

and Gallagher (I think correctly) stress the importance of understanding physical-chemical conditions before turning to complex biological constructs. They also emphasize that hypothesis guides observation (defending the importance of mathematical community dynamics), but it seems to me that ecological theory played a minor role in two of the more important advances of recent years: the use of the baited cameras of Isaacs and the discovery of the vent communities. Some of the questions raised in this paper come up again in the last one, on the antiquity of the deep-sea fauna. It is written from a paleobiologist's point of view and has much to offer to deep-sea biologists. Papers on in situ respiration and on enzyme adaptations are also highly relevant in this context.

Those interested in the deep-sea environment will want to own this volume and to use it in their graduate classes. They may also wish to consult a somewhat similar volume (*The Dynamic Environment of the Ocean Floor*, K. A. Fanning and F. T. Manheim, Eds., Lexington [Heath], 1982), which treats physical-chemical aspects of the benthic interface more extensively and at a more technical level than the volume at hand.

W. H. BERGER

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Volcanic Processes

The 1980 Eruptions of Mount St. Helens, Washington. PETER W. LIPMAN and DONAL R. MULLINEUX, Eds. U.S. Geological Survey, Reston, Va., 1982 (also available from Superintendent of Documents, Washington, D.C.). xxviii, 844 pp., illus., + map. \$35. Geological Survey Professional Paper 1250.

A good many undeserved superlatives have been used in reference to the recent activity at Mount St. Helens, but it is certainly not an overstatement to say that no other major historic eruption has been as closely observed and thoroughly documented as that of 18 May 1980.

The events are now familiar to every geologist. At precisely 8:32 in the morning, the northern slope of the mountain, which had been bulging at an alarming rate for more than a week, finally failed in a gigantic avalanche when a magnitude-5.1 earthquake shook the mountain. The sudden relief of pressure triggered an explosion of steam and gas-charged magma that swept with hurricane force down the flank and across 150 square miles of one of the most beautiful forests of the Pacific Northwest. More than a cubic

kilometer of the mountain, along with glacial ice, uprooted trees, and a torrent of mud, poured down the Toutle and Cowlitz rivers and finally into the Columbia, where it dumped over 34 million cubic meters of sediment and closed the port of Portland to shipping. At least 60 lives were lost, and property losses are estimated to have exceeded a billion dollars.

One can gain a vivid impression of the eruption from the various accounts given in the book under review. The events of 1980 are described and interpreted in more than 60 papers by authors not only from the Geological Survey but from the academic community as well.

Mention of some of the major topics covered may convey the scope of the book. A description of the geological evolution of the volcano is followed by a carefully documented chronology of the eruptive activity of 1980. A notable part of this section is a detailed analysis of the extraordinary sequential photographs taken by witnesses to the eruption of 18 May. This is followed by accounts of seismic activity and deformation, gas emissions, thermal anomalies, and various types of monitoring. A long section is devoted to the pyroclastic eruptions and debris flows and to the early stage of growth of a dome in the huge crater that occupies what was once the summit of the mountain. Preliminary reports are included on the effects of the ash falls and mudflows on the hydrology and vegetation of the region. And finally the problems of assessing and alleviating hazards are discussed, and an effort is made to analyze the implications of the eruption and the possibilities of future activity elsewhere in the Cascade Range.

Each paper is capable of standing on its own, so that the reader need not wade through earlier sections in order to understand later ones. This results in a certain amount of repetition, but it adds immeasurably to the usefulness of the book as a reference. I found no evidence that the editors attempted to achieve uniformity in interpretation. Though there seems to be no serious disagreement about factual evidence, reasoned differences of opinion have been given the full latitude they deserve.

The volume is sure to join the ranks of classic accounts of great eruptions, such as LaCroix's account of the eruption of Mont Pelee in 1902, Taylor's description of the eruption of Mount Lamington in 1951, and Bostok's famous report on the great catastrophe at Agungijyh in 1928. It differs, of course, in that it is written by a host of authors, but what it lacks in the style and individual character of ear-

lier works it makes up for in depth and detail. It is profusely illustrated with many full-page color photographs and diagrams, and a quadrangle-size geological map is enclosed in a pocket. Given the prices of commercially published books, this volume is the bargain of the year.

ALEXANDER R. MCBIRNEY

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Books Received

Cancer-Associated Genodermatoses. Henry T. Lynch and Ramon M. Fusaro, Eds. Van Nostrand Reinhold, New York, 1982. x, 560 pp., illus. \$32.

Catastrophe Theory and Applications. D. K. Sinha, Ed. Halsted (Wiley), New York, 1982. xii, 158 pp., illus. \$15.95. Mathematics of Mathematical Sciences.

Catastrophe Theory for Scientists and Engineers. Robert Gilmore. Wiley-Interscience, New York, 1981. xx, 666 pp., illus. \$45.95.

Evoked Potentials. Papers from a conference, June 1981. Ivan Bodis-Wollner, Ed. New York Academy of Sciences, New York, 1982. xii, 738 pp., illus. Cloth or paper, \$157. Annals of the New York Academy of Sciences, vol. 388.

Fetal and Neonatal Pathology. Perspectives for the General Pathologist. Papers from a symposium, Birmingham, England, Apr. 1981. A. J. Barson, Ed. Praeger, New York, 1982. x, 262 pp., illus. \$33.

A Field Guide to Mushrooms and Their Relatives. Booth Courtenay and Harold H. Burdsall, Jr. Van Nostrand Reinhold, New York, 1982. 144 pp., illus. \$18.95.

The Human Primate. R. E. Passingham. Freeman, San Francisco, 1982. xii, 390 pp., illus. \$14.95.

Igneous and Metamorphic Petrology. Myron G. Best. Line drawings by the author. Freeman, San Francisco, 1982. xx, 630 pp. \$29.95.

Multicomputers and Image Processing. Algorithms and Programs. Papers from a workshop, Madison, Wis., May 1981. Kendall Preston, Jr., and Leonard Uhr, Eds. Academic Press, New York, 1982. xx, 470 pp., illus. \$34. Notes and Reports in Computer Science and Applied Mathematics, 3.

The Nervous System. Peter Nathan. Oxford University Press, New York, ed. 2, 1982. xvi, 298 pp., illus. \$24.95.

Outcome Uncertain. Science and the Political Process. Mary E. Ames. Avon, New York, 1982. x, 230 pp. Paper, \$3.50. A Discus Book. Reprint of the 1978 edition.

Ozonation in Organic Chemistry. Vol. 2, Nonolefinic Compounds. Philip S. Bailey. Academic Press, New York, 1982. xx, 500 pp., illus. \$69.50. Organic Chemistry, vol. 39-II.

The Parasite. Michel Serres. Translated, with notes, from the French by Lawrence R. Schehr. Johns Hopkins University Press, Baltimore, 1982. x, 260 pp., illus. \$17.50.

Research Techniques in the Rat. Clayton Petty. Thomas, Springfield, Ill., 1982. xiv, 368 pp. \$36.75.

The Research Universities and Their Patrons. Robert M. Rosenzweig with Barbara Turlington. University of California Press, Berkeley, 1982. xiv, 152 pp. \$14.50.

Reversed-Phase High-Performance Liquid Chromatography. Theory, Practice, and Biomedical Applications. Ante M. Krstulović and Phyllis R. Brown. Wiley-Interscience, New York, 1982. xiv, 296 pp., illus. \$35.

Review of Human Development. Tiffany M. Field, Aletha Huston, Herbert C. Quay, Lillian Troll, and Gordon E. Finley, Eds. Wiley-Interscience, New York, 1982. xxii, 664 pp., illus. \$45.

RNA Tumor Viruses. Robin Weiss, Natalie Teich, Harold Varmus, and John Coffin, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., 1982. xii, 1396 pp., illus. \$110. Second edition of *Molecular Biology of Tumor Viruses*. Cold Spring Harbor Monograph Series, vol. 10C.

The Time of Darkness. Local Legends and Volcanic Reality in Papua, New Guinea. R. J. Blong. University of Washington Press, Seattle, 1982. xii, 258 pp., illus. \$25.

Toxicology of the Liver. Papers from a symposium. Gabriel L. Plaa and William R. Hewitt, Eds. Raven, New York, 1982. xii, 338 pp., illus. \$41. Target Organ Toxicology Series.

Personnel Placement

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Parasitologist. Ph.D. Broad research experience in FILARIASIS and SCHISTOSOMIASIS. Clinical, veterinary, field and descriptive research. More than 90 publications. University and medical school teaching experience. Excellent credentials and references. Seeks position in research or in combination with teaching. Telephone: 301-949-6242. Write: Box 290, SCIENCE. X

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ANIMAL PHYSIOLOGIST University of Miami

Applications are invited for a tenure-track position at the assistant professor level in the area of animal physiology. Candidates must have a broad background in physiology and commitment to development of a strong research program. Teaching responsibilities will include team-teaching in general biology and courses in the person's area of specialization. Preference will be given to individuals with interdisciplinary interests in behavior, neurobiology, or ecology.

Applications should include curriculum vitae, copies of recent publications, and the names of three individuals who may be contacted for letters of recommendation and should be submitted by 15 December 1982 to:

Dr. Keith D. Waddington
Physiology Search Committee
Department of Biology
University of Miami
P.O. Box 249118
Coral Gables, Fla. 33124

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ASSISTANT OR ASSOCIATE PROFESSOR—Tenure-track position in Anatomy Department beginning September 1983. Candidates should have Ph.D. with postdoctoral research experience and ability to obtain extramural grant support. Research interest in cell biology desired, especially in areas such as membrane structure and function, cell adhesion, and membrane glycoproteins. Individuals will participate in teaching in one of the areas of anatomy with ultimate development of a graduate course in their area of expertise. Superb research facilities available in new building. Send curriculum vitae, brief statement of research interests, and names of three references by 15 December to:

Gary E. Wise, Ph.D.
Chairman, Department of Anatomy
Camp Bowie at Montgomery
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WASHINGTON UNIVERSITY SCHOOL OF MEDICINE DEPARTMENT OF ANATOMY AND NEUROBIOLOGY

Applications are invited for positions available at the assistant, associate, and full professor level from candidates with research interests related to the nervous system. Particular attention will be paid to candidates with a strong background in cell and/or molecular biology. They may work in any discipline ranging from electrophysiology and morphology to biochemistry and genetics, but they must have a real interest in teaching medical students and graduate students. Applicants should send curriculum vitae, a statement of research and teaching interests, and the names of three references to: **Professor G. D. Fischbach, Department of Anatomy and Neurobiology, Washington University School of Medicine, 660 South Euclid, St. Louis, Mo. 63110.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSIOLOGY. Tulane University School of Medicine, Department of Physiology, invites applications for tenure-track appointment at the assistant or associate professor level. Disciplines of specific interest are: cellular and integrative; cardiovascular; respiratory; and exercise physiology. Applicants must have Ph.D. degree with a record of productivity in research. Salary commensurate with experience and qualifications. Applicants should submit curriculum vitae, including (i) at least three recent publications, (ii) statement of teaching and research goals, (iii) current and pending research support, and (iv) three reference letters, to: **Nicholas R. Di Luzio, Ph.D., Professor and Chairman, Department of Physiology, Tulane University School of Medicine, 1430 Tulane Avenue, New Orleans, Louisiana 70112.** Application should be submitted no later than 15 January 1983. *Tulane University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

1 SEPTEMBER OPENING (FALL 1983)

ASSISTANT PROFESSOR undergraduate, Medical Technology Program. Ph.D. preferred. Applicants should have interest in research and teaching; mainly, immunohematology, histology, parasitology. Consideration given M.S., MT with certification (ASCP) in clinical specialty. Salary, rank commensurate experience. *Equal Opportunity/Affirmative Action Employer.* Résumé and three references by 1 March 1983 to: **Dr. Michael Chenouda, Coordinator, Medical Technology Program, Department of Natural Sciences, York College, City University of New York, Jamaica, New York 11451.**

ASSISTANT PROFESSOR OF ANATOMY

Applications from cellular neurobiologists are invited for a tenure-track assistant professor position in the Department of Anatomy, Emory University School of Medicine. Candidates should have at least 2 years of postdoctoral training in cellular neurobiology and a suitable background for teaching gross anatomy to professional students. Research interests in neuron development, gene expression, or cellular neuroendocrinology would be of particular interest. Deadline for receipt of applications is 15 December 1982. Send curriculum vitae, names of four referees, and description of research interests and goals to: **Dr. Jerome Sutin, Chairman, Department of Anatomy, Emory University School of Medicine, Atlanta, Georgia 30322.** *Emory University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF ANATOMY

The Department of Anatomy, University of Missouri-Columbia, School of Medicine, invites applications for a faculty position at the level of assistant professor. Applicants should have at least 1 year of postdoctoral experience following the receipt of a Ph.D. or M.D. We seek faculty members with excellence and dedication to the teaching of gross anatomy or histology and whose research interests are directed towards molecular neurobiology, neuroendocrinology, or cell biology. The department is seeking an individual with special expertise and background in organ and tissue culture techniques. The candidate will have an opportunity to join an active dynamic department in the process of renovation of the entire physical plant. Instrumentation is available in the form of transmission and scanning electron microscopy, coupled with core radioimmunoassay, immunocytochemical laboratories, tissue and organ culture facilities, and fully staffed histology and immunochemistry units. Interested applicants should send curriculum vitae, a brief summary of research interests and goals, and the names of three referees by 1 January 1983 to:

Dr. David E. Scott
Department of Anatomy
University of Missouri-Columbia
Columbia, Missouri 65212

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The Department of Chemistry at Purdue University solicits applications for an **ASSISTANT PROFESSOR** level, tenure-track, position in any area of organic chemistry, effective August 1983. Minimum requirements include a Ph.D. in chemistry and exceptional promise in research and teaching at the undergraduate and graduate levels. Curriculum vitae, including undergraduate and graduate transcripts, a summary of planned research, and three letters of recommendation should be sent by 15 January 1983 to: **Professor D. W. Margerum, Head, Department of Chemistry, Purdue University, West Lafayette, Ind. 47907.** *Purdue is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR IN PHARMACOLOGY and appropriate clinical department. Opportunity to conduct fundamental research in Pharmacology Department and continue limited clinical activities. A new Clinical Pharmacology Program at the University of Florida is searching for a tenure-track faculty member. Applicant must be capable of establishing independent research program (preferably in cellular or molecular pharmacology) and will have responsibilities in teaching and patient care. Anticipated start date is 1 July 1983. Position requires an M.D., eligibility for Board-certification, and includes active dual appointment in appropriate clinical department with commensurate salary. Applicants may apply by sending curriculum vitae, outline of academic interests, and names of three references to: **Warren Ross, M.D., Box J-267 JHM Health Center, Gainesville, Florida 32610,** by 15 January 1983. *Equal Opportunity/Affirmative Action Employer.*

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ASSISTANT PROFESSOR OF CHEMISTRY. A tenure-track position is available for September 1983. The area in which the appointment will be made is unspecified; however, preference will be given to candidates from interdisciplinary areas, particularly electrochemistry, physical chemistry of polymers, organometallic chemistry, and biophysical chemistry. Strong interests and potential of excellence in both teaching and research are expected. Applications will be accepted up to 15 December 1982. Send résumé, three letters of recommendation, and summary of research plans to: **Dr. T. P. Fehlner, Department of Chemistry, University of Notre Dame, Notre Dame, Ind. 46556.** The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.

The G. W. C. Whiting School of Engineering of The Johns Hopkins University invites applications for a tenure-track appointment in **ENVIRONMENTAL ENGINEERING** at the **ASSISTANT OR ASSOCIATE PROFESSOR** level in the Department of Geography and Environmental Engineering. Responsibilities involve participation in and supervision of research and graduate and undergraduate teaching. Candidates should have research interests in biological or chemical processes in water and wastewater treatment systems and in natural waters. Applicants should send a résumé and the names of three referees by 1 December 1982 to: **Professor M. Gordon Wolman, Department of Geography and Environmental Engineering, The Johns Hopkins University, Baltimore, Md. 21218.** The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT/ASSOCIATE PROFESSOR OF MICROBIOLOGY. 1983-1984 time frame. Tenure-track appointments (two positions). Individuals should have an M.D. and/or Ph.D. in microbiology, biochemistry, or a closely related area, with 2 years of postdoctoral training in the area of molecular genetics, molecular or cell biology. Send curriculum vitae, publication list, and the names of three references to: **Box S, Department of Microbiology, Graduate Biology Building, State University of New York (SUNY) at Stony Brook, Stony Brook, N.Y. 11794.** SUNY, Stony Brook, is an Equal Opportunity/Affirmative Action Employer. AK 446.

ASSISTANT OR ASSOCIATE PROFESSOR OF PHARMACOLOGY. Northeastern Ohio Universities College of Medicine, Program in Pharmacology, invites applicants for tenure-track appointment at the assistant or associate professor level to work with Martin D. Schechter, Ph.D., professor and acting chairman, Program in Pharmacology. Applicants must have Ph.D. and/or M.D. degree with a record of productivity in research, preferably in the areas of psychoneuropharmacology or toxicology. Candidate should be capable of teaching outside area of research expertise to medical and graduate students. Applicant should submit curriculum vitae, bibliography, statement of teaching and research goals, research funds, and names of three references to: **Office of the Provost, Northeastern Ohio Universities College of Medicine, Rootstown, Ohio 44272.** An Equal Opportunity/Affirmative Action Employer.

The Department of Land, Air and Water Resources, University of California, Davis, announces an **ASSISTANT PROFESSOR** position in **SOIL SCIENCE** in the area of soil genesis and morphology. This tenure-track (11 months) position will be divided 25 percent teaching and 75 percent research.

Qualifications: A Ph.D. in soil science with undergraduate training in soil science or geology. Applicants should have field experience and an interest in soil-geomorphic relationships.

The appointee will be expected to teach undergraduate courses in genesis, morphology and management of salt affected soils and develop a graduate course in soil genesis. In addition, the appointee will share teaching duties for a summer field course. Additional teaching duties include advising of undergraduate and graduate students. The appointee will be expected to develop a research program in soil genesis and geomorphology.

Applicants: Applicants should submit curriculum vitae, transcripts, statement of research and teaching interests and background in each, copies of publications and manuscripts, and the names and addresses of at least three references to: **M. J. Singer, Chair, Search Committee, Department of Land, Air and Water Resources, 171 Hoagland Hall, University of California, Davis, California 95616,** by 10 January 1983.

The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR OF PHARMACOLOGY

The Department of Pharmacology, University of Health Sciences/The Chicago Medical School (UHS/CMS), invites applications for a tenure-track position at the assistant or associate professor level. A Ph.D. in pharmacology and two or more years of postdoctoral experience and training in one of the following fields is required: cardiovascular or renal pharmacology, immunopharmacology, toxicology, or neuropharmacology. Applicant should have demonstrated ability for independent research. Applicant will be expected to participate in teaching of medical and graduate students. We provide excellent facilities, stimulating environment, and a competitive salary. Please submit curriculum vitae, description of accomplished research, and names of three references to: **Dr. S. Ehrenpreis, Chairman, Department of Pharmacology, UHS/CMS, 3333 Green Bay Road, North Chicago, Ill. 60064. UHS/CMS is an Equal Opportunity/Affirmative Action Employer.**

ASSISTANT PROFESSOR—RADIATION THERAPY

Requirements: M.D. and Board-qualified (prefer Board-certified) in therapeutic radiology. Post residency, academic experience, and experience and training in interstitial radiation therapy. Must be interested and experienced in academic research and writing. Salary open to negotiation, depending upon experience. Apply to: **Search Committee, Department of Therapeutic Radiology, Box 494 University Hospitals, 420 Delaware Street, SE, Minneapolis, Minnesota 55455, before 1 March 1983.**

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

ASSISTANT RESEARCH PHYSIOLOGIST POSITION available 1 January 1983 for a recent Ph.D. in biophysics or physiology. Research projects involve recording with voltage-sensitive and ion-specific microelectrode from in vitro eye tissues. Background in intracellular recording and eye physiology required. Previous postdoctoral experience desirable. Send curriculum vitae to: **Dr. Roy H. Steinberg, Department of Physiology, University of California, San Francisco, Calif. 94143.**

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ASSISTANT RESEARCH SCIENTIST

Assistant research scientist position in university Biochemistry Department working on the development of therapeutic agents for sickle cell disease. Research will involve the design and synthesis of active site directed reagents which interfere with the polymerization of deoxyhemoglobin S. Compounds found to be active in vitro will have to be prepared in larger amounts (50 to 100 grams) and as radiolabeled derivatives, and their toxicity and effects on red cell viability studied in suitable animal models. The individual will be expected to prepare results of research for publication and presentation at scientific meetings. A Ph.D. degree in chemistry, medicinal chemistry, or related field and at least 2 years of further postdoctoral training are required. The applicant must have a strong background in organic synthesis including the use of high-field NMR spectroscopy for structure identification. Experience in medicinal chemistry related to problems of drug design and pharmacological testing is needed. Salary is \$20,000. The work week is 40 hours. Send curriculum vitae and three letters of recommendation to:

**Job Service of Iowa
1810 Lower Muscatine Road
Iowa City, Iowa 52244
Attention: Dave Seibel
J.O. Number 1344638**

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ASSISTANT SPECIALIST position available for individual with background in industrial toxicology. Responsibilities include active participation in research projects of the Northern California Occupational Health Center and technical support training graduate students in toxicology. A master's or doctoral degree in toxicology or related field is required and preference will be given to applicants with laboratory research experience. Salary: \$18,552 to \$21,252, commensurate with experience. Application deadline: 30 November 1982. Send résumé to: **E. T. Wei, Ph.D., School of Public Health, University of California, Berkeley, Calif. 94720. The University of California is an Equal Opportunity/Affirmative Action Employer.**

Post Doctoral Scientist Tumor Cell Biology

SmithKline Beckman, a leader in pharmaceutical research and technology, is seeking a Post Doctoral Scientist to join an interdisciplinary research program directed by Dr. George Poste in an environment designed to foster creative, innovative research and to promote personal and professional growth.

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Send curriculum vitae and names and addresses of at least three references to:

Dr. R. P. Burchard and Dr. F. E. Hanson
Chairmen, Search Committee
Department of Biological Sciences
University of Maryland Baltimore County
Catonsville, Maryland 21228

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POSTDOCTORAL RESEARCH OPPORTUNITIES

Applications are invited for research awards at the Goddard Institute for Space Studies, a division of Goddard Space Flight Center. The awards are part of the associateship program of the National Research Council. Opportunities at GISS are available in the fields of

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Information on these research fields and application materials may be obtained from GISS or the NRC:

Associateship Programs,
JH608-G2
National Research Council
2101 Constitution Avenue
Washington, DC 20418

Goddard Institute for
Space Studies, G2
2880 Broadway
New York, NY 10025

POSITIONS OPEN

ASSOCIATE DEAN Ontario Agricultural College University of Guelph

Applications are invited for the position of **associate dean**, Ontario Agricultural College (OAC).

The position, available 1 July 1983, requires a recognized scholar with experience in the development and administration of research programs.

The principal duties of the position will be to coordinate and promote research and agricultural services in the OAC, and to review research and service priorities of the OAC. In addition, the successful applicant will be expected to share the administrative duties of the OAC, and in the absence of the dean, be responsible for his administrative responsibilities.

The term of office is 5 years, with a possible 5-year extension upon review. The salary is negotiable. The successful applicant will hold an academic appointment in the appropriate department.

Enquiries and applications, which will be treated in confidence, should be addressed to: **The Dean, Ontario Agricultural College, University of Guelph, Guelph, Ontario, Canada N1G 2W1.**

Application should include complete curriculum vitae and the names of three referees.

Closing date for applications: 30 November 1982. Position subject to final budgetary approval.

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

ASSOCIATE PROFESSOR OF RADIATION THERAPY

Joint Center for Radiation Therapy and Department of Radiation Therapy, Harvard Medical School, invite applications for position of associate professor. Candidates should have strong interest in Friend murine leukemia virus hematopoiesis as it relates to bone marrow transplantation and be capable in radiation biology. Application should include curriculum vitae, bibliography, research goals summary, and names of three professionals acquainted with applicant's work. Send applications to: **Samuel Hellman, M.D., Joint Center for Radiation Therapy, 50 Binney Street, Boston, Mass. 02115.**

Harvard University and Joint Center for Radiation Therapy are Equal Opportunity Employers with an Affirmative Action Program, and encourage applications from women and members of minority groups.

ASTRONOMY

Pending final budgetary approval, the Department of Astronomy of the University of California at Berkeley expects to make one tenure-track appointment in astronomy/astrophysics at the assistant professor level, effective 1 July 1983. Applicants should send, as soon as possible, curriculum vitae, bibliography and a brief statement of research interests, and names of at least three references to: **Chairman Hyron Spinrad, Department of Astronomy, University of California, Berkeley, California 94720.** All materials should be received by 1 December 1982.

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

Ph.D. BACTERIAL IMMUNOLOGIST—Research associate for study of immune responses to *Haemophilus influenzae* as part of new NIH project. Minimum of 2 to 3 years of postdoctoral experience required with background in immunochemistry and hybridoma methodology. Academic appointment and salary commensurate with qualifications. Position available immediately. Send curriculum vitae and names of three references to: **Joel I. Ward, M.D., Pediatric Research, University of California, Los Angeles, Harbor-UCLA Medical Center, Torrance, Calif. 90509.** *Equal Opportunity Employer.*

CHAIRPERSON: ANATOMY. Howard University, College of Medicine, Washington, D.C., invites applications from individuals with demonstrated leadership in research, administrative experience, and commitment to education in the health sciences. The successful applicant will be expected to play a major role in expanding the graduate program and furthering interdisciplinary research. Send letter of interest with curriculum vitae and the names of at least three references to: **Dr. G.-M. Moolenaar, Anatomy Search Committee, Department of Physiology, Howard University, College of Medicine, Washington, D.C. 20059.** Closing date: 15 January 1983. *Howard University is an Equal Opportunity Employer.*

POSITIONS OPEN

BIOCHEMIST. Challenging group leader research position available immediately in food product development area. A major food processor located in the East is seeking a biochemist/microbiologist experienced in enzymology for basic and applied research programs in food processing. Qualified candidates should have a Ph.D. in one or more of these fields and be experienced in industrial enzymes. Prior experience in the food industry desirable. Submit résumé and salary requirements to: **Box 281, SCIENCE.**

BIOCHEMIST: Postdoctoral position available. Background in proteins, enzymology, and amino acids needed for basic studies in enzymes. Work will stress structure-function and active site investigations. Send résumé and references to: **Dr. Sarah Ratner, Department of Biochemistry, Public Health Research Institute, 455 First Avenue, New York, N.Y. 10016.** *An Equal Opportunity Employer.*

BIOLOGY, MOLECULAR. Assistant professor position available 1 September 1983. Responsibilities include the design and teaching of a one-semester nonlaboratory course in molecular biology, a one-semester laboratory course with emphasis on the development of plants and animals, and one other one-semester advanced offering in molecular biology. The incumbent also will supervise advanced undergraduate research projects. Ph.D. required: *women and minorities are encouraged to apply.* Send curriculum vitae, undergraduate and graduate transcripts, and three letters of recommendation by 15 November 1982 to: **Dr. Robert Chase, Chairman, Search Committee, Department of Biology, Lafayette College, Easton, Pa. 18042.** *Equal Opportunity Employer, M/F.*

CHAIR, DEPARTMENT OF MEDICAL TECHNOLOGY

Texas Tech University Health Sciences Center (TTUHSC) is searching for a chairperson for its B.S. program in medical technology (MT). The TTUHSC consists of Schools of Allied Health, Medicine, and Nursing; other schools are planned. The MT Department is to be housed in the School of Allied Health. Responsibilities include the research, fiscal management, community service, and clinical practice at four Regional Academic Health Centers. Doctorate with MT (ASCP). Rank of professor: salary mid-to-upper \$40,000's. Applications and three letters of reference must be received by 15 November 1982. Starting date: 1 January 1983 or as soon thereafter as possible. Send résumé and letters to:

**Dr. Robert A. Cornesky, Dean
School of Allied Health
Texas Tech University
Health Sciences Center
Lubbock, Texas 79430
Telephone: 806-743-3223**

Texas Tech University Health Sciences Center is an Equal Opportunity/Affirmative Action Employer.

CHAIRMAN DEPARTMENT OF FOOD SCIENCE College of Life Sciences and Agriculture University of Maine at Orono

Qualifications: An earned doctorate is required, with at least one degree in food science. Candidates should have a significant record of research, scholarship, and teaching, and a record of professional leadership and involvement. Administrative experience is preferred. Starting date: 1 July 1983. Application deadline: 31 December 1982, or until suitable candidate is identified. Send letter of application, curriculum vitae, and names and addresses of three professional references to: **Chairman, Food Science Search Committee, 105 Winslow Hall, University of Maine, Orono, Maine 04469.**

An Equal Opportunity/Affirmative Action Employer

ENDOCRINOLOGIST

A tenure-track position at the assistant professor level is expected to be available 1 September 1983. Duties include teaching comparative endocrinology at the graduate level and animal physiology to undergraduate majors.

The successful candidate will be expected to develop a strong research program in area of specialization. Preference given to those with postdoctoral experience who can interact with colleagues in renal, electrolyte, or reproductive physiology.

Send curriculum vitae and addresses of three references by 30 November 1982 to: **Dr. Nancy B. Clark, Physiology Section, UNIVERSITY OF CONNECTICUT, Biological Sciences, U-42, Storrs, Conn. 06268.** *An Equal Opportunity/Affirmative Action Employer. (SEARCH 3A15.)*

The European molecular biology laboratory, a research institute founded by 10 member states and situated in Heidelberg, Germany, invites applicants for the following post

BIOCHEMIST

To work on the biochemistry of protein nucleic acid complexes.

The ideal candidate should have a PhD and post-doctoral experience, and is expected to undertake an independent research program. In addition, he or she should be versed in the purification of such complexes (possibly through the construction of recombinant DNA overproducers) in sufficient amounts for structural studies to be undertaken in collaboration with the existing crystallographic team.

Knowledge in one of the three official languages (English, French and German) is required.

The net salary offered will be above average. Certain allowances are payable in addition, such as family allowance, children's allowance and non-resident allowance, depending on personal circumstances.

An initial contract of 3 years' duration will be offered to the successful candidate, which may be renewed.

Please write briefly for an application form, quoting reference no. 82.13 to :
EMBL, Personnel Section, Postfach 10.2209
D - 6900 HEIDELBERG - GERMANY

Pharmacologist Cardiovascular Pharmacology

SmithKline Beckman, a world leader in pharmaceutical research and technology, is seeking an outstanding scientist to collaborate with others in the development and direction of a program in Cardiovascular Evaluation. The position offers significant opportunities for innovative basic research, participation in the development of new directions within the research division and career growth potential.

The successful candidate will apply known state-of-the-art technologies/theories and develop new methodologies where applicable to the discovery of drugs to treat cardiovascular disease.

Preference will be given to candidates who have:

- PhD in Pharmacology with 2 or more years relevant post doctoral experience.
- Formal training and experience in cardiovascular pharmacology including state-of-the-art *in vivo* technologies.
- Excellent communication skills.
- Capacity to initiate and develop novel research programs in cardiovascular pharmacology.

SmithKline Beckman offers an excellent compensation and benefits package along with opportunity for personal and professional growth. Please forward your resume in confidence to: Walter B. Flagg, SMITHKLINE BECKMAN CORPORATION, 1578 Spring Garden Street, Philadelphia, PA 19101. We are an Equal Opportunity Employer, M/F/H/V.

SK&F
a SmithKline company

DIRECTOR OF PROGRAMS AND SCIENTIFIC ADVISOR

Bureau of Medicine and Surgery

NAVAL MEDICAL RESEARCH AND
DEVELOPMENT COMMAND (NMRDC)
Bethesda, Maryland 20814

Senior Executive Position —
\$56,945 - \$64,600 per annum
(Current pay cap limits salary to \$58,500)
(Readvertisement — Previous applicants do not
have to reapply under this announcement).

The Director of Programs and Scientific Advisor provides technical program direction for a broad multidisciplinary research, development, test and evaluation (RDT&E) effort directed toward assuring the health, safety and readiness of Navy and Marine Corps personnel worldwide. The incumbent is responsible to the Commanding Officer for the planning, reviewing, directing and technical management of the following highly diversified research programs: Submarine and Diving Medicine, Aviation Medicine, Human Performance, Fleet Health Care Systems, Infectious Diseases, Fleet Occupational Health, Oral and Dental Health, and Electromagnetic Radiation.

To be considered minimally qualified, the incumbent must have a Bachelor's Degree (Ph.D or M.D. preferred) from an accredited college or university with major study in an academic field relating to the health sciences or allied sciences pertinent to the research program areas of this position; incumbent's experience must have been of sufficient scope and quality to be able to carry out effectively the managerial and technical duties of the position. Experience, education, accomplishments, and/or potential must indicate competence to provide leadership for the following: Managerial Elements: (1) Integration of Internal and External Program/Policy issues; (2) Organizational Representation and Liaison; (3) Direction and Guidance of Programs, Projects, or Policy Development; (4) Resource Acquisition Administration; (5) Utilization of Human Resources; (6) Review and analysis of Implementation and Results; Technical Elements: (1) Knowledge of biomedical research as indicated by extensive background as a researcher, or research manager; (2) Ability to direct the formulation, planning, review, implementation and documentation of a diversified medical research and development program. (3) Knowledge of medical RDT&E performed both in private and government sectors; (4) Ability to manage the technical aspects of comprehensive medical research and development programs executed by Navy and contract organizations.

Candidates who meet the basic qualifications will be evaluated by an ADHOC panel on the following factors: scientific reputation/peer recognition; training and education; and honors and awards, and the degree to which they exceed the minimally qualified level of the professional/technical and managerial/executive qualifications. Additional information may be obtained from Mrs. Ruth Hladchuk, Personnel Staffing Specialist, (202) 295-1420.

Applications (Personal Qualifications Statement, SF-171) are to be sent to:

Consolidated Civilian Personnel Office
Northwest, National Naval Medical Command
National Capital Region, Tower-13
Bethesda, Maryland 20814.
Announcement No. NMRDC-40-82 (S)

Applications must be postmarked no later than January 7, 1983.

An Equal Opportunity Employer

POSITIONS OPEN

BIOLOGY DEPARTMENT CHAIRPERSON: Tenure-track position, to begin September 1983. Rank and salary commensurate with experience. Administrative responsibilities include providing leadership in curriculum development, budgeting, scheduling, personnel evaluation, and so forth, for eight-member department, teaching reduced load, and research. Teach four units plus Winterim (4-1-4 academic year). Initiate active research program involving undergraduates. Ph.D., teaching/administrative experience, and commitment to undergraduate teaching required. Preference will be given to applicants in the areas of genetics, molecular biology, or botany (excluding plant physiology), but candidates with related specialties will be considered. Submit interest letter, curriculum vitae, transcripts, and names of three references by 15 November 1982 to: **Biology Chair Search, University of Puget Sound, P.O. Box 7297, Tacoma, Wash. 98407. An Equal Opportunity/Affirmative Action Educator/Employer.**

DIRECTOR BIOMEDICAL ENGINEERING

Position available for individual with Ph.D. and/or M.D. who has at least one engineering degree. Position offers challenge and opportunity to expand biomedical engineering research program involving the University area hospitals, and the medical school. It is desirable that applicants have experience in biomedical engineering research and teaching.

The University of Akron, the third largest state university in Ohio, is located within a culturally rich region of concentrated industrial and research activities as well as outstanding health care facilities.

Salary is competitive, fringe benefits are outstanding, and housing is attractively priced.

Send résumé and names of three references by 15 November 1982 to:

**Dean Louis A. Hill, Jr.
College of Engineering
The University of Akron
Akron, Ohio 44325**

All materials, including letters from references, transcripts, and so forth, will be considered for the position available as early as January 1983. *The University of Akron is an Equal Education/Employment Institution.*

ENTOMOLOGIST—Assistant professor, 12-month, tenure-track position for entomologist with background in population genetics and/or population ecology to conduct research on the insect problems affecting urban society in New Jersey with emphasis on household and structural pests, and to develop and coordinate a program in urban pest management including its educational components, and to teach a graduate course(s) in his/her specific interest area. Position is budgeted 2/3 research, 1/3 extension. Send application, including résumé, transcripts, and three letters of reference, to: **Dr. H. T. Streu, Department of Entomology and Economic Zoology, Rutgers—The State University of New Jersey, New Brunswick, N.J. 08903.**

FACULTY POSITION IN DEVELOPMENTAL BIOLOGY

Applications are invited for a tenure-track position in the Department of Biological Sciences at Carnegie-Mellon University. Applicants must be strongly motivated toward carrying out research in cell and/or developmental biology and must be qualified to supervise graduate students and to teach in these areas. We are especially interested in individuals whose research programs combine genetic and molecular approaches to cell and/or developmental biology. Candidates who are just completing their postdoctoral research training will be considered for a position of starting assistant professor; exceptionally well-qualified individuals may be considered for appointment at a higher level. To apply, send curriculum vitae and a concise description of research interests (no more than three pages) and, in addition, have three letters of recommendation sent to:

**Dr. Chien Ho
Department of Biological Sciences
Carnegie-Mellon University
4400 Fifth Avenue
Pittsburgh, Pa. 15213**

Carnegie-Mellon University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

DIRECTOR NEW YORK STATE AGRICULTURAL EXPERIMENT STATION AND ASSOCIATE DIRECTOR FOR RESEARCH COLLEGE OF AGRICULTURE AND LIFE SCIENCES, CORNELL UNIVERSITY

Cornell University invites applications and nominations for the position of director, New York State (NYS) Agricultural Experiment Station, Geneva, N.Y., and associate director for research of the College of Agriculture and Life Sciences, Ithaca, N.Y. Responsibilities include leadership and administration of the Station, involvement in the College's overall research program, and relationships with state and federal agencies and constituencies. The station has five of the college's 22 departments, 66 faculty, a 650-acre campus, and a \$9 million budget.

Qualifications must include an earned doctorate in one of the agricultural or life sciences; demonstrated research and administrative accomplishments; and ability to work effectively with research faculty.

Nominations and applications, including a résumé of professional experience and qualifications, will be received until 31 December 1982. Applications should be addressed to:

**Dr. Kenneth E. Wing
Associate Dean
NYS College of Agriculture and Life Sciences
Cornell University
102 Roberts Hall
Ithaca, N.Y. 14853
Telephone: 607-256-7720**

An Equal Opportunity/Affirmative Action Employer

EVOLUTIONARY PLANT ECOLOGIST

Assistant Professor, tenure-leading, August 1983. Requires Ph.D. All research programs emphasizing a strong theoretical perspective in plant ecology/plant population biology will be carefully considered. Particular consideration will be given to applicants with research programs concerning life history adaptations and demography, pollination biology, genetical ecology, physiological ecology, or plant/animal interactions (plant perspective). Responsibilities include development of a productive research program, advising M.S. and Ph.D. students, and participation in the teaching program. Salary competitive. Submit curriculum vitae, three letters of reference, and a statement of research goals by 15 November to: **Dr. Anthony Joern, School of Life Sciences, University of Nebraska—Lincoln, Lincoln, Nebraska, 68588-0118. Affirmative Action/Equal Opportunity Employer.**

FACULTY POSITION UNIVERSITY OF LOUISVILLE

FACULTY POSITION in an innovative, dynamic, multidisciplinary child psychiatric setting, including model acute short-term inpatient service, active consultation/liaison program in a major pediatric hospital, day hospital, and extensive out-patient programs in fourth oldest child guidance clinic in the nation. Duties will include direct and indirect patient care, teaching and supervision of fellows, residents, and students. Opportunity for part-time private practice; 10 to 20 percent of time for research and scholarly activities. Salary competitive with excellent benefit package. Louisville is located in north-central Kentucky on the Ohio River with temperate climate. This community of over 900,000 thrives on the arts, sports, and its natural beauty; hiking, biking, and water sports are popular.

Submit curriculum vitae to: **Mohammad Shafii, M.D., Professor and Director, Child Psychiatric Services, University of Louisville School of Medicine, 200 East Chestnut Street, Louisville, Kentucky 40292. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL FELLOW

Research institute is seeking Ph.D. (one or more). The successful applicant will participate in program project to study the growth, function, and aging of differentiated cells in culture. Knowledge of cell biology or biochemistry is necessary. Special consideration will be given to candidates with experience in culture or biochemical function of differentiated cells.

Send résumé and three letters of reference to:

**Personnel Office
W. Alton Jones Cell Science Center
Old Barn Road
Lake Placid, New York 12946**

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

FACULTY POSITION—GENETICS

The Biology Department of The College of Charleston is conducting a search for a tenure-track position at the assistant or associate professor level. The appointment will include teaching responsibilities in undergraduate genetics and general biology courses, and the development of an active research program in some area of organismal or population genetics. It is anticipated that the person appointed will develop an upper-level undergraduate course in population genetics. A Ph.D. is required; preference will be given to applicants with prior teaching experience. Candidates should send transcripts, curriculum vitae, and three letters of recommendation by 19 November to: **Dr. Harry Freeman, Chairman, Search Committee, Department of Biology, College of Charleston, Charleston, S.C. 29424. Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION—NUTRITION at the University of Florida at the level of assistant, associate, or full professor; 12-month, tenure-accruing, teaching-research appointment in the Food Science and Human Nutrition Department. Candidates should have a Ph.D. in nutrition or closely related field, excellent communication skills, and a general knowledge of food science. Teaching duties include an undergraduate course in introductory nutrition-food science offered to the university at large. Independent research and ability to attract research funds will be expected. Cooperative research programs exist with faculty in the College of Medicine and Veterinary College. Submit curriculum vitae, official transcripts, and at least three letters of reference by 1 February 1983 to: **Dr. J. L. Oblinger, Chairman, Search and Screen Committee, Food Science and Human Nutrition Department, University of Florida, Gainesville, Florida 32611. Telephone: 904-392-1991. Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITIONS

The Department of Microbiology, College of Medicine, University of California, Irvine, has openings for two assistant (or possibly associate) professors in the tenure-track series. Individuals with research interests and experience in the control of gene expression in microorganisms, viruses, cultured animal cells, or the immune response are invited to apply. Preference will be given to those using recombinant DNA methods in their research. Teaching duties will include courses presented to graduate and medical students. Send curriculum vitae and three letters of reference to: **Chairman, Microbiology Search Committee, Department of Microbiology, University of California, Irvine, Calif. 92717. An Affirmative Action/Equal Opportunity Employer.**

HEAD, DEPARTMENT OF MARINE BIOLOGY

Texas A & M University at Galveston; effective as soon as possible but no later than 1 June 1983. The appointment will be a 12-month, tenure-track position at the full professor level. The applicant must have a Ph.D. and demonstrate skills of excellence and leadership in administration, teaching, and research in the biological sciences. Preference given to applicants with interests in analysis and management of marine fisheries communities and in fisheries population dynamics. Salary commensurate with experience. Submit curriculum vitae and three letters of recommendation by 1 December 1982 to: **Head, Department of Marine Biology, Texas A & M University at Galveston, Galveston, Texas 77553.**

IMMUNOLOGIST

The Division of Biology at Kansas State University has a tenure-earning position available at the assistant or associate professor level effective 1 September 1983. Applications are invited from outstanding candidates in the immunological sciences, including the areas of mechanisms of autoimmunity, biochemical mediators of the immune system, mechanisms of host resistance, regulation of the immune response, and immunochemistry. The successful applicant will be expected to establish a vigorous and creative research program and to participate in graduate and undergraduate teaching. Postdoctoral experience will be required. Candidates should apply by 17 December 1982. Submit curriculum vitae, three letters of reference, and a brief description of future research plans to:

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

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



BioTechnica International, Inc.

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

BioTechnica International, Inc., a biotechnology company located in Cambridge, Massachusetts, has additional openings at the Senior Scientist and Research Scientist levels in the areas of cDNA cloning, organic chemistry, and genetics of gram positive organisms. BTI offers excellent compensation, a full benefits program, and opportunities for professional growth. Please send letter of application, curriculum vitae, and names of three references by December 15, 1982, to:

**Personnel Director
BioTechnica International, Inc.
85 Bolton Street
Cambridge, MA 02140.**

SENIOR SPECIALIST IN SCIENCE AND TECHNOLOGY

GS-17 \$57,500

THE LIBRARY OF CONGRESS CONGRESSIONAL RESEARCH SERVICE WASHINGTON, D.C. 20540

Qualifications: Three years of progressively responsible specialized experience in professional research, college or university teaching, or other employment specifically involving national and international science and technology policy, and national recognition as an authority in the field. One year of the experience must have been at the GS-15 level in the federal service or at a comparable level of difficulty outside the federal service.

Please call: **The Library of Congress
Recruitment and Placement Office
Telephone: 202-287-5620**

for a copy of Vacancy Announcement #20669 and an application form.

Deadline for receipt of application is 24 November 1982.

Sensitive position requiring appropriate clearance.

Civil Service status not required—*Equal Opportunity Employer.*

MARINE SCIENTIST

Postdoctoral Research Position

The Environmental Sciences Division of the Lawrence Livermore National Laboratory has a postdoctoral position available immediately in Marine Science. The appointment will be for two years with a possible extension to three years. The scientist selected will assume primary responsibility for a new research effort in one of the following areas: (1) the effects of pollutants on the reproduction and development of estuarine flatfish, (2) the transfer of pollutants and bulk sewage organics from benthic infauna to fish, or (3) the effects of oil on the reproduction and growth of benthic infauna. Requirements for the position include a recent PhD in Marine Science with emphasis in Fisheries Biology, Invertebrate Zoology, or Benthic Processes. Some work experience in one

of these subject areas is desirable. The successful applicant will join an interactive group of marine scientists and geochemists involved in a variety of marine research projects. Marine laboratory facilities and extensive analytical capabilities are available for a projected expansion of ongoing marine science research.

Qualified candidates are invited to forward their curriculum vitae and 3 letters of recommendation to: **Earl G. Morrell, Employment Division, LAWRENCE LIVERMORE NATIONAL LABORATORY, P.O. Box 5510, Dept. KSC-102, Livermore, CA 94550.** U.S. Citizenship required. An equal opportunity employer, m/f/h.

University of California



**Lawrence Livermore
National Laboratory**

An Equal Opportunity Employer M/F

POSITIONS OPEN

FACULTY POSITION in physical chemistry or chemical physics. Applications or nominations are invited for an opening in the Department of Chemistry at Massachusetts Institute of Technology (MIT). Applicants should have demonstrated ability to do outstanding independent research in chemistry and show promise of excellence in teaching. Appointment will probably be at the assistant professor level, but applications and nominations for other levels will be considered. Candidates should submit curriculum vitae, a publications list, and a description of research interests, and have three letters of recommendation sent not later than 15 February 1983 to: **Professor C. T. Walsh, Room 18-399, MIT, Cambridge, Mass. 02139.** MIT is an Equal Opportunity/Affirmative Action Employer.

HEAD, DEPARTMENT OF GENETICS AND DEVELOPMENT

The **UNIVERSITY OF ILLINOIS** at **URBANA-CHAMPAIGN** invites applications and nominations in its reopened search for the headship of this 20-person department. The candidate should be an active and accomplished scientist concerned with **SYNTHETIC EVOLUTIONARY PERSPECTIVES IN GENETICS AND DEVELOPMENT.** The person should have the capability for strong and creative leadership in research and curriculum development. The department offers B.S., M.S., and Ph.D. degrees within the School of Life Sciences. The appointment, with duties beginning August 1983, subject to budgetary approval, will be at the rank of professor and the salary is negotiable. Applicants should send curriculum vitae and the names of three references to: **Department of Genetics and Development, University of Illinois, 515 Morrill Hall, 505 South Goodwin Avenue, Urbana, Ill. 61801; telephone 217-333-7814.** All completed applications received before 20 December 1982 are assured consideration. The University of Illinois at Urbana-Champaign is an Affirmative Action/Equal Opportunity Employer.

MOLECULAR BIOLOGIST

Nestlé is seeking a molecular biologist for the expanding Genetics and Molecular Biology Group of its **RESEARCH LABORATORIES.**

The appointee will work on the application of genetic techniques to the development of food processing microorganisms, including the use of recombinant DNA technology to clone genes of secondary metabolism and those applicable to food manufacturing processes.

Candidates will have graduated in genetics or molecular biology and have subsequently gained a Ph.D. in the field of prokaryote cloning and have postdoctoral experience.

The position offers attractive compensation along with social benefits adapted to living conditions in Switzerland in addition to a pleasant location at La Tour-de-Peilz on the lake of Geneva.

Please apply, giving curriculum vitae and full details, to: **M. Germanier, Central Personnel Services, Nestec, 1800 VEVEY, Switzerland.**



POSTDOCTORAL FELLOW

Position available immediately for a recent Ph.D. to study the cell-mediated immune response in patients with intraocular malignancies and autoimmune diseases. Previous experience in cell-mediated immunity highly desirable. Send curriculum vitae with three references to: **Dr. Norman T. Felberg, Research Division, WILLS EYE HOSPITAL, 9th and Walnut Streets, Philadelphia, Pa. 19107.** Equal Opportunity Employer, M/F.

POSTDOCTORAL POSITION. Pharmaceutical, physicochemical, chemical engineering, or environmental scientist. Duties will include the design and conduction of research aimed at relating chemical structure to physicochemical properties of biologically important compounds. Some mathematical and computer background is helpful. Salary: \$17,000 per year. Submit résumé, transcript, and two letters of reference before 1 January 1983 to: **Dr. Samuel H. Yalkowsky, College of Pharmacy, University of Arizona, Tucson, Arizona 85721.** The University of Arizona is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

UNIVERSITY OF SASKATCHEWAN COLLEGE OF PHARMACY MASS SPECTROSCOPIST

A mass spectroscopist is required to work with the Drug Metabolism-Drug Disposition Research Group in the College of Pharmacy, University of Saskatchewan. The position involves the operation and routine daily maintenance of VG Micromass MM16F and 7070HS mass spectrometers and associated data systems. Familiarity with modern techniques such as positive and negative chemical ionisation and fast atom bombardment would be advantageous. Salary in accordance with experience. Please apply to:

Dr. K. K. Midha
College of Pharmacy
University of Saskatchewan
Saskatoon, Saskatchewan, Canada S7N 0W0

MOLECULAR GENETICIST, assistant professor, tenure-track. Beginning August 1983. Ph.D. and postdoctoral or equivalent professional experience required. Duties include graduate and undergraduate teaching and research in the areas of biochemistry, genetics, and molecular biology. The individual selected will be expected to establish and obtain support for an active research program within these general areas. Preference will be given to individuals who have direct experience with recombinant DNA technology and who can contribute to the development of a biotechnology program. Illinois Institute of Technology is a midwest center for science and technology with close ties to local industry. The department offers B.S., M.S., and Ph.D. degree programs in basic and applied areas of biology. Candidates should submit curriculum vitae, including a statement of research plans, and should arrange for the transmission of three letters of recommendation by 15 November 1982 to:

Professor Dale Webster
Chairman of Search Committee
Department of Biology
Illinois Institute of Technology (IIT)
Chicago, Illinois 60616

IIT is an Equal Opportunity/Affirmative Action Employer.

The University of Delaware announces a tenure-track position for **PHYSICAL/BIOLOGICAL ANTHROPOLOGIST** at the rank of assistant professor beginning September 1983. Preference will be given applicants with one or more years (post-Ph.D.) research and/or teaching and experience in skeletal analysis of archaeological materials. Position requires excellence in teaching courses in introductory biological anthropology, fossil hominids, primatology, and skeletal analysis. Send curriculum vitae and three reference letters by 15 December 1982 to: **Jay Custer, Search Committee, Department of Anthropology, University of Delaware, Newark, Del. 19711.** Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION. Available immediately to join a multidisciplinary project on two flaviviruses which are important problems in human public health. The project will utilize DNA cloning and monoclonal antibody technologies to clone, identify, and sequence genes for the major envelope proteins of the viruses. Other objectives will be to obtain efficient bioproduction of the viral proteins in recombinant microorganisms, to identify the antigenic domains of these proteins, and to study their biosynthesis in infected cells. A background in molecular biology, immunology, virology, or protein chemistry is desirable. Salary \$17,000 to \$19,000, commensurate with experience. Send résumé to: **Dr. Thomas L. Mason or Dr. Maurille J. Fournier, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003,** by 15 November 1982. An Affirmative Action/Equal Opportunity Employer.

UNIVERSITY OF SASKATCHEWAN COLLEGE OF PHARMACY POSTDOCTORAL POSITION/ RESEARCH ASSOCIATE

A research position is available with the Drug Metabolism-Drug Disposition Research Group in the College of Pharmacy, University of Saskatchewan. The position involves stereoselective synthesis and characterization of both haptens for radioimmunoassay and a variety of drug metabolites to serve as standards for analytical and drug disposition studies. Experience in synthetic organic chemistry is essential. Salary based on experience. Please apply to:

Dr. J. W. Hubbard
College of Pharmacy
University of Saskatchewan
Saskatoon, Saskatchewan, Canada S7N 0W0

POSITIONS OPEN

MICROBIOLOGIST with research emphasis in physiology. Assistant professor in Division of Microbiology, eligible for tenure review; Ph.D. required; commitment to undergraduate and graduate teaching and research, postdoctoral experience desired. Teaching duties include microbial physiology and pathogenic microbiology. Development of advanced specialty course and research program expected. Send curriculum vitae, reprints, statement of research program, and three letters of reference, to arrive no later than 14 January 1983, to: **Dr. L. R. Fox, Chairman, Department of Biological Sciences, Wichita State University (WSU), Wichita, Kans. 67208.** WSU is an Equal Opportunity/Affirmative Action Employer.

EXCELLENT OPPORTUNITY FOR PH.D. PHARMACOLOGIST

Position: Pharmacologist needed to start basic research and clinical program in a dynamic growing medical center. Program will focus on the cytotoxic interaction of chemotherapeutic agents with human cancer cells. Tenure track. Salary and academic title commensurate with qualifications.

Job description: A Ph.D. pharmacologist with background in drug interactions, mechanisms of action, and pharmacokinetics is sought to participate in the developmental therapeutics program. Program will involve a multidisciplinary approach and will actively involve the Departments of Pharmacology, Medicine, Surgery, Pathology, Radiation Therapy, and Private Industry. The major focus will involve the utilization of fluorescent probes to explore qualitative and quantitative molecular differences in human cancer cells relating to the cytotoxicity of chemotherapeutic agents. A background or interest in computer programming for quantitative image analysis systems is desirable.

Send résumé to: **Personnel Manager, Oklahoma Teaching Hospitals, 940 Northeast 13, Oklahoma City, Oklahoma 73126.**

Equal Opportunity Employer

PHARMACOLOGIST. Emory University has a position open at the assistant professor or associate professor rank. Candidates must have doctoral or equivalent degree; for assistant professor rank, at least 1 year of postdoctoral research experience and potential to develop an independent research program; for associate professor rank, five or more years of experience in teaching and research in pharmacology or related discipline, evidence of excellent independent research, and current grant support. Strong commitment to teaching and research is essential. Preferred research interests are neuropharmacology or cellular and molecular pharmacology. Curriculum vitae, description of career goals, proposed research program, and three letters of recommendation must be received by 15 January 1983. Address to: **Dr. Neil C. Moran, Chairman, Department of Pharmacology, Emory University, Atlanta, Ga. 30322.**

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PLANT SCIENTIST—TISSUE CULTURIST

A position is available at the Corporate Research Laboratory of George J. Ball, Inc., West Chicago, Illinois. The qualifications for the position are: M.S. in horticulture, agronomy, botany, or plant sciences, with a strong background in plant physiology. An interest in developing the projects of cell and tissue culture in flower and vegetable crops. Send résumé to:

Dr. Irwin Chu
Corporate Vice President—
Research and Development
P.O. Box 335
West Chicago, Illinois 60185

POSTDOCTORAL POSITIONS. Multidisciplinary cardiovascular research laboratory studying the cellular and molecular biology of lipoproteins and cell surface receptors seeking candidates with recombinant DNA/molecular biology or receptor biochemistry experience. Send résumé and names of references to: **Personnel, Gladstone Foundation Laboratories for Cardiovascular Disease, University of California, San Francisco, P.O. Box 40608, San Francisco, Calif. 94140.**

NIH POSTDOCTORAL POSITIONS (two) available for research in cell and molecular biology of cardiovascular system. The specific area of interest is atherosclerosis. Individuals interested in chromatin structure and function, lipid metabolism or macrophage function may apply. For further information, call or write: **Dr. K. T. Lee or Dr. K. Janakidevi, Department of Pathology, Albany Medical College, Albany, N.Y. 12208.** Telephone: 518-445-5454. Equal Opportunity/Affirmative Action Employer.

PhD Cell Biologists Endothelial Cell Biology

SmithKline Beckman, a leader in pharmaceutical research and technology, is seeking Scientists to join an interdisciplinary research program in an environment designed to foster creative, innovative research and to promote personal and professional growth. Posts are available for both established investigators and post doctoral fellows.

We encourage publication of findings in leading journals and a full interaction with the scientific community.

Successful candidates will interact with several multidisciplinary groups whose interests include:

- the interaction of platelets with the vascular endothelium
- the role of endothelium - tumor cell interactions in metastasis
- angiogenesis
- endothelial cell heterogeneity
- the role of the vascular endothelium in modulating the effect of novel cardiovascular agents
- endothelial cell pharmacology.

Preference will be given to candidates having a strong background in endothelial cell biology and relevant publications in major scientific journals.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your C.V. and names of 3 references to: Mr. Walter B. Flagg, **SMITHKLINE BECKMAN CORPORATION**, P.O. Box 7929, 1570 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

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VIROLOGIST

Sterling-Winthrop Research Institute announces an opening in its growing antiviral chemotherapy section.

We are seeking an innovative and resourceful scientist with experience in structural and/or molecular virology. This position will focus on establishing the motive action of novel antiviral drugs at the molecular level. The successful candidate will have a PhD or equivalent with at least 2 years experience in the virology field.

We provide a project team approach to research which offers opportunities for interaction within the department of microbiology and with other scientific disciplines.

We offer an attractive salary and benefits package with the opportunity for professional growth. The Institute is located near Albany, N.Y. which is readily accessible to major summer and winter recreational activities. Please send your curriculum vitae including salary requirements in confidence to:

Mr. John G. Barry
Employment Administrator



**STERLING-WINTHROP
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• Biophysicist • Physiologist

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At Becton Dickinson we're committed to technological advancement. That's why we invested over \$43.5 million in R&D in 1981. It is this kind of commitment that gives you the independence and support you need to achieve project goals.

Biophysicist

Will assume major responsibility on new research projects in advanced drug delivery systems. Specific responsibilities will include R&D in therapeutic monitoring for advanced drug delivery systems utilizing biomedical transducer technology. You will also take charge of technology evaluations and feasibility demonstration of drug delivery and monitoring systems using invasive and non-invasive techniques.

A PhD in Biophysics or equivalent with 2 or more years experience in advanced biomedical instrumentation and R&D with focus on clinical chemistry or drug monitoring required. A strong background in engineering concepts and biomedical applications is essential.

Physiologist

Will be responsible for the design, development and implementation of new and improved blood collection/processing technologies. Specific areas include: evaluation of capillary blood sampling, development of cell separation methods and technology surveillance.

Credentials should include a PhD in physiology and 3 or more years experience in the research and development of laboratory/medical instrumentation or devices. Knowledge and experience in biochemistry, clinical chemistry or engineering science would be beneficial.

Along with an excellent salary and outstanding benefits, including relocation assistance, we offer the opportunity to be a major contributor in the dynamic health care field. For a complete briefing on the advantages Becton Dickinson can offer, send fully confidential resume to: **Mr. F. Richard Wilson, Becton Dickinson, Research Center, P.O. Box 12016, Research Triangle Park, NC 27709.** An equal opportunity/affirmative action employer.

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Chief Environmental Scientist

Battelle Project Management Division's Office of Nuclear Waste Isolation (ONWI) is seeking a qualified professional for the position of *Chief Environmental Scientist*. This is a highly visible position in the Site Exploration Functional Office requiring immediate and important contributions and excellent communication skills. The requirements are for an environmental scientist/manager with experience in directing multidisciplinary groups of environmental scientists and socioeconomic specialists.

The candidate should possess a doctorate or equivalent combination of education and experience, and a record of proven leadership.

The successful candidate will offer a background that reflects ability to plan and implement environmental siting and licensing programs including experience in interacting with regulatory and licensing agencies. The candidate should have demonstrated expertise in the physical and environmental sciences and socioeconomic, with a minimum of 10 years of environmental siting and licensing experience, particularly with large energy related projects and nuclear-power facilities.

ONWI has a strategic role in the Department of Energy's National Waste Terminal Storage Program developing appropriate environmental analyses and assessments, and in the management of subcontractor activities leading to the siting and licensing of nuclear waste repositories.

The Site Exploration Functional Office includes active project-management teams of engineers, geologists, geochemists, hydrologists, environmental scientists and socioeconomic specialists working on a wide range of siting and licensing objectives.

We offer a comprehensive benefits package and an excellent salary commensurate with your background and experience. Send resume in confidence to:

Box #



Battelle

**Project Management Division
Office of Nuclear Waste Isolation (ONWI)**
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Viral Immunologist

Becton Dickinson Research Center, a growing part of a billion dollar, multinational health care company, has an excellent expansion-created career opportunity at their Corporate Research Center in Research Triangle Park, NC. Responsibilities will include developing characterization methodologies to apply monoclonal antibodies to the biochemical elucidation of organism specific determinants. You will also establish parameters for and assist in the growth of viral and bacterial organisms.

We seek a person with an in-depth knowledge of viral propagation and purification obtained during work on the biochemical characterization of viral antigens using monoclonal antibody technology. Work on human viruses a plus.

PhD in Virology or Microbiology with 2 or more years experience in immunocharacterization of viral surface components required.

We offer excellent salary, comprehensive benefits and the opportunity to join a dynamic organization. Please send your resume and salary history in confidence to: **Mr. F. Richard Wilson, Human Resources Department, Becton Dickinson Research Center, P.O. Box 12016, Research Triangle Park, North Carolina 27709.** An equal opportunity/affirmative action employer.

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POSITIONS OPEN

POPULATION ECOLOGIST

Vassar College, Biology Department, seeks applicants at the assistant professor rank for fall 1983 (3 years; renewal possible). Must have broad biological background and ability to teach introductory biology and ecology. Competency in plant-animal interactions desirable. Teaching experience and active research program expected; postdoctoral experience favorable. Facilities include a 500-acre ecological preserve and field station. Curriculum vitae, including teaching and research interests, and three letters of reference to: **Chairman, Department of Biology, Box 377, Vassar College, Poughkeepsie, N.Y. 12601.** Deadline: 10 December 1982. *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL ENTOMOLOGIST/BIOCHEMIST to investigate the mating pheromones of *Drosophila*. Candidates should have experience working with pheromones. Experience with the bioassay techniques is preferred. The project will involve TLC, GC, HPLC, GC-MS, and other techniques. Positions for graduate students are also available. The postdoctoral position is available January 1983. Send curriculum vitae and names of three references to:

**Dr. Larry L. Jackson
Biochemistry, Johnson Hall
Montana State University
Bozeman, Montana 59717**

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POSTDOCTORAL POSITION for studies on molecular basis of maternofetal transfer of IgG: isolation and characterization of membrane Fc receptor. Background in protein chemistry, cell membrane chemistry, enzymology, or immunochemistry. Salary: \$17,000. Send curriculum vitae, description of research experience, and names and telephone numbers of three references to: **Dr. Max Schlamowitz, Department of Biochemistry, University of Texas System Cancer Center, 6723 Bertner Avenue, Houston, Texas 77030.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION immediately available for a Ph.D. biochemist/biophysicist to study structure-function relationships in vitamin K-dependent coagulation proteins. Of particular interest are the studies related to the initiation of clotting through Factor VII and activation of Factor IX by Factor XIa and by Factor VII(VIIa) (see *JBC* 256, 253-259, 1981; 257, 3726-3731; 4127-4132, 1982). Send curriculum vitae and names of three professional references to: **Dr. S. P. Bajaj and Dr. S. I. Rapaport, University of California Medical Center, (H 811 K), 225 Dickinson Street, San Diego, Calif. 92103.**

POSTDOCTORAL POSITION available immediately to study the metabolism of hydrocarbons found in water-soluble oil fractions. Expertise necessary in analytical techniques, especially GC-MS, HPLC, and spectroscopy. Persons with biochemistry background will be given preference. Send curriculum vitae to: **Dr. John P. Harrington, Chairman, Department of Chemistry, University of Alaska, Anchorage, 3221 Providence Drive, Anchorage, Alaska 99508.** *An Equal Opportunity/Affirmative Action Employer and Educational Institution.*

POSTDOCTORAL/RESEARCH ASSOCIATES

Research on: (i) coated vesicle assembly using available monoclonal probes, (ii) membrane, coat, and receptor relationships, and (iii) transcellular IgG transport in a unique in vitro system. Salary: \$14,000 to \$19,000. Send curriculum vitae, statement of research interests, and telephone numbers of three referees to: **Dr. Thomas F. Roth, Department of Biological Sciences, University of Maryland Baltimore County (UMBC), Catonsville, Md. 21228.**

UMBC is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE. A postdoctoral research position is available for a cell biologist to investigate the development and maintenance of epithelial cell polarity using embryonic systems. The polarized organization of both the epithelial cell plasma membrane and the cytoplasmic organelles will be studied, so some experience with freeze-fracture and thin section electron microscopy is desirable. Anticipated appointment is for 2 to 3 years. Starting salary: \$14,500 per year. Closing date: 6 December 1982.

Send résumé and names of three references to: **Dr. R. Nuccitelli, Zoology Department, University of California, Davis, Calif. 95616.** *Equal Opportunity/Affirmative Action Employer.*

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Candidates should normally be under 35 and hold a Ph.D. in a field of applied science or engineering.

Application forms and further information can be obtained from NTNF's Fellowship Office.

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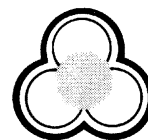
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This position will provide an exciting and challenging opportunity to give imaginative leadership to a strong and growing new company, with a stable financial base.

The qualifications for this position include a university degree in chemistry or a biological science and experience in research administration, with at least three years spent directing a research group. Some experience in business would be desirable.

Zymos offers an attractive salary, an opportunity for substantial equity participation in the company, and a full benefit package.

To apply in confidence, send your resume and the names of three references together with a brief statement of your professional interests and goals to:

Vickie Clark

ZYMOS CORPORATION
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Seattle, Washington 98103

POSITIONS OPEN

POSTDOCTORAL POSITIONS (two) available immediately through an NCI-supported training program. Candidates will be selected from Ph.D.'s with training in immunology or biochemistry. Exciting new research projects have been established in the following areas: (i) radio-immunodetection of cancer, involving development of monoclonal antibodies to tumor specific surface antigens. Experience in hybridoma technology is desirable, and (ii) Use of monoclonal reagents to explore the relationship of IgG subclass type and amount in the immune destruction of red blood cells and platelets in patients with immune cytopenias. Send curriculum vitae and names of three references to: **Albert F. LoBuglio, M.D., Director, Simpson Research Institute, University of Michigan, 102 Observatory, Ann Arbor, Michigan 48109.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS IN CARCINOGENESIS available immediately. Successful candidates will join an interdisciplinary research program emphasizing mechanisms of carcinogenesis by chemicals, radiation, and retroviruses and related areas such as molecular genetics, DNA repair, membranes, and tumor immunology. Beginning stipend is \$15,000; U.S. citizenship or permanent residency required. Persons soon to be awarded or holding recent Ph.D., M.D., or D.V.M. degrees are invited to write for information to: **Training Office, University of Tennessee—Oak Ridge Graduate School of Biological Sciences, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tenn. 37830.** An Equal Opportunity/Affirmative Action Employer.

Department of Pathology
University of Utah
College of Medicine

POSTDOCTORAL POSITIONS now available to study: (i) transferrin-mediated iron uptake and pathways on intracellular iron transport, and (ii) macrophage membrane dynamics, with particular emphasis on receptor mediated endocytosis.

A background in biochemistry, cell biology, or immunology preferred.

Send curriculum vitae and the names of two references to: **Dr. Jerry Kaplan, Department of Pathology, University of Utah, College of Medicine, Salt Lake City, Utah 84132.**

POSTDOCTORAL OR RESEARCH ASSOCIATE position open immediately in a project on gene regulation in early mammalian development. Experience in RNA/DNA hybridization, recombinant DNA techniques, and gel/filter transfer is required. Salary range \$18,000 to \$20,000 per annum, depending upon experience. Send curriculum vitae and references to: **Dr. Cole Manes, Center for Neurologic Study, 11575 Sorrento Valley Road, Unit 206, San Diego, Calif. 92121.**

POSTGRADUATE RESEARCH DEPARTMENT OF BIOLOGY PRINCETON UNIVERSITY

NIH postdoctoral training grant positions for recent Ph.D.'s in the areas of biochemical and genetic aspects of cell differentiation (Doctors T. Cline, E. Cox, A. Newton, P. Schedl, and E. Wieschaus), cell biology and development (Doctors J. Bonner, E. Luna, and M. Steinberg), and behavioral and population genetics (Doctors J. Gould, R. Greenspan, J. Hoogland, R. May, W. Quinn, D. Ready, and D. Rubenstein) are available. Candidate must be U.S. citizen or national or permanent resident and must have Ph.D. degree at time of appointment.

Applications should include curriculum vitae, references, and summary of research interest. Application closing date: 15 November 1982. Inquiries or applications should be sent to: **Dr. E. C. Cox, Chairman, Department of Biology, Princeton University, Princeton, New Jersey 08544.**

Princeton University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATES IN TOXICOLOGY: Research associates and training fellowships available for persons holding Ph.D. degrees in areas related to toxicology. Research to be conducted in areas of absorption and transport of toxicants, cholinesterase inhibition, genetic and physiological effects of toxicants. Interested persons should send letter of interest, copies of transcripts of all university work, and arrange for two letters of recommendation to be sent to: **F. E. Guthrie, Toxicology Program, North Carolina State University, Raleigh, N.C. 27650.**

POSITIONS OPEN

Immediate opening for a **POSTGRADUATE RESEARCH BIOCHEMIST** or **ASSISTANT RESEARCH BIOCHEMIST** (\$15,936 to \$22,900). Position is for a bioorganic chemist in areas of enzyme mechanisms and organic synthesis. Should be familiar with enzymology. Apply to: **Professor Ernest Kun, Cardiovascular Research Institute, 1315-Moffitt Hospital, University of California, San Francisco, Calif. 94143.** An Equal Opportunity/Affirmative Action Employer.

STATE UNIVERSITY OF NEW YORK AT BUFFALO

Department of Biological Sciences
Full Professor and Chairman

We are seeking a distinguished scientist with a substantial ongoing research program who can provide effective leadership for a well-established teaching/research department in the biological sciences. Candidates from all biological subdisciplines are encouraged to apply. However, preference will be given to those candidates who demonstrate a breadth of understanding across the biological sciences.

The departmental program consists of 27 faculty, 61 graduate students, and a large undergraduate program, all housed in a new well-equipped facility. The majority of current graduate students are enrolled in cell and molecular biology, comparative physiology, or ecology.

Earliest appointment date is January 1983 but the actual starting date can be negotiated. Application closing date is 1 December 1982.

Interested applicants should send a complete résumé, including a detailed description of current research activities, to: **Dr. Chester Langway, Chairman, Biological Sciences Search Committee, c/o Office of the Dean-FNSM, 732 Clemens Hall, State University of New York at Buffalo, Buffalo, New York 14260.**

State University of New York at Buffalo is an Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSISTANT PROFESSOR to work in biochemical pharmacology and toxicology of anticancer drugs. Laboratory committed to development of new drugs and studies of toxicity of existing agents. Applicants should have Ph.D. and postdoctoral training in pharmacology. Inquiries to: **Dr. Irwin H. Krakoff, Director, Vermont Regional Cancer Center, University of Vermont, 1 South Prospect Street, Burlington, Vt. 05401.** An Affirmative Action Employer. Women and minorities encouraged to apply.

RESEARCH ASSOCIATE—NEUROSCIENCE PROGRAMMER. We seek a colleague whose primary interest would be in software development for our research group. Responsibilities include system management, and development of collection and data analysis programs for neurobehavioral experiments. Experience with PDP-11 minicomputers, assembly and higher level languages, and the RT-11 operating system is desirable. Starting salary up to \$26,000. Send résumé to: **Dr. Vernon B. Mountcastle, Department of Neuroscience, Johns Hopkins University School of Medicine, 725 North Wolfe Street, Baltimore, Maryland 21205.**

RESEARCH ASSOCIATE

A postdoctoral position available immediately to study cytochromes P-450 from steroidogenic organs. Studies will include isolation, characterization of physical and chemical properties, determination of amino acid sequence, and genetic cloning. Send curriculum vitae and names of three references to: **Dr. Peter Hall, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.**

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PROGRAM

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This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a doctor of optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **The Dean of Admissions, The New England College of Optometry, Room 1002, 424 Beacon Street, Boston, Mass. 02115.**

PROGRAM

THE MECHANISM OF ACTION OF ANTICANCER DRUGS AT THE CELLULAR LEVEL

POSTDOCTORAL TRAINING PROGRAM emphasizes membrane transport, quantitation of drug-target interactions within the cell and drug-induced biochemical perturbations that are the basis for drug action. Ph.D. in biochemistry preferred. American citizenship or immigrant visa required. Contact: **Dr. I. David Goldman, Chairman, Divisions of Biochemical Pharmacology and Medical Oncology, Medical College of Virginia, Box 663 MCV Station, Richmond, Va. 23298.**

FELLOWSHIPS

RESEARCH FELLOWSHIP. Postdoctoral research traineeship available immediately for 1, 2, or 3 years in the area of neural control of the circulation and neurogenic mechanisms of systemic hypertension. Ph.D. in physiology or biochemistry. Must have experience in neurochemistry, radioimmunoassay of peptide hormones and neurotransmitters, radioenzymatic and HPLC assays for catecholamines and metabolites, use of stereotaxic instruments for invasive brain study, and experience with in vitro superfusion techniques for quantifying hormone and neurotransmitter release from hypothalamus and pituitary. Contact: **Suzanne Oparil, M.D., University of Alabama in Birmingham, 1012 Zeigler Building, University Station, Birmingham, Alabama 35294.** An Affirmative Action/Equal Opportunity Employer.

STS RESEARCH FELLOWSHIPS

The Massachusetts Institute of Technology (MIT) Program in Science, Technology, and Society (STS) invites applications for several 1-year research fellowships on the relationships of science, technology, and society, with a preference given this year to social studies of science and technology, especially ethnographic studies. Ph.D. or equivalent desirable. Partial or full stipend available. Application deadline: 15 January 1983. For more information, write:

Shawn Finnegan, Secretary
ESI-210
MIT
Cambridge, Mass. 02139

GRADUATE FELLOWSHIP IN CELLULAR OR DEVELOPMENTAL BIOLOGY

Applications and nominations are invited for a graduate fellowship in the Department of Cellular and Developmental Biology. The stipend is \$8000 per year, renewable for 3 years. Areas of research being pursued include somatic cell genetics, microbial genetics, molecular virology, electron crystallography, cellular ultrastructure, toxicology, plant biology, molecular biology of DNA repair, aging, and neurobiology. For information, write to: **The Graduate Committee, Department of Cellular and Developmental Biology, University of Arizona, Tucson, Ariz. 85721.** Teaching and research assistantships are also available to qualified applicants. An Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF UMEÅ The Institute for Applied Cell and Molecular Biology RESEARCH FELLOWSHIPS (THREE POSITIONS)

The positions will have the rank of associate professor (one) and postgraduate research assistant (two). The posts are tenable for 2 years.

The research will involve studies of growth and maturation factors in the immune system. We are looking for imaginative scientists with active interest and training in molecular biology including DNA technology, but also protein chemistry and cell and immune biology.

A salary ranging between 95 to 125,000 Swedish crowns (about U.S. \$16,000 to \$21,000) will be paid, per annum.

Inquiries can be made to: **Dr. Erik Lundgren, The Unit for Applied Cell and Molecular Biology, University of Umeå, Sweden.**

Applications with curriculum vitae and the names of two referees should be sent to: **The University Administration, University of Umeå, 901 87 Umeå, Sweden.**

Expiring date for applications is 12 November 1982.

Post Doctoral Scientist Oncogenes

SmithKline Beckman, a leader in pharmaceutical research and technology, is seeking a Post Doctoral Scientist to join an interdisciplinary research program in an environment designed to foster creative, innovative research and to promote personal and professional growth.

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

Our post doctoral appointments are of 1 year duration and with mutual agreement, renewable for a 2nd year. The successful candidate will join a multidisciplinary team whose goal is to evaluate the role of oncogenes in the pathogenesis of human tumors. This includes a study of the mechanisms regulating oncogene expression and an evaluation of the biological activity of the oncogene protein products.

Candidates are required to have a Ph.D. in Molecular Biology with 0-3 years post doctoral experience.

Preference will be given to candidates having a strong background in molecular genetics and/or protein biochemistry and relevant publications in major scientific journals.

We offer excellent compensation and benefits and an attractive relocation policy. For confidential consideration, send your C.V. and names of 3 references to: Mr. Walter B. Flagg, SMITHKLINE BECKMAN CORPORATION, P.O. Box 7929, 1568 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

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FACULTY POSITIONS AT NORTHEASTERN UNIVERSITY

The Department of Biology at Northeastern University invites applications for FOUR tenure-track positions. TWO positions are to be filled by individuals with a Ph.D. or M.D. and at least two years of post-doctoral experience in BIOCHEMISTRY or MOLECULAR BIOLOGY. These appointments can be made at the upper Assistant Professor or Associate Professor level, depending upon qualifications. TWO positions are available for individuals with a Ph.D. or M.D. and at least two years of post-doctoral experience in IMMUNOLOGY or MICROBIOLOGY. One of these positions carries the rank of Assistant Professor while the other can be filled at either the rank of Assistant or Associate Professor. The ability to contribute a portion of salary from a research grant is a requirement for entry above the level of basic Assistant Professor.

Successful candidates must have a strong commitment towards excellence in teaching and have the ability to develop and maintain an independent research program. Teaching responsibilities will include courses at both the undergraduate and graduate levels and the supervision of graduate student research.

Please address inquiries, including curriculum vitae with a list of publications, statement of research interests, and the names of three references, by 30 November, to: **Chairperson, Faculty Search Committee, Department of Biology, Northeastern University, 360 Huntington Avenue, Boston, MA 02115.** Northeastern University is an Affirmative Action/Equal Opportunity University.

SUPERVISORY MEDICAL OFFICER

The Division of Heart & Vascular Diseases, National Heart, Lung, and Blood Institute, is seeking applicants for the position of Supervisory Medical Officer (Research) in the Cardiac Diseases Branch with an annual salary of \$51,353 and applicant may be eligible for bonus payments to Federal physicians.

The Cardiac Diseases Branch is responsible for the planning and administration of cardiac disease-oriented research, both clinical and fundamental. Its scope encompasses all forms of cardiac and peripheral vascular disease, exclusive of hypertension and the etiology of atherosclerosis. The staff is involved with regular and program project grants and with targeted programs; the latter involve special grant and contract programs with particular staff involvement. Currently, major targeted programs are in the area of Ischemic heart disease—the Specialized Centers of Research on ischemic Heart Disease, programs on sudden cardiac death and lethal arrhythmias, on fundamental processes associated with the protection of ischemic myocardium, methods of estimating the extent of ischemic myocardium, such predominantly in-hospital collaborative clinical trials as the Coronary Artery Surgery Study and the Multicenter Investigation for the Limitation of Infarct Size.

Applicant should have an M.D. or equivalent degree, and possess scientific and clinical experience in cardiovascular diseases. Postgraduate training and/or research experience in a biomedical science related to cardiovascular diseases and board certification in internal medicine are desirable. The position to be filled is in the Civil Service. However, individuals in the Public Health Service Commissioned Corps may submit a resume. Other interested applicants should file a Standard Form 171, Personal Qualification Statement, Curriculum Vitae and Bibliography to the NHLBI Personnel Office, National Institutes of Health, Public Health Service, 9000 Rockville Pike, Building 31, Room 5A34, Attn: Ms. Donna Pratt, Bethesda, Md. 20205 or call (301) 496-6477. The application deadline is November 30, 1982. NIH is an Equal Opportunity Employer.

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