

Personnel Placement

Only those employers and individuals who do not discriminate on the basis of race, sex, religion, age, color, or national origin should submit Personnel Placement advertising.

POSITIONS WANTED: 40¢ per word; use of Box Number counts as 10 additional words. Minimum charge \$10. Prepayment required. This rate applies to individuals only; personnel agencies, companies, colleges, and universities take display rate for all advertising.

DISPLAY (POSITIONS OPEN, MARKET PLACE, AND SO FORTH): \$145 per inch, minimum, per insertion (1 inch is equivalent to 11 lines of 52 spaces each). Ads over 1 inch billed to nearest quarter-inch. No charge for Box Number. Rates net. No agency commission allowed for ads under 4 inches. No cash discount. Prepayment required for foreign advertising. Purchase orders and billing information must accompany all other advertising.

COPY for ads must reach SCIENCE by Wednesday, 3½ weeks before issue date (Friday of each week) requested. Send copy for all positions wanted ads and display ads under 5 inches to:

SCIENCE, Room 207
1515 Massachusetts Ave., NW
Washington, D.C. 20005

Send copy for display ads, 1/6 page and larger, to:

Scherago Associates, Inc.
11 West 42nd Street
New York, N.Y. 10036

BLIND AD replies should be addressed as follows:

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

POSITIONS WANTED

Air Quality Systems Engineer. Research and experience in dispersion modeling, assessment of health effects, and urban planning. Governmental agency experience. Ph.D. 1975. Box 88, SCIENCE. X

Anatomist/Biologist. Ph.D. General biology, human anatomy and physiology, histology, embryology. Four years of teaching experience including undergraduate and professional school. Seeks teaching position. Box 89, SCIENCE. X

Biochemist-Chemist. Ph.D. Broad research and teaching experience. Publications. Expertise in neurochemistry, membranes, proteins, lipid biochemistry, enzymology. Research in diabetes and metabolism. Strong background in analytical methods and radioisotopes. On medical school faculty for last 6 years. Seeks research/teaching position. Box 90, SCIENCE. X

Biochemist-Microbiologist. Ph.D. 1971. Experienced and interested in enzyme purification; posttranslational protein modification; hormone regulation of amphibian metamorphosis. Desires academic or industrial position. Box 91, SCIENCE. X

Biologist. M.S. Recent graduate with part-time teaching experience seeks academic position. Special interests are ornithology, ecology, and animal behavior. Box 14457, Philadelphia, Pennsylvania 19115. 3/4, 11, 18

Environmental/Marine Chemist. Laboratory and project management. Seven years of experience in analytical chemistry, mass spectroscopy, field sampling, marine research and management. Master's, 1970. Box 92, SCIENCE. X

Evolutionary-Ecological Geneticist. Yale Ph.D. 1970, seeks teaching/research position in southern U.S. Publications: mostly insect hybridization; wide experience. Oliver, R.D. 1, Box 78, Scottsdale, Pennsylvania 15683. 3/4, 11, 18

Immunologist. Ph.D. 1972. Immunochemistry, protein chemistry, oncology. Experience with tumor-associated antigens, development of RIA's, solid-phase techniques, immunofluorescent methodologies, enzymology, writing proposals. Industrial, teaching, and clinical experience. Publications. Seeking position in eastern U.S. Box 70, SCIENCE. X

POSITIONS WANTED

Grants/Contracts Coordinator; many years with three federal science agencies; excellent health; industrious; directed studies; publications experience. Box 93, SCIENCE. X

Kinesicist/Linguist. Ph.D. Broad experience in ethological study of human communication, especially nonverbal. Has studied individual, group, and family psychotherapy. Expertise in study of microorganization of behavior of dysfunctional children. Many publications. Seeks research/teaching position. Box 94, SCIENCE. X

Microbiologist-Molecular Biologist. Ph.D. 1971. Interest in DNA repair of prokaryotes and eukaryotes; differentiation aspects of bacterial spores; radiation biology. Seeks academic or industrial position. Box 95, SCIENCE. X

Science Writer. Ph.D. (chemical oceanography), July 1977; scholarly and popular publications; broad earth science/environmental background. Résumé, clippings, and references available. Box 96, SCIENCE. X

Sociobiologist, Entomologist, Scientific Illustrator. M.S. 1974 (Ph.D. requirements complete except for thesis), with additional teaching experience in parasitology and anatomy and physiology for nurses. Desires teaching and/or research, government, or industry position for September 1977. Box 97, SCIENCE. 3/4, 11

Theoretical Physicist. Sc.D. 1967, Habilitation (honorary title of professor) 1975, Germany. Eighteen independent research publications in cosmic rays and elementary-particle physics. Over 50 citations by other scientists. Teaching experience at all levels. German, English, French, Spanish. Seeks teaching and/or research position. Interest also in developing countries. Box 98, SCIENCE. X

Toxicologist. Ph.D. 1975. Genetic and industrial toxicology. Postdoctoral inhalation technique and contract administration experience. M.S. in fisheries biology (water pollution ecology). Seeking position with interdisciplinary research/academic group. Box 86, SCIENCE. X

Viral Diagnosis. Husband and wife team seeking opportunity to function in a viral diagnostic laboratory, preferably associated with a medical center. Eighteen years of combined experience in viral diagnosis plus experience in serological testing, clinical bacteriology, food microbiology, and teaching of medical microbiology. A role in clinical research is welcome. Sixty-five publications. Box 99, SCIENCE. X

POSITIONS OPEN

ANATOMIST

Assistant professorship, starting 1 July 1977. Applicants must have Ph.D. or M.D. degree and demonstrated ability to teach gross anatomy and neuroanatomy to medical students. Preference given to beginning investigator with active research program in neuroscience. Send résumé and names and addresses of three references, by 15 March 1977, to: **Search Committee, Department of Anatomy, Dartmouth Medical School, Hanover, New Hampshire 03755.**

An Equal Opportunity/Affirmative Action Employer

ASSISTANT PROFESSOR OF BIOLOGY HARVARD UNIVERSITY

The Cellular and Developmental Biology Division expects to appoint an assistant professor for the coming year in the area of plant molecular developmental biology. Applicants should have the Ph.D. Preference will be given to candidates with teaching experience, records of research accomplishment, and postdoctoral training.

The University is an Equal Opportunity Employer; women and members of minority groups are specifically encouraged to apply. Please have three professional persons who are well acquainted with your work send letters of recommendation directly to us. Applications should include your résumé, copies of your most significant publications, and a summary of your research goals and should be sent to: **Chairman, Plant Biology Search Committee, Department of Biology, 16 Divinity Avenue, Cambridge, Mass. 02138,** prior to 28 March 1977.

POSITIONS OPEN

ANATOMY UCR/UCLA PROGRAM IN BIOMEDICAL SCIENCES

The University of California Riverside/UCLA Program in Biomedical Sciences, in which the M.D. degree is jointly obtained from the University of California at Riverside and the UCLA School of Medicine, has an opening in **anatomy** at the **assistant professor** level. Applicants should have postdoctoral research experience. Teaching responsibilities will include instruction of medical and graduate students in gross anatomy and/or histology. *The University of California is an Affirmative Action/Equal Opportunity Employer.* Applications, including a curriculum vitae and references, should be sent to:

Richard T. Lobl, Ph.D.
Program in Biomedical Sciences
University of California, Riverside
Riverside, California 92521

ANATOMIST to develop a series of video tape modules combining conventional and scanning EM anatomy for undergraduate students. Position funded for 2 years at fiscal year salary of \$12,500 and \$13,500, respectively. Applicant must possess doctoral degree or have equivalent experience, and an interest in innovative teaching. Position available 1 April 1977. Closing: 15 March 1977. Send résumé and have three referees forward letters to **Paul C. Harris, Department of Animal and Veterinary Science, Hitchner Hall, University of Maine, Orono, Maine 04473.** Inquiries: telephone 207-581-7521.

ANATOMIST

Applications are invited for an opening, preferably at the assistant professor level, in the Division of Biology and Medicine at Brown University for an individual qualified to teach in gross morphology. Candidates must have an active research program in some related field of morphological science, such as neuroanatomy, human morphology, comparative anatomy, developmental biology, or cell biology. Candidates should submit a curriculum vitae, a publication list, a description of research and teaching interests, and names of three references not later than 30 April 1977 to: **Dr. Ford F. Ebner, Division of Biology and Medicine, Box G, Brown University, Providence, R.I. 02912.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR, Ph.D. training, research in agrostology and plant ecology; core teaching in introductory genetics, postdoctoral experience, demonstrated teaching and research ability desired. Submit full curriculum vitae including reprints of publications and transcripts of all college and university work, and at least three letters of recommendation by 1 April 1977 to **M. Chessin, Department of Botany, University of Montana, Missoula, Montana 59812.** *The University of Montana is an Equal Opportunity Employer. Women and minorities are encouraged to apply.*

UNIVERSITY OF MICHIGAN ASSISTANT PROFESSOR

Assistant professor of exercise physiology in the Department of Internal Medicine available. Must have Ph.D. in exercise physiology. Ability to give exercise prescription after exercise tests. Technical skill to do noninvasive cardiac output and maximal oxygen consumption measurements. Demonstrated ability to write and carry out research protocols in humans. Send résumé to **Box 101, Science.** *An Affirmative Action, Nondiscriminatory Employer.*

DEPARTMENT OF BIOCHEMISTRY

Applications are invited for a position as **assistant professor** from candidates with a Ph.D. in biochemistry and with postdoctoral experience. The primary requirements for the position are promise of excellence in teaching and ability to establish an active program of scholarly investigation. Some preference will be given to applicants with biochemical research interests in the areas of endocrinology, nutrition, or immunology. The position is available 1 July 1977. Applicants should submit a curriculum vitae, list of publications, and the names of three references to **Dr. Paul M. Anderson, Department of Biochemistry, School of Medicine, University of Minnesota, Duluth, Duluth, Minnesota 55812,** by 22 April 1977. *An Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN



ASSISTANT PROFESSOR. Primary teaching responsibilities in human gross anatomy. Postdoctoral experience preferred. Research interest open. Applicants should show evidence of potential for research, obtaining grant support, and developing graduate programs. Submit curriculum vitae, names of references, and summary of research efforts to:

Chairperson, Department of Anatomy

COLLEGE OF MEDICINE AND DENTISTRY OF NEW JERSEY

**N.J. Medical School
100 Bergen Street
Newark, N.J. 07103**

An Equal Opportunity/Affirmative Action Employer



Position to be filled: **ASSISTANT PROFESSOR OF BIOLOGY** with specialty in cell biology and biochemistry. Starting salary: \$12,000 to \$12,500 (academic year) depending upon qualifications. Position begins: 1 September 1977. Responsibilities: primary duties entail teaching courses and conducting research in cell biology and biochemistry at the undergraduate and graduate level. Secondary skills in areas of microbiology or nutrition or plant physiology desirable. Qualifications: Ph.D. in the biological sciences. Application: Applicants should send: (i) curriculum vitae or résumé, (ii) undergraduate and graduate transcripts, and (iii) three letters of recommendation to: **Alton H. Desmond, Chairman, Department of Biological Sciences, Bell Hall Room 314, George Washington University, Washington, D.C. 20052.** *Applications and all supporting documents should be sent promptly; consideration of files remaining incomplete as of 15 March 1977 cannot be ensured. *The George Washington University is an Equal Opportunity Employer and will consider all applicants without regard to race, color, religions, sex, or national origin.*

DIVISION OF SCIENCE UNIVERSITY OF NEW BRUNSWICK SAINT JOHN CAMPUS

Applications are invited for a position of **assistant professor of biology** effective, subject to budgetary approval, 1 July 1977 or later. The successful applicant will be expected to teach undergraduate courses in marine botany, general botany, and introductory plant physiology, and to develop an active research programme. Applicants should have a doctorate and should send a curriculum vitae and the names of three referees to the **Chairman, Search Committee, Division of Science, University of New Brunswick, Saint John, N.B. E2L 4L5 Canada.**

ASSISTANT PROFESSOR-GENETICS. Individual to develop strong academic program in genetics. Teaching responsibilities will include courses in genetics at the undergraduate and graduate levels. Expertise in population genetics, cytogenetics, or biostatistics desirable but not essential. Applicant should have potential for obtaining grants and developing an active research program in genetics of eucaryotes. Ph.D. required and postdoctoral experience expected. Qualified persons should submit curriculum vitae, reprints, undergraduate and graduate transcripts, at least three letters of recommendation, and statement of research interests by 30 March 1977 to **Dr. Doris Beck, Department of Biological Sciences, Bowling Green State University, Bowling Green, Ohio 43403.** *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT PROFESSORSHIP IN PHYSIOLOGY. Responsibilities include teaching in medical and graduate courses and establishment of an independent research program. Expertise in the area of renal physiology is desirable. Send curriculum vitae to **Dr. Alan Freeman, Chairperson, Department of Physiology, Temple University School of Medicine, Philadelphia, Pa. 19140.** *An Equal Opportunity Employer.*

ASSISTANT PROFESSOR OF PHYSIOLOGY

The Department of Medical Physiology, College of Medicine, Texas A & M University invites applications from individuals specializing in renal, neural, or endocrine control of cardiovascular function and/or body fluids. Candidates should be expected to show promise of developing a vigorous research program. The appointee will join a physiology faculty deeply involved in cardiovascular programs. Send curriculum vitae, a résumé of research interests, and names of three references to: **Dr. Elvin E. Smith, Head, Department of Medical Physiology, College of Medicine-1, Texas A & M University, College Station, Texas 77843.** *Texas A & M University is an Equal Opportunity Employer.*

POSITIONS OPEN

ASSISTANT AND ASSOCIATE PROFESSOR OF MEDICAL MICROBIOLOGY AND IMMUNOLOGY. The department invites applicants for two full-time faculty positions. Applicants must have experience and background: (i) to participate in a team taught medical microbiology and immunology course, (ii) to offer advanced graduate courses, and (iii) to direct and support doctoral research programs. Applicants must maintain vigorous independent research programs capable of successfully competing for extramural support. We encourage applicants from all disciplines of microbiology but preference will be given to applicants with experience and interests in cellular immunity, eukaryotic cellular genetics, or microbial pathogenesis. Submit a curriculum vitae and statement of personal goals by 1 April 1977 to **Chairman, Faculty Recruitment Committee, Department of Microbiology and Immunology, School of Medicine, East Carolina University, Greenville, N.C. 27834.** *An Equal Opportunity/Affirmative Action Employer.*

Stanford University. **ASSISTANT PROFESSOR OF NUTRITION.** Candidate should have proven aptitude for interdisciplinary approach to teaching and research. Experience of nutrition problems in developing countries an advantage. Appointment for 3 years in Food Research Institute; close affiliation with medical school and program in human biology. Submit curriculum vitae, bibliography, and names of three referees to **Dr. Bruce Johnston, Food Research Institute or Dr. Keith Taylor, Department of Medicine, Stanford University, Stanford, Calif. 94305.**

ASSISTANT PROFESSOR, PHYSIOLOGY ILLINOIS STATE UNIVERSITY AUGUST 1977

Applicants are expected to possess a Ph.D. and have demonstrated teaching proficiency and research interest in comparative invertebrate physiology. Teaching obligations include a graduate level course in comparative physiology and involvement with an animal physiology course for biology majors and a course in human anatomy and physiology for non-majors. Applications, including a curriculum vitae, university transcripts, and three letters of recommendation, should be sent to: **Howard R. Hetzel, Chairperson, Department of Biological Sciences, Illinois State University, Normal, Ill. 61761.** The Department of Biological Sciences has over 600 undergraduate majors, 85 graduate students, and a faculty of 39. Graduate programs leading to the M.S. and Ph.D. degrees are offered. *Illinois State University is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR-POPULATION ECOLOGY. Position available September 1978. The successful candidate will be expected to initiate a productive research program, obtain grants, and advise graduate students. Teaching duties will include introductory and advanced courses in ecology. Ph.D. required and postdoctoral experience desirable. Submit résumé, three letters from referees, undergraduate and graduate transcripts, and research plan by 1 April 1977 to: **Chairman, Ecology Search Committee, Department of Biological Sciences, Bowling Green State University, Bowling Green, Ohio 43403.** *An Affirmative Action/Equal Opportunity Employer.*

ASSISTANT RESEARCHER I. Applicant will engage in research on the synthesis of fine neurological electrodes. Must have Ph.D. plus at least 3 years of experience including work with PVD, CVD, and biological materials. Please send résumé to: **Myrna Beltman, Brain Research Institute, University of California at Los Angeles, Room 73-364 CHS, Los Angeles, California 90024.** All applications must be received by 15 March 1977. *UCLA is an Equal Opportunity Employer. Candidates will be considered without regard to race, color, religion, sex, or national origin.*

POSITIONS OPEN

ASSISTANT PROFESSOR OF EXPLORATION GEOPHYSICS IN THE UNIVERSITY OF CALIFORNIA, BERKELEY

Applications are invited for an assistant professor in the Engineering Geoscience Group in the field of applied or exploration geophysics. Applicants should have a Ph.D. and have a demonstrated interest in teaching and research dealing with the application of geophysics in the broad area of energy and mineral exploration. Address inquiries to **Chairman, Department of Materials Science and Mineral Engineering, University of California, Hearst Mining Building, Berkeley, California 94720.** *The University of California is an Affirmative Action and Equal Opportunity Employer. Minority and women candidates are encouraged to apply.* Closing date for applications: 31 May 1977.

HARVARD SCHOOL OF PUBLIC HEALTH

BEHAVIORAL SCIENTIST at assistant professor level in Department of Health Services to develop a program to influence life styles to improve health. Ph.D. or equivalent and experience in applied research in community behavior required. Would be expected to apply for grants for support of research. Salary within range for rank. *Women, handicapped, and minorities encouraged to apply.* Send résumé only to **Robert J. Haggerty, M.D., Harvard School of Public Health, 677 Huntington Avenue, Boston, Mass. 02115.**

Assumption College, Worcester, Mass., has a new full-time opening in **BIOLOGY** at the **INSTRUCTOR** or **ASSISTANT PROFESSOR** level. The position involves 15 hours (lecture and laboratory) each week. Requirements: Ph.D.; background in general biology with specialization in invertebrate zoology and ecology. Complete applications (including résumé, three letters of recommendation, and transcripts) must be received by 1 April 1977. Send to: **Eugene W. Byrnes, Chairman, Division of Natural Sciences, Assumption College, Worcester, Massachusetts 01609.** *An Equal Opportunity/Affirmative Action Employer.*

BIOLOGY POSITIONS

Southwestern At Memphis invites application for two biology positions, starting in September 1977. **BOTANIST:** teaching duties include introductory biology and advanced botany. **ECOLOGIST:** teaching duties include introductory biology, ecology, and field biology. For both positions: Ph.D. required; opportunities for research and supervising student independent study projects; rank and salary negotiable; deadline for receiving applications is 31 March 1977. Interested individuals send curriculum vitae and three letters of recommendation to

**Professor J. T. Darlington
Southwestern At Memphis
2000 North Parkway
Memphis, Tennessee 38112**

An Equal Opportunity/Affirmative Action Employer

BIOMEDICAL ENGINEER—Research or postdoctoral associate position open for research oriented person with strong background in electronic and/or ultrasonic engineering. The successful applicant will provide investigative and technical support to a small research team engaged in the development of ultrasonic bloodflow measuring apparatus. Submit credentials before 1 April 1977 to **C. J. Drost, Department of Physiology, Biochemistry and Pharmacology, New York State College of Veterinary Medicine, Ithaca, N.Y. 14853.** *An Equal Opportunity Employer.*

The Department of Biological Sciences at Stanford University plans to appoint two faculty at the non-tenured level in the general areas of **CELLULAR AND DEVELOPMENTAL BIOLOGY.** These positions will be on the Palo Alto campus and will be available in September 1977. Successful candidates should have demonstrated independent research capabilities and are expected to participate in both undergraduate and graduate teaching programs in the department, as well as to carry out an active research program. Preference for one of the positions may be given to a person whose research activities are in botanical systems. Nominations or curriculum vitae should include the names of three references and can be sent to: **Robert T. Schimke, Search Committee Chairperson, Department of Biological Sciences, Stanford University, Stanford, California 94305.**

Stanford University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

CHAIRPERSON

The Division of Natural Sciences and Mathematics at Marymount Manhattan College is seeking applicants for the position of chairperson. Responsibilities include development of the undergraduate program in science and math, teaching, faculty supervision, administrative duties, fund raising for special projects. Requirements: Ph.D. with evidence of administrative ability and development of funded programs. Specialization in biological or health sciences and a minimum of 3 years college level teaching. Salary competitive. Applications accepted through 18 March 1977. Position available 1 July 1977. Send application to:

Academic Dean
Marymount Manhattan College
221 East 71 Street
New York, N.Y. 10021

The UCLA School of Medicine is seeking the most highly qualified person to become **CHAIRMAN** of its Department of Pediatrics on 1 July 1977. Candidates must have substantial background in academic pediatrics, with interest and experience in patient care, teaching, research, and administration. *UCLA is an Equal Opportunity/Affirmative Action Employer, and encourages minority and women candidates to apply.* Interested persons should submit letters summarizing their qualifications to: **Chairman, Pediatrics Search Committee, c/o Dean, UCLA School of Medicine, Los Angeles, California 90024.**

CHEMIST. A chemist with Ph.D. degree is being sought for an appointment starting September 1977. The appointment will be for 1 year and may be extended for a second year. Principal responsibilities will include introductory general chemistry. The department has facilities for research in environmental chemistry and other areas of chemistry and can also provide the opportunity to teach an advanced course in the individual's area of specialization. Send a résumé to: **S. S. Butcher, Department of Chemistry, Bowdoin College, Brunswick, Maine 04011, before 31 March 1977. An Affirmative Action/Equal Opportunity Employer.**

FACULTY POSITIONS

College of Medicine,
King Faisal University
Dammam, Saudi Arabia

Biology	Epidemiology
Chemistry	Biochemistry
Physics	Embryology
Anatomy	Physiology
Community medicine	Hematology
Biostatistics	Pathology

Applications are invited from U.S., British, and Canadian academicians who have a doctorate or similar degree and postdoctorate teaching experience. Openings are available immediately and for 1977-1978 at all levels. The language of instruction is English.

Salary ranges:	
Monthly salary and bonus in Saudi riyals	Approximate annual equivalent in U.S. dollars
Professor	
6,720 to 7,392	\$22,600 to \$24,800
Associate professor	
5,376 to 6,496	\$18,100 to \$21,800
Assistant professor	
4,032 to 5,152	\$13,500 to \$17,300

M.D. degree commands a higher salary. Fringe benefits include free furnished accommodations and annual leave and travel allowance to country of origin.

Send résumé and names, addresses, and phone numbers of three references to:

Mohammed T. Altorki, M.D., MRCP
Dean of the Medical Faculty
King Faisal University
c/o Saudi Arabian Educational Mission
2223 West Loop South, Suite 400
Houston, Texas 77027

Specify teaching experience and date of availability.

POSITIONS OPEN

Duke University Medical Center is inviting applications for the position of **ASSISTANT PROFESSOR OF PLASTIC AND MAXILLOFACIAL SURGERY**. Applicants should be Board-qualified or Board-eligible in general surgery and Board-qualified or Board-certified in plastic surgery. At least 6 months of intensive training in hand surgery, following a minimum of 2 years in an approved plastic surgery residency program is required. Applicants must have a proven background and demonstrated ability in basic research. Training in head and neck oncology, congenital deformities, aesthetic surgery, management of acute burns, and other extremity-type surgical procedures, cleft lip and palate surgery, cranial facial surgery, microvasculature surgery, and breast surgery is required. *Duke University is an Equal Opportunity/Affirmative Action Employer.* Reply to: **Chief of Plastic, Maxillofacial and Oral Surgery, P.O. Box 3098, Duke University Medical Center, Durham, North Carolina 27710.**

CYTOPATHOLOGIST

Position immediately available at assistant or associate professor level for pathologist with major interest in the process of neoplasia and competence in its early detection. Enthusiasm and competence in the training of pathology residents and cytotechnology students in cytopathology is essential. Send curriculum vitae by 1 April 1977 to **Dr. George M. Martin, Search Committee, Department of Pathology SM-30, University of Washington, Seattle, Wash. 98195. Affirmative Action/Equal Opportunity Employer.**

Applications are invited for the position of **DEAN** of the College of Pharmacy and Pharmaceutical Sciences at Howard University in Washington, D.C. Qualifications for the position would include evidence of a strong academic background, administrative experience, and leadership qualifications.

The deadline for submitting applications is 7 March 1977.

Inquiries should be submitted to:

Chairman, Search Committee
Howard University
600 W Street, NW
Washington, D.C. 20059

POSITIONS OPEN

CARDIOLOGIST. Full-time academic appointment with opportunities for research, teaching, and clinical responsibilities in adult cardiology. Send curriculum vitae and bibliography and names of three references to **Director of Cardiology, P.O. Box 5999, Dallas, Texas 75222.**

DEPUTY DIRECTOR FOR ADMINISTRATION UNIVERSITY OF ARIZONA CANCER CENTER

The University of Arizona Cancer Center is seeking a deputy director for administration. Candidates should be experienced in health research administration, relevant aspects of basic and clinical science, as well as unique features of cancer programs. Applicants should have prior experience with proposal writing, possess writing and other communication skills, and be willing to travel to meet sponsors. Responsibilities will include close and responsive interaction with the Center's scientific director and executive committee, program planning, supervisory management of budget aspects, and coordination and evaluation of operational aspects of ongoing programs. Position open immediately. A Ph.D. or M.P.H. is preferred. Send résumé, curriculum vitae, and names of at least three references by 15 March 1977 (extended from 1 March) to: **Sydney E. Salmon, M.D., Director, Cancer Center, University of Arizona College of Medicine, Tucson, Arizona 85724. An Affirmative Action/Equal Opportunity Employer.**

DIRECTOR, CLINICAL RESEARCH

M.D., experienced clinical investigator and good administrator, academic background, experience in drug abuse research desirable. Possible association with Stanford University.

POSTDOCTORAL POSITION

Research psychologist or psychiatrist, studies on function of opioid peptides in humans.

Résumés to **Dr. Avram Goldstein, Director, Addiction Research Foundation, 701 Welch Road, Palo Alto, Calif. 94304. Affirmative Action Employer.**

ANNOUNCEMENT

One Day Seminar Entitled

"Energy Conservation
And The Application of
Solar Energy In The Design
And Construction
of Laboratory Animal
Facilities"

Where: Washington,
D.C.

When: 17 October
1977

Cost: \$125.00 per
person

Limited registration
deadline: 15 May 1977

For direct registration
write:

Dr. M. L. Simmons
Veterinary Resources
Americas, Inc.
11300 Rockville Pike
Rockville, Maryland 20852

AURA

Association of Universities for Research
in Astronomy, Inc.
Seeks a
PRESIDENT

AURA, a nonprofit corporation with headquarters in Tucson, Arizona, manages the Kitt Peak National Observatory near Tucson, the Cerro-Tololo International Observatory in Chile, and such other astronomical programs and facilities as might from time to time be mutually agreed upon with the National Science Foundation, which is the primary source of funding. The corporate board is comprised of representatives from 12 research universities with major programs in astronomy and of several at large representatives. The observatories are operated as national facilities.

The Board of Directors has directed that a search be initiated for a president who will serve as chief executive officer of the corporation and will be the primary liaison between the board and the directors of the several observatories. The new president should have a background in science or engineering, preferably experience in astronomical science or related fields. Interactions with the NSF and other federal agencies will be frequent, and an awareness of such processes is desirable. Demonstrated administrative ability is essential.

There is no firm date, but the board desires to fill the position as soon as practical. Salary and terms commensurate with background and experience.

All qualified candidates will be considered without regard to race, national origin, religion, or sex. Applications or nominations are asked for by 7 March 1977, but later inquiries may be considered.

Inquiries, nominations, or applications may be directed to the chairman of the search committee:

Dr. Cornelius J. Pings
Vice Provost
California Institute of Technology
Pasadena, California 91125

POSITIONS OPEN

DEAN OF AGRICULTURE

The University of Wyoming invites nominations and applications for the position of dean of agriculture and director of the Agricultural Experimental Station.

The dean is academic and administrative officer of the College, one of eight colleges within the University of Wyoming, a land-grant institution. The College is organized into seven divisions, with approximately 200 full-time faculty and staff and an enrollment of 700 students.

Applicants must have an earned doctorate in an appropriate field and have commensurate teaching, research, and administrative experience.

Effective date is negotiable but no later than 1 July 1978.

Résumés, including three references, should be received by 15 April 1977, and should be addressed to:

Associate Professor Donald J. Brosz
Chairman, Dean's Search Committee
Box 3434, University Station
Laramie, Wyoming 82071

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

DIRECTOR OF EDUCATIONAL RESOURCES EAST TENNESSEE STATE UNIVERSITY COLLEGE OF MEDICINE

East Tennessee State University invites applications from, and nominations of, qualified individuals for the position of director of educational resources of its developing College of Medicine which is being established in affiliation with the Mountain Home Veterans Administration Hospital and community hospitals of the Tri-Cities area. Letters of application or nomination for this immediate opening should include a curriculum vitae and three personal and professional references.

Candidates should possess a doctoral degree and be trained in educational evaluation and/or curriculum development. Skills in development of tests and other evaluation instruments and previous medical school experience in the areas of program development and testing are essential.

Responsibilities will include the development of a comprehensive plan for evaluation of students, faculty, and the medical education program to be conducted in the affiliated hospitals.

Correspondence should be received not later than 15 March 1977, and addressed to:

Dr. Jack E. Mobley, Dean
East Tennessee State University
College of Medicine
Johnson City, Tennessee 37601

East Tennessee State University offers Equal Opportunity in its employment, admissions, and educational activities and is an Affirmative Action Employer.

FACULTY POSITION IN RANGE-WILDLIFE ANIMAL NUTRITION

Faculty position available 1 July 1977 in the Department of Forestry and Conservation, University of California, Berkeley. Assistant professor, Step I-IV depending on qualifications. Completion of the Ph.D. is necessary for regular appointment, but individuals in the final stages of doctoral dissertation research are encouraged to apply. The applicant should possess at least one degree in professional resource management (or equivalent professional experience) with a strong background in nutrition and food habits of wild ungulates and/or domestic livestock. The individual appointed is expected to devote 50 percent time to graduate and undergraduate teaching and advising and 50 percent time to research within the broad area of animal nutrition (wildlife and/or livestock) with emphasis on forage and browse nutritional quality of the major rangeland cover types of California. Submit (before 15 April 1977) letters of application with curriculum vitae, college transcripts, three or more letters of reference, list of publications, and other pertinent materials to:

Professor John W. Menke
Department of Forestry and Conservation
University of California
Berkeley, California 94720

The applicant should request each referee to send a letter of reference directly to the above address.

The University of California is an Equal Opportunity/Affirmative Action Employer. Women and minority candidates are urged to apply.

POSITIONS OPEN

The Department of Biological Sciences, Eastern Montana College has two positions available starting 1 September 1977.

PLANT TAXONOMIST

A permanent position is open in the Department of Biological Sciences for a Ph.D. in botany with emphasis in plant taxonomy. Responsibilities include courses in plant taxonomy, plant morphology, general botany, and genetics. The appointee will be required to continue an active research program and will be responsible for organization and expansion of the department herbarium. Preference will be given to those applicants with extensive training in agrostology.

VERTEBRATE ZOOLOGIST

A 1-year position is open in the Department of Biological Sciences for a Ph.D. in vertebrate zoology. Responsibilities will include laboratory courses in introductory human anatomy and physiology and audio-tutorial courses in histology, hematology, and embryology. Preference will be given to applicants who can offer additional courses in classical zoology.

Eastern Montana College is an Equal Opportunity/Affirmative Action Employer.

Applicants must send a curriculum vitae, transcripts, and three letters of reference to **Dr. R. Gary Beaver**, Department of Biological Sciences, Eastern Montana College, Billings, Montana 59101. The deadline for receipt of applications is 15 April 1977.

ECOLOGY

Applications are invited for a position in ecology at the level of assistant professor, effective 1 July 1977. Candidates must have a completed Ph.D. degree, or equivalent. The appointee will be expected to teach a general ecology course, be involved in advanced teaching (graduate) in ecology and develop an active research program. Applications, including complete curriculum vitae and the names of three referees, should be sent to: **Dr. R. E. Dengler**, Associate Chairman, Division of Life Sciences, Scarborough College, University of Toronto, 1265 Military Trail, West Hill, Ontario, M1C 1A4 Canada.

EXPERIMENTAL PATHOLOGIST

Position immediately available at associate professor or professor level for nationally recognized medical scientist (pathologist preferred) with major investigative interest in tumor biology or cell injury. Enthusiasm and competence in teaching of professional and graduate students is essential. Opportunity for limited participation in hospital pathology service. Send curriculum vitae by 1 April 1977 to **Dr. George M. Martin**, Search Committee, Department of Pathology SM-30, University of Washington, Seattle, Wash. 98195. *Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION/PHYSICS. Assistant professor level. Demonstrated interest in quality teaching and scholarly work required. Must be able to teach all offerings in physics and physical science. College teaching experience preferred. Send résumé and names of three professional references to **Dr. Joe B. Davis**, Chairman, Department of Chemistry and Physics, Winthrop College, Rock Hill, S.C. 29733 by 14 March 1977. *An Equal Opportunity/Affirmative Action Employer.*

Department of Biological Sciences announces two permanent **FACULTY OPENINGS** beginning September 1977. (i) **Vertebrate physiologist** to teach human anatomy and physiology and general biology. Must have specialized training and research interest in area of vertebrate physiology other than reproductive physiology and endocrinology. (ii) **Population biologist** (this position contingent upon budgetary approval) with strong background in evolutionary biology to teach general biology and develop a course in evolution. Both positions require a Ph.D. Both positions instructor rank. Salary \$11,000 to \$13,833 for 10 months, dependent on background and experience. Closing date for applications: 15 March 1977. Send curriculum vitae, graduate transcript(s), three letters of reference, and statement detailing specific qualifications for either position (i) or (ii) to **H. Muma**, Chairperson, Biology Hiring Committee, Towson State University, Baltimore, Maryland 21204.

Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

FACULTY POSITION-BIOPHYSICS/PHYSICS

Applications are invited for a joint position, at the rank of assistant professor, in the Department of Physics and the Biophysics Research Division. A Ph.D., competence to conduct independent research in experimental biophysics in the division laboratories, and ability to teach in the Department of Physics are essential. Must have potential to make significant contributions to both units. Qualified individuals should send a résumé and the complete names and addresses of three references to **Dr. Martha L. Ludwig**, Biophysics Research Division, Institute of Science and Technology, University of Michigan, Ann Arbor, Michigan 48109. *A non-discriminatory, Affirmative Action Employer.*

FACULTY POSITION IN BIOLOGY. September 1977 opening for Ph.D.; principal teaching responsibility will include anatomy and physiology; research interests in developmental or neurophysiology preferred. Apply to:

Affirmative Action Committee
Drawer S
William Paterson College
300 Pompton Road
Wayne, New Jersey 07470

TWO FACULTY POSITIONS—Appointment at assistant or associate professor rank depending upon qualifications.

Molecular geneticist—Strong background in genetics and biochemistry required. Biochemical approach to genetics research. Postdoctoral experience required. Ability to interact with ongoing research in comparative biochemistry of steroid biosynthesis, molecular bases of aging, evolutionary biochemistry, and research on cell membranes, are highly desirable.

Toxicologist—Strong background in pharmacology. Develop fundamental research program in physiological/biochemical bases of effects of toxic substances. Desire to provide expertise to ongoing biochemical and physiological research, essential. Send résumés and three letters of reference to: **Dr. J. W. A. Burley**, Department of Biological Sciences, Drexel University, Philadelphia, Pa. 19104.

FACULTY POSITION at the assistant professor level for an individual with postdoctoral training and publications in the field of prokaryotic molecular biology with emphasis on the use of genetic approaches. Applicants for this position should send their curriculum vitae, a list of publications, and the names of three references to: **the Search Committee**, Department of Microbiology, School of Basic Health Sciences, State University of New York, Stony Brook, New York 11794. *Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITIONS

FOOD PROCESS ENGINEER/FOOD SCIENTIST

Ph.D. with documented excellence in food engineering and food processing research. Industrial experience desirable. Undergraduate and graduate teaching, research, and service responsibilities. Rank and salary open.

FOOD SCIENCE/MANAGEMENT

Assistant professor: Ph.D. in food science with background in food systems management. Demonstrated research capability. Teaching courses in food processing, management, and quality evaluation; accompanying research and service responsibilities. Salary open.

Positions available 1 September 1977. Send résumé, official transcripts, and names of four referees before 21 April 1977, to **Dr. R. J. H. Gray**, Chairperson, Search Committee Food Science and Human Nutrition, College of Home Economics, University of Delaware, Newark, Delaware 19711. Telephone: 302-738-8407.

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

FACULTY POSITIONS

Applications for fall openings are invited from qualified persons: **PHYSIOLOGIST** (Ph.D.) to develop and teach courses in basic physiology and prerequisite chemistry, assist in the systems curriculum and in research program. **INSTRUCTOR** (M.S.) for laboratory sections of gross anatomy and embryology, some histology. Salaries competitive. Send résumé and recommendations to **Dr. G. E. Jacobs**, Faculty Search Committee, Northwestern College of Chiropractic, 1834 South Mississippi Boulevard, St. Paul, Minn. 55116. *Equal Opportunity Employer.*

POSITIONS OPEN

UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE FACULTY POSITION

The Department of Pathology is seeking a faculty member with an M.D. or Ph.D. at the assistant or associate professor level for the Division of Experimental Pathology to work in the fields of cellular immunology or membrane chemistry. This person should have considerable experience in either of these fields and be capable of developing an independent research unit. In addition to research, the person will have responsibilities for teaching at the graduate and medical student levels. Reply to: **Thomas J. Gill III, M.D., University of Pittsburgh School of Medicine, Department of Pathology, Pittsburgh, Pa. 15261. An Equal Opportunity/Affirmative Action Employer.**

FACULTY POSITION IN BIOCHEMISTRY. Tenure-track position beginning September 1977 or 1978. Postdoctoral experience and a research interest in macromolecular or membrane structure-function desired. Principal teaching duties in biochemistry at the undergraduate and graduate level. Send curriculum vitae, publication list, three letters of reference, and a brief summary of research and teaching interests to: **Biochemistry Committee, Chemistry Department, California State University, Fullerton, Calif. 92634. Affirmative Action, Equal Opportunity, Title IX Employer.**

The Department of Biological Sciences at Northern Illinois University, DeKalb, Illinois, expects three **FACULTY POSITIONS** at the assistant professor level to be available for August 1977. Applications are invited. Research is expected. Postdoctoral experience is desirable. **Microbial geneticist:** strengths in microbiology and microbial genetics are desired. Teaching duties include general microbiology and/or general biology and a graduate level course in microbial genetics. **Marine invertebrate zoologist:** competence in systematics or quantitative ecology is desired. Teaching duties include general zoology and/or general biology and an upper level course in invertebrate zoology. **Developmental botanist:** competence in developmental botany at the cellular or molecular level. Teaching at the introductory and advanced levels. Assistance in the general biology course may be expected. Send résumé and three letters of reference by 23 March 1977 to: **Dr. James A. McCleary, Department of Biological Sciences, Northern Illinois University, DeKalb, Ill. 60115. Northern Illinois University is an Equal Opportunity/Affirmative Action Employer.**

The Department of Obstetrics and Gynecology at UCLA is accepting applications from individuals with a primary interest in either **GYNECOLOGY OR OBSTETRICS**. Post-residency fellowship or experience is desirable but not required. Applications will close 1 April 1977. Send curriculum vitae and bibliography to: **C. R. Brinkman, III, M.D., Faculty Appointments Committee, Department of Obstetrics and Gynecology, UCLA School of Medicine, Los Angeles, California 90024. UCLA is an Equal Opportunity Employer.**

HUMAN POPULATION GENETICIST: Faculty position open July 1977. Teaching includes undergraduate and graduate courses. Research interests should be appropriate to training graduate students in human population genetics. Submit curriculum vitae, three letters of recommendation, and a synopsis of research interests by 15 April 1977 to the **Search Committee, Department of Genetics, University of California, Berkeley, California 94720. An Affirmative Action/Equal Opportunity Employer. Women and minority candidates welcomed.**

ICHTHYOLOGIST: Joint assistant professorship in Zoology/Entomology and Fishery and Wildlife Biology to teach ichthyology, fish physiology, and possibly one other course in fish biology. Candidate is expected to pursue a strong research program and direct graduate students. Postdoctoral experience preferred. Send complete curriculum vitae with list of publications (if any) and names of three references to: **Dr. B. A. Wunder, Ichthyologist Search Committee, Department of Zoology/Entomology, Colorado State University, Fort Collins, Colorado 80523. Application deadline: 1 April.**

Colorado State University is an Equal Opportunity Employer and complies with Title IX requirements. Complaints should be filed with the Office of Equal Opportunity, Student Services Building. Inquiries from qualified ethnic minority and/or female candidates are especially welcomed.

POSITIONS OPEN

IGNEOUS OR METAMORPHIC PETROLOGIST UNIVERSITY OF ALASKA, FAIRBANKS

The Division of Geosciences invites applications from qualified persons in igneous or metamorphic petrology, with a strong background in field geology and volcanology. The appointment may be made at the level of assistant, associate, or full professor, depending upon qualifications and experience.

Applicants should have a Ph.D. or its equivalent in training and experience, and should have contributed substantially to research, as evidenced in the scientific literature. Preference will be given to persons with field experience in Alaska. Prior teaching experience is desirable.

Duties will include teaching undergraduate petrography courses and graduate-level courses in igneous and metamorphic petrology, and volcanology. The appointee will be a member of staff of the Geophysical Institute.

The University of Alaska is an Equal Opportunity/Affirmative Action Employer. Women and members of minority groups are encouraged to apply.

For further information, please write to the **Director, Division of Geosciences, University of Alaska, Fairbanks, Alaska 99701.**

Closing date: 31 May 1977.

IMMUNOLOGIST— IMMUNOPHARMACOLOGIST

Ph.D. immunologist or immunopharmacologist, to direct a laboratory investigating the immunological parameters of acute and chronic inflammation to contribute to the development of anti-inflammatory drugs. Experience in investigating the immunologic events contributing to inflammatory responses in animals is desired. Requires creativity and offers opportunity for growth and advancement. Please send complete résumé, with bibliography and salary requirement to: **Randall K. Weston, Sterling-Winthrop Research Institute, Columbia Turnpike, Rensselaer, N.Y. 12144. An Equal Opportunity Employer, M/F.**

THE UNIVERSITY OF CALGARY DEPARTMENT OF BIOLOGY INSTRUCTORSHIP IN INVERTEBRATE ZOOLOGY

Responsibilities will be planning, direction, and coordination of laboratories in multi-sectioned courses in invertebrate zoology. Applicants should have a strong commitment to undergraduate teaching and should have at least a master's degree. Anticipated starting date is 1 July 1977. The salary floor for the rank of instructor is \$13,100 (likely to be adjusted effective 1 July 1977).

Applicants should send curriculum vitae and name and addresses of three referees to: **Dr. J. H. Williamson, Head, Department of Biology, University of Calgary, Calgary, Alberta, T2N 1N4, Canada by 1 May 1977.**

MAMMALIAN INSECTICIDE TOXICOLOGIST. Position for toxicologist with interest in effects of insecticides on mammals and mammalian systems. Effective 1 July 1977. Ph.D. or equivalent research training in toxicology required. Eleven-month appointment at level of assistant insecticide toxicologist, Experiment Station, and assistant professor of entomology, approximately 90 percent research, 10 percent teaching. Activities include research on effects and hazards of insecticides on/to mammals and mammalian systems, supervision of graduate students, and some course instruction. Submit curriculum vitae, transcripts, reprints, and names and addresses of five referees to **Ralph B. March, Search Committee Chairman, Division of Toxicology and Physiology, Department of Entomology, University of California, Riverside, Calif. 92502. The University of California is an Equal Opportunity/Affirmative Action Employer.**

NEUROBIOLOGIST—Indiana University School of Medicine—Evansville Center. Applicants are sought for a new faculty position in neurobiology at the rank of assistant professor beginning July 1977. Candidates with research experience in the study of neurotransmitters are of particular interest. Responsibilities will include teaching freshman medical students in neurobiology and participation as a neurochemist in interdisciplinary research. Current research activities at the Center include basic studies on alcohol and other abused substances. Applications should be received by 1 April 1977. Address to: **Dr. George D. Guthrie, Evansville Center for Medical Education, 8600 University Boulevard, Evansville, Ind. 47712. An Equal Opportunity Employer.**

POSITIONS OPEN

NEUROBIOLOGIST: SOMATOSENSORY SYSTEM

Faculty position—assistant professor of anatomy in residence. Available: 1 July 1977. Expertise in electrophysiology and modern neuroanatomical techniques as applied to the mammalian somatosensory system is required. Will join a research and teaching group in neurobiology. The individual will be expected to apply for extramural support for one-half the salary.

Send curriculum vitae to:

**H. J. Ralston
Department of Anatomy
University of California
San Francisco, Calif. 94143**

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

OCEANOGRAPHY FACULTY POSITION

There is a 2-year faculty position, with possibilities for extension, open for a chemical or geological oceanographer with a Ph.D., or equivalent, beginning September 1977. Applicants in all fields of chemical or geological oceanography are invited to apply. Deadline for receipt of applications is 30 March 1977. Send résumé and four letters of recommendation to: **Dr. Ronald Merrill, Chairman Recruitment Committee, Department of Oceanography WB-10, University of Washington, Seattle, Wash. 98195. The University is an Equal Opportunity/Affirmative Action Employer.**

PATHOLOGISTS are needed at the new University Hospital of the University of Massachusetts Medical Center. Positions available range from assistant professor to full professor. Preference given to Board-certified pathologists with primary interest in surgical pathology (including cytopathology) and autopsies, and strong collateral interest in teaching and/or research. *Minority candidates and women are especially encouraged to apply.* Write to **Dr. G. Majno, Chairman, Department of Pathology, University of Massachusetts Medical School, 55 Lake Avenue North, Worcester, Mass. 01605. An Equal Opportunity/Affirmative Action Employer.**

PATHOLOGISTS

DIRECTOR—D.V.M. Board-certified pathologist with solid managerial experience and interest in large-scale toxicology programs is needed to direct and expand a growing pathology department.

ANATOMIC PATHOLOGIST—D.V.M. Board-certified is preferred with experience in large-scale toxicology programs desired to perform necropsies and pathological evaluations.

Maryland and D.C. area location; excellent fringe benefits; salary open; relocation assistance available; qualified individuals should submit a curriculum vitae with salary requirements to **Tim Schick, Employment Manager, Litton Bionetics, Inc., 5516 Nicholson Lane, Kensington, Md. 20795. Equal Opportunity Employer, M/F.**

PHARMACOLOGIST (TOXICOLOGY)

The National Cancer Institute is seeking candidates for an inhalation toxicologist position in the Carcinogenesis Program. The person selected will be expected to design and supervise inhalation carcinogen bioassay studies and experiments related to toxicity and metabolism of carcinogens. He or she will also supervise the analysis, evaluation, and presentation of data resulting from these studies. The position is primarily an administrative assignment that requires a close working relationship with other government agencies and the scientific community at large. Salary range will be from \$28,725 to \$37,000, based upon experience and training. This position is a career Civil Service appointment. Experience in inhalation toxicology, pharmacology, biochemistry, and/or metabolism is desirable. Please send résumé by 2 April 1977 to:

**Yvonne DeWald
NCI Personnel Office
National Institutes of Health
Public Health Service
9000 Rockville Pike
Building 31, Room 3A27
Bethesda, Maryland 20014
Equal Opportunity Employer**

POSITIONS OPEN

PHARMACOLOGISTS, TOXICOLOGISTS (2). Applications are invited for faculty positions at assistant or associate professor level. Candidate must have Ph.D., M.D., or D.V.M. degree and postdoctoral research experience. Established investigator or potential to develop independent research program. Teaching experience preferred but not essential. Send curriculum vitae and names of three references to: **Dr. Theodore M. Brody, Chairman, Department of Pharmacology, Life Sciences Building, Michigan State University, East Lansing, Michigan 48824.** An Equal Opportunity/Affirmative Action Employer.

PHYSICAL CHEMIST, associate or full professor, to teach undergraduate courses in physical chemistry and to teach graduate courses and guide graduate research in solid state science. Nine hours teaching per semester. Ph.D. and 4 years of postdoctoral teaching experience at an American university required. Available equipment includes NCR 201 and PDP-8 computers; Varian 4502 ESR; G.E. XRD 6 for diffraction and fluorescence; Beckman U.V.-visible; Perkin-Elmer 337 I.R.; Phillips Liquid Nitrogen; controlled atmosphere high-temperature furnaces; conductivity, magnetic susceptibility, Mössbauer spectroscopy, thermoluminescence, emission spectroscopy, differential thermal analysis and thermogravimetric equipment, and ⁶⁰Co radiation facility. Two-year appointment beginning September 1977; salary range \$14,400 to \$28,800 including furnished housing and other benefits. Send résumé to: **Dean of Faculties, American University in Cairo, 866 United Nations Plaza, New York, N.Y. 10017.**

Full-time, academically oriented **PHYSICIAN** at assistant or associate professor level to function as **associate director** of the Sleep Disorders Service in the Department of Psychiatry and Behavioral Sciences at Stanford University School of Medicine. An understanding of neurochemistry, neurophysiology, and biological rhythms, as well as clinical experience with sleep disorders or in sleep research is desirable. Many aspects of the Sleep Disorders Service are unprecedented and entirely new conceptually and practically. Strong collaborative relationships for service, training, and research exist, making joint departmental appointments possible. Send curriculum vitae to **William C. Dement, M.D., Ph.D., Director, Sleep Disorders Service, Department of Psychiatry and Behavioral Sciences, Stanford University School of Medicine, Stanford, Calif. 94305.** Stanford University is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.

PHYSIOLOGY FACULTY POSITION

The Division of Biochemistry, Physiology and Pharmacology of the University of South Dakota School of Medicine invites applications from well-qualified physiologists for a faculty position in an expanding program. Applicants must hold a Ph.D. degree and have at least 2 years of postdoctoral training. All qualified physiologists will be considered, but those with expertise in endocrinology will be favored. Candidates should be prepared to develop a strong, independent research program, participate in graduate student training and teach physiology to medical students. Although there is a preference for candidates at the assistant professor level, consideration will be given to more advanced applicants. Salary is negotiable. Please send a curriculum vitae, including a complete bibliography, a brief description of anticipated future research directions, and the names of three references by 30 April 1977 to: **J. L. Johnson, Ph.D., the University of South Dakota School of Medicine, Vermillion, S.D. 57069.** Equal Education and Employment Opportunity/Affirmative Action Institution.

THE UNIVERSITY OF DELAWARE: Three non-tenure track positions for the 1977-78 academic year with teaching responsibilities in **general chemistry** (two positions) and **elementary organic/elementary biochemistry**. Ph.D. in chemistry required (inorganic for one position, analytical or physical for the second, organic/biochemistry for the third). Recent Ph.D. (assistant professor) or academic sabbatical leave. Curriculum vitae and three teaching recommendations to **Dr. Thomas B. Brill** (inorganic applicants), **Dr. John L. Burmeister** (analytical or physical), or **Dr. Harold White** (organic/biochemistry), Department of Chemistry, University of Delaware, Newark, Delaware 19711, by 25 March 1977. The University of Delaware is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

MEDICAL GENETICS RESEARCH ASSOCIATE

Person to maintain managerial role for development, organization, processing, and interpretation of genetic research data; coordination of genetics clinics; grant management. Minimum B.S./B.A. and 2 years of genetics research experience or postgraduate training. Send résumé to: **Richard C. Juberg, M.D., Department of Pediatrics, Wright State University, Children's Medical Center, 1735 Chapel Street, Dayton, Ohio 45404.** An Equal Opportunity and Affirmative Action Employer, M/F.

PHARMACOLOGY. The Department of Pharmacology, School of Medicine, University of Louisville, invites applications for four full-time faculty positions. Two positions for clinical pharmacologists with an M.D. degree who would have a joint appointment in the appropriate clinical department are open at the assistant professor level, or if qualified, associate professor. Applicants whose interests are in cardiovascular pharmacology, drug metabolism, or molecular pharmacology will be preferred candidates for the other two assistant professor positions. Send curriculum vitae and three letters of recommendation to: **William J. Waddell, M.D., Chairman, Department of Pharmacology, University of Louisville, School of Medicine, Health Sciences Center, P.O. Box 1055, Louisville, Kentucky 40201.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL APPOINTMENT now available for a recent or expectant Ph.D. in biochemistry, molecular biology, or biology with an interest in messenger RNA metabolism in cultured animal cells. Transcription and polyadenylation in cells, isolated nuclei, and purified enzymes are now under investigation. Salary is negotiable. Please send curriculum vitae and names of two references to **Dr. Mary Edmonds, Department of Life Sciences, University of Pittsburgh, A741 Crabtree Hall, Pittsburgh, Pa. 15261.** An Equal Opportunity Employer.

POSTDOCTORAL POSITION in biochemistry available immediately. Research on membrane-associated regulatory enzymes including a protein kinase and an adenosinetriphosphatase. Studies involve isolation, purification, and kinetic characterization of membrane-associated enzymes and modeling of the putative regulatory system. Tenure, either 1 or 2 years. Please submit curriculum vitae, transcript, a brief résumé of your predoctoral research, and three letters of recommendation to **Dr. E. B. Cunningham, Department of Biochemistry, Medical University of South Carolina, Charleston, South Carolina 29401.** Telephone: 803-792-2331. An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION IN OCEANOGRAPHY

Applications are invited for a postdoctoral faculty position in the Department of Oceanography, University of Washington, starting 1 April 1977 or later. Applicants must have a Ph.D., excellent theoretical background, preferably experience in numerical modelling, qualified and be interested in theoretical research on ocean circulation, large-scale ocean-atmosphere interaction, or climate dynamics. Send complete curriculum vitae, list of publications, and four letters of reference to **Dr. R. T. Merrill, Chairman, Faculty Recruitment Committee, Department of Oceanography, University of Washington, Seattle, Washington 98195.** The University of Washington is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION

Available immediately. Recent Ph.D. in biochemistry or microbiology for study of mechanism of bacterial energy conservation. Familiarity with enzyme purification or membrane or mutant systems desirable. One-year appointment, renewable. Stipend: \$10,000 for first year. Send curriculum vitae and names of three references to **Dr. Daniel DerVartanian, Department of Biochemistry, Boyd Graduate Studies Research Center, University of Georgia, Athens, Georgia 30602.** The University of Georgia is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION IN MOLECULAR VIROLOGY. Available summer 1977. Nontargeted basic research on genetic regulation by negative-strand RNA viruses in a challenging, multidisciplinary environment. Applications should include curriculum vitae, names of three references, and a statement of career goals. **Dr. David W. Kingsbury, St. Jude Children's Research Hospital, P.O. Box 318, Memphis, Tennessee 38101.** St. Jude Hospital is an Equal Opportunity Employer.

POSITIONS OPEN

WANTED—Position available for host mediated assay of chemicals using diffusion chamber technique. M.S. or Ph.D. required with experience in animal cell culture and cytogenetics including chromosome banding techniques. Ability to carry out independent research. Send curriculum vitae and two letters of recommendation to **Dr. Ninan, Biology Department, Erie Community College-South, 4140 Southwestern Boulevard, Orchard Park, New York 14127.**

POSTDOCTORAL POSITION: Research involving the biochemistry of plant viroids. Experience with nucleic acids and molecular hybridization would be especially helpful. One-year appointment, renewable. \$10,900 minimum. Available immediately. Send curriculum vitae and names of three references to **Dr. Milton Zaitlin, Department of Plant Pathology, Cornell University, Ithaca, N.Y. 14853.** An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL POSITION available immediately for a biochemist-marine biologist to study the corticosteroid stress response in marine teleosts. Experience with radioimmunoassay preferred. Contact: **Dr. J. M. Neff, Department of Biology, Texas A & M University, College Station, Texas 77843.**

POSTDOCTORAL POSITION: Two, available immediately. To study (i) elemental composition of isolated cell systems (red blood cells, isolated gastric cells), and (ii) the distribution of diffusible elements in the kidney at the cellular level. Techniques of microphysiology and electron probe microanalysis will be used. Apply to: **C. Lechene, M.D., Director, Biotechnology Resource in Electron Probe Microanalysis, Harvard Medical School, LHRB, 45 Shattuck Street, Boston, Massachusetts 02115.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS

Three to five openings between 1 April and 1 July 1977 for 2 to 3 years at \$11,568 for 12 months. No teaching. Research in following areas:

- (1) Microbiology and lipid biochemistry with additional work possible in cell culture physiology and intracellular parasitism.
- (2) Lipid biochemistry with background in enzymology.
- (3) Lipoprotein metabolism; prostaglandins and other metabolic mediators; metabolites in serum and urine by high-pressure liquid chromatography/mass spectrometry.

Send curriculum vitae, bibliography, research interests, and the names of four references to: **Search Committee, Hormel Institute, University of Minnesota, Austin, Minn. 55912.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

Two positions for biochemists in a laboratory employing a multidisciplinary approach to the study of chemical carcinogenesis and environmental toxicology. Must have interest in metabolism and elucidation of the mechanism of molecular interaction, particularly with cellular macromolecules, utilizing in vitro and in vivo approaches. Send résumé to: **Dr. James R. Allen, Department of Pathology, University of Wisconsin, 470 North Charter Street, Madison, Wisconsin 53706.** Telephone: 608-263-3524.

An Equal Opportunity/Affirmative Action Employer

SACRAMENTO PEAK OBSERVATORY POSTDOCTORAL RESEARCH SCIENTISTS

Postdoctoral appointments are available at Sacramento Peak Observatory for 1- to 3-year periods beginning 1 October 1977. Salaries range upward from \$14,000 depending on qualifications. The observatory is operated by the National Science Foundation to undertake research in solar physics and to provide observing opportunities for the community. Staff scientists have access to a variety of advanced telescopes and auxiliary instrumentation, including the Vacuum Solar Tower. Observational and theoretical research in many areas of solar physics that relate to stellar astrophysics are pursued at the observatory. Applications specifying qualifications, experience, and the names of three professional references should be sent to: **Director, Sacramento Peak Observatory, Sunspot, N.M. 88349,** by not later than 15 April 1977.

An Equal Opportunity Employer

POSITIONS OPEN

University of California, Davis has two positions for **POSTHARVEST BIOLOGISTS** each of whom will be a member of an academic department and participate in an interdepartmental research program devoted to advancements in the storage and distribution of fruits, vegetables, and ornamental plants. Positions provide an opportunity for participation in undergraduate teaching and in one or more graduate faculty groups such as plant physiology, biochemistry, horticulture, and food science. Minimum requirements are a Ph.D. in a pertinent discipline and the capacity for independent, original research. For detailed position descriptions write to: **Dr. W. P. Hackett, Department of Environmental Horticulture, University of California, Davis, Calif. 95616. University of California is an Equal Opportunity Employer.**

MEDICAL RESEARCH FOUNDATION PRESIDENT

Senior research scientist who will serve as scientific director and devote major portion of his/her time to planning, development, and implementation of scientific programs of Oklahoma Medical Research Foundation. As chief executive officer, president is responsible to Board of Directors and Executive Committee for direction, planning, and development of the Foundation within Board-approved policies and programs. Foundation has close working relationships with University of Oklahoma Health Sciences Center and other Oklahoma Health Center institutions. Salary negotiable with excellent fringe benefits. *Equal Opportunity/Affirmative Action Employer.* Send curriculum vitae and letter of interest to **Chairman, Search Committee for President, Oklahoma Medical Research Foundation, 825 Northeast 13th Street, Oklahoma City, Oklahoma 73104.**

PROFESSOR AND HEAD, Department of Microbiology, College of Veterinary Medicine and Biomedical Sciences, Colorado State University. Responsibilities are to direct the education, research, and training programs of a department that currently consists of 28 full-time faculty members, 6 postdoctorates, 80 graduate students, and approximately 500 undergraduate majors in microbiology, microbiology/medical technology, environmental health, fish disease technology and veterinary microbiology. B.S., M.S., and Ph.D. degrees are offered. Applicants must hold a doctoral degree or equivalent and have demonstrated scholarship in microbiology. Deadline for submitting applications is 30 April 1977. Interested persons are invited to direct inquiries and submit curriculum vitae to **Dr. Max Zelle, Chairman Search Committee, Department of Radiology and Radiation Biology, Colorado State University, Fort Collins, Colorado 80523. Colorado State University is an Equal Opportunity Employer and complies with Title IX requirements. Complaints should be filed with the Office of Equal Opportunity, Student Services Building.**

PULMONARY PHYSIOLOGY RESEARCH/TRAINING

Research and graduate position available in field of mammalian pulmonary physiology with adjunct professorship of appropriate rank in the University of California, Irvine. Collaborative research conducting physiologic studies in animals exposed to airborne materials of environmental/occupational interest. Requires Ph.D. in physiology or related field and 2 years of postdoctoral research, preferably with pulmonary measurements in laboratory animals. Preference given applicants experienced in inhalation toxicology and published independent work. Research site at Toxic Hazards Research Unit, Wright-Patterson Air Force Base, Dayton, Ohio; opportunity to participate in training of graduate students of University of California, Irvine, and other campuses. Closing date for application is 4 April 1977. *Applications from all qualified candidates are welcome; minorities and women are encouraged to apply.* Submit complete curriculum vitae and names of at least three references to: **Dr. J. D. MacEwen, University of California, Irvine, Toxic Hazards Research Unit, Overlook Branch, P.O. Box 3067, Dayton, Ohio 45431.**

RESEARCH ASSOCIATE—BIOCHEMISTRY

Applications are invited for a research position in the Division of Orthopedic Surgery at Stanford University School of Medicine. Preferred qualifications include a Ph.D. degree with interest in biochemistry related to connective tissue. Submit résumé to: **Dr. David Schurman, Division of Orthopedic Surgery, 300 Pasteur Drive, Stanford, California 94305.**

POSITIONS OPEN

RADIO ASTRONOMER

A staff position will be available at the Arecibo Observatory in Puerto Rico beginning summer or fall 1977. Preference will be given to applicants with several years of research experience beyond the Ph.D. and with interests in spectral line radio astronomy. Respond to: **Dr. Harold D. Craft, Jr., Arecibo Observatory, Box 995, Arecibo, Puerto Rico 00612. Cornell University is an Affirmative Action/Equal Opportunity Employer.**

RESEARCH ASSISTANT III. Nutritional sciences. Salary: \$9,200 to \$14,750. Duties include: isolation of lipoproteins from plasma, extraction of lipids from lipoproteins, separation of lipids, determination of lipid structure, analysis of lipids, and supervision of lipid research laboratory. Ph.D. in lipid chemistry or biochemistry or equivalent experience required. Apply to **K. L. Knox, U-17, University of Connecticut, Storrs, Connecticut 06268. An Equal Opportunity Employer.**

RESEARCH ASSOCIATE

An opening for a research associate is available in the laboratory of Dr. Andrzej Bartke for someone interested in reproductive endocrinology. Applicants should be recent Ph.D.'s or M.D.'s and must possess experience in radioimmunoassay of androgens or other polypeptide hormones. Experience in the area of polypeptide hormone receptors is desirable. Women and minority candidates are encouraged to apply. Send curriculum vitae and request three referees to send references directly to: **Dr. Ashton Gibbons, Director of Personnel, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545. An Affirmative Action/Equal Opportunity Employer**

RESEARCH PSYCHIATRIST NEUROSCIENTIST UNIVERSITY OF MICHIGAN

Two positions—Mental Health Research Institute, University of Michigan. Openings are immediately available for an active research psychiatrist who also qualifies for academic rank in the Department of Psychiatry; and a neuroscientist having research interests relevant to mental health will be appointed with an academic appointment in an appropriate department of the University. Codes #1800IO and 1900IO. Send résumé to **Box 100, SCIENCE. A non-discriminatory Affirmative Action Employer.**

The U.S. Food and Drug Administration's Bureau of Medical Devices and Diagnostic Products has approximately 20 Civil Service openings at the GS-11/12/13 levels (Salary \$17,056 to \$24,308) for **REVIEWERS OF SCIENTIFIC DATA** (premarket approval applications, investigational new device exemption requests, product development protocols, and so forth) in the following disciplines: biochemistry, organic (plastics) chemistry, clinical chemistry, health physics, physiology, toxicology, hematology, immunology, histopathology, diagnostic clinical microbiology, statistics/epidemiology, and engineering (biomedical, electrical, mechanical materials). Interested persons with Ph.D., M.D., D.V.M. or with B.S. or M.S. plus experience, may submit applications (résumé or completed Standard Form 171, Personal Qualifications Statement, plus transcripts) to **Division of Classification and Scientific Evaluation, HFK-400, BMDDP, FDA, 8757 Georgia Avenue, Silver Spring, Md. 20910, Attn: Margie M. Dall. Telephone 301-427-7230. U.S. citizenship required. FDA is an Equal Opportunity Employer.**

SENIOR BIOCHEMIST

Applications invited from medically oriented Ph.D.'s with 3 to 7 years postdoctoral experience in nutrition and metabolism. Background should include facility with all phases of biochemical analysis, including immunochemical methods, carbohydrate chemistry, techniques of animal surgery, and methods of performing drug metabolism experiments.

This position will be filled by an individual with sufficient imagination and creativity to conduct their own projects in an R & D environment.

The position is also accompanied by a competitive salary and comprehensive benefit package. For consideration, please send résumé in confidence to:

**Steve Lesniak
Baxter-Travenol Laboratories
6301 North Lincoln Avenue
Morton Grove, Illinois 60053**

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

RESEARCH POSITIONS available in a histocompatibility laboratory. Postdoctoral experience of 0 to 5 years in statistics, microbiology, or genetics required. Duties include working with an ongoing research program in histocompatibility.

Send curriculum vitae and statement of interest to: **Dr. Paul Terasaki, Department of Surgery, University of California, Los Angeles, California 90024. Equal Opportunity/Affirmative Action Employer.**

The Midland Macromolecular Institute (MMI) invites applications for a **SENIOR FACULTY POSITION**. Duties will involve research in **molecular oncology** and teaching in either molecular biology, biochemistry, organic chemistry, or related fields on the graduate and postdoctoral level. The position is fully funded and carries with it funds for three postdoctoral fellows, equipment, and so forth. Prospective candidates with qualifications for the full professor level and proven ability to carry out vigorous and imaginative research program should contact the **Search Committee, Molecular Oncology, Midland Macromolecular Institute, 1910 West St. Andrews Road, Midland, Michigan 48640**, for details before submitting applications. **Telephone: 517-631-9453. MMI is an Equal Opportunity/Affirmative Action Employer.**

The Chemistry Department at Yale University has **OPENINGS at the SENIOR FACULTY LEVEL** in inorganic and organic chemistry. Although the precise area is not the major factor, candidates with research interests complementing our current concentrations would be given preference. We are seeking candidates who have achieved international recognition and are considered to be leaders in their field. *Yale is an Affirmative Action/Equal Opportunity Employer and encourages applications from women and members of minority groups with appropriate qualifications.* Applications should be returned by 30 March 1977 to the **Chairman, Department of Chemistry, Yale University, 225 Prospect Street, New Haven, Connecticut 06520.**

SENIOR PHARMACOLOGIST (ANALGESICS, ANESTHETICS, CNS)

The Sterling-Winthrop Research Institute offers a basic and product development research career opportunity for a senior Ph.D. or M.D. pharmacologist who has demonstrated creative leadership in the research and development of analgesics, anesthetics, and/or psychotherapeutic drugs. Applicants are expected to have extensive experience in this area and the ability to manage and direct research projects. Knowledge of the neurochemical correlates of drug action is desirable. Please send complete résumé and salary requirements to **Randall K. Weston, Sterling-Winthrop Research Institute, Columbia Turnpike, Rensselaer, N.Y. 12144. An Equal Opportunity Employer, M/F.**

TERATOLOGIST

Excellent opportunity with a major drug firm for individual with an M.S. or M.A. degree in the biological sciences or the equivalent in number of years of experience. Supervisory experience is essential. This individual will be responsible for coordinating the daily activities in teratology studies and designing, performing, correlating, and reporting the results of these studies with the minimum of supervision.

Wyeth offers an excellent starting salary, company paid benefits and tuition refund policy. Send résumé and salary requirements to:

Personnel Department

**WYETH
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P.O. Box 861
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POSITIONS OPEN

SENIOR SOLAR ENERGY RESEARCH ENGINEER to conduct and manage applied research in solar energy, energy conservation, energy storage, related areas, at Desert Research Institute Energy Systems Laboratory, Boulder City, Nevada. Requires M.S., Ph.D., or equivalent degree in mechanical or chemical engineering, and substantial experience in solar energy systems development. Salary: approximately \$25,000; application deadline: 31 March 1977. Send résumé to **Dr. Michael C. Noland, c/o Personnel Office, Desert Research Institute, University of Nevada System, P.O. Box 60220, Reno, Nevada 89506.** An Equal Opportunity/Affirmative Action Employer.

TOXICOLOGIST-PHARMACOLOGIST

An established midwestern research facility is accepting applications for an aggressive individual to be responsible for protocol development and project direction in an expanding research program in toxicology. Ph.D. preferred. Excellent career opportunity. Send résumé to: **Springborn Institute for Bio-research, Inc., 553 North Broadway, Spencerville, Ohio 45887.**

UNIVERSITY OF MIAMI

The Department of Biology seeks applicants for 2 faculty positions beginning August 1977. Rank and salary are dependent upon qualifications. Preference will be given to those having interest in **tropical biology**. Send curriculum vitae and arrange to have at least three letters of recommendation conveyed to: **Faculty Search Committee, Department of Biology, University of Miami, P.O. Box 249118, Coral Gables, Florida 33124.** A private, independent, international university. An Equal Opportunity Employer.

VIROLOGIST. Position for recent Ph.D. experienced in animal virology, tissue culture, immunology, and molecular biology techniques. Research on grant funded project dealing with human papilloma viruses. Position open immediately. Send curriculum vitae and names of three references to: **Dr. Cedric Quick, University of Minnesota, 420 Delaware Street SE, Minneapolis, Minn. 55455.**

SUMMER TRAINING INSTITUTE

The Department of Psychobiology at the University of California, Irvine, located 3 miles inland from the coastal resort community of Newport Beach, invites applications from pre- and postdoctoral social scientists for a **Summer Training Institute on Neurobiology and Addiction**. Applicants must be citizens or permanent residents of the United States. The Institute, sponsored by the Social Science Research Council and supported by NIMH, will run 6 weeks, 20 June to 29 July 1977. Prior training in biological sciences is not required. Stipends will cover living costs and travel to and from Irvine. The Institute will include training in basic neurobiology, the neurobiology of addiction and clinical applications in the treatment of addiction. Completed applications and supporting documents must be received by 15 April 1977. Application forms and further information may be obtained from **Dr. Richard F. Thompson, Professor of Psychobiology and Director of the Institute, University of California, Irvine, Irvine, California 92717.** Attention: Sharon Phillips.

SUMMER PROGRAM

SPECIAL SUMMER PROGRAM ON ENZYMES AND THEIR USE IN ANALYSIS AND CLINICAL DIAGNOSIS

Massachusetts Institute of Technology
27 June to 1 July 1977

The objective of the program is to develop the participants' abilities to use enzymes as analytical reagents. It will provide a comprehensive theoretical background and practical knowledge in *applied enzymology*, and develop an awareness for the multiple areas of application of enzymatic assays, including clinical diagnosis and the use of immobilized enzymes.

For further details and application forms, write

**Director, Summer Session
Room E19-356
Massachusetts Institute of Technology
Cambridge, Mass. 02139**

TRAINING PROGRAM

GRADUATE STIPENDS

Ph.D. Training Program in Physiology and Biophysics Rush Graduate School

Modern physiology seeks to analyze the function of animal systems quantitatively using the techniques and approaches of chemistry, physics, engineering, and applied mathematics. Most of today's leaders of research have started their careers as physical scientists and continue to approach physiological problems from that perspective. Applications are presently being considered for a training program stressing an independent approach to the acquisition of knowledge in which directed tutorial study provides the basic framework. Stipend support, tuition fellowships and scholarships, equipment, space, and travel funds are available. Address correspondence to **Dr. C. Schaaf, Director, Division of Physiology, Rush University, 1750 West Harrison, Chicago, Illinois 60612.**

SEMINAR

INTENSIVE SUMMER SEMINAR: INTRODUCTION TO TECHNIQUES IN ELECTRON MICROSCOPY

25 July to 5 August 1977

Preparing biological tissues for viewings in transmission electron microscope via fixation, dehydration, embedding, ultra-thin sectioning, heavy metal staining, use of TEM, SEM, and dark room. Instruments available: Sorvall MT2 and MT1 ultra microtomes, Reichert and LKB microtomes, Zeiss EM9S, AMR—Scanning EM, Denton Vacuum Evaporator, Critical Point Drier, and complete dark room. Tuition: \$150 for New York residents and \$300 for out-of-state. Limited to 16 students for individual instruction. Contact: **Jean Keene, Orange County Community College, Middletown, New York 10940.** Telephone: 914-343-1121, extension 303.

STUDENTSHIPS

Three-year **STUDENTSHIPS** leading to a M.Sc./Ph.D. in multidisciplinary areas of biological psychiatry (neurochemistry, neuropharmacology, or neurophysiology) are available. Applications are invited from graduates with first or second class honors or equivalent qualifications in a suitable biological subject to read for a higher degree. Interested persons should write to **Dr. A. V. Juorio, Psychiatric Research Division, University Hospital, Saskatoon, Saskatchewan, S7N 0W8, Canada,** including a curriculum vitae and the name and address of two referees. Applications should be sent not later than 30 June 1977.

ASSISTANTSHIPS

GRADUATE RESEARCH and TEACHING ASSISTANTSHIPS in biophysics are being offered for the M.S. and Ph.D. degree programs in the Department of Biochemistry and Biophysics, Texas A & M University, College Station, Texas 77843. Current programs include: studies in mass spectrometry, x-ray crystallography and interactive computer graphics modelling, nitrogen fixation, pesticide effects on growth and development, and origin and role of molecular chirality in life. For details write **Dr. Andrew Garay, Department of Biochemistry and Biophysics, Texas A & M University, College Station, Texas 77843.**

FELLOWSHIPS

FELLOWSHIP IN RENAL AND MEMBRANE PHYSIOLOGY

A fellowship commemorating Dr. Louis G. Welt has been established by the Department of Medicine, University of North Carolina, Chapel Hill, for 2 years of support for an M.D. or Ph.D. interested in postdoctoral research in the areas of nephrology or membrane physiology. Recipient would concentrate in one of several areas including renal physiology, epithelial transport, endocrinology of ion and water metabolism, hormones and membranes, or red blood cell transport. Interested parties should communicate with **Arthur L. Finn, M.D., Departments of Medicine and Physiology, University of North Carolina-Chapel Hill, Chapel Hill, N.C. 27514.** Deadline for receipt of applications: 15 May 1977.

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS

The Center for Alcohol Studies of the University of Pennsylvania invites applications for two postdoctoral fellowships to begin July 1977. Applicants must hold an M.D. or Ph.D. degree in physics, chemistry, biology, biochemistry, pharmacology, physiology, psychology, or any medical specialty.

Opportunities exist for a 2-year research training experience in a multidisciplinary alcoholism center emphasizing collaboration between biomedical and behavioral science.

Trainees receive a stipend of \$10,000 to \$13,200 per year. Send curriculum vitae to:

**James L. Stinnett, M.D.
Box 444
Hospital of the University of Pennsylvania
3400 Spruce Street
Philadelphia, Pa. 19104**

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL FELLOWSHIPS in human genetics beginning 1 July 1977 for 1-, 2-, and 3-year periods. Applicants to have M.D., D.D.S., or Ph.D. degree. Training emphasis placed on clinical genetics and/or cytogenetics, biochemical and population genetics. Stipends from \$10,000 to \$13,000 per year depending on experience. Write to **Dr. David Bixler, Department of Medical Genetics, Indiana University School of Medicine, 1100 West Michigan Street, Indianapolis, Indiana 46202,** or telephone: 317-264-8201.

POSTDOCTORAL RESEARCH TRAINING IN BIOENGINEERING AND ORTHODONTICS.

University of Connecticut School of Dental Medicine. A 2-year NIDR fellowship which offers a broad range of research experience in four major areas: (i) the application of mathematical modeling and computer simulation, graphics technology to facial growth, bone dynamics, and diagnosis, (ii) the determination of force systems from orthodontic appliances including studies in metallurgy, appliance design, finite element and transducer techniques, (iii) the biological response of bone and connective tissue to stress, and (iv) the study and measurement of muscle activity and forces during oropharyngeal function. Three categories of candidates for a fellowship will be considered: (i) physical scientists with Ph.D. (engineers, bioengineers, physicists, physical chemists, and mathematicians), (ii) candidates with D.D.S. degree with a certificate of core clinical training in orthodontics or a related specialty, and (iii) candidates with D.D.S. degree with B.S. degree in mathematics, engineering, or physical chemistry. Stipends are dependent on experience past the doctoral degree and start at \$10,000. Send curriculum vitae to: **Dr. Sam Weinstein, Professor, Department of Orthodontics, University of Connecticut Health Center, Farmington, Conn. 06032.** An Equal Opportunity Employer, M/F.

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Pharmaceutical Research

We are a diversified (chemicals, pharmaceuticals, agricultural chemicals, aerospace components, plastics) American Subsidiary of Imperial Chemical Industries Ltd. (London). Support of research effort is evidenced by \$28 million expansion to double capacity by late 1978, to augment parent company's worldwide pharmaceutical prominence and continuation of programs that have introduced major drugs—antihypertensives, antiarrhythmics, hypolipodemics, psychotropics, antibacterials, antifungals, corticosteroids and anesthetics.

Manpower needs of Wilmington laboratories have created these immediate openings:

Pharmacology

- Ph.D. neuropharmacologist or neuro-physiologist, with 2-5 years industrial experience, to join expanding CNS group. Will supervise team of technicians in antipsychotic development program. Familiarity with EEG evaluation essential.
- B.S./M.S. to join neuropharmacology laboratory. EEG experience preferred.
- B.S./M.S. to join GI laboratory. Background in autonomic or cardiovascular pharmacology.

Hematology

- Ph.D. or D.V.M. with background in small animal work, with preference for experience in microbiology and/or clinical chemistry. To develop new/improved techniques, analyze and interpret pre-clinical data, and participate on new drug team.

Campus setting in suburban Wilmington, 25 miles south of Philadelphia. Compensation and benefits compare favorably with major American pharmaceutical houses. We invite confidential resumes, defining salary and employment expectations.

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POST-DOCTORAL FELLOWSHIPS

Department of Physics
University of Waterloo
Waterloo, Ontario, Canada

Applications are invited for postdoctoral research fellowships in physics.

Fellowships carry a stipend of \$11,220. per annum which is subject to Canadian income tax. The awards are tenable for the period of one year with a possible renewal for a second year.

Research areas include:

Atomic and Molecular Physics, Biophysics, Brillouin Spectroscopy, Crystallography, Electron Microscopy, Electron tunneling, Ellipsometry, Experimental superconductivity, Diffraction Physics, Far-infrared spectroscopy, Infrared and Raman Spectroscopy, De Haas-van Alphen effect, Magnetoconductivity of metals, Laser Physics, Lattice dynamics, Nuclear magnetic resonance, Semiconductors, and amorphous semiconductors, Theoretical studies of magnetic impurities in superconductors and other related fields.

The applicants should submit their resumes and three letters of references to:

Dr. J. W. Leech, Chairman,
Department of Physics,
University of Waterloo,
Waterloo, Ontario, Canada. N2L 3G1

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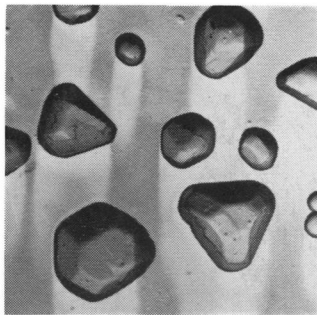


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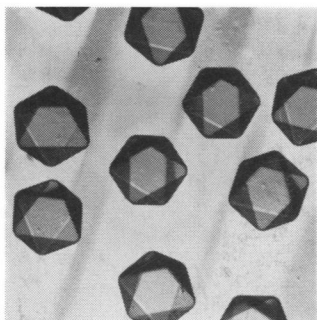
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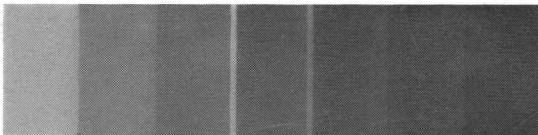
Kodak instant print film: it's quite different in the way it captures color



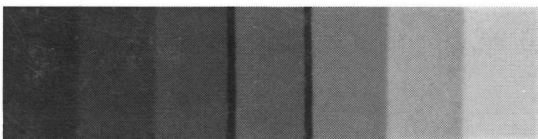
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Silver halide crystals behave so: except the kind in Kodak instant print film.



INCREASING EXPOSURE →

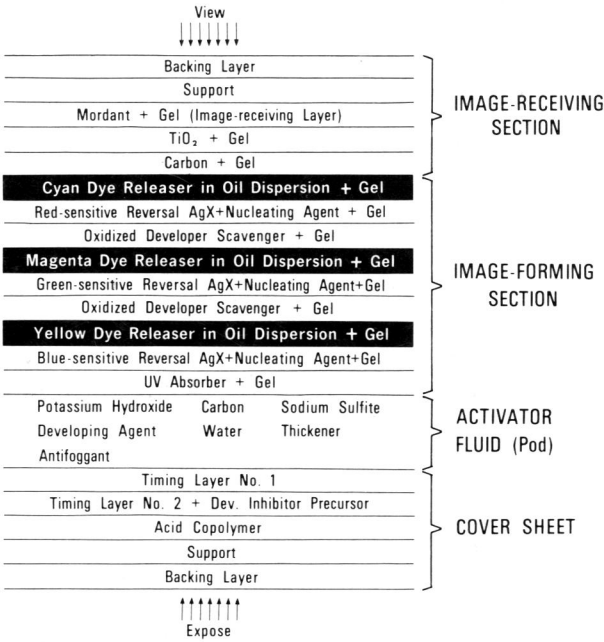


In the first kind, several photons from the scene hitting within a short time mark a crystal for development. The second kind are constructed in a way that makes them sensitive internally instead of externally. Photoelectrons get trapped inside. During processing, electrons supplied chemically go where the photoelectrons went instead of triggering development on the surface, as happens to unstruck crystals with the kind of developer employed. Light thus serves to mark a crystal for non-conversion to silver, and the unstruck crystals undergo development—the reverse of what happens in conventional silver halide photography.

In color photography, though, it's not the silver image that's wanted, but a color picture. In Kodak instant print film, reacted developer—now thought of as an electron transfer agent—is formed in proportion to the silver. This now electron-avid stuff leaves the silver behind and, by regenerating itself with electrons from a compound in the adjacent layer, changes that compound so that it will hydrolyze to release a dye built into its molecular structure. The relatively unreactive dye migrates to the receiving layer, where it binds itself.

All this happens in triplicate, for each third of the visible spectrum. For the red and green, sensitizing dyes are required, and each of the three light-sensitive layers requires its own separate image-dye-releaser layer. Then there are the layers where oxidized developer is scavenged before it can cause release of the wrong dye, the solution-permeable opaque layers that keep light out of the built-in darkroom in the film, the titanium dioxide that reflects light for the finished picture, and the layers that time the ballet that starts when the pod contents are released. Then the action stops. The time scale has slowed

down from the microseconds of electron flow in the silver halide crystal, through the few minutes for the dyes to migrate where they belong, to the distant days when we look back to a moment in our lives.



The theorists construct their models of nature, the scientists select the principles to use, and the engineers lay down the layers of many components.

