

terminology a bit frustrating, although radio scientists, plasma physicists, and astrophysicists should discover some subjects of interest. This book does provide clear evidence that the investigation of the polar magnetosphere continues to be as dynamic as the region of space under study.

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Sedimentary Processes

Geochemistry of Sedimentary Ore Deposits. J. BARRY MAYNARD. Springer-Verlag, New York, 1983. xii, 306 pp., illus. \$29.80.

In many respects this book is a sequel to a recent book, *Sedimentology of Shale* by Potter, Maynard, and Pryor, also published by Springer-Verlag. Unlike the earlier work, however, this book focuses on processes of sedimentary ore formation, with two principal objectives—to acquaint sedimentologists with sedimentary processes that are often best represented in sedimentary ore deposits and to give greater emphasis to aqueous geochemistry in the study of sedimentary ore deposits. To consider deposits that do not *sensu stricto* have a sedimentary origin, the author has expanded the definition of “sedimentary” to include ore deposits hosted by sedimentary rocks or soils. Though this redefinition may appear unconstrained, the author has taken care to consider only deposits formed at or near the earth’s surface under low to moderate temperatures.

Chapter 1 gives a brief introduction to the principles of stable isotope chemistry, thermodynamics, and the applications of predominance-area diagrams. Subsequent chapters consider sedimentary deposits of iron, copper and silver, aluminum and nickel, manganese, uranium, and lead and zinc and volcanic-sedimentary deposits. The types of deposits considered range from those accumulated at the sediment-water interface (for example, iron formations, sedimentary manganese, and exhalative sediment-hosted and volcanic-sedimentary sulfide deposits) to those precipitated from ground waters (for example, infiltrational uranium) and diagenetic fluids (for example, copper in sandstone and shale) and those formed during tropical weathering (for example, aluminum and nickel laterites). Deposits of sedimentary

origin excluded from consideration are phosphorites, evaporitic deposits, clastic-hosted barite, and placers other than uranium and gold.

Most chapters consider the mineralogy, geochemistry, petrography, and local stratigraphy in turn and end with a discussion of genetic theories drawing on some of the more extensively studied and often most representative deposits as examples. In discussions of deposits having minerals of supergene origin (for example, iron formations, copper in sandstone), a separate section is devoted to supergene processes. Likewise, the tectonic setting is emphasized for polymetallic volcanic-sedimentary deposits. Overall, the treatment of each type of deposit is balanced, although the role of tectonic processes in the formation of exhalative sediment-hosted lead and zinc deserves greater consideration. Extensional tectonism is probably the single most important process controlling basin formation, the episodic discharge of metalliferous fluids onto the sea floor, and ultimately the precipitation and preservation of lead-zinc sulfide deposits.

Much emphasis is placed on aqueous geochemistry in understanding the manner in which ore-forming elements are transported and precipitated. Reference is commonly made to equilibrium relationships illustrated with Eh-pH or activity diagrams constructed under a given set of conditions. When considering some deposits, particularly those formed at or near the earth’s surface at low temperatures (for example, infiltrational uranium, sandstone copper), these diagrams are effective in predicting their mineralogy and mineral zonation. The higher-temperature (250° to 350°C) hydrothermal systems responsible for the formation of exhalative sulfide deposits have been modeled by several workers in the field but are considered only briefly here. When lower-temperature ore-forming fluids are examined, it is not always clear how the initial compositions of metalliferous fluids were estimated or whether or not they are realistic for a particular type of deposit. Furthermore, because ore formation is commonly a dynamic process, the products of which overlap in space and time, there are inherent difficulties in using static models to simulate an ore-forming system. The value of this approach is that it places constraints on the fluid composition and therefore geologic environment necessary to generate a particular mineral assemblage.

The book is clearly and concisely written and well illustrated with figures. Er-

rors are rare and generally minor with the exception of figure 6-2, where the wrong figure has been reproduced from an earlier publication. References are for the most part up to date and a fair representation of the literature. When describing deposits that were discovered tens of years ago, the author very wisely cites some of the older papers documenting the geology, mineralogy, and petrography in greater detail.

The book should prove valuable not only to the sedimentologist seeking to understand sedimentary processes, but also to the economic geologist and geochemist attempting to unravel the often complex processes of sedimentary ore formation.

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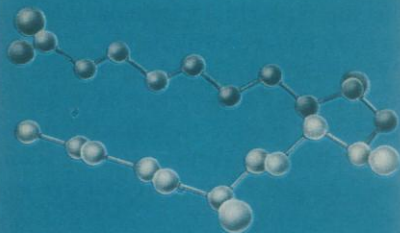
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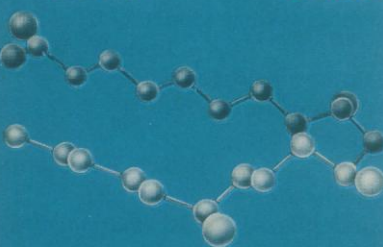
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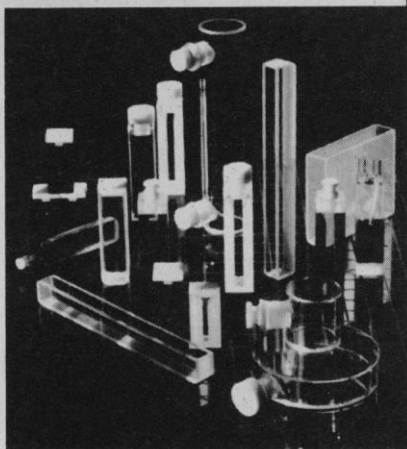
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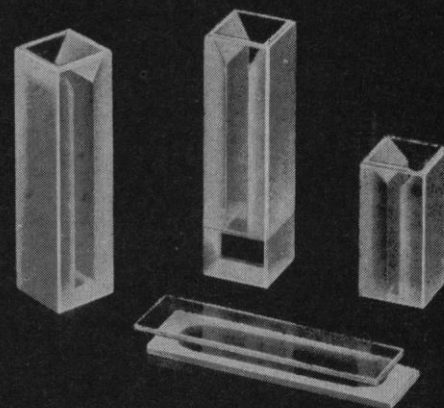
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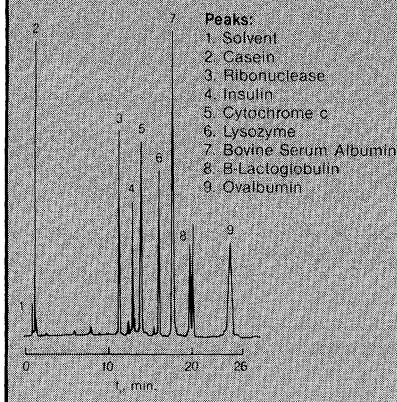
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Telephone: 202-467-4456

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Box (give number)
SCIENCE
1515 Massachusetts Avenue, NW
Washington, D.C. 20005

POSITIONS WANTED

Anatomist/Zoologist, Ph.D. Diverse background in animal and cell morphology/function. Outstanding teaching ability. Seeks position in liberal arts environment. Box 300, SCIENCE. X

Behavioral Neuroscientist, B.S., June 1984. Seeks position as research assistant or technical writer. Strong research experience (including radiography); scientific German and computer programming skills. Box 342, SCIENCE. X

Biochemist, Ph.D., tenured, mainly experienced in college teaching and counseling. Also experienced in laboratory research in diverse areas of study including recent RNA work. Wishes industrial/commercial position involving intramural teaching or information transfer, personnel work, public relations. Box 330, SCIENCE. X

Cellular Physiologist, Ph.D., 10 years of clinical research experience. Interested in trace element, nutrition, and environmental research. NIH grant support. Seeking position in academia, government, or industry. Box 341, SCIENCE. X

Environmental Chemist. Strong agroanalytical background. Pesticide residue analysis. Adsorption and leachate study of farm wastes. Postdoctoral experience. Ph.D. (agronomy) and M.S. (chemistry). Box 339, SCIENCE. 12/16; 1/6, 20; 2/3, 17; 3/2

Immunologist, Ph.D. Publications in transplantation, immunogenetics, autoimmunity, and reproductive immunology. Desires to relocate to a strong immunology group with projects in molecular immunogenetics and/or immune regulation. Competitive renewal at \$100,000 per year. Fiscal year 1984. Box 326, SCIENCE. 12/16, 23

Laser/Optical Physicist, Ph.D. 1972, seeks career change to a senior technical position developing laser/optical medical instruments. Box 333, SCIENCE. X

POSITIONS WANTED

Ph.D./J.D. Seeking science/legal position in academia, government, or industry. Excellent writing skills and highly motivated. Box 340, SCIENCE. X

Ph.D. Physicist/Biophysicist; 13 years of research and teaching. Fluent in English, German, and French. Good communication skills. Experienced in analytical instrumentation, especially NMR: nucleic acid-drug interaction, mechanism of antibiotic action in protein biosynthesis, thermodynamics and kinetics of conformational changes of tRNA. Publications. Seeks industry laboratory manager, administrative/multilingual, academic, or government position. For résumé, write: Box 338, SCIENCE. X

As your **President/CEO** I will help form or increase profits/sales of your existing biotechnology/life science/health care company. Box 343, SCIENCE, or telephone: 617-965-6340.

12/16; 1/13, 27; 2/10, 24; 3/9, 23

Research Assistant. One decade of research experience, mostly in a large and aggressive Department of Pharmacology. Expert in use, maintenance, and repair of Hewlett-Packard, Nermag, and Finnigan GC-MS systems and related analytical techniques, for example, HPLC. Proven ability to plan, carry out, and analyze biomedical experiments. Desires research involvement, responsibility. Box 344, SCIENCE. X

Zoologist (Ph.D.). Former college/university teacher of undergraduate/graduate biology courses desires to return to teaching after 9 years of high-tech and government experience. Wants to teach the subject matter of vertebrate biology using lectures, laboratories, and microcomputers. Box 335, SCIENCE. X

POSITIONS OPEN

ANALYTICAL/ENVIRONMENTAL CHEMIST

The Chemistry Department, University of Washington, invites applications from analytical/environmental chemists. An emphasis on atmospheric chemistry is preferred although aquatic chemistry is also of interest. An analytical chemistry background, with expertise in areas such as chromatography, mass spectroscopy and/or atomic absorption/emission spectroscopy is desired. A strong publication record coupled with an established or rapidly developing reputation in the field, and the promise of excellence in teaching are essential characteristics.

Send curriculum vitae and bibliography to: **Professor Robert Vandenbosch, Department of Chemistry, BG-10, University of Washington, Seattle, Wash. 98195.** Applicants should arrange to have three letters of recommendation forwarded as well. Consideration of applicants will begin by 1 February 1984. *The University of Washington is an Equal Opportunity/Affirmative Action Employer.*

Tenure-track position (**ASSISTANT/ASSOCIATE PROFESSOR**) available fall 1984 for **population geneticist** with strong background and interest in mathematical approaches to biology. Teaching responsibilities include regular participation in basic biology courses and biometrics, plus development of specialty course in population genetics. Commitment to and excellence in undergraduate teaching required. Successful candidate expected to develop and support strong research program. Ph.D. in biological sciences required. To be considered, applicant must submit completed application form, résumé, three letters of reference, and graduate transcripts, including confirmation of highest degree earned, postmarked no later than 17 February 1984 to: **Chairman, Population Geneticist Search Committee, Biological Sciences Department, California State Polytechnic University, 3801 West Temple Avenue, Pomona, Calif. 91768.**

Tenure-track **FACULTY POSITION** available fall 1984. Ph.D. Microbiology/related area and teaching experience in hematology and clinical laboratory procedures required. Clinical laboratory experience and demonstrated excellence in teaching and research preferred. Apply by 31 January 1984 with résumé and three letters of reference to:

Dr. Bijay K. Pal
Chairman, Microbiology Search Committee
Biological Sciences Department
California State Polytechnic University
3801 West Temple Avenue
Pomona, Calif. 91768

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

ANATOMIC PATHOLOGIST. The Dartmouth-Hitchcock Medical Center has a position at the assistant professor level in anatomic pathology. Candidates must demonstrate a high potential for developing a strong, independent, funded research program. Individuals sought must also have an active interest in undergraduate and graduate teaching. Applicants should be Board-eligible-certified. Please send curriculum vitae and names of three references and salary requirements by 1 January 1984 to: **Martha E. Stauffer, M.D., Chairman, Search Committee, Department of Pathology, Dartmouth-Hitchcock Medical Center, Hanover, N.H. 03756.** *Equal Opportunity/Affirmative Action Employer.*

AQUATIC BIOLOGIST

The Department of Zoology, University of Wisconsin-Milwaukee (UWM), anticipates an opening for a tenure-track position at the **ASSISTANT PROFESSOR** level, effective 27 August 1984. Applicants should have research specialization in an area of biological limnology/oceanography, a commitment to research on the Great Lakes, the ability to obtain extramural research funding, and a willingness to participate in interdepartmental research programs through the Center for Great Lakes Studies. Teaching responsibilities include quantitative ecology, an advanced graduate course in area of specialization, and participation in graduate seminars, and supervision of M.S. and Ph.D. students. Candidates must have a Ph.D., and postdoctoral experience is preferred. Send letter of application, curriculum vitae, summary of research goals, selected reprints, and three letters of recommendation to: **Professor Charles C. Remsen, Chair, Search Committee, Department of Zoology, University of Wisconsin-Milwaukee, P.O. Box 413, Milwaukee, Wisconsin 53201.** Closing date is 15 February 1984.

UWM is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR

The Harvard School of Public Health is seeking applicants to fill an assistant professorial position in the Department of Tropical Public Health. The applicant should have experience working with parasites, preferably schistosomes, and be trained in molecular biology. The person would be expected to establish a vigorous research and teaching program.

Applicants should send curriculum vitae, bibliography, copies of publications, the names and addresses of three references, and a summary of both research and teaching objectives to: **Chairman, Search Committee, Department of Tropical Public Health, Harvard School of Public Health, 665 Huntington Avenue, Boston, Massachusetts 02115.** *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF BIOLOGY

The Department of Biology, Wilkes College, Wilkes-Barre, Pennsylvania, invites applications for a nontenure faculty position at the assistant professor level. The applicant will be expected to teach comparative anatomy, parasitology, and an upper level elective which complements the existing departmental course offerings. Ph.D. required. The main emphasis of the position is teaching but the candidate must be willing to supervise undergraduate research. The initial appointment is for 1 year, with the possibility of renewal for two additional years. Send curriculum vitae, three letters of recommendation, and complete transcripts to: **Dr. Lester Turoczy, Chairman, Department of Biology, Wilkes College, Wilkes-Barre, Pa. 18766.** Applications will be accepted until 31 January 1984. *Wilkes College is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF BIOLOGY

The Biology Department of the College of Liberal Arts invites applications for a tenure-track position in the general area of biochemistry, microbiology, and cell biology to start September 1984. Additionally, experience with tissue culture is desirable. Responsibilities include teaching advanced courses and participation in the team-taught introductory course sequence. Research involving undergraduates is expected. A Ph.D. is required. Applicants should submit curriculum vitae, a summary of academic preparation, a statement of research and teaching interests, and three letters of recommendation to: **Dr. John D. Shepherd, Biology Department, College of Liberal Arts, Mercer University, Macon, Georgia 31207.**

Application deadline: 20 January 1984.

Mercer University is an Equal Opportunity Employer.

DEAN, SCHOOL OF NATURAL SCIENCES AND MATHEMATICS

The University of Texas at Dallas

The University of Texas (UT) at Dallas invites nominations and applications for the position of Dean of the School of Natural Sciences and Mathematics. UT-Dallas, a component of The University of Texas System, offers upper division and graduate education in six schools. The School of Natural Sciences and Mathematics is composed of 76 full-time faculty members, and offers eight master's programs and six doctoral programs.

The dean is expected to exercise leadership in the area of faculty recruitment, curriculum planning, community relations, budget planning and administration, and long-term planning for the School. The dean reports directly to the Vice President for Academic Affairs.

Qualifications:

A doctoral degree related to one of the School's disciplines and university teaching experience are highly desired, but the fundamental qualification is excellence, whether it be in academic scholarship, public service, or scientific leadership. The candidate should have an outstanding record of performance in administration, a capacity to communicate effectively with colleagues, and, above all, a demonstrated ability to think creatively about the problems of education in the sciences. The candidates' record should justify appointment at a tenured level in one of the disciplines in the School.

The term of office as dean will presumably begin on or before 1 September 1984. In order to ensure full consideration, applicants would submit, by 15 February 1984, a letter of interest, a résumé, and the names of referees to:

Chairman, Search Committee Number 265
School of Natural Sciences and Mathematics
The University of Texas at Dallas
P.O. Box 830688
Richardson, Texas 75083-0688

The University of Texas at Dallas is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH AWARDS

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

The National Research Council will make awards in April, July and November of 1984 under the Resident Associateship Program, which provides awardees with opportunities to conduct experimental and theoretical research as visiting scientists and engineers in the fields of

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

in the Ballistic Research Laboratory complex located in the beautiful Chesapeake Bay country of Maryland, within easy driving distance of the metropolitan centers of Baltimore, Philadelphia, and Washington, D.C. Some programs are open to senior investigators as well as recent doctorates. Most programs require U.S. citizenship.

Further details on research programs can be obtained from Dr. L. J. Puckett, (301) 278-6246, at the Ballistic Research Laboratory, Aberdeen Proving Ground, MD 21005.

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

Associateship Office (JH-610-E-15)
NATIONAL RESEARCH COUNCIL
2101 Constitution Avenue, NW
Washington, DC 20418

Postmark deadlines for application are January 15, April 15 and August 15, 1984, respectively.

POSITIONS OPEN

ASSISTANT PROFESSOR OF BIOLOGY

Tenure-track position available September 1984. Microbial ecologist/microbial physiologist with post-doctoral experience to teach a course in microbial ecology and/or physiology, to participate in an introductory biology sequence, and to conduct an active research program involving undergraduates and master's candidates.

Please send letter of application, curriculum vitae, and names of three references before 4 January 1984 to:

Dr. Daniel Burke, Chairman
Biology Department
Seton Hall University
South Orange, N.J. 07079

An Equal Opportunity/Affirmative Action Employer

ASSISTANT PROFESSOR OF HEALTH POLICY AND HISTORY OF HEALTH SCIENCES (nontenure-track) at the University of California, San Francisco, Division of General Internal Medicine/Institute for Health Policy Studies. Applicant must have a doctoral degree in economics, public policy, or history of health sciences, as well as substantial experience conducting health policy research, working with government officials, policy-makers, medical and other health professionals, and evaluating multiple option health insurance plans and health care delivery systems. Requires strong background in health insurance and public policy. Send curriculum vitae and letter to: **Ruth Weiller, Search Committee Coordinator, Institute for Health Policy Studies, 1326 Third Avenue, San Francisco, California 94143**, by 31 January 1984. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF MICROBIOLOGY—The Department of Botany and Microbiology at the University of Oklahoma is seeking a highly qualified Ph.D. in microbiology or a related field for a tenure-track position. The successful candidate must have postdoctoral experience and demonstrated evidence of research productivity. The position requires that the candidate participate in microbiology undergraduate and graduate teaching and develop an active independent research program. The preferred area of research interest is molecular mechanisms of gene expression or molecular mechanisms of virulence, but other areas will be considered. Please submit curriculum vitae, statement of professional goals and research interests, plus three letters of reference to: **Dr. John Lancaster, Search Committee Chairman, Department of Botany and Microbiology, University of Oklahoma, 770 Van Vleet Oval, Norman, Okla. 73019**, by 29 February 1984. *The University of Oklahoma is an Equal Opportunity/Affirmative Action Employer.*

YALE UNIVERSITY DEPARTMENT OF PSYCHIATRY

Assistant professor: The neurobiologic research group of the Ribicoff Research Facilities, Yale University, and Connecticut Mental Health Center is seeking to recruit a psychopharmacologist working in neuropeptides. Must have experience in single unit electrophysiology and microiontophoresis, light and electron microscope immunohistochemistry, and receptor autoradiography. Previous experience and publications in the field of neuropeptides preferred. Send curriculum vitae and three letters of reference by 1 March 1984 to: **Dr. Boris Astrachan, Yale University, Department of Psychiatry, 25 Park Street, New Haven, Conn. 06519**. *Yale University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN SURGERY

Applications are invited for a scientist to head an experimental myocardial preservation laboratory at the University of Connecticut Health Center. The applicant must have a Ph.D. or M.D.; a record of scientific accomplishment; experience with HPLC and spectrophotometry; training in operative technique, including experimental cardiopulmonary bypass and myocardial contractility; and **expertise in lipid metabolism**. The individual is expected to participate in an ongoing NIH research grant entitled "Myocardial preservation during cardiopulmonary bypass" which centers on the influence of cholestyramine in lipid metabolism. The applicant is also expected to generate additional research funding.

Submit letters of inquiry, curriculum vitae, and names of three references to: **Richard M. Engelman, M.D., Chief of Cardiac Surgery, Baystate Medical Center, 759 Chestnut Street, Springfield, Mass. 01107**.

POSITIONS OPEN

BIOLOGY. Anatomy and physiology. Tenure-track position at small college with strong premedical program. Primary responsibility teaching anatomy and physiology and occasionally general biology and/or microbiology to undergraduates. Assistant professor rank. Salary commensurate with qualifications and experience. Fall 1984 appointment. Ph.D., demonstrated excellence in teaching and research required. Send résumé, three letters of reference, and evidence of scholarship and teaching ability to: **Dean of the Faculty, Chapman College, Orange, Calif. 92666**. Deadline: 1 March 1984. *Affirmative Action/Equal Opportunity Employer.*

CHAIRPERSON DEPARTMENT OF BIOCHEMISTRY MICHIGAN STATE UNIVERSITY

Applications and nominations are invited for the position of chairperson of the Department of Biochemistry, Michigan State University, to be available 1 September 1984. The department consists of 35 faculty members actively engaged in research and teaching in the Colleges of Agriculture and Natural Resources, Natural Science, Human Medicine and Osteopathic Medicine, as well as research supported by the Agricultural Experiment Station. We seek an individual of senior academic rank with a distinguished record of research and teaching accomplishments and evidence of administrative experience or potential. The department anticipates growth in cellular and molecular biology and seeks an individual who will provide leadership in these areas. Applications and nominations should be sent by 15 February 1984. Applications should include curriculum vitae and be supported by three letters of reference. Address correspondence to: **Dr. William L. Smith, Chairperson Search Committee, Box A, Department of Biochemistry, Michigan State University, East Lansing, Mich. 48824**. *Michigan State University is an Equal Opportunity/Affirmative Action Employer.*

CHEMISTRY ANTICIPATED POSITION

Assistant professor. The Department of Chemistry of Seton Hall University anticipates one tenure-track assistant professor position as of fall 1984. Applications are invited from experimental chemists with demonstrated research excellence and a commitment to teaching at the graduate and undergraduate levels. The individual should complement the research areas of our faculty and participate in our B.S., M.S., and Ph.D. programs.

Send a résumé, a brief description of future research plans, and the names of three references before 10 January 1984 to:

Faculty Search Committee
Department of Chemistry
Seton Hall University
South Orange, N.J. 07079

An Equal Opportunity/Affirmative Action Employer

INTERNATIONAL CROPS RESEARCH INSTITUTE FOR THE SEMIARID TROPICS (ICRISAT) needs CHICK-PEA BREEDER/PATHOLOGIST at Islamabad (Pakistan)

To work closely with the Coordinator (Pulses) of the Pakistan Agricultural Research Council in Islamabad in the conduct of national screening and varietal trials at the National Agricultural Research Center, Islamabad and other locations, and also assist in holding seminars/workshops. This scientist will assist in the development of a breeding program to transfer *Ascochyta* resistance to adapted backgrounds, act as liaison between the program in Pakistan and the Food Legume and Pulse Improvement Programs at ICARDA (Aleppo, Syria) and ICRISAT, and will assist ICRISAT in administering the technical assistance. The position is for 2 years with possibility of extension.

Qualifications: Doctorate in plant breeding with knowledge of plant pathology, or in plant pathology with knowledge of plant breeding. Experience in breeding for disease resistance in economic crops. Preference will be given to those candidates who have worked with fungal diseases of tropical field crops, especially grain legumes. Knowledge of English is essential.

Salary at principal staff level according to qualifications and experience; excellent fringe benefits.

Send résumé and names of three references by 17 February 1984 to: **Director General, ICRISAT, ICRISAT Patancheru P.O., Andhra Pradesh 502 323, India.**



Public Service Commission
of Canada

Commission de la Fonction
publique du Canada

Fisheries Research Scientist

Fisheries and Oceans
Winnipeg, Manitoba

We require two mature and experienced research scientists immediately to fill vacancies in the Freshwater Institute.

Arctic Fish Productivity

We require a scientist to conduct research on the productivity of Arctic fishes as part of a team studying the dynamics of polar marine food chains. Emphasis will be on population estimation, prey ingestion, yield to predators and other energetic parameters. The field work will require posting at remote Arctic locations for up to a year at a time.

Freshwater Fish Population Dynamics

We require a scientist to conduct research on population dynamics and stock assessment of freshwater fish. As part of a team carrying out a pilot walleye rehabilitation study, you will assess and document the fish community structure in order to quantify and/or predict changes which might arise from specific fisheries rehabilitation practices. There is a requirement to spend several weeks a year working in a field camp at Dauphin Lake, Manitoba.

You require a doctorate degree from a recognized university in fisheries science, population ecology or a related field, or a lesser degree with research experience and scientific productivity equivalent to a doctorate. In addition, demonstrated experience in conducting scientific research in fisheries science is essential. Knowledge of English is essential for both positions and a pre-employment medical examination will be required.

We offer a salary from 26 834 \$ to 49 913 \$ commensurate with your qualifications and experience.

Forward your résumé and/or application form, quoting reference number 83-NCRSO-DFO-RES-3 (4030) for Arctic Fish Productivity or 83-NCRSO-DFO-RES-4 (4030) for Freshwater Fish Population Dynamics to:

Joan Girling (613) 593-5331
Public Service Commission of Canada
Ottawa, Ontario K1A 0M7

Please apply before 13 January 1984.

Tout renseignement est disponible en français en s'adressant à la personne susmentionnée.

The Public Service of Canada is
an equal opportunity employer

Canada

POSITIONS OPEN

ASSOCIATE DEAN OF AGRICULTURE AND DIRECTOR OF ACADEMIC PROGRAMS COLLEGE OF AGRICULTURAL SCIENCES

The Associate Dean of Agriculture position at Oregon State University is now vacant. This is a major administrative position in the university and involves primary emphasis upon supervision of the academic programs of 11 departments in the College of Agricultural Sciences. It carries the rank of full professor with a salary range of \$50,000 to \$60,000 per year. Nominations and applications should be submitted to: **Dr. Michael V. Martin, Department of Agricultural and Resource Economics, Oregon State University, Corvallis, Ore. 97331.** Closing date for applications is 31 December 1983.

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

Appalachian State University announces three tenure-track positions for **BIOLOGISTS** at the rank of assistant professor. Ph.D. required. Successful candidates will develop courses and research program in their specialty, teach introductory biology, and direct master's students. Positions are:

- 1) **Comparative vertebrate physiology**,
- 2) **Terrestrial ecology**; specialty area must complement interests of existing faculty, and
- 3) **Cellular/molecular biology**.

Applicant should send letter of application indicating the position for which he/she is applying and curriculum vitae with list of graduate courses and names, addresses, and telephone numbers of three references to:

**Dr. Jeffrey A. Butts, Chairman
Department of Biology
Appalachian State University
Boone, North Carolina 28608**

No materials accepted after 31 January 1984. Appalachian State University is an Equal Opportunity/Affirmative Action Employer.

CHAIRMAN, DEPARTMENT OF NUCLEAR MEDICINE. Chairman to direct the academic affairs of nuclear medicine at The State University of New York at Buffalo, including direct oversight of a Nuclear Medicine Residency Training Program, a Nuclear Medicine Technology Training Program, and an active Radiopharmaceutical Research Program. The department, through a board of directors, operates a Central Radiopharmacy which supplies radiopharmaceuticals to ten member institutions and administers a Health Physics Program and Joint Radioisotope Committee on behalf of the School of Medicine. Candidates should have a proven ability to teach principles and practice of nuclear medicine, experience in nuclear medicine related research, and academic administrative skills. The candidate must be able to interact with clinicians as well as members of basic science departments of the university. Reply: **Box 336, SCIENCE. Affirmative Action/Equal Opportunity Employer.**

UNIVERSITY OF CALIFORNIA, LOS ANGELES (UCLA) Continuing Education Specialist Department of Engineering, Science and Mathematics UCLA Extension

The Department of Engineering, Science and Mathematics, UCLA Extension, is recruiting for the position of **continuing education specialist**. This position has responsibility to assess continuing education needs in the sciences, project goals and perspectives and plan a broad spectrum of programs of various types, such as classes, travel study, special programs, to meet these needs. Subject areas include classes in physical and life sciences, mathematics, and "extracurricular" programs. As a member of the Department of Engineering, Science and Mathematics, the continuing education specialist will assist in developing program departmental budgets and carry responsibility for the fiscal viability of programs which he/she plans, work with other specialists and the director in developing and implementing departmental goals, attend administrative meetings, and serve on UCLA Extension committees.

General qualifications: Strong academic background in the sciences (physical sciences preferred) including an advanced degree (Ph.D. preferred). Previous experience in adult continuing education desirable. Applications accepted through 30 December 1983. Send résumé to: **Marva Cooper Bell, Department of Employee Services, UCLA Extension, P.O. Box 24902, Los Angeles, Calif. 90024.**

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

To strengthen our **CELL BIOLOGY** research and graduate training group, we will appoint a tenure-track assistant professor to begin August 1984. We seek an individual with postdoctoral experience and interests in the regulation of the cell cycle and cell reproduction or the organization of cytoplasmic structure, but no outstanding cell biologist is excluded from consideration. The successful candidate will participate in cell biology instruction and will be given ample support in establishing a research program. Applications, to include curriculum vitae, statement of research objectives, and names of at least three references should be sent by 7 January to: **Search Committee, School of Biological Sciences, University of Kentucky, Lexington, Ky. 40506. Equal Opportunity/Affirmative Action University.**

CELL BIOLOGIST DEPARTMENT OF ANATOMY UNIVERSITY OF MINNESOTA

The Department of Anatomy at the University of Minnesota Medical School in Minneapolis announces a cell biologist position to begin as early as 1 September 1984. Appointment may be either at the **assistant professor** (tenure track) or **associate professor** (tenured) level, depending on the qualifications of the successful candidate. Applicants must have postdoctoral or equivalent research experience, and must have demonstrated the ability to pursue an active, productive research program in an area of cell biology. A multidisciplinary approach with a morphological component is much desired. Teaching responsibilities will include joint participation in histology and graduate teaching in an area of specialty. Curriculum vitae, brief statement of research interests and goals, reprints of publications, and names of three references must be received by 1 March 1984, addressed to: **Search Committee, Department of Anatomy, University of Minnesota, 4-135 Jackson Hall, 321 Church Street, SE, Minneapolis, Minn. 55455. The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.**

DELAWARE MUSEUM OF NATURAL HISTORY (DMNH)

DMNH invites applications for a **curatorial position in malacology**. Prime requisite is a strong research orientation in systematics, with a demonstrated interest and competence in marine mollusca. In addition, the candidate should be actively involved in applying the results of systematic investigations to problems in phylogenetic reconstruction, evolutionary theory, functional morphology, or ecology. Furthermore, the person is expected to be active and competent in field investigations and in collecting original materials for research purposes. Other duties include full participation in the department's curatorial program as well as participation in other normal duties (including the exhibition program and resource for the education department) of the curatorial staff of the Museum.

The position will be filled in February 1984. The successful candidate must have a Ph.D. in hand by time of appointment. Applications should include: (i) a brief statement of research interests, (ii) curriculum vitae, (iii) a complete bibliography, and (iv) at least two letters of recommendation from persons familiar with the applicant's qualifications. Applications must be submitted by 20 January 1984 to: **Chairman, Professional Search Committee, Delaware Museum of Natural History, P.O. Box 3937, Greenville, Del. 19807. An Equal Opportunity/Affirmative Action Employer, M/F.**

POSITIONS OPEN

CHAIRPERSON DEPARTMENT OF ANATOMY UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

The University of Arkansas for Medical Sciences invites applications and nominations for the position of professor and chairperson, Department of Anatomy. Candidates must possess an M.D. or Ph.D. with training in anatomy. Research interest in either cell biology or neuroscience is desirable. We seek an individual with significant experience in research and teaching. Candidates should submit a complete résumé documenting experience in teaching, research, administration, and/or program leadership. Curriculum vitae and the names of five suggested references should be submitted by 15 January 1984 to:

**Dr. Ernest J. Peck, Jr.
Chairman, Anatomy Search Committee
Department of Biochemistry, Slot 516
University of Arkansas for Medical Sciences
4301 West Markham
Little Rock, Arkansas 72205**

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

CURATOR/TEACHING ASSISTANT. The University of South Carolina, Anatomy Department, is seeking a candidate, with a master's degree in anatomy, to prepare laboratory specimens and possibly assist in teaching gross anatomy to medical students, commencing January 1984. Submit résumé and letters of recommendation to: **Professor Richard J. Weymouth, Chairman, Department of Anatomy, University of South Carolina School of Medicine, Building 1, B-26, Columbia, South Carolina 29208.**

An Equal Opportunity Employer

DEVELOPMENTAL BIOLOGIST. To teach undergraduate developmental biology and genetics, and to develop a research program and graduate courses in specialty. A strong molecular orientation is expected. Doctorate is required. Tenure-track position available August 1984. Send résumé and three letters of recommendation by 1 February 1984 to: **Dr. Kenneth E. Mantai, Chairman, Department of Biology, College at Fredonia, Fredonia, New York 14063. The State University of New York is an Equal Opportunity/Affirmative Action Employer.**

DIRECTOR—ENVIRONMENTAL STUDIES PROGRAM

Sweet Briar College is seeking an experienced environmentalist to direct and develop a coordinate program in environmental studies. Duties include coordination of a team-taught introductory course including faculty from eight departments, teaching other environmentally related courses, and expanding programs with local industry.

Sweet Briar is a woman's college of about 700 students with a campus of 3400 acres, including two lakes, a nature sanctuary of 500 acres established in 1934, and an operating dairy farm. The environmental studies program is 10 years old.

A Ph.D. in a relevant academic discipline, strong interest in environmental issues, some teaching and administrative experience, as well as the ability to work with colleagues in a variety of disciplines are required.

This is a full-time, tenure-track position. Interested candidates should submit a résumé and names and telephone numbers of three references by 20 January 1984 to: **Environmental Studies Program, Sweet Briar College, Sweet Briar, Virginia 24595. Sweet Briar College is an Affirmative Action/Equal Opportunity Employer.**

DARTMOUTH COLLEGE DIRECTOR of ELECTRON MICROSCOPE FACILITY

The director is responsible for the technical and administrative leadership of the Dartmouth College Electron Microscope Facility. He or she is responsible for the operation and maintenance of the electron microscopes and related instruments, for supervision of the staff, for promotion of use of the facility, and for providing the assistance necessary to carry out the teaching, research, and service functions of this institution-wide resource. The director is responsible through the chair of the Electron Microscope Committee to the provost. A master's degree in science plus 5 years of experience in electron microscopy or the equivalent are required; a doctorate is desirable. Demonstrated proficiency and technical achievement as well as excellent administrative and interpersonal skills are necessary. Review of application will begin 1 February 1984. Send résumé and salary requirements to: **Dr. John L. Dunn, Chair, EM Search Committee, Department of Pathology, Dartmouth Medical School, Hanover, N.H. 03756. An Equal Opportunity/Affirmative Action Employer, M/F**

AFOSR

SCEEE

SUMMER RESEARCH OPPORTUNITIES FACULTY & GRADUATE STUDENTS 1984

The USAF Summer Faculty Research Program (SFRP), sponsored by the Air Force Office of Scientific Research (AFOSR) and conducted by the Southeastern Center for Electrical Engineering Education (SCEEE), provides research opportunities for qualified faculty and graduate students of U.S. colleges and universities. These opportunities consist of ten week summer research periods at one of 20 USAF Laboratories/Centers throughout the U.S. with follow-on research opportunities being available through other AFOSR and SCEEE programs. Under exceptional circumstances the ten week research period may be during the regular academic year. Prerequisite for appointment: (1) Be U.S. citizens, (2) Be faculty members or graduate students at accredited U.S. colleges or universities. All qualified applicants will receive consideration without regard to race, color, religion, sex, or national origin. Preference will be given to applicants having no previous research sponsored by the Air Force. SCEEE supports equal opportunity/affirmative action. Application Deadline: February 1, 1984

For further information contact:

SCEEE Management Office
1101 Massachusetts Ave.
St. Cloud, FL 32769

OR CALL:
(305) 892-6146

CONGRESSIONAL SCIENCE AND ENGINEERING FELLOWSHIPS APPLICATIONS INVITED

The American Association for the Advancement of Science (AAAS) invites applications for a 1-year **Congressional Science and Engineering Fellowship** it will offer for the period beginning 1 September 1984. The Fellowship Program provides an opportunity for accomplished and societally aware postdoctoral to mid-career scientists and engineers to participate in and contribute to the public policy-making processes within the Congress for approximately 1 year. Fellows work as special legislative assistants within the congressional staff system.

Persons may apply from any physical, biological, or behavioral science or any field of engineering. The term "science" is used broadly to include the system sciences, public health, and other technical professions. In addition to the fellowship awarded by the AAAS, about 25 others are given by the 20 other participating professional societies. The AAAS runs a year-long educational program for the set of Congressional Science and Engineering Fellows. Addresses of all participating societies are available from the address listed below.

The 1984-1985 AAAS Congressional Science and Engineering Fellow will receive a stipend of \$25,200; an additional \$1,500 is available for relocation expenses and travel in connection with the Program.

In order to obtain detailed information on the program and specific application requirements write:

Congressional Science and Engineering Fellow Program
American Association for the Advancement of Science
1776 Massachusetts Avenue, NW
Washington, D.C. 20036

The deadline for application is 1 February 1984. The award will be announced around 1 May 1984.

SPECIAL EXPERT NATIONAL INSTITUTES OF HEALTH PUBLIC HEALTH SERVICE

The National Institute of Neurological and Communicative Disorders and Stroke (NINCDS) invites applications for the position of Special Expert in its Office of Planning and Analysis. This is a non-tenured position, lasting two (2) years, and is located in Bethesda, Maryland. The incumbent will assume a major role in the review, update and generation of research goals for the neurological and communicative sciences.

Applicants must possess an extensive background of professional training and successful research activity in neurological and/or communicative sciences; must show extensive ability to compile, write and edit scientific reports; and must possess the interpersonal skills necessary to plan, organize and conduct scientific meetings. An individual must have the same level of qualifications as required for the GS-13 grade level in the Federal government. Salary will be commensurate with the appointee's qualifications and expertise, but may not exceed Level V of the Executive Schedule (\$63,800/per annum).

Please submit a Standard Form 171 (Personal Qualifications Statement), curriculum vitae, and bibliography to: Mr. Clifford Schein, NINCDS Personnel Office, Building 31, Room 8A-23, 9000 Rockville Pike, Bethesda, Maryland 20205 (Telephone (301) 496-6334). All applications must be post marked no later than January 30, 1984.

The National Institute of Neurological and Communicative Disorders and Stroke is an Equal Opportunity Employer.

SENIOR PEPTIDE CHEMIST

Battelle Columbus Laboratories, a world leader in contract research and development, currently has a challenging opportunity for a **Senior Research Scientist** to work in our Organic & Polymer Chemistry section. We seek a person with a PhD in organic or peptide chemistry and 3-5 years postdoctoral experience in an industrial environment to establish and lead a research group which will **design and synthesize physiologically active peptides**. Specialization in the design and synthesis of vaccinal or hormonal peptides based on structure-activity relationships is essential. Your research will become an integral part of Battelle's commitment to research in **biotechnology**, and you must have excellent verbal and oral communications skills to effectively interact with all levels of Battelle staff and research sponsors.

We offer a competitive starting salary, excellent employee benefits and opportunities for career growth. Research Scientists interested in our senior level position should send resumes to Dick Shaw, Employment, Dept. M-4.



Columbus Laboratories
505 King Avenue • Columbus, Ohio 43201

An Equal Opportunity/Affirmative Action Employer

SCIENTIFIC ASSISTANT TO PRESIDENT

The person we are seeking is looking for a new career opportunity. A Ph.D. in biotechnology-related field desirable but perhaps not necessary, depending on background and experience. Salary open. Job is to establish and maintain extensive data base on current status and history of developments in biotech, drug, and related industries. Extensive and continuous reading of scientific publications, journals and papers as well as business publications necessary to collect, correlate and update base. Telephone and personal contacts will also be utilized. Broad knowledge of pharmaceuticals and drug companies highly desirable. Understanding of potential impact of biotech research programs essential. Applicant must have high energy level, innate curiosity, excellent retention, data organization skills and ability to communicate to top management. Position open to be filled immediately. Write in strictest confidence with curriculum vitae and salary range to:

A. G. Scheid, Pres.
California Biotechnology Inc.
2450 Bayshore Frontage Road
Mountain View, CA 94043

Every contact will be answered.

Research Scientist

The Lawrence Berkeley Laboratory, Applied Science Division seeks a Staff Scientist II to carry out research on topics related to the analysis and improvement of building energy performance. Duties include independent research on heat transfer through glazing materials, frame sections and window systems incorporating thin-film coatings, low conductance gases and transparent porous insulators, and preparation of scientific reports for publication.

Successful candidate should possess a Ph.D. in Mechanical Engineering, or related scientific discipline, theoretical and experimental background with thermal insulation materials (such as aerogel, ultra-fine powders or other porous insulators) and have demonstrated expertise in optics and heat transfer techniques including expertise in spectrum measurement, automatic data acquisition systems, design and operation of apparatus for heat transfer measurements, and computer simulation modeling of complex heat transfer processes.

Interested applicants should send two copies of current resume to: Employment Office Building 65, LAWRENCE BERKELEY LABORATORY, One Cyclotron Road, Berkeley, CA 94720. Please reference Job #A/ 2506. An Equal Opportunity Employer Affirmative Action M/F/H.



**LAWRENCE
BERKELEY
LABORATORY**

POSITIONS OPEN

EUKARYOTIC RNA PROCESSING POSTDOCTORAL POSITIONS

Several funded postdoctoral positions are available in the laboratory of Thoru Pederson, to work on messenger RNA processing and small nuclear RNA's. Areas of emphasis include: (i) the ribonucleoprotein structure of pre-mRNA's, with particular reference to sequence-specific (intron-related) aspects, (ii) transcription, processing, RNP assembly and functions of small nuclear RNA's, and (iii) elucidation of signals for nuclear-cytoplasmic RNA traffic. Send curriculum vitae, including bibliography, a synopsis of previous research, and at least two letters of recommendation, to: **Dr. Thoru Pederson, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.**

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

EXECUTIVE DIRECTOR AMERICAN SOCIETY FOR MICROBIOLOGY

The position of Executive Director will become available on 1 July 1984. The appointee will be ultimately responsible for directing the Society's Washington headquarters, for ensuring that the policies developed by the elected officers and the council policy committee of the Society are implemented, and for advancing the interests of the Society and its members.

The Society has over 30,000 members and a staff of approximately 70 reporting to directors who represent each of the major functions of the Society, and in turn, report directly to the executive director.

Applicants should have extensive administrative experience in an organization concerned with the sciences. A doctorate in the biological sciences is desirable. Salary will be competitive and determined according to experience and qualifications. Applications with curriculum vitae and names of three references should be submitted by 5 February 1984 to: **Dr. J. Mehlen Joseph, Secretary, American Society for Microbiology, Laboratories Administration, Maryland State Department of Health and Mental Hygiene, P.O. Box 2355, Baltimore, Maryland 21203.**

The American Society for Microbiology is an Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION

**Department of Comparative and Experimental Pathology
University of Florida**

Tenure-track assistant/associate professor with D.V.M. (or equivalent) and certification by the American College of Veterinary Pathologists (or willingness to seek certification) needed to develop strong, independent research program, teach professional and graduate students, and participate in departmental diagnostic programs. Prefer individual with demonstrated research productivity in some aspect of virology or immunology. Apply with curriculum vitae, bibliography, statement of career and research goals, and names of three referees to: **Dr. Lindsey Hutt-Fletcher, Chair, Search Committee, Department of Comparative and Experimental Pathology, College of Veterinary Medicine, Box J-145, JHMHC, University of Florida, Gainesville, Fla. 32610.** Application deadline: 1 February 1984. *The University of Florida is an Affirmative Action/Equal Opportunity Employer.*

MASS SPECTROMETRIST

The Washington University, Mass Spectrometry Resource, is seeking a person to develop and direct a program in high resolution tandem mass spectrometry. Applicants must have demonstrated expertise in these areas as well as familiarity with particle desorption and CID techniques. A faculty appointment will be offered, at the Medical School or Liberal Arts campus, in the department that is most closely allied with the applicant's academic qualifications. It is essential that the applicant have both a sufficient degree of research productivity and clearly formulated investigational goals, to satisfy the search committee that this individual will ultimately achieve tenure and research grant support through his or her own merits.

Applicants should send curriculum vitae and a brief description of current research interests to:

William R. Sherman, Ph.D.
Washington University School of Medicine
4940 Audubon Avenue
St. Louis, Missouri 63110

Washington University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

FIELD BIOLOGIST

Assistant professor/tenure-track position beginning 20 August 1984. Experience in coastal/wetland botany preferred. Teaching competency should include field botany and vascular systematics. Active research expected. Send letter of application, including three letters of reference and résumé, to: **Dr. Vincent Bellis, Department of Biology, East Carolina University, Greenville, North Carolina 27834,** before 15 February 1984.

An Equal Opportunity/Affirmative Action Employer

GENETICIST TENURE-TRACK APPOINTMENT UNIVERSITY OF WISCONSIN-MADISON

We seek an innovative researcher who wishes to extend his/her research to nonhuman primates in order to take advantage of a unique opportunity. The appointment will be made jointly between the Wisconsin Regional Primate Research Center and the Department of Genetics. Any field of basic or applied genetics utilizing approaches of modern genetics will be considered, and additional animal models may be used. The individual will also be expected to teach at least one advanced course in genetics. Postdoctoral experience is required. Current strong areas of research at the Primate Center include behavior, embryogenesis, endocrinology, cell biology, neuroscience, and pathology. No previous experience with nonhuman primates is required. Review begins 1 February 1984, and will continue until a suitable candidate is selected. Applications should include transcripts, curriculum vitae, bibliography, reprints or preprints of three significant publications, statement of research goals, and three letters of recommendation. Send these to: **Genetics Search Committee, Wisconsin Regional Primate Research Center, 1223 Capitol Court, Madison, Wis. 53715-1299.**

The University of Wisconsin-Madison is an Affirmative Action/Equal Opportunity Employer.

IMMUNOLOGIST

The Division of Biology at Kansas State University has a tenure-earning position available at the assistant professor level effective 1 September 1984. Applications are invited from individuals in all areas of the immunological sciences. The division has a strong program in biological research, excellent facilities, a training grant in virology and tumor biology, and a distinguished faculty with several million dollars in extramural research grants. The successful candidate will be expected to establish a vigorous research program and to contribute to our graduate and undergraduate instruction in immunology. Candidates should apply by 17 January 1984. Submit curriculum vitae, three letters of reference, and a brief description of future research plans to:

Dr. Terry C. Johnson, Director
Division of Biology
Kansas State University
Manhattan, Kans. 66506

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

MOLECULAR GENETICIST/MICROBIOLOGIST. Lecturer, term appointment starting August 1984 for Ph.D. molecular geneticist interested in eukaryotes. Teaching responsibilities include microbiology, general biology, and/or participation in biotechnologist training program. Expected to pursue research program in collaboration with other faculty. Salary range is \$18,000 to \$22,000 for academic year. Applicants should provide copies of their curriculum vitae, summary of their research interests, and names, addresses, and telephone numbers of three references by 15 March 1984 to: **Dr. Wendall E. Allen, Chairman, Search Committee, Department of Biology, East Carolina University, Greenville, N.C. 27834.** *Affirmative Action/Equal Opportunity Employer.*

MOLECULAR GENETICIST. Tenure-track position at assistant professor level effective 1 September 1984. Preference given to geneticist with postdoctoral training and recombinant DNA capability interested in structure and/or regulation of microbial genomes. Appointee expected to develop vigorous research program, supervise master's and doctoral students, and teach at undergraduate and graduate levels. Send curriculum vitae, description of research goals, and three letters of reference by 1 March to: **Dr. Jack Spiegel, Department of Biology, Catholic University of America, Washington, D.C. 20064.** *Affirmative Action/Equal Opportunity Employer.*

NATIONAL SCIENCE FOUNDATION
Washington, D.C.
DIVISION OF MATHEMATICAL SCIENCES
DIVISION OF COMPUTER RESEARCH

The Directorate for Mathematical and Physical Sciences is seeking qualified applicants for three Senior Executive Service positions: Director, Division of Mathematical Sciences (DMS); Deputy Director, Division of Mathematical Sciences (DMS); and Director, Division of Computer Research (DCR).

The two Division Director positions, with a salary currently ranging from \$59,230 (ES-2) to \$63,800 (ES-4), may be filled on a career or a two- or three-year rotational basis. The Deputy Division Director position, with a salary currently ranging from \$56,945 (ES-1) to \$61,515 (ES-3) will be filled on a career basis.

Qualification requirements include a Ph.D. or equivalent professional experience in the mathematical sciences or related field for the DMS positions and a Ph.D. or equivalent professional experience in the computer sciences or related field for the DCR position. All positions require substantial research experience and strong evidence of scholarship in the relevant discipline, including publication of research; demonstrated familiarity with the relevant academic community and recognized professional standing in the scientific/engineering community; and supervision and management of professional and support staff.

Vacancy announcements contain additional qualification requirements and application instructions. Applicants should contact Margaret Cademartori on (202) 357-7857 to request announcement EPS 84-35 for a career appointment as Division Director, DCR; EPS 84-135 for a rotational appointment as Division Director, DCR; EPS 84-45 for a career appointment as Division Director, DMS; EPS 84-145 for a rotational appointment as Division Director, DMS; and/or EPS 84-55 for a career appointment as Deputy Division Director, DMS. Applications must be received by January 31, 1984.

Equal Opportunity Employer

HOFFMANN-LA ROCHE

**Associate
Scientist**

Hoffmann-La Roche has a 75-year history of leadership in the development of pharmaceuticals, vitamins and fine chemicals.

Our Department of Immunopharmacology offers an opportunity for a qualified candidate to assume responsibility for planning and executing experimental procedures involving both in vitro and in vivo assessment of immunologic function in experimental animals. The individual will also conduct a pre-clinical research program evaluating the effects of lymphokines in animal models of immunologic disorders and supervise all on-going studies.

Qualifications: BS/MS degree in an appropriate discipline or equivalent and 4-6 years relevant experience. Ability to work independently; excellent oral and written communications skills desirable.

Roche offers an outstanding benefits package, including an attractive bonus, and an environment that encourages professional growth. **Please send resume, including salary history, to: Richard L. Dow, Employment and Staffing Representative,**



**HOFFMANN-
LA ROCHE INC.**
Nutley, NJ 07110

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from people who care*

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**SUPERVISORY
MICROBIOLOGIST/BIOLOGIST**
National Institutes of Health
National Cancer Institute

The National Cancer Institute has an opening for Chief of the Biological 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 role of biological agents, genetic sequences, viral genes, and combinations of viral and cellular genes in carcinogenesis.

The position requires extensive knowledge of the scientific basis of biological 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 microbiology, biology,

or chemistry. A doctorate or equivalent training in molecular biology or biochemistry is desirable.

This is a Civil Service Career-Conditional Appointment under the Merit Pay System at the GM-15 level with a salary range of \$48,553 to \$63,115 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.

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: 301/496-3337
 Applications must be received or postmarked by
 January 6, 1984.

NIH is an equal opportunity employer.

POSITIONS OPEN

UNIVERSITY OF WASHINGTON/GEOPHYSICS. Applications invited for a tenure-track faculty position in geophysics. Individual is to teach courses at the senior and graduate student level and to establish innovative, forward-looking research programs. Scientists with prime interest in global seismology or in the physical properties of the earth's mantle and core preferred. Send curriculum vitae and four letters of reference prior to 31 January 1984 to: **Professor Ronald T. Merrill, Geophysics Program AK-50, University of Washington, Seattle, Wash. 98195.** An Affirmative Action/Equal Opportunity Employer.

GROSS ANATOMIST—The Department of Anatomy at the University of Puerto Rico Medical School is seeking a tenure-track instructor to associate professor, beginning spring or summer 1984. Research interest is open. Experience in teaching gross anatomy and Ph.D. required by starting date of appointment. Send curriculum vitae and names of three references by 15 February 1984 to:

Search Committee
Department of Anatomy
University of Puerto Rico Medical School
G.P.O. Box 5067
San Juan, Puerto Rico 00936

An Affirmative Action/Equal Opportunity Employer

Ph.D. MICROBIOLOGIST. Tenure-track, assistant professor, beginning fall 1984. Teaching responsibilities in area of general microbiology and bacteriology plus an advanced specialty such as virology or mycology. Previous college teaching and/or clinical experience is advantageous. Our 16-member department emphasizes teaching excellence and student-involved research is encouraged. Research space is limited. Applications must consist of a statement of personal goals and objectives, résumé, transcripts of all undergraduate and graduate work, and three letters of reference, postmarked by 15 February 1984. Send material to: **Dr. Judith P. Downing, Chairperson, Search Committee, Department of Biological & Allied Health Sciences, Bloomsburg University, Bloomsburg, Pa. 17815.** Equal Opportunity/Affirmative Action Employer.

PLANT EVOLUTIONARY OR POPULATION ECOLOGIST

The Department of Botany, Iowa State University, announces a 9-month, tenure-track position at the assistant professor or associate professor rank, available 21 August 1984 for individuals with a Ph.D. or its equivalent. Candidates should have research accomplishments in the population genetics of natural plant populations, or the evolutionary implications of ecological phenomena. Development of a strong research program is expected. Teaching responsibilities include an undergraduate course in biological evolution, a graduate course in plant population biology, and/or other appropriate courses. Preference will be given for postdoctoral research experience and teaching experience. Application deadline is 15 February 1984 or until the position is filled. Send curriculum vitae, a statement of research interests, and graduate transcripts, and have three letters of recommendation sent to: **Ronald C. Coolbaugh, Chairman, Department of Botany, Iowa State University, Ames, Iowa 50011.** Iowa State University is an Equal Opportunity Employer.

PLANT MOLECULAR BIOLOGIST

The Department of Biology of University of California, Los Angeles (UCLA) will make a tenure-track appointment in the area of plant molecular biology on or after 1 July 1984. We seek an outstanding scientist who will develop a vigorous research program on some aspect of higher plant gene structure and function. Although all researchers with such interests are encouraged to apply, preference will be given to those with experience in introducing foreign genes into plant cells and applying this methodology to investigate fundamental problems of plant molecular biology. The appointment will preferably be at the assistant professor level; however, more senior investigators with demonstrated productivity in research will also be considered. The successful candidate will contribute to departmental undergraduate and graduate teaching programs. Applicants should send curriculum vitae, names of three referees, and statements of current and future research plans by 15 February 1984 to: **Dr. Robert B. Goldberg, Search Committee on Plant Molecular Biology, Department of Biology, University of California, Los Angeles, Calif. 90024.**

UCLA is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

MEDICAL DIRECTOR, LABORATORY OF CYTOGENETICS. This is a tenure-accruing position at a rank and salary commensurate with experience, in the Department of Pathology, College of Medicine, University of Florida, to begin 1 April 1984. The candidate must hold an M.D. degree and be licensed or be eligible to apply for a license in the state of Florida. The candidate will be responsible for the medical direction of the Laboratory of Cytogenetics in the Department of Pathology. This will involve hospital service activities as well as development of independent research and teaching programs. Preference will be given to a candidate with interest in molecular genetics or related areas. Interested candidates should forward applications by deadline of 1 March 1984 to: **Raul C. Braylan, M.D., Professor, Department of Pathology, Box J-275, College of Medicine, University of Florida, Gainesville, Florida 32610.** An Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGIST. The Department of Biology expects to make a tenure-track appointment at the assistant professor level to be effective August 1984. Candidates must have a Ph.D. and research interests in either the molecular biology of development or eukaryotic molecular genetics. A strong commitment to teaching at the undergraduate level is required. Applicants should submit curriculum vitae, three letters of recommendation, and a statement of teaching and research interests by 15 January 1984 to: **Dr. James W. Smiley, Chairman, Department of Biology, College of Charleston, Charleston, S.C. 29424.** Affirmative Action/Equal Opportunity Employer.

PHYSICAL OCEANOGRAPHER—The Woods Hole Oceanographic Institution plans to make a tenure-track appointment as assistant scientist in the Department of Physical Oceanography. Applicants should have a degree in physical oceanography or a closely related field and, preferably, some postdoctoral experience. A candidate's area of expertise in oceanography is not specified, but a working knowledge of fluid dynamics is an important qualification. Please send curriculum vitae to: **The Chairman, Physical Oceanography Department, Box 54 P, Woods Hole Oceanographic Institution, Woods Hole, Mass. 02543.** An Equal Opportunity Employer.

PLANT PHYSIOLOGY. One-year position (sabbatical replacement) to teach plant physiology courses designed for the nonmajor, and to participate in freshman-level biology. Starts 1 September 1984. Ph.D. is preferred; an ABD with a strong teaching background will be considered. Applicants should submit letter of application, curriculum vitae, and three letters of recommendation by 1 March 1984 to: **Dr. David Richard, Chair, Department of Biology, Rollins College, Winter Park, Fla. 32789.** Equal Opportunity/Affirmative Action College.

POSTDOCTORAL FELLOW. Organic chemist with interest in biochemistry/molecular biology to investigate 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, M/F/H.

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE POSITIONS AVAILABLE IMMEDIATELY in cDNA and genomic cloning, DNA sequencing, recombinant DNA technology, mutagenesis studies, and DNA protein interactions applied to regulation of gene transcription in the exocrine pancreas. Candidates should have Ph.D. degree and experience in genetic engineering and protein and nucleic acid biochemistry. Applications, including curriculum vitae, bibliography, one letter of reference, and names of two additional references should be sent to: **Dr. George Scheele, Laboratory of Cell and Molecular Biology, The Rockefeller University, New York, N.Y. 10021.**

TWO POSTDOCTORAL POSITIONS are available during 1984 through 1987 at the Center for Laboratories and Research, New York State Department of Health, Albany, New York, to study estrogen receptor and DNA interactions. Candidates with experience in the isolation and characterization of mRNA using available monoclonal antibodies and cloning of cDNA in plasmid vectors are desirable. Send résumé and names of two references to: **Dr. S. Anand Kumar, Center for Laboratories and Research, New York State Department of Health, Empire State Plaza, Albany, N.Y. 12201.**

POSITIONS OPEN

POSTDOCTORAL FELLOW/RESEARCH ASSOCIATE position beginning 1 January 1984. Research will focus on molecular approaches to studying mitochondrial genetics in mammalian cells. A background in recombinant DNA technology/genetic engineering is required. Please submit curriculum vitae and names of three references to: **Dr. Neil Howell, Department of Radiation Therapy, University of Texas Medical Branch, Galveston, Texas 77550.** An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately for recent Ph.D. for study of nucleic acid abnormalities in autoimmune disease using recombinant DNA techniques. Background in biochemistry and/or immunology desirable. Please submit statement of research interests and curriculum vitae to: **Dr. Charles Steinman, Director, Division of Rheumatology, State University of New York (SUNY)-Downstate Medical Center, 450 Clarkson Avenue, Box 42, Brooklyn, N.Y. 11203.** Equal Opportunity/Affirmative Action Employer, M/F.

POSTDOCTORAL POSITIONS IN CELLULAR AND MOLECULAR BIOLOGY are available as early as 1 January 1984. Applicants should have a Ph.D. or M.D. degree with a background in biochemistry, cell biology, or molecular biology. Specific projects include the following: (i) to determine the nature and regulation of subcellular organelle traffic involved in the endocytosis of insulin and other ligands [Dr. Fine and Dr. Tilch; see *J. Cell Biol.* 96, 133 (1983)]; (ii) to determine the role of growth factor receptor kinases (insulin and IGF-1) in the regulation of cellular metabolism, receptor metabolism, and/or cellular growth [Dr. Tilch, see *Biochemistry* 22, 717 (1983) and *Nature (London)* 305, 438 (1983)]; (iii) to clone the insulin receptor and clathrin genes [Dr. Farmer, Dr. Fine, and Dr. Tilch]; (iv) to study the regulation of tubulin gene expression using β tubulin cDNA clones [Dr. Farmer, see *Mol. Cell. Biol.* 3, 1333, (1983)]. Applicants should indicate interest in a specific project and send curriculum vitae and the names of three references to one of the following individuals: **Dr. Stephen R. Farmer, Dr. Richard E. Fine, Dr. Paul F. Tilch, Department of Biochemistry, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.** An Equal Opportunity Employer, M/F.

POSTDOCTORAL POSITION available immediately in virology and molecular biology for studies on human cytomegaloviruses. Research involves gene regulation, expression, and cloning. Please send curriculum vitae, description of research experience, and names of three references to: **Dr. Mark F. Stinski, Department of Microbiology, University of Iowa, Iowa City, Iowa 52242.**

POSTDOCTORAL POSITION available immediately to study the physiology of salinity tolerance in grasses. Familiarity with ecophysiological techniques for photosynthetic and water-relations studies is essential. Send letter of application, curriculum vitae, and the names of three references to: **Gary L. Cunningham, Biology Department, New Mexico State University, Las Cruces, New Mexico 88003.** New Mexico State University is an Equal Opportunity Employer.

POSTDOCTORAL POSITION

An opening has just become available for a research fellow in the area of eicosanoids and the coronary circulation. Work will be conducted in the Departments of Physiology and Medicine (Cardiology) on basic and clinical aspects of the role of thromboxanes and leukotrienes in coronary disease states. The appointee will work on joint research projects in the laboratories of Dr. A. M. Lefer (physiology) and Dr. P. Walinsky (cardiology).

Applicants should send recent curriculum vitae, including a statement of research interests and experience, and arrange to have three letters of reference sent to: **Dr. Allan M. Lefer, Director, Ischemia-Shock Research Center, Jefferson Medical College, Thomas Jefferson University, 1020 Locust Street, Philadelphia, Pa. 19107.** Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately for ongoing studies of molecular biology of intracellular parasites. Candidates should have background in molecular biology. Send résumé and names of three references to: **Jack S. Remington, M.D., Palo Alto Medical Foundation, 860 Bryant Street, Palo Alto, Calif. 94301.** Equal Opportunity/Affirmative Action Employer.

**NATIONAL SCIENCE FOUNDATION
Washington, D.C.**

**DIVISION OF ELECTRICAL, COMPUTER
AND SYSTEMS ENGINEERING**

The Directorate for Engineering is seeking qualified applicants for position of Director, Division of Electrical, Computer and Systems Engineering. Duties of the position include managing a division responsible for the evaluation of proposals and awards of grants for the conduct of basic research in the areas of automation and sensing systems; microelectronics; communication systems; computer engineering; systems theory and operations research; quantum electronics; and bioengineering and research for the handicapped. Incumbent plans and implements research initiatives, determines funding requirements, balances program requirements, allocates resources, and supervises both professional and support staff.

This position is in the Senior Executive Service with a salary currently ranging from \$59,230 (ES-2) to \$63,800 (ES-4). Appointment will be on a one- or two-year rotational basis.

Qualification requirements include a Ph.D. or equivalent professional experience or a combination of education and equivalent experience in Electrical Engineering, Computer Engineering, Systems Engineering or closely related discipline; substantial research experience directed toward engineering programs involving fundamental investigations and interdisciplinary goals; demonstrated familiarity with relevant academic community and recognized professional standing in the scientific and engineering communities; and supervision and management of professional and support staff.

Applicants should contact **Margaret Cademartori on (202) 357-7857 to request announcement EPS 84-6S**. Announcement contains additional qualification requirements and application instructions. Applications must be received by January 31, 1984.

Equal Opportunity Employer

**NATIONAL SCIENCE FOUNDATION
Washington, D.C.**

**DIRECTOR
DIVISION OF POLAR PROGRAMS**

NSF is seeking qualified applicants for position of Director, Division of Polar Programs. Incumbent manages Division responsible for planning, funding, and management of all U.S. activities in Antarctica, including a multi-discipline program of scientific research, research facilities, and all logistic support for the U.S. bases and field operations. Division also supports research in the Arctic. This Senior Executive Service position has a salary currently ranging from \$59,230 (ES-2) to \$63,800 (ES-4). These salaries are expected to increase in January 1984. Appointment will be on a career basis.

Qualification requirements include: 1) Ph.D. or equivalent professional experience in one of the sciences pertinent to the Division (e.g., polar glaciology, atmospheric sciences, biological sciences, earth sciences, meteorology, or ocean sciences); 2) demonstrated familiarity with the U.S. Antarctic Program activities; 3) experience in the planning of diverse research programs in the field of polar research; 4) demonstrated high level of professional recognition in the polar oriented scientific community in all of its government, academic, and international components; and 5) management experience including supervision of professional and support staff involved in diverse endeavors. Individual selected must be able to pass the physical examination required for travel to Antarctica.

Applicants should contact **Margaret Cademartori on (202) 357-7857 to request Announcement EPS 84-1** for complete qualification requirements and application procedures. Applications must be received by January 23, 1984.

EQUAL OPPORTUNITY EMPLOYER

Scientist/ Programmer

Merck Sharp & Dohme Research Laboratories, a world leader in the development of pharmaceutical and biological products, is seeking a scientist/programmer to join the Biological Data Department located in Rahway, New Jersey.

The successful candidate must have a B.S., preferably an M.S., in biology or chemistry, a firm scientific background and extensive experience in computer science. Knowledge of JCL and disk and tape backup procedures, solid programming experience, budget preparation and experience supervising and training subordinates are essential. Experience with Datapoint and/or INQUIRE software is highly desirable. Responsibilities will include the supervision of the collection, storage and retrieval of biological data, the integrity and security of the files of those data and the interface with other departments and divisions to provide expeditious use of the data.

Salary, benefits and growth potential are excellent. Send resume to: Mary C. Habbersett, BDD,



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Veterinarian

THE FOUNDATION FOR SUCCESS

If you'd like to step into the future with a stable and growing company, consider Collagen Corporation, a premier biomedical innovator. When we say we've laid the foundation for success, we mean it is there for our people as well as for our company.

Veterinarian/Animal Physiologist

Under the direction of the Connective Tissue Research Laboratories, you will develop and conduct a program on the use of animal models for studies related to the replacement and repair of connective tissue. You will also supervise biology facilities and personnel, collaborate in safety and efficacy studies, and direct operations of a histology lab.

A doctorate in veterinary medicine and/or a biological science with demonstrated ability or potential to perform duties as described are required. At least 3-4 years' research or animal clinical experience is also required.

Share Our Future

To share our future, please send your resume, a brief account of your interests, and a list of references whom we may contact, to: Dr. Karl Piez, Director, Connective Tissue Research Laboratories, Box 100, Collagen Corporation, 2500 Faber Place, Palo Alto, CA 94303. We are an equal opportunity employer.

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Plant Biochemist

The Monsanto Agricultural Products Company has an immediate opening for a plant biochemist in the Plant Sciences Department of the Research Division. Qualified applicants should have a Ph.D. in biochemistry with at least 3 years of experience beyond the doctorate, a strong background in plant physiology, extensive experience in protein purification, physical and chemical characterization of proteins, enzymology, enzyme mechanisms, elucidation of biochemical pathways, and use of isotopic tracers. Candidates must possess an in depth knowledge of primary and secondary plant metabolism and an awareness of modern techniques of molecular biology.

Please send resume to: K.K. Kiger, MONSANTO COMPANY, 800 N. Lindberg Blvd., St. Louis, Missouri 63167. An Equal Opportunity/Affirmative Action Employer M/W/H/V.

Monsanto

PHYSICIAN -M.D., Ph.D.

This company, a world leader in pharmaceutical and agricultural research, is seeking a physician, M.D., Ph.D., candidate for the Medical Division. A cardiovascular physiologist who is a physician and preferably a fellow of the American College of Physicians is required. Must be a recognized cardiovascular physiologist, with a Ph.D. in Physiology or Pharmacology. Academic experience as associate professor or professor is recommended.

This position is within the Medical Division which is responsible for generation, storage, and usage of data for new and existing products. Would serve as team leader in monitoring clinical studies of antihypertensive, anti-dysrhythmic, and inotropic drugs. This company offers an excellent compensation program and opportunities for professional growth. Qualified individuals should send their resume in confidence to:

Indiana State Employment Service
10 North Senate Avenue
Indianapolis, IN 46204
Attn: W. Shepherd

Please be sure to include your Social Security number and refer to our identification number, 2019217.

Salary: \$4,900

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POSITIONS OPEN

POSTDOCTORAL POSITION: FLUOROCHEMICAL NMR IMAGING AND SPECTROSCOPY at the University of Cincinnati. Multi-investigator interdisciplinary NIH-funded project. Departments of Chemistry (main campus), Radiology and Pharmacology (College of Medicine), and Children's Hospital Research Foundation. Superb opportunity, excellent salary, immediate opening for candidate with NMR background. Direct curriculum vitae and two letters of recommendation to: **Jerome L. Ackerman, Department of Chemistry, M.L. Number 172, University of Cincinnati, Cincinnati, Ohio 45221.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available for a person familiar with current concepts of molecular genetics and biochemistry and experienced in some of the techniques that have become available recently (restructuring DNA, transcript mapping, sequencing). Project will involve attempts to gain molecular insights into bacterial-plant interactions (*Agrobacterium*, *Rhizobium*). Stipend: C\$25,000. Curriculum vitae, reprints, and names of three appropriate references to: **Dr. V. N. Iyer, Department of Biology, Carleton University, Ottawa, Ontario, Canada K1S 5B6.**

POSTDOCTORAL POSITION available immediately (3 years' duration). Should have expertise in one or more of following areas: ovarian mitochondria, phospholipids, protein phosphorylation, and/or protein kinases. Contact: **M. J. Dimino, Ph.D., Department of Biochemistry, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, Va. 23501.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION—MOLECULAR BIOLOGICAL APPROACH TO ANTICANCER DRUG RESISTANCE. A research position is available for a person recently obtaining a doctoral degree in molecular biology, biochemistry, cell biology, or closely related area. Research will be on molecular mechanisms of clinical resistance to specific anticancer drugs and will employ techniques of molecular biology. Experience in the latter is an advantage. There will be opportunities for collaborative studies and interactions with a number of investigators working in this research area. Send curriculum vitae and three references to: **Dr. Raymond L. Blakley, Chairman, Division of Biochemical and Clinical Pharmacology, St. Jude Children's Research Hospital, 332 North Lauderdale, Memphis, Tenn. 38101.** An Equal Opportunity/Affirmative Action Institution.

POSTDOCTORAL POSITION available immediately for protein or organic chemist in the field of "immunotoxin" research. Immunotoxins are a new genre of reagents in which potent toxins are linked to monoclonal antibodies. Emphasis is on chemical modification and cross-linking of proteins. Experience in HPLC, isoelectric focusing, peptide mapping, and western blotting helpful. Interested candidates send curriculum vitae and telephone numbers of three references to: **Dr. Daniel A. Vallera, University of Minnesota, Box 367 Mayo Memorial Building, Minneapolis, Minnesota 55455.**

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

POSTDOCTORAL POSITION IN DEVELOPMENTAL NEUROBIOLOGY

Position available immediately for 2- to 3-year fellowship to investigate chemical and biological properties of the neural cell adhesion molecule (NCAM). Experience in cell culture, antibody-based techniques, or membrane protein biochemistry is desirable. Send résumé and three references to: **U. Rutishauser, Department of Developmental Genetics and Anatomy, Case Western Reserve University, School of Medicine, 2119 Abington Road, Cleveland, Ohio 44106.**

POSTDOCTORAL RESEARCH

Postdoctoral positions in neuroendocrinology available to study (i) aging, pineal and opioid peptides on reproduction and (ii) hormone release from cultured hypothalamic and pituitary cells. If qualified and interested, please submit résumé to: **Employment Coordinator, St. Joseph's Hospital and Medical Center, P.O. Box 2071, Phoenix, Ariz. 85001.** Equal Opportunity Employer.

POSITIONS OPEN

POSTDOCTORAL POSITION—BIOCHEMISTRY. Purine/protein biochemist to study nutrition and intestinal mucosal cell metabolism. Please send curriculum vitae and letters of reference to: **Neal S. LeLeiko, M.D., Ph.D., Division of Pediatric Gastroenterology, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029.** An Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately to work on a NIH-sponsored research project involving the cloning of cDNA and genomic sequences for the catalase gene in *Drosophila* with a subsequent molecular analysis of variants that alter the rate of catalase synthesis as a function of development. The position is for 1 year, renewable upon satisfactory performance. Send curriculum vitae and three letters of recommendation to: **Dr. Glenn C. Bewley, Department of Genetics, North Carolina State University, Raleigh, N.C. 27650.**

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Postdoctoral Research Associate to work on basic mechanisms of hormonal and metabolic influences on developmental biology of fetal lung. Competence in enzymology, receptors, membranes, cyclic nucleotides, and/or gene expression expected. Highly competitive salary. Stimulating scientific environment. Send curriculum vitae and three references to: **Dr. David Warburton, Neonatal Respiratory Disease Division, Childrens Hospital of Los Angeles, P.O. Box 54700, Los Angeles, California 90054.**

Postdoctoral Research Fellow, Grade IA—Applications are invited for two postdoctoral research fellows to study the genetic and biochemical basis of virulence expression in the bacterium *Haemophilus influenzae*. The appointments are from 1 April 1984 for 3 years. Applications should be sent to: **S. Hayes, Department of Paediatrics, John Radcliffe Hospital, Oxford OX3 9DU, United Kingdom.** Include curriculum vitae and names of three referees. Closing date for applications: 29 February 1984.

PRE- AND POSTDOCTORAL openings in **EXPERIMENTAL PARASITOLOGY** available February and July 1984, University of Massachusetts/Amherst. Traineeships limited to U.S. citizens or permanent residents. Others eligible for support in research in trichomonads, trypanosomes, nematodes, and medical entomology projects. Contact: **Dr. B. M. Honigberg, Zoology, University of Massachusetts, Amherst, Mass. 01003-0027.** Rolling admission. An Affirmative Action/Equal Opportunity Employer.

RESEARCH ASSOCIATE. Position available for up to 3 years in a research group studying molecular mechanisms of *Mycoplasma pneumoniae* disease, with emphasis on the B-cell polyclonal mitogenic activity. Ph.D. degree required. Experience in cellular immunology desirable. Please send curriculum vitae and two letters of reference to: **Ping-chuan Hu, Ph.D. Division of Infectious Diseases, Department of Pediatrics, University of North Carolina School of Medicine, 535 Burnett-Womack Building 229H, Chapel Hill, N.C. 27514.** The University of North Carolina is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to voluntarily identify themselves.

RESEARCH ASSOCIATE position involving studies on protein structure and function relating to half-site reactivity and enzyme homology in thiokinases. Position available immediately. Ph.D. in biochemistry with experience in enzymology preferred. Send résumé to: **Dr. Louis Hersh, Department of Biochemistry, University of Texas Health Science Center, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** An Equal Opportunity University.

RESEARCH ASSOCIATE POSITION IN PLASMA TURBULENCE

Applications are sought from Ph.D. recipients (physics or engineering) with major accomplishments or outstanding promise in fields of computational plasma physics and nonlinear dynamics. Experience with large-scale computer simulation and numerical modeling in the above fields is required. At least 1 year of postdoctoral experience is preferred. The initial salary is \$22,000 per annum. Résumés, including publications list and names of three references, should be directed to:

**Professor M. V. Goldman
Department of Astrophysical, Planetary
and Atmospheric Sciences
Campus Box 391
University of Colorado
Boulder, Colo. 80309**

Physiologist/ Biochemist/ Cell Biologist

Merck Sharp & Dohme Research Laboratories, a division of Merck & Co., Inc., has an immediate opening for a Physiologist, Biochemist or Cell Biologist to investigate muscle/adipose tissue biology.

The successful candidate will be a key member of an interdisciplinary team and will initiate and conduct basic research into the regulation of growth characteristics of food producing animals.

A Ph.D. with a minimum of two years' postdoctoral experience and a strong record of research productivity as evidenced by publications is required. Ability to communicate effectively and to collaborate with scientists outside of one's own discipline are essential.

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*For details of submission
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Biotechnology

SENIOR BIOTECHNOLOGY PROCESS ENGINEER

The Adolph Coors Company, located in Golden, Colorado, has an immediate opening for a Senior Biotechnology Process Engineer.

The ideal candidate will contribute to the development and growth of the Biotechnology division by directing and participating in research and development of various processes to produce new product lines.

Position requires a thorough knowledge in the field of Biochemical Engineering, training and experience in fermentation technology and the purification of biological substances. Must be familiar with economic forecasting, computer modeling, able to document research data, and ensure financial soundness of projects.

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NEW YORK MEDICAL COLLEGE

BIOMEDICAL RESEARCH SCHOLAR PROGRAM

Applications are invited for research career awards for outstanding postdoctoral investigators to work with a preceptor at New York Medical College (NYMC). Four scholars will be selected over the next 2 years. Candidates should show exceptional scientific promise and evidence of ability to conduct independent research. Usually one would have received the Ph.D. degree within the past 5 years or the M.D. degree within the past 9 years. Awards up to \$25,000 per year, supported by a grant-in-aid from the Charles H. Revson Foundation, will be for 1 to 2 years; 1984 deadline for receipt of application: **1 April**. Earliest start date: 1 July 1984. For applications and guidelines, contact the potential NYMC preceptor. Requests should be accompanied by curriculum vitae. For guidelines only, you may contact: **Lorraine Lasker, Director, Office of Research Administration, New York Medical College, Elmhurst Hall, Valhalla, New York 10595.**

POSTDOCTORAL RESEARCH in BIOCHEMISTRY

Battelle Columbus Laboratories, a world leader in contract research and development, has an immediate opening in our Medical and Molecular Biology Section for a recent Ph.D. to work as a postdoctoral researcher. Requirements include expertise and experience in the biochemistry and physiology of anaerobic microorganisms and in the growth and manipulation of such microorganisms. The successful candidate will be an integral member of a research team which will be concerned with the determination and enhancement of anaerobic dehalogenation and degradation of chlorinated organics in aqueous systems.

This position is for a 1-year initial appointment, potentially renewable, with the possibility of a permanent position with Battelle's multidisciplinary contract research operations in biotechnology. Salary range will be \$18,000 to \$24,000 per year. U.S. citizenship or permanent residency required. Individuals interested in this challenging opportunity should send résumés to: **Richard C. Needles, Department J-4,**



Battelle

Columbus Laboratories
505 King Avenue
Columbus, Ohio 43201

POSITIONS OPEN

POSTDOCTORAL POSITION available summer 1984 to work on the isolation and characterization of plant nuclear genes encoding chloroplast proteins. Studies will involve some of the following: gene isolation, DNA sequencing, in vivo and in vitro transcription, and transformation using *Agrobacterium*. Experience in molecular biology is desirable. Send curriculum vitae and three letters of reference to: **Anthony R. Cashmore, The Rockefeller University, Laboratory of Cell Biology, 1230 York Avenue, New York, N.Y. 10021.**

PROFESSOR AND CHAIRMAN DEPARTMENT OF BIOCHEMISTRY

Applicants are invited for the position of professor and chairman of the Department of Biochemistry, University of Puerto Rico, San Juan. Applications are welcome from individuals with previous history of providing quality education to graduate and medical students and who have demonstrated research productivity. The candidates should be committed to academic excellence and have administrative skills. Candidates should submit curriculum vitae and names of three references to: **L. A. Le Zotte, Jr., M.D., Ph.D., Chairman Search Committee, Associate Deanship of Biomedical Sciences, Medical Sciences Campus, G.P.O. Box 5067, San Juan, P.R. 00936.**

PUBLICATIONS POSITION AVAILABLE

Publications manager/editor for a Washington-based national center for the life sciences. As chief staff editor for a 12,000-plus monthly scientific magazine, requires strong business and financial management skills, facility in use of editorial boards, effectiveness in advertising promotion and subscription development, and ability to direct staff writers and editors. Also involves support of overall communications and public relations activities. Postgraduate academic background in the life sciences with successful current responsibility in general readership periodicals important. Salary commensurate with competitive fringe benefits. Send complete résumé with present compensation to: **Box 327, SCIENCE.**

RESEARCH ASSOCIATE/POSTDOCTORATE.

Up to three full-time positions are available for physiological ecologist and/or agricultural engineer and process-based ecosystem modeler at the Systems Ecology Research Group, San Diego State University; M.Sc., Ph.D., or equivalent experience. Duties will include designing improvements to a computer-controlled elevated CO₂ greenhouse system with temperature, precipitation, and relative humidity control. This research is directed toward determining the response of arctic tundra to elevated CO₂. At least one person will be at the Toolik Lake, Alaska, site from May to September to operate and maintain the system while directing field personnel and processing field data. The modeler will assist in the development and refinement of an ecosystem model of the chaparral and arctic tundra.

Applicants should submit curriculum vitae, representative publications, and three letters of references to: **Employment Office, San Diego State University, San Diego, Calif. 92182.** Closing date is 15 January 1984. *Equal Opportunity/Affirmative Action Employer.*

A **RESEARCH FACULTY APPOINTMENT** is available in the recently formed Biomedical Computing Unit at the Yale University School of Medicine. The position involves collaboration with faculty in the implementation of computing techniques in a wide variety of research areas including all aspects of neuroscience, clinical data analysis, and biomedical image processing. The successful applicant will combine a fundamental understanding of the nature and practice of both biomedical research and computing science and will be expected to teach computer theory and biomedical applications in courses run by the Unit. A Ph.D. in biomedical engineering is required for this position, although a Ph.D. in electrical engineering or computer science with demonstrable in-depth education or experience in biomedical research would also be acceptable. Applicants should send curriculum vitae before 1 February 1984 to: **Dr. David Stagg, Biomedical Computing Unit, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

RESEARCH ASSOCIATE. Chemistry Department. To study protein thermodynamics. Requires Ph.D. in chemistry or biochemistry and prior experience in the field of thermodynamics, including scanning and isothermal calorimetry. Also required is familiarity with biochemical preparations. Full-time position with annual salary of \$15,000. Submit résumé to: **Box 337, SCIENCE.** *An Equal Opportunity/Affirmative Action Employer.*

STAFF DIRECTOR BOARD ON RESEARCH ON THE EFFECTS OF RADIATION

The Commission on Life Sciences of the National Research Council seeks a staff director to develop and administer a program of studies on the biological effects of ionizing and non-ionizing radiation. Candidates should be able to demonstrate both a record of contributions to scientific knowledge about the exposure to and effects of radiation and experience in administering large and complex research programs. Applicants should have a minimum of 10 years of experience. A doctorate or equivalent is required. Send curriculum vitae and letter of interest to: **Dr. Alven Lazen, Executive Director, Commission on Life Sciences, National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** *An Equal Opportunity Employer.*

The Department of Veterinary Diagnostic Investigation, College of Veterinary Medicine, University of Minnesota, has a **TOXICOLOGICAL ANALYST FACULTY POSITION** available 1 May 1984. Duties are to develop and conduct chemical analytical procedures required to provide complete veterinary toxicology service, supervise analytical laboratories support personnel, and participate in research and teaching programs of the College of Veterinary Medicine. Assistant professor rank requires Ph.D. with zero to 4 years of experience in analytical chemistry; associate professor requires Ph.D. with five or more years of experience in toxicological analysis. Applicants with D.V.M. in addition to Ph.D. and eligible for Minnesota veterinary license given preference. Send curriculum vitae and names of three references by 15 February 1984 to: **Dr. Glen Nelson, Department of Veterinary Diagnostic Investigation G, College of Veterinary Medicine, University of Minnesota, 1943 Carter Avenue, St. Paul, Minn. 55108.** *The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.*

TOXICOLOGY LABORATORY TECHNICIAN. B.S. degree in biology, total knowledge of reproduction and teratology, macroscopic pathological examinations, and cesarean sections on mice, rats, and rabbits. Examines fetus externally for malformations and variations, prepares skeletons for examinations by clearing and staining with Alizarine Red S, stereomicroscopic examinations of fetal skeleton and of soft tissues by Wilson's slicing technique or Staples dissections, and reviews data for accuracy, uniformity, and completeness; 5 days, Monday to Friday, 40 hours per week, \$280.80. Apply with résumé to: **The Ohio Bureau of Employment Services, 88 West Third Street, Mansfield, Ohio 44902.** Refer to Job Order Number 0504196.

TRANSLATORS (Russian to English). Publisher of major Soviet scientific and technical research journals in English translation requires qualified translators in all areas of engineering and technology and the pure and exact sciences. Openings in the following areas: tribology, water chemistry and technology, agricultural sciences, arid land research, energy technology. Applicants must have a technical background in the field of translation. Application with curriculum vitae to: **Box 329, SCIENCE.**

VETERINARY ANATOMIST

A tenure-track position is available in the Department of Veterinary and Comparative Anatomy, Pharmacology and Physiology (VCAPP) at Washington State University (WSU). Duties include teaching veterinary gross and/or neuroanatomy and to establish an independent research program.

We are especially interested in a veterinary gross anatomist with documented research productivity in the neurological sciences. Send curriculum vitae and three letters of recommendation to: **Jarrett W. Newbrey, Department of VCAPP, Washington State University, Pullman, Wash. 99164-6520** (telephone: 509-335-8112), by 1 February 1984.

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The MX Missile and the Strategic Balance of Power

A collection of recent articles from *SCIENCE* on contemporary strategic ideology is now available for use by professionals, teachers, and researchers interested in the nuclear arms race.

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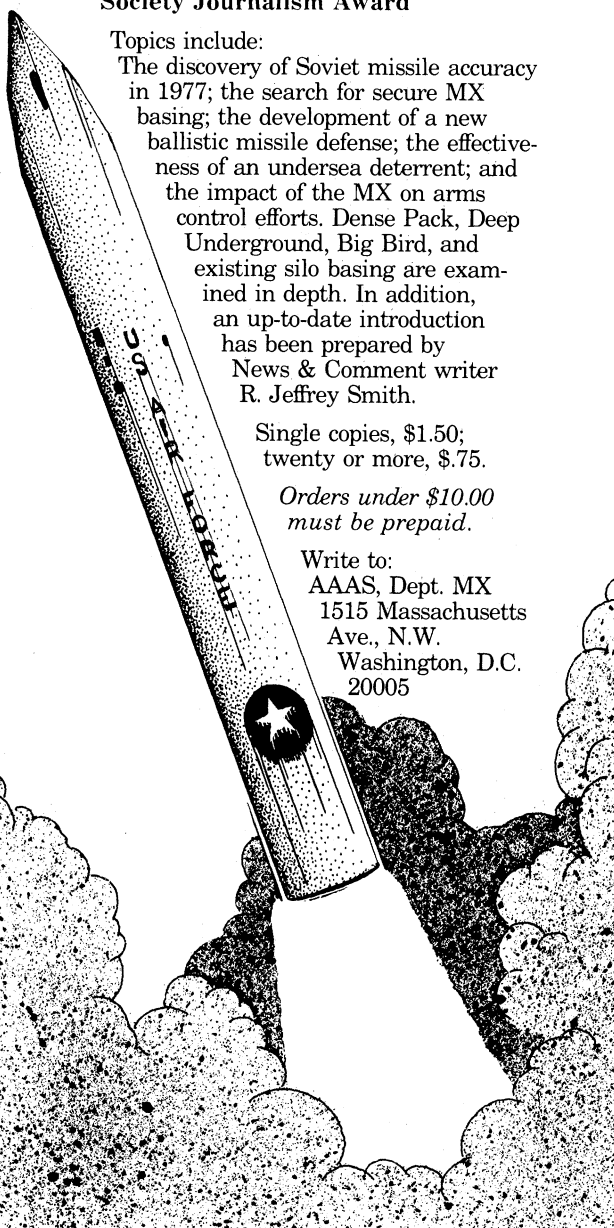
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A High Energy Physics Research Laboratory is seeking applicants for the position of **RESEARCH ASSOCIATE** to participate in the development, design, construction, commissioning, operation, and analysis of results of large, high-energy experiments. Applicants must hold a Ph.D. in experimental high energy physics. An annual salary of \$22,500 and comprehensive benefits package are offered. The normal workweek is 40 hours (8:30 a.m. to 5 p.m.). Applicants should direct their résumé to: **Joan Haight, Illinois Job Service, 910 South Michigan Avenue, Room 400, Chicago, Ill. 60605**, quoting **Reference Number 2652-H**. An employer paid ad.

VETERINARY IMMUNOLOGIST/ MICROBIOLOGIST

D.V.M./Ph.D. or Ph.D. in immunology/microbiology. Diplomate or eligibility for ACVM highly desirable. Tenure-track position with 100 percent research responsibility. Duties and responsibilities of this position are related to immunology and microbiology research. The incumbent is expected to design and conduct sophisticated research with primary emphasis on infectious diseases of domestic animals. Must be able to apply a broad and knowledgeable background to animal diseases and utilize acceptable experimental designs and laboratory procedures. These studies will include the development and conduct of research program(s) as project leader in the participation as a team member on station research projects. Rank and salary commensurate with skills and experience of the candidate. Health, life and disability plans are available. Eligible for TIAA-CREF retirement program. Liberal vacation and sick-leave plans. Location: University of Nebraska, Lincoln, Nebraska. Applicant should forward detailed curriculum vitae and names of three references by 31 January 1984 to: **Dr. Gary A. Anderson, Chair, Veterinary Immunologist/Microbiologist Search Committee, University of Nebraska, Department of Veterinary Science, Lincoln, Neb. 68583-0905** (telephone: 402-472-2952).

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EXCHANGE PROGRAMS

NAS SCIENTIFIC EXCHANGE PROGRAMS WITH U.S.S.R. AND EASTERN EUROPE

Applications are invited from American scientists who wish to make professional visits in the U.S.S.R., Bulgaria, Czechoslovakia, the German Democratic Republic, Hungary, Poland, Romania, and Yugoslavia between January and December 1985. Applicants must be U.S. citizens and have a doctoral degree in the natural, biomedical, or social and behavioral sciences by the time of visit. Deadline for requesting applications is Friday, 17 February 1984. Please contact:

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

PROGRAMS

PREDOCTORAL AND POSTDOCTORAL TRAINING IN CHEMICAL CARCINOGENESIS AND CANCER BIOLOGY. Fellowships available for training in chemical carcinogenesis, cell/molecular biology, environmental toxicology, nutrition, virology, immunology, and experimental pathology. Ph.D. studies are in cooperating departments, including Biochemistry, Biomedical Chemistry, Medical Microbiology, Pathology and Laboratory Medicine, Pharmacodynamics and Toxicology, and Pharmacology. Primary study areas include mechanisms of carcinogen activation and chemical carcinogenesis, biochemistry of DNA-carcinogen interactions, mechanisms of DNA repair, molecular biology of carcinogenesis, nutrition, viruses and cell immortalization, and teratocarcinoma differentiation. Candidates should send transcript, three letters of recommendation, and brief statement of career goals to: **Dr. Edward Bresnick, Eppley Institute for Research in Cancer, University of Nebraska Medical Center, 42nd and Dewey Avenue, Omaha, Nebraska 68105**.

PROGRAMS

RESEARCH TRAINING PROGRAM

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 will have an already-demonstrated record of research activity and now wish additional training in the area of health and behavior. Training will occur at one or several of eight sites: Duke University, Karolinska Institute, Rutgers, University of Pennsylvania, University of California at Los Angeles and San Francisco, University of Pittsburgh, and Yale University for a period of 6 to 24 months. Areas of research include 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 regulation; the psych-physiology of high blood pressure; health enhancement; weight reduction; compliance to medical regimens; family dynamics and health; social supports; self-help; risk reduction in disease; health decisions; belief systems about health and disease; personality factors in health and disease; pain; functional bowel disease; aging; and cancer. Preference will be given to those interested in interdisciplinary research training. Please address letters of inquiry, a 1- to 2-page statement of focused goals, and curriculum vitae before 16 January 1984 to: **Judith Rodin, Ph.D., Yale University, Department of Psychology, Box 11A Yale Station, New Haven, Conn. 06520**.

GRADUATE STUDIES IN BIOLOGY GEORGETOWN UNIVERSITY, WASHINGTON, D.C.

Under new directives established for the Graduate School, the Department of Biology has renewed its commitment to quality graduate education and seeks highly qualified applicants for its Ph.D. program. University fellowships and/or grant support will be available for qualified applicants. The 14 faculty members of the department conduct active research programs in various areas of cellular and organismal biology, including: cell biology, development, genetics, immunology, behavior, physiology, neurobiology, phyiology, microbiology, ecology, radiobiology, and tissue culture (plant, animal, and hybridoma). For additional information, please contact: **Dr. D. Nishioka, Committee on Graduate Students and Studies, Department of Biology, Georgetown University, Washington, D.C. 20057**.

REQUEST FOR PROPOSALS

REQUEST FOR PROPOSAL

The Three Mile Island Public Health Fund will commission one or more reviews to identify and rank various human populations that hold the most promise for research to improve estimates of the risk of cancer associated with exposure to low-level ionizing radiation.

For information, call or write to: **Jonathan Berger, Executive Secretary, 1622 Locust Street, Philadelphia, Pa. 19103. Telephone: 215-875-3026**.

FELLOWSHIPS

POSTDOCTORAL RESEARCH FELLOWSHIP available on NIH training in respiratory physiology beginning July 1984. Send résumé plus the names of two references to:

**Dr. S. M. Tenney
Department of Physiology
Dartmouth Medical School
Hanover, N.H. 03756**

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POSTDOCTORAL FELLOWSHIP available for a recent Ph.D. interested in working on a laboratory project concerned with an algal flagellate associated with odour production in acidic Canadian lakes. Relevant experience required in algal physiological ecology, culture methodology, or plant physiology. One-year term, with renewal for a second year possible. Send curriculum vitae and names of three references before 1 February 1984 to: **Dr. L. M. Brown, Department of Plant Sciences, University of Western Ontario, London, Ontario, Canada N6A 5B7**.

FELLOWSHIPS

LUDWIG INSTITUTE FOR CANCER RESEARCH (Cambridge Branch) Postdoctoral Fellowship

Applications are invited from individuals having a background in biochemistry/molecular biology to participate in studies on the genetics and cell biology of human cytoskeletal tropomyosins. The Institute, which is adjacent to the Laboratory of Molecular Biology, offers an opportunity to join a group working in a stimulating academic environment. The position is available from 1 February 1984, for 2 years with a possibility of further renewal. Salary is within the scale £7,190 to £10,710.

Applications, including curriculum vitae and two letters of reference, should be sent to: **Dr. A. R. MacLeod, Ludwig Institute for Cancer Research, MRC Centre, Hills Road, Cambridge, England CB2 2QH**.

POSTDOCTORAL RESEARCH FELLOWSHIP. To study the transformation-associated protein p53. The appointment will involve work with existing recombinant DNA systems that direct the expression of p53 protein in eukaryotic cells. Appropriate technologies including oligonucleotide synthesis are available on site. There is considerable scope for independent research. Suitable experience might include SV40/adenovirus biology, DNA-mediated gene transfer, and so forth. The appointment is for a period of 3 years and salary in the range £7,190 to £14,125 per annum. Applications, full curriculum vitae, and the names of two referees to: **Dr. J. R. Jenkins, Marie Curie Research Institute, The Chart, Oxted, Surrey, United Kingdom**.

PREDOCTORAL FELLOWSHIP IN BIOCHEMISTRY

We have three predoctoral fellowships for qualified individuals interested in training in an exciting, well-established, medically oriented, multidisciplinary laboratory involved in several research areas: protein purification, enzyme kinetics, monoclonal antibodies, cell culture, peptide receptors, protein synthesis, and molecular biology. Students with B.A. or M.S. are eligible. Tuition waiver and stipend of \$8000 annually for qualified individuals. Application should be sent to: **Dr. J. Baylink, M.D., Professor of Biochemistry and Medicine, Loma Linda University, 11201 Benton Street, Loma Linda, Calif. 92357**.

POSTDOCTORAL FELLOWSHIP PHARMACOLOGY

Applications are solicited for a postdoctoral fellowship with a multidisciplinary group in the Department of Medicinal Chemistry and the Department of Medicine at the J. Hillis Miller Health Center of the University of Florida and the Veterans Administration Medical Center, Gainesville, Florida.

The emphasis will be on the toxicity, pharmacokinetics, and efficacy of a group of newly synthesized metal chelators. Patient studies may be included in latter phases of the investigation.

Preference will be given to individuals with experience in the broad range of pharmacologic animal testing.

Please send curriculum vitae and names of three references to: **Dr. Richard R. Streiff, M.D., Medical Service (111), VA Medical Center, Gainesville, Florida 32602**.

POSTDOCTORAL FELLOWSHIP IN GENETICS available for studies on influenza viruses. Training in genetic engineering techniques will be provided. Candidates should forward résumé and names and addresses of three references to: **Dr. Peter Palese, THE MOUNT SINAI SCHOOL OF MEDICINE, One Gustave L. Levy Place, New York, N.Y. 10029. An Equal Opportunity Employer.**

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BIOSYSTEMS UPDATE

Additional DNA Synthesis Workshops

Applied Biosystems is conducting a number of workshops on the latest methods for oligonucleotide synthesis and purification. If you use or plan to use synthetic DNA, this is a unique opportunity to talk with scientists from the leader in DNA chemistry and instrumentation. Manual and automated methods of synthesis will be demonstrated and information on custom oligonucleotides will be presented.

The workshops will include discussions of new techniques which enable any laboratory to synthesize DNA. Four years ago, production of an oligonucleotide with 20 bases

was a major undertaking requiring many days of work. Now, purified reagents and the efficient phosphoramidite chemistry allow up to 200 base additions in one day. Information on the use of this chemistry for both manual and automated synthesis will be included in the program.

Although these workshops are free, advance registration is required. The program will be from 9:00 A.M. to 4:00 P.M. and the Applied Biosystems Model 380A DNA Synthesizer will be available for the production of oligonucleotides during the day.

LOCATIONS AND DATES

Research Triangle Park, North Carolina	Tuesday, January 10th
Miami, Florida	Sunday, January 15th
Houston, Texas	Monday, January 23rd
Los Angeles, California	Tuesday, February 14th
San Diego, California	Thursday, February 16th
San Francisco, California	Tuesday, February 28th
St. Louis, Missouri	Sunday, April 1st

TOPICS INCLUDE

ORGANIC CHEMISTRY OF OLIGONUCLEOTIDE SYNTHESIS
MANUAL SYNTHESIS METHODS (Including Demonstration)
AUTOMATION OF OLIGONUCLEOTIDE SYNTHESIS
EVALUATION OF CRUDE DNA BY GEL ELECTROPHORESIS
HIGH PRESSURE LIQUID CHROMATOGRAPHY OF OLIGONUCLEOTIDES

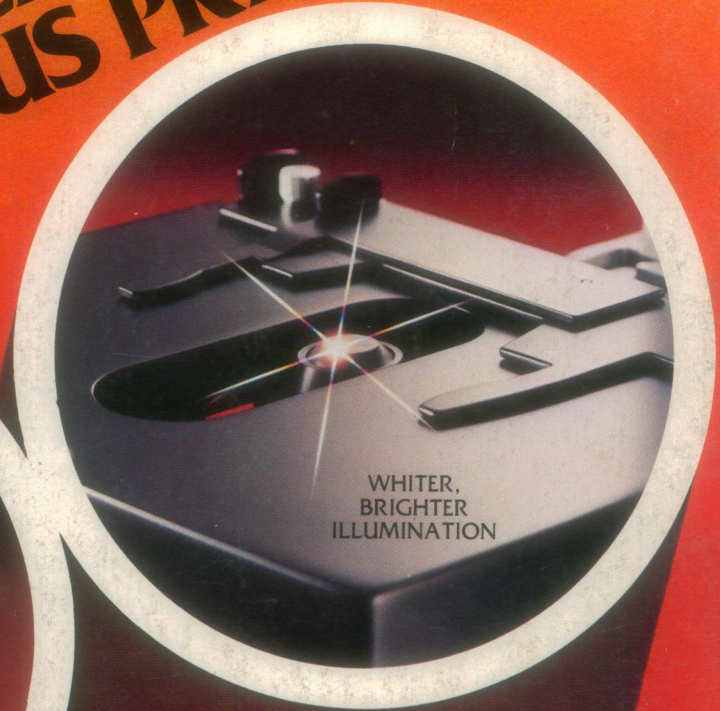
If you need the latest information on new methods for DNA synthesis and purifica-

tion, call us at 800-874-9868 (in California, 800-831-3582) to reserve your place.



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