram negative bacteria. Applicants should have a Ph.D. and 2-3 years postdoctoral experience or equivalent.

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Rapidly growing biotechnology firm is seeking a Director for our Pilot Plant located in Gaithersburg, Maryland. This individual will have full responsibility for managing 3 sections, Pilot Plant Operations, Pilot Plant Microbiology and Process Engineering. The successful candidate will have a Ph.D. in Biochemical engineering or the equivalent in experience; a minimum of 5 years experience in pilot scale fermentations; and demonstrated management capabilities with strong technical and leadership skills. Experience with Pilot scale protein recovery desirable. Salary and benefits negotiable. Please submit resume and 3 professional references to:



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Petroferm is a new, rapidly expanding biotech company, specializing in biologically produced surface active compounds. One of our current products is Emulsan, a proprietary microbial emulsifier. To qualify, a PhD or equivalent is a requisite plus post-doctoral experience in microbial physiology. We offer excellent benefits and compensation. Send your resume, with salary history and requirements, to: Manager, Human Resources, Petroferm USA, P.O. Box 514, Short Hills, NJ 07078. An equal opportunity employer M/F.

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POSITIONS OPEN

PROGRAM MANAGER AIR-SEA INTERACTION

NASA Headquarters, Oceanic Processes Branch, is seeking candidates for planning, developing, and implementing a scientific research program utilizing satellite techniques in the general area of air-sea interaction. Specifically included is the use of satellite scatterometry to characterize the surface wind field, and the effect of surface winds on upper-ocean currents. Qualifications include: (i) ability to communicate effectively, (ii) demonstrated experience in conducting original research, (iii) program management experience, and (iv) knowledge of physical oceanography. GS 14/15, with salary ranges from \$41,277 to \$63,115, commensurate with experience/education. For further information regarding requirements and application procedures, write to address below or telephone: 202-755-3687. Formal applications must be received by 6 May 1984. An Equal Opportunity Employer.

NASA—National
Aeronautics and Space
Administration

NASA Headquarters
Code NHP
Washington, D.C. 20546

RESEARCH ASSISTANT PROFESSOR. The Department of Obstetrics and Gynecology, F. Edward Hebert School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland, is inviting applications for a (possible tenure-track) faculty position. Applicants must have an M.D. or Ph.D. degree and significant research experience in the area of reproduction. Candidates are expected to have technical expertise in the areas of tissue culture, receptors-hormone interaction, or other aspects of molecular biology appropriate to the OB/GYN Department. Applicants are expected to participate in collaborative research and departmental training programs. The successful candidate is expected to pursue a vigorous independent research program capable of attracting extramural funding. While a specific research area is not mandated, excellence of the program appropriate to the OB/GYN Department needs will be desirable. U.S. citizenship is required. Interested individuals should send a copy of their curriculum vitae, three recent reprints, and the names of three references by 31 May 1984 to:

Directorate of Civilian Personnel
attention: P. K. Chakraborty, Ph.D.
Uniformed Services University of the Health Sciences
4301 Jones Bridge Road
Bethesda, Md. 20814

Applications will not be returned. *The Uniformed Services University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH ASSOCIATE position available for a creative molecular biologist, preferably with some postdoctoral experience to investigate molecular mechanisms of X chromosome inactivation. The position as Ph.D. has potential for junior faculty status. An excellent opportunity for someone with expertise in recombinant DNA technology and interest in human genetics and a stimulating academic environment. Along with credentials, send names, addresses, and telephone numbers of three references to: Dr. Barbara R. Migeon, Children's Medical & Surgical Center 1004, The Johns Hopkins Hospital, Baltimore, Maryland 21205.

RESEARCH COORDINATOR—CHEMICAL LIMNOLOGY

Research coordinator—chemical limnology position available immediately at the University of Georgia's Savannah River Ecology Laboratory for an M.S. or recent Ph.D. with thorough knowledge of water chemistry and management skills to supervise a water chemistry laboratory employing eight technical personnel. The laboratory is presently studying the impact of nuclear industrial operations on the chemistry of receiving waters. Candidate must be a U.S. citizen. Send resume and three letters of recommendation to: Dr. Michael C. Newman, Savannah River Ecology Laboratory, Drawer E, Aiken, S.C. 29801; telephone: 803-725-2472. Applications will be accepted until 6 April 1984.

SCIENTIFIC ADVISER

Anti-Vivisection Society requires Boston-area scientific adviser on consulting basis. Candidates should have Ph.D. and background in life sciences. Send resume to: New England Anti-Vivisection Society (NEAVS), One Bulfinch Place, Boston, Mass. 02114.

POSITIONS OPEN

PULMONARY MOLECULAR PHARMACOLOGIST

Pharmaceutical firm seeks a Ph. D. scientist in the Mid-Atlantic states.

Requirements of this position include a Ph.D. in pharmacology and a biochemical background with two years of relevant post-doctoral experience. Candidate must be able to conduct independent research in animal models and to develop and apply state-of-the-art techniques for the discovery of drugs for the treatment of pulmonary diseases. You must have formal training and experience in lipid biochemistry and the pharmacology of arachidonic acid metabolism, experience in tissue culture, enzyme purification and assays, radioimmunoassays, HPLC, GLC and bioassay methods. You must be able to interact effectively with and contribute to a Team approach to research. Supervisory experience required with good written and oral communication skills. Excellent record of publications a must.

We offer a salary to \$37,400 and an excellent benefits package.

Responses are to be sent to:

Mr. R.J. Shiels
Department of Labor
P.O. Box 8029
Newark, DE 19711

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Function as grants officer for Hartford Hospital. Act as representative of Research Committee and represent hospital at colleges, medical schools, and in community on all research matters. Act as resource to investigators, monitoring all research in terms of quality and progress. Qualifications include education at doctoral level (M.D. or Ph.D.) with demonstrated experience in biomedical research, plus experience in securing grants and senior level administrative experience. Please send resume to:

Donald Brown, M.D.
Director of Education
Hartford Hospital
80 Seymour Street
Hartford, Conn. 06115

THE AUSTRALIAN NATIONAL UNIVERSITY invites applications for appointment to the position of **RESEARCH FELLOW/POSTDOCTORAL FELLOW** in the **DEPARTMENT OF APPLIED MATHEMATICS, RESEARCH SCHOOL OF PHYSICAL SCIENCES**. Current theoretical and experimental work in the field of membrane biophysics within the Department of Applied Mathematics (acting head: Dr. J. N. Israelachvili, FAA) includes the structure and interactions of biological membranes, lipid bilayers, vesicles and microemulsions, with particular reference to the role of water structure in surface-water, and surface-surface interactions. However, proposals to undertake work in other areas would be considered. One post at either level will be available from August 1984. Salary in accordance with qualifications and experience within the ranges: research fellow, \$23,394 to \$30,734 per annum; postdoctoral fellow Grade 1 (at fixed point), \$20,164 to \$23,100 per annum. Current exchange rate: A\$1 = U.S.\$0.94. Appointment will be: research fellow normally up to 3 years with the possibility of extension to maximum of 5 years; postdoctoral fellow normally 2 years, with the possibility of extension to maximum of 3 years. Grants are provided towards travel and removal; assistance with housing; superannuation. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Applicants may obtain further particulars from: **The Registrar, The Australian National University, G.P.O. Box 4, Canberra, ACT 2601, Australia**, with whom applications close on 6 April 1984.

RESEARCH SPECIALIST, BIOMEDICAL ENGINEERING

A biomedical engineering position is available immediately with reproductive biology research group studying fetal and maternal physiology. This is a permanent position involving design, production, and analysis using computer and microprocessor aided data acquisition systems.

Resume and three references to: Dr. Peter W. Nathanielsz, College of Veterinary Medicine, Cornell University, Ithaca, N.Y. 14853.

Cornell University is an Affirmative Action/Equal Opportunity Employer.

CELLULAR IMMUNOLOGIST/ IMMUNOBIOLOGIST

The Upjohn Company, a leader in the worldwide research, production, and marketing of pharmaceuticals, chemicals, and agricultural products, has an opening in its Hypersensitivity Diseases Research Unit for a Research Scientist interested in the discovery and development of agents useful in arthritis therapy. In addition to establishing an independent research program in this area, this scientist will be responsible for profiling disease-modifying agents of arthritis using *In vivo* models of autoimmunity. The scientist will also serve as a member of a multidisciplinary research project team consisting of experienced scientists with similar research programs.

Candidates should have a Ph.D. in Immunobiology/Immunopharmacology. Special interests in the pathogenesis of autoimmune diseases with an emphasis on T-lymphocyte immunoregulatory and immunomodulation mechanisms and experience with *In vivo* models of autoimmunity are highly desirable. Candidates must have a demonstrated ability to conduct independent research.

Upjohn offers a stimulating research environment, career potential, competitive salary (commensurate with experience), and an outstanding benefits package. The Kalamazoo, Michigan area provides an attractive living environment with immediate access to an excellent mix of cultural, educational, and recreational pursuits.

For confidential consideration, please call toll-free Upjohn's Corporate Employment Office at 1-800-253-8600 and ask for extension 3-6767. In Michigan, call collect 616-323-6767. Please refer to ad number 15962G when calling.

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POSITIONS OPEN

PROTEIN CHEMISTS, CELL BIOLOGISTS, PHARMACOLOGISTS

Postdoctoral research position is open for recent Ph.D.'s with background in protein chemistry, molecular cell biology, or organic chemistry. Research will be related to the elucidation of the mechanism of blood pressure regulation, which includes molecular and cellular studies of renin and angiotensin function, and biochemical and cell biological aspects of natriuretic substances. The applicant must be a U.S. citizen or permanent resident. This position is supported by a NIH Training Grant. Salary will depend on experience and according to the NIH stipend levels. Send curriculum vitae and two reference letters to: **Tadashi Inagami, Director, Hypertension SCOR, Vanderbilt University School of Medicine, Nashville, Tenn. 37232. An Equal Opportunity Employer.**

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

OPTS/Office of Pesticide Programs Hazard Evaluation Division

The Hazard Evaluation Division is recruiting for qualified **SCIENTISTS** in the fields of environmental chemistry, analytical chemistry, biochemistry, toxicology, pharmacology, physiology, microbiology, and biostatistics to perform analysis of pesticide exposure, environmental fate, and environmental and human health hazards.

Applicants must have at least a bachelor's degree or equivalent plus 1 year of appropriate directly related professional experience. Salary ranges from \$17,138 to \$55,538 per annum (GS-7 through GS-14), depending on qualifications. Applicants must have current OPM eligibility for all positions at GS-7 level and for all life-science positions GS-7 through -12.

Application submissions: Please submit a completed SF-171 and course listing available at the Federal Job Information Centers and federal agency personnel offices, to reach EPA no later than 15 April 1984, to: **EPA, 401 M Street, SW, Room 3020-PM-212, Washington, D.C. 20460, Attention: Jennifer Karey. An Equal Opportunity Employer.**

SENIOR FACULTY POSITION

Mental Retardation Research Center

University of California, Los Angeles (UCLA)

An opening for a group coordinator exists in the Developmental Biology Group of the UCLA Mental Retardation Research Center. Candidates with very strong backgrounds in developmental biology of the central nervous system, including genetics, molecular biology, immunology, immunohistochemistry, or pharmacology are invited to apply. Appointment will be made at senior associate professor or professorial level. Compensation dependent upon academic rank and clinical qualification, if any.

Write: **N. A. Buchwald, Director, Mental Retardation Research Center, 760 Westwood Plaza, Los Angeles, Calif. 90024.**

UCLA is an Equal Opportunity/Affirmative Action Employer.

American Red Cross seeks **TECHNOLOGIST** for its hybridoma/tissue culture laboratory. B.S. degree in biology/chemistry and hands-on experience in the preparation of monoclonal antibodies required. Salary: \$17,000 to \$27,000, commensurate with experience. Please send résumé and salary history in confidence to: **American Red Cross, Office of Personnel, Position: Technologist II, 17th and D Streets, NW, Washington, D.C. 20006. Equal Opportunity Employer, M/F.**

TUMOR IMAGING

POSTDOCTORAL OR MORE ADVANCED POSITION available for individual with background in biology, immunology, pharmacology, or nuclear imaging. The project involves comparing and improving various methods of tumor imaging using radionuclides. Candidates with a background working with animal tumors, radiolabeled monoclonal antibodies, other tumor imaging agents, and familiar with tissue counting techniques are preferred.

The successful candidate must be capable of independent work in a small laboratory group and enjoy working with medical students and clinically oriented physicians. Position is currently available. Please submit curriculum vitae and three references to: **Dr. Paul B. Hoffer, Section of Nuclear Medicine, Department of Diagnostic Imaging, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.**

Yale University is an Affirmative Action/Equal Opportunity Employer. Applications from women and minority groups are encouraged.

INTERNSHIPS

NASA PLANETARY BIOLOGY SUMMER INTERNSHIPS. The Marine Biological Laboratory, Woods Hole, Massachusetts, invites applications from graduate students and seniors accepted in graduate programs for \$1,600 awards to participate in research at NASA centers and collaborating institutions during the summer. Application deadline: 16 April 1984. For information and applications, contact: **John Stolz, Planetary Biology Intern Program, Department of Biology, Boston University, 2 Cummings Street, Boston, Mass. 02215. An Equal Opportunity/Affirmative Action Institution.**

PROGRAMS

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This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **The Dean of Admissions, The New England College of Optometry, Room 302, 424 Beacon Street, Boston, Mass. 02115.**

TRAINING PROGRAM IN DIABETES AND ENDOCRINOLOGY RESEARCH

Postdoctoral research associate positions (two) to study the molecular basis of transmembrane signalling: (i) molecular cloning of adenyl cyclase coupling proteins, and (ii) phospholipid reconstitution of receptors with coupling proteins and study of consequences. Pre-doctoral experience in either protein purification, nucleic acid research, or protein-phospholipid interactions desirable. Requires U.S. citizenship or permanent residence visa in United States. Candidates should write to: **Dr. Lutz Birnbaumer, Professor, Department of Cell Biology, Baylor College of Medicine, Houston, Texas 77030, and provide a list of references.**

FELLOWSHIPS

Position immediately available for **POSTDOCTORAL FELLOW** in high energy experimental physics using nuclear emulsion. Candidates should have good published record and enough experience in using scattering microscope with digitized stage and TV camera to handle three-dimensional data. Send curriculum vitae to: **Professor P. L. Jain, Physics Department, State University of New York at Buffalo, Amherst, New York 14260. An Affirmative Action/Equal Opportunity Employer.**

MID-CAREER SABBATICAL FELLOWSHIP

The John D. and Catherine T. MacArthur Foundation Mental Health Research Network on Determinants and Consequences of Health-Promoting and Health Damaging Behavior solicits applicants with Ph.D., M.D., or equivalent degree. Successful applicants must have a significant publication record in behavioral, biological, or medical research. They must describe, in one or two pages, a research training experience they wish to acquire in one or more of the following areas of health and behavior research: stress, coping, and disease; alcoholism, tobacco, and other substance abuse; obesity and other disorders of weight regulation; coronary prone behavior; mechanisms of eating, drinking, and weight reduction; the psychophysiology of high blood pressure; health enhancement; weight reduction; compliance to medical regimens; family dynamics and health; social supports; self-help; risk reduction in disease; personality factors in health and disease; pain; functional bowel disease; aging; and cancer. The training experience will be for a period of 6 to 24 months and will take place at two or more of the eight sites of the Network: Duke, Karolinska, Rutgers, University of Pennsylvania, University of California, Los Angeles, University of California, San Francisco, University of Pittsburgh, and Yale. Preference will be given to established, mid-career investigators interested in interdisciplinary research and wanting to shift into the health and behavior area, especially in conjunction with a partially supported sabbatical year. Please address letters of inquiry, a one- to two-page statement of focused goals, and curriculum vitae before 15 April 1984 to: **Judith Rodin, Ph.D., Yale University, Department of Psychology, Box 11A Yale Station, New Haven, Conn. 06520.** Fuller applications will be solicited after reviewing the initial letters of inquiry and goal statements.

FELLOWSHIPS

POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS

Fellowships available to residents of North America with Ph.D. or M.D. and less than one year of postdoctoral laboratory experience by application date for beginning training in basic biomedical research. Three-year award includes annual stipend of \$16,000, \$1,000 per annum research allowance, travel to fellowship location, annual meeting. Application deadline: 15 August; fellowships activate following July. For application forms, write: **The Helen Hay Whitney Foundation, 450 East 63 Street, New York, N.Y. 10021.**

NEUROBEHAVIORAL FELLOWSHIP (July 1984 to June 1986). The Department of Neurology, University of Wisconsin Medical School, Milwaukee Clinical Campus, is offering a 2-year postdoctoral fellowship in neuropsychology. Requirements: APA accredited internship and Ph.D. in clinical psychology; coursework in neuropsychology. For details, write to: **Kerry Hamsher, Ph.D., Department of Neurology, Mount Sinai Medical Center, P.O. Box 342, Milwaukee, Wis. 53201.** Application deadline: 30 April 1984. *An Equal Opportunity Employer.*

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS IN ENVIRONMENTAL TOXICOLOGY AND PATHOLOGY. Positions available in NIH-funded interdisciplinary program. Research areas include pharmacology and pathobiology of chemically induced disease (morphological and biochemical effects of chemicals, carcinogenesis, teratology, immunotoxicology, cytogenetics); food-borne disease (biochemistry and mechanisms of action of microbial toxins, food additives, naturally occurring toxicants); epidemiology; behavioral toxicology; fate of pesticides in the environment. U.S. citizenship or permanent residence required. To apply, identify area of interest and send résumé, transcripts, and three letters of recommendation to: **Director, Environmental Toxicology Center, University of Wisconsin, 309 Infirmmary, Madison, Wis. 53706; telephone: 608-263-4580. Equal Opportunity/Affirmative Action Employer.**

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We seek an individual to lead a major new program in life science. The ideal candidate will have a Ph.D. in immunochemistry, molecular genetics or a related field and have worked extensively in areas such as immuno diagnostics, microbiology, or cell biology.

This candidate is now directing the efforts of 5-10 Ph. D's with a variety of background and experience, and has successfully combined a strong scientific background with excellent leadership, motivational, and communications skills necessary to accomplish a significant R&D project. Creativity, enthusiasm and a multidisciplinary approach are important.

Scientists

Senior Scientist

Ph.D in Biochemistry or Immunology. Post-Doctoral Research or Industrial experience working with monoclonal anti-bodies to human neoplastic cells. Job Code SRSC.

Principal Scientist

Position involves reagent formulation, stabilization, and optimization. Ph.D in Chemistry with 6-8 years' experience required. Simplex optimization methodology background a plus. Job Code PLS.

Principal/Senior Scientist

Work on emulsion stabilization and packaging, Ph.D/M.S. in Chemistry/Pharmacology with 2-5 years' experience. Job Code PSS.

Electrochemist

We are looking for a dynamic individual with a solid background in electroanalytical chemistry. The successful candidate will possess a Ph.D. in electrochemistry, with 3-5 years' industrial or post-doctoral experience in the theory, development, and application of electro-chemical techniques. A background in clinical/organic/biochemistry is a definite plus. We are seeking a knowledgeable, enthusiastic individual for this hands-on position requiring excellence in problem solving, creativity, communication and leadership. Job Code ELCH.

Senior Scientist

To handle ion selective electrode design and evaluation, and take electrodes from breadboard stage into manufacturing. Experience with electrode manufacturing processes is essential. BS/MS/PhD in Chemistry or Chemical Engineering required. Job Code SRST.

Senior Scientist

Seeking a product oriented Senior Scientist with applied (versus theoretical) experience in immunology and antibodies. Job Code SSC.

Biochemist

Evaluate biotechnologies having application in in-vitro diagnostic tests including immunodiagnostics, monoclonal antibodies and DNA probes. Design or develop diagnostic tests using technology available within IL or at other Allied divisions. Guide designs through production phase. MS biochemistry with 5-10 years' experience diagnostics or biotechnology. Knowledge of immunology, monoclonal antibody technology. Job Code BCH.

IL offers an excellent salary and benefits package. Please forward resume including salary requirements and specifying job code for the position you are interested in to Mr. Paul A. Smith, Jr., Dept. S, Instrumentation Laboratory, 113 Hartwell Avenue, Lexington, MA 02173. We are an equal opportunity employer, M/F.

Engineers

Mechanical Engineer-Optics

Hands-on position with design experience in optical systems. Must be knowledgeable in area of spectrophotometry as applied to analytical measurements. BS/MS/PhD and 5-10 years' experience required. Job Code MEO.

Electronics Engineer

We seek a systems oriented, hands-on person with electro-mechanical skills to handle instrument design and interface with manufacturing. Experience in analog design for high impedance sensors and familiarity with EMI shielding techniques are a definite plus. BS/MS and 5-10 years' experience required. Job Code ELE.

Senior Electronics Engineer

Design control and signal processing circuitry for biomedical instrumentation, using discrete digital and analog circuitry in combination with microprocessor technology interfaced with electrochemical and optical sensors. Select and specify all components. Manage construction of prototype and electronic systems. Guide design through production phase. MSEE preferred with 5 years experience. Job Code SEE.

Senior Mechanical Engineer

Design and manage construction of prototype fluid handling and sampling systems for biomedical instrumentation. Layout total instrument architecture. Specify materials and components for high precision fluid control. Specify biomaterials to be used in diagnostic test such as films, membranes and filters. Job Code SME.

Management Project Manager

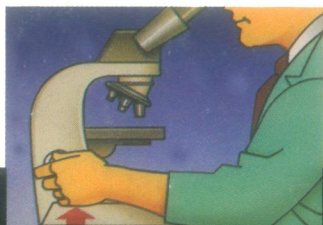
Seek individual to manage new instrument development program within our Biomedical R&D Group. Must have demonstrated ability to manage project from concept to manufacturing release and interface with Quality, Manufacturing and Marketing personnel at all levels. Medical instrumentation background required with blood gas instrumentation experience a strong plus. The ideal candidate will have an MS in Engineering with an MBA and an understanding of chemistry. Job Code PRM.

Instrumentation Laboratory

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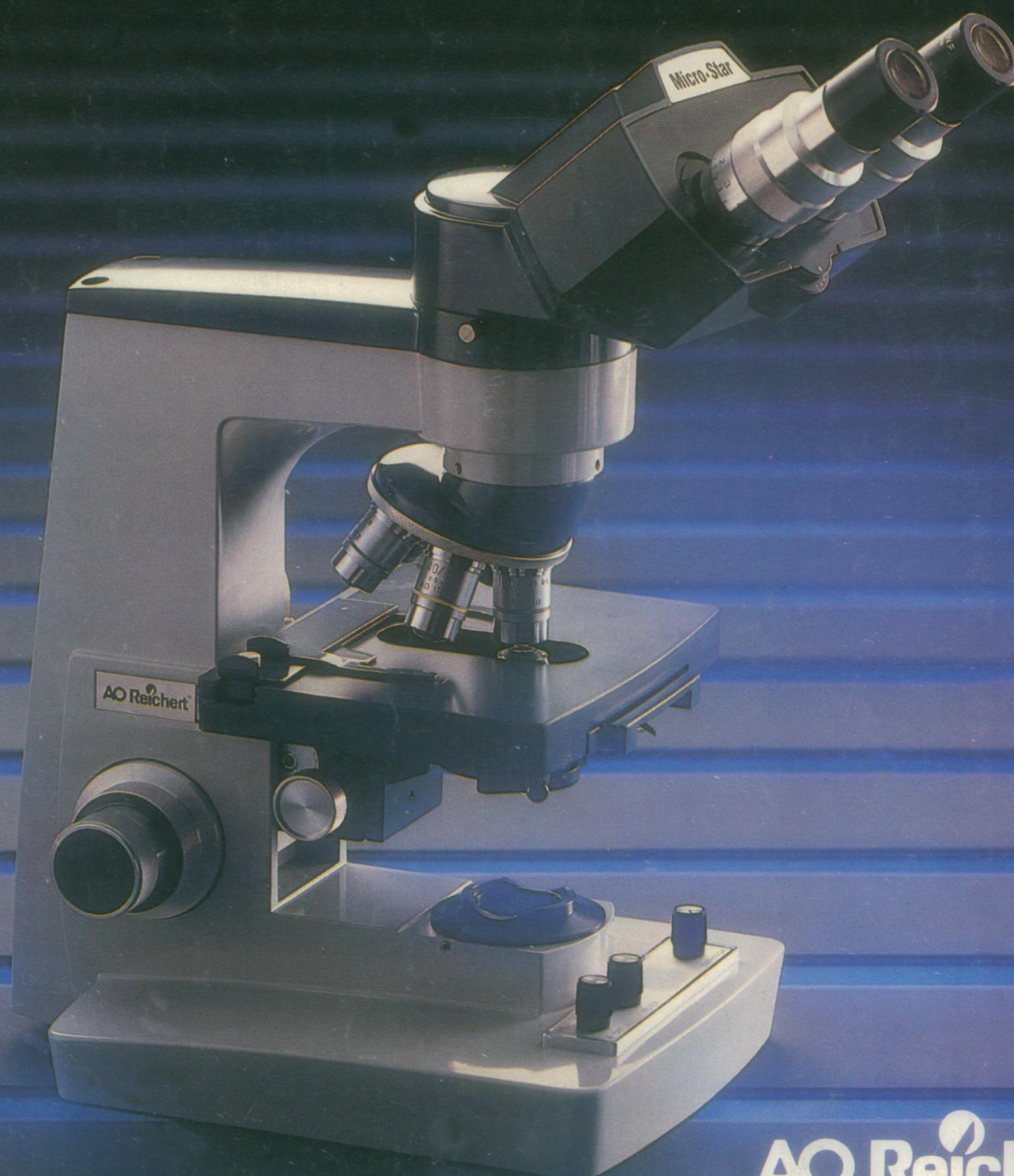
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