

Signed and Spoken Language: Biological Constraints on Linguistic Form

Editors: U. Bellugi, M. Studdert-Kennedy

Until recently, nearly all that was known about language had come from the study of spoken languages. But now new research into signed languages has revealed that there are primary linguistic systems, passed down from one generation of deaf people to the next, which have been forged into autonomous languages and are not derived from spoken languages. Thus, for the first time, we can examine the properties of communication systems that have developed in alternate transmission systems, i. e., in visual-gestural channels.

A group of psychologists, linguists, neurologists, and biologists met in Berlin in March, 1980 to review the progress of this new work, in particular with regard to the structure of language, its acquisition, related cognitive processes, and the complicated set of constraints that have been linked together to shape language.

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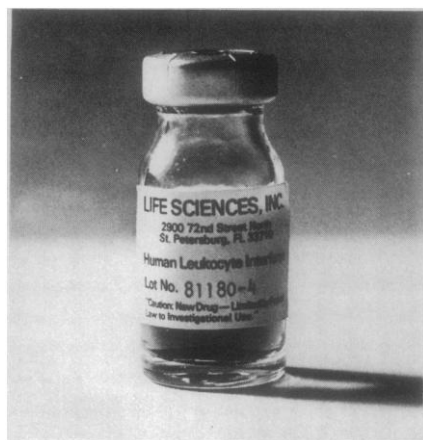
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ACADEMIC PATHOLOGIST for VA Dean's Committee Hospital at the University of South Dakota School of Medicine. We are seeking an experienced academic pathologist at the professional level who is AP/CP-certified to direct an active laboratory service and participate in teaching and research in the Department of Laboratory Medicine. Closing date: 28 February 1981. Salary commensurate with training and experience: Send curriculum vitae and three references to: **Richard A. Jaqua, M.D., Professor and Chairman, Department of Laboratory Medicine, University of South Dakota School of Medicine, VA Tower, Sioux Falls, S.D. 57105.**

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ANATOMIST. Two faculty positions at intermediate faculty levels will be available by early summer in the Department of Anatomy, University of Alabama in Birmingham. Persons with research interests in experimental or developmental neuroanatomy or neurocell biology and with teaching interests and experience in neuroanatomy, and/or gross anatomy should send a letter stating interests and goals along with curriculum vitae. Postdoctoral experience and evidence of productive, fundable research programs will receive highest priority. Position and salary will be commensurate with education and experience. *The University of Alabama in Birmingham is an Affirmative Action/Equal Opportunity Employer.* Send information to: **Earl G. Hamel, Jr., Ph.D., Department of Anatomy, University of Alabama in Birmingham, University Station, Birmingham, Ala. 35294.**

ASSISTANT PROFESSOR OF BIOCHEMISTRY AT VANDERBILT UNIVERSITY

The Department of Biochemistry invites applications from highly qualified individuals for a tenure-track faculty position at the rank of assistant professor. The primary requirement is promise of excellence in research and teaching and preference will be given to applicants with demonstrated competence, including relevant postdoctoral experience and publications, in the biochemistry of control mechanisms of cell growth, particularly those related to nucleic acid. Appointment at the level of associate professor may be possible for an exceptionally well qualified individual. The position will be available 1 September 1981, but some flexibility in starting date is possible.

Applicants should submit curriculum vitae including a list of publications, a brief description of their proposed research, and the names of three references to: **Chairman, Department of Biochemistry, Vanderbilt University Medical Center, Nashville, Tennessee 37232. Vanderbilt University is an Equal Opportunity/Affirmative Action Employer.**

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The Johns Hopkins University Applied Physics Laboratory (APL) is presently seeking an individual to join a multidisciplinary environmental assessment research team. **AIR TRANSPORT MODELING.** Challenging opportunity in modeling of atmospheric transport (dispersion, complex terrain, regional scale flow systems, pathway) associated with potential impact on power plant operations. Ph.D. or equivalent in mathematics or related field desired. You will enjoy the stable work environment and excellent facilities at APL. We offer a comprehensive benefit program, excellent relocation package, and a salary commensurate with education and training. The Laboratory has approximately 2500 employees, including over 1300 technical professionals, and is located on 360 acres midway between Washington, D.C. and Baltimore, Md., affording a choice of city, suburban, or rural living. Please send your résumé to:

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ANATOMIST. Assistant or associate professor, Department of Anatomy, University of Nevada, Reno, School of Medicine, to start 1 July 1981. Candidates will be expected to teach gross anatomy plus one or more of the other subdisciplines of anatomy. Research interests should be in the area of neuroscience or cell biology. Deadline for applications (curriculum vitae and three letters of reference) is 1 May 1981. Write to: **Dr. L. K. Schneider, Department of Anatomy, School of Medicine, University of Nevada, Reno, Nevada 89557. Affirmative Action/Equal Opportunity Employer.**

ANATOMIST Harvard-MIT Division of Health Sciences and Technology

The Harvard-Massachusetts Institute of Technology (MIT) Division of Health Sciences and Technology seeks to appoint an assistant or associate professor to a tenure-track position in the field of anatomy. Applicants should have outstanding research ability in one or more of the anatomical subdisciplines; preference is for research on biophysical mechanisms at the cellular or organ level. Applicants should also have strong interest and ability to offer instruction in the Division's gross anatomy course which employs analytical/functional approaches and which exemplifies the productive interactions between medicine, biomedical engineering, and other disciplines vital to advances in health sciences and technology. Applicants should send curriculum vitae, statement of research interests, and the names of three references by 1 March 1981 to: **Professor Farish A. Jenkins, Jr., Chairman, HST Anatomy Search Committee, c/o HST Curriculum Office, Building E2-387A, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115.**

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ANIMAL ECOLOGIST. The Biology Department at the State University College at Fredonia anticipates a tenure-track position at the assistant professor level beginning August 1981. Ph.D. required. Major responsibility will be to teach a core course in general ecology for biology majors. Other teaching responsibilities will include some combination of undergraduate and graduate courses in an area of vertebrate and invertebrate for nonmajors. Interest in maintaining a small museum would be helpful. A research program involving undergraduate and graduate (M.S.) students is expected. Send curriculum vitae and three letters of reference by 28 February 1981 to: **Search Committee, Department of Biology, State University College, Fredonia, New York 14063. State University of New York is an Equal Opportunity/Affirmative Action Employer.**

CORNELL INTERCOLLEGE PROGRAM IN ARCHAEOLOGY seeks **ASSISTANT PROFESSOR**, fall 1981. Tenure-track possible. Salary competitive. Specialty: Old World prehistoric archaeology, or use of scientific methodology of prehistoric school. Preferred area: western Mediterranean. Breadth of training/experience, background in field archaeology, necessary for introductory and methods courses, supervising major. Send curriculum vitae to: **Alvin Bernstein, Chairman, Search Committee, Archaeology Program, 265 McGraw Hall, Cornell University, Ithaca, New York 14853. Equal Opportunity/Affirmative Action Employer.**

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THE TRUDEAU INSTITUTE, INC. ASSISTANT AND ASSOCIATE PROFESSORSHIPS

The Trudeau Institute wishes to appoint three **RESEARCH IMMUNOBIOLOGISTS**, at the level of **assistant or associate professor**, to investigate basic immune functions and mechanisms of defense against infectious and neoplastic diseases. Candidates should have at least 3 years of productive postdoctoral experience to apply for an assistant professorship, and a minimum of 6 years of experience to apply for an associate professorship. The successful candidates will be provided the space and facilities to develop their own research programs. Although they will be expected to compete for outside funding, the Institute has the financial resources to support them for generous periods of time.

The Trudeau Institute is a not-for-profit institution dedicated to pure research. It is housed in a modern facility and situated in the lakes and high peaks region of the Adirondack Mountains, 8 miles from Lake Placid, N.Y.

Résumés should be sent to: **Dr. Robert J. North, The Director, Trudeau Institute Inc., P.O. Box 59, Saranac Lake, N.Y. 12983.**

ASSISTANT PROFESSOR OF BIOCHEMISTRY

Two new tenure-track positions will become available in September 1981. Preference will be given to candidates with two or more years of postdoctoral experience, established record of productivity, funded or pending research grant, and teaching experience. Candidates will preferably conduct research in the areas of nucleic acids or physical biochemistry and teach graduate and introductory level biochemistry courses. Appointments are for 9 months; salaries commensurate with experience. Please submit curriculum vitae, research synopsis (two to three pages), and names and addresses of three references as soon as possible. Send material to: **Dr. Wesley Wicks, Department of Biochemistry, University of Tennessee, Knoxville, Tennessee 37916.**

The University of Tennessee, Knoxville, is an Equal Opportunity/Title IX/Section 504/Employer.

ASSISTANT PROFESSOR IN BIOLOGY. To start 1 September 1981. One year temporary placement with consideration for permanent tenure-track position. Applicants must have a Ph.D. in developmental biology with background in genetics. Teaching excellence, a commitment to research, and a desire to interact with students and faculty in a liberal arts environment are essential. Primary teaching duties include genetics vertebrate embryology, vertebrate comparative anatomy, and human physiology. Faculty committee participation and student advisement are also expected. Send all inquiries to the following address by 1 March 1981: **Biology Search Committee, Dr. Clifton Morris, Chairman, Biology Department, Whittier College, Whittier, California 90608.**

ASSISTANT PROFESSOR, PLANT PATHOLOGY. Applications are invited for a tenure-track research and teaching position in host-parasite genetics. The appointee will use molecular and traditional genetic methods to analyze the plant host-parasite interaction, with the objective of identifying and manipulating useful genetic elements. Teaching responsibility is for a biennial graduate-level course in pathogen variability and host resistance. Ability to work cooperatively with researchers in other disciplines and to supervise graduate students is essential. Ph.D. in plant pathology or a related field with strong background in microbial, plant, or molecular genetics and biochemistry is required, and experience in manipulating macromolecules is desirable. Minimum salary is \$22,000. Please submit curriculum vitae, a statement of research experience and goals, transcripts, and three letters of reference to: **Dr. Steven G. Pueppke, Search Committee Chairman, Department of Plant Pathology, University of Florida, Gainesville, Fla. 32611.** Closing date for receipt of applications is 1 March 1981. *Equal Opportunity/Affirmative Action Employer.*

BIOLOGY FACULTY POSITIONS

Available fall 1981. A full-time teaching position, tenure-track, for a Ph.D. in physiology with a background in microbiology. Experience in radiobiology an asset. Assistant/associate level, depending on experience. Interested persons should respond with a letter of application, a résumé, and three letters of recommendation by 2 March to: **Chairman, Biology Department, La Salle College, 20th and Olney Avenues, Philadelphia, Pa. 19141.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR Department of Genetics Stanford University

Having scientific interests in areas of: (i) human genetics (for example, human biochemical genetics; chromosome structure and function), or (ii) developmental and molecular genetics of lower eukaryotic organisms. Full-time position that involves teaching and independent research. Send curriculum vitae and bibliography to:

**Dr. Stanley N. Cohen, Chairman
Department of Genetics
Stanford University Medical Center
Stanford, California 94305**

Stanford University is an Equal Opportunity Employer and welcomes applications from and nominations of women and minority group members.

UNIVERSITY OF MINNESOTA-Minneapolis

The Department of Laboratory Medicine and Pathology invites applications at the rank of **ASSISTANT PROFESSOR** (nontenure-track) in Immunobiology Research Center. Ph.D. immunology/immunogenetics with at least 3 years of postdoctoral experience. Individual to do studies in cellular immunology and immunogenetics in mouse. Some teaching, no administration. Experience with in vitro culture and cloning of mouse T lymphocytes and influence of H-2 controlled antigens on activation of cells. Interest in macrophage T cell interaction. Send résumé to: **Andreas Rosenberg, Ph.D., Department of Laboratory Medicine and Pathology, Box 198 Mayo, 420 Delaware Street, SE, Minneapolis, Minn. 55455.**

The University of Minnesota is an Equal Opportunity/Affirmative Action Employer, and specifically invites and encourages applications from women and minorities.

✓ ASSISTANT PROFESSOR—NUTRITION

The Division of Environmental and Nutritional Sciences, University of California, Los Angeles (UCLA), School of Public Health, invites applications from qualified individuals for an assistant professorship in nutrition. This is a tenure-track position and, if qualifications of the applicant justify, appointment at a higher level could be considered. The applicant should have a doctorate, a demonstrated commitment to public health problems, and a research interest in human nutrition. The successful candidate will have responsibility for developing courses, seminars, and research in community nutrition and conducting a laboratory course on biochemical nutrition assessment. Position will be available 1 July 1981. Curriculum vitae, bibliography, and three letters of recommendation should be submitted to: **Chair, Search Committee, Division of Environmental and Nutritional Sciences, UCLA School of Public Health, Los Angeles, Calif. 90024.**

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

Position open for full-time **ASSISTANT PROFESSOR, OPHTHALMOLOGY**, to perform teaching and patient service functions. Opportunity for clinical research and administrative functions if desired.

Please send curriculum vitae and bibliography to:

**Yale University
School of Medicine
Department of Ophthalmology and Visual Science
P.O. Box 3333
New Haven, Connecticut 06510**

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BIOBEHAVIORAL SCIENCES. Research associate I. Salary: \$14,000, negotiable. Postdoctoral research in neurochemistry (hormonal regulation of neurotransmitter processes). Ph.D. in neuroscience or biochemistry. Reply by 20 February 1981 to: **Paul Y. Sze, U-154, University of Connecticut, Storrs, Conn. 06268.**

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BIOCHEMICAL ENGINEER. Stahmann Farms, Inc. (Las Cruces, N.M.) is interested in a biochemical engineer at the B.S.- or M.S.-level to design and operate a plant for the conversion of sugarbeet molasses to industrial alcohol. Some expertise with solar energy is desirable. Closing date for applications is 1 April 1981. *Stahmann Farms Inc. is an Equal Opportunity/Affirmative Action Employer.* Please send curriculum vitae and three letters of recommendation to: **Larry P. Jones, Department of Biological Science, The University of Texas at El Paso, El Paso, Texas 79968.**

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR ORTHOPAEDIC BIOCHEMISTRY

The Department of Orthopaedic Surgery of the University of Pennsylvania is seeking applications for a full-time academic position in orthopaedic biochemistry. Candidates should have a Ph.D. in biochemistry and a strong interest in biochemistry of the musculo-skeletal system. Duties of the position include participation in the teaching program of the department, individual and collaborative research in the McKay Laboratory of Orthopaedic Surgery Research, and individual direction of orthopaedic residents and students in medicine and biochemistry involved in various research efforts. A joint appointment in the Department of Biochemistry, with opportunities for graduate and undergraduate teaching, collaborative research, and direction of Ph.D. candidates is anticipated. Applicants should submit curriculum vitae and arrange to have three letters of recommendation sent directly to:

**Sergio A. Jimenez, M.D.
Chairman, Biochemistry Search Committee
Department of Orthopaedic Surgery
424 Medical Education Building/GM
36th Street and Hamilton Walk
University of Pennsylvania
Philadelphia, Pennsylvania 19104**

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NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is seeking qualified applicants for the position of **ASSOCIATE PROGRAM DIRECTOR** for the Metallurgy Program, within the Metallurgy, Polymers, and Ceramics Section of the Division of Materials Research. The position is excepted from the competitive civil service and is equivalent to the GS-14 (\$37,871 to \$49,229 per annum). This position will be filled on a 1- to 2-year rotational basis. Applicants should have a Ph.D. or equivalent in metallurgy/materials science or related disciplines, a substantial record of scientific research publications, and preferably some experience in directing/managing basic research in an academic, industrial, or governmental institution. Résumés will be accepted until the position is filled and should be sent to: **National Science Foundation, Personnel Administration Branch, 1800 G Street, NW, Room 212, Washington, D.C. 20550, Attention: E. Paul Broglie, EX 81-23.** For further information, telephone: 202-357-7841. *NSF is an Equal Opportunity Employer.*

BIOLOGY OF THE LEPIDOPTERA

The Biology Department and Museum of Comparative Zoology of Harvard University are seeking to fill a joint position: the Sidney A. and John H. Hessel Assistant or Associate Professorship of Biology and Assistant or Associate Curatorship of Lepidoptera. The incumbent is expected to assume responsibility for the care, maintenance, and growth of the Lepidoptera collection. Preference will be given to candidates with a strong research program in the biology of Lepidoptera and the ability to teach entomology and related disciplines.

Salaries for assistant and associate professors in the 1980-1981 budget year range from \$18,900 to \$24,500 on a 10-month basis.

Applicants should send curriculum vitae, statement of research interests, and three letters of recommendation to: **Professor Karel F. Liem, Museum of Comparative Zoology, Harvard University, Cambridge, Mass. 02138.** Applications should be submitted by 13 March 1981. *Harvard is an Equal Opportunity/Affirmative Action Employer.*

ENTOMOLOGIST AND CURATOR

The Biology Department and Museum of Comparative Zoology at Harvard University are seeking to make a joint appointment of an Assistant Professor of Biology and an Assistant Curator of Entomology. Applicants are being sought with demonstrated research and teaching excellence in the broadly defined area of systematic biology of the Coleoptera. The incumbent will be expected to assume responsibility of the Coleoptera collection.

The starting salary for assistant professors in the budget year 1980-1981 is \$18,900 on a 10-month basis.

Applicants should send curriculum vitae, statement of research interests, and three letters of recommendation to: **Professor Karel F. Liem, Museum of Comparative Zoology, Harvard University, Cambridge, Mass. 02138.** Applications should be submitted by 13 March 1981. *Harvard is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT PROFESSOR, IN-RESIDENCE, CHEMICAL PATHOLOGY

University of California, Irvine. Department of Pathology, is recruiting for a faculty position at assistant professor level. Required: M.D., clinical Board eligible/qualified, service experience in chemical pathology, demonstrated interest in independent research. Duties: Teach medical students and house staff; limited administrative responsibility in the area of chemical pathology. *An Affirmative Action Employer.* Send curriculum vitae and references to: **H. Simpkins, M.D., Ph.D., University of California, Irvine, Department of Pathology, 101 City Drive South, Orange, Calif. 92684**, by 6 March 1981. Position effective 1 July 1981.

ASSISTANT OR ASSOCIATE PROFESSOR, tenure track, **PHYSIOLOGY**, Ph.D. Applications are invited to fulfill departmental obligations for undergraduate courses in physiology. Starting date is August 1981. Candidates at the associate professor level should have teaching experience. Postdoctoral research experience is desired. Candidates should be qualified to contribute to graduate courses in cellular or comparative physiology. Persons with active research programs in neuroscience, endocrinology, or membrane biology have high priority. Submit résumé, statement of research interests, and the names and addresses of three referees by 30 April 1981 to: **Dr. Duncan W. Martin, Chairman, Department of Zoology, SE 632, University of Arkansas, Fayetteville, Ark. 72701.** *Affirmative Action/Equal Opportunity Employer.*

MEMORIAL UNIVERSITY OF NEWFOUNDLAND Department of Biology

Assistant Professor—Quantitative Ecology

Applications are invited for the position of assistant professor (quantitative ecology) vacant from 1 September 1981, subject to availability of funds. Applicants should possess a strong background in quantitative ecology, including statistics of sampling, population dynamics, and ecological modeling. While the field of biology is open, preference will be given to candidates who will most suitably relate to the present complement of the department, especially the marine biological aspects. Prospective applicants should note that this post is **additional** to that recently advertised.

The successful applicant will have full responsibility in teaching a course in population dynamics and shared responsibility for a course in quantitative methods in biology. In addition, a strong research programme will be developed, and the incumbent will be expected to assist in the general advising of students and faculty in areas of quantitative methods.

Applications, including full curriculum vitae and the names of three referees, close on 28 March 1981 and should be addressed to:

**Dr. G. Robin South, Head
Department of Biology
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3X9**

THE UNIVERSITY OF TORONTO DEPARTMENT OF BOTANY

Applications are invited for a tenure-stream faculty position in the Department of Botany as a **flowering plant systematist and vascular plant herbarium curator**. The successful candidate should have a Ph.D. and a significant research record, together with experience in the teaching of taxonomy and as a curator of an herbarium. The appointment will be at the assistant professor level, at a starting salary of not less than \$18,800, dependent upon experience. Further particulars may be obtained from: **Professor T. C. Hutchinson, Chairman, Department of Botany, University of Toronto, Toronto, Ontario, Canada, M5S 1A1**, to whom all applications and the names and addresses of three referees should be sent. Closing date is 1 April 1981. Position will be available effective 1 July 1981.

The Division of Medical Oncology of The Evanston Hospital, an affiliate of Northwestern University, has an opening for a **CELL BIOLOGIST**. The candidate should have a Ph.D., preferably in the cancer field, with extensive experience in cell culture cloning and other related techniques. Seed money will be available initially, but the candidate is expected to pursue independent research. Salary is negotiable. Apply to: **Dr. Janardan D. Khandekar, Evanston Hospital, 2650 Ridge Avenue, Evanston, Ill. 60201.**

POSITIONS OPEN

BIOLOGICAL PSYCHOLOGY—Position Number 2

Applications are invited from behavioral neuroscientists for an anticipated position at the **assistant professor level** in the **Department of Psychology**, beginning August 1981. Appointments will be made on the basis of strong research potential in the general area of behavioral and neuronal plasticity, emphasizing learning, memory, sensory processes, motivation, and/or development. For this position applicants are expected to use **neurochemical and/or neurohistochemical techniques** in their research and to be able to teach neurochemistry. For this appointment a background in genetics will be an important consideration. Salary is \$16,000 or higher, commensurate with experience.

Applications, including a statement describing proposed research activities and objectives, curriculum vitae, and three to five letters of recommendation, should be sent to: **Dr. Herbert P. Alpern, Chairman, Biological Psychology, Department of Psychology, University of Colorado, Boulder, Colorado 80309.**

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

Application deadline: 21 March 1981.

BIOLOGICAL SCIENCE/ECOLOGY. Assistant professor. Salary negotiable. Teach biology, 244-245. Develop course in physiological ecology. Maintain active research program. Ph.D. in biological sciences. Postdoctoral research and teaching experience desired. Reply to: **R. Jack Schultz, U-42, University of Connecticut, Storrs, Conn. 06268.**

Equal Opportunity Employer

BIOLOGY FACULTY POSITIONS

Two assistant professor, tenure-track positions for September 1981. Ph.D., teaching and postdoctoral experience required. Candidates will be expected to participate in teaching undergraduate and graduate courses, develop an independent research program, and direct graduate students.

MICROBIOLOGY/IMMUNOLOGY. Responsibilities include teaching graduate and undergraduate courses in microbiology and immunology. Research expertise in immunology preferred.

PHYSIOLOGY. Applicants may expect to teach courses in comparative anatomy, human anatomy and physiology, as well as other undergraduate and graduate courses in physiology. Research expertise in systems physiology preferred.

To apply, applicants must submit curriculum vitae, reprints, statement of research interests and teaching experience, and have three letters of recommendation sent to: **Dr. Helen Oujesky, Acting Director, Division of Allied Health and Life Sciences, The University of Texas at San Antonio, San Antonio, Texas 78285.** Application deadline: 1 March 1981.

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

CHAIRMAN DEPARTMENT OF NEUROSCIENCE

The University of Florida College of Medicine seeks a distinguished individual to serve as **professor and chairman** of the Department of Neuroscience. Applicants should have an M.D. and/or Ph.D., a record of significant accomplishment in research, and a clear commitment to medical and graduate education. Position available after 1 July 1980. Applications, including curriculum vitae, bibliography, and the names of at least four references, should be sent before 1 March 1981 to: **Dr. Allen H. Neims, Chairman, Neuroscience Search Committee, College of Medicine, University of Florida, Box J-267 JHMHC, Gainesville, Florida 32610.** *Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON—DEPARTMENT OF BIOLOGICAL SCIENCES

Fordham University invites applications for the position of chairperson at the rank of professor. The department, which has Ph.D., M.S., and B.S. programs, is housed in a newly renovated building.

The candidate must have a commitment to academic excellence, be a nationally recognized scientist with an ongoing funded research program, and have teaching and administrative experience. Send curriculum vitae by 15 March to:

**Rev. Richard E. Doyle, S.J., Dean
Graduate School of Arts and Sciences
Chairman, Search Committee
Fordham University
Bronx, N.Y. 10458**

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POSITIONS OPEN

CHAIRMAN DEPARTMENT OF OPHTHALMOLOGY BAYLOR COLLEGE OF MEDICINE

Applications and nominations are invited for the position of chairman, Department of Ophthalmology. Candidates should have a distinguished record of research, education, and administrative skills in academic medicine.

**Dr. C. Eugene Carlton
Chairman, Ophthalmology Search Committee
Baylor College of Medicine
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Houston, Texas 77030**

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CHAIRPERSON Department of Biochemistry Uniformed Services University of the Health Sciences (USUHS)

The School of Medicine, USUHS, seeks an individual with superior credentials in teaching and research in biochemistry to chair the department. Candidates must have a demonstrated ability to develop medical and graduate training programs and conduct meritorious research. Internal resources are available (laboratory space, positions, research support) to develop a superior department. USUHS, a medical school established by act of Congress to train physicians for the uniformed services, is located on the campus of the National Naval Medical Center, Bethesda, Md. Salaries and benefits are competitive with academic institutions in the area.

Closing date for applications: 1 April 1981. Interested individuals should submit curriculum vitae and the names of three references to:

**Dr. Lewis Aronow
USUHS (Attention Personnel/Manpower)
4301 Jones Bridge Road
Bethesda, Md. 20014**

An Equal Opportunity Employer

ENDOWED CHAIR IN EVOLUTIONARY BIOLOGY JOHN A. HANNAH DISTINGUISHED PROFESSOR

Michigan State University announces a position for an evolutionary biologist as the **John A. Hannah Distinguished Professorship**, available September 1981. The position involves a university-wide interest in research and teaching with interest in the programs developed at the Kellogg Biological Station. The John A. Hannah Distinguished Professorship is dedicated to the encouragement of continued outstanding scholarship, creative activity, and teaching.

Nominations and inquiries should be sent to: **Dr. Bill Cooper, Chairman, Search Committee, Department of Zoology, Michigan State University, East Lansing, Mich. 48824.**

Nominations are requested by 15 March 1981. *Michigan State University is an Affirmative Action/Equal Opportunity Institution.*

CYTOGENETICIST, Ph.D.

A tenure-track position will be available beginning April 1981. Responsibilities include directorship of the Cytogenetics Laboratory, research, and teaching in the field of medical genetics. Rank and salary depends on experience. Please submit curriculum vitae, a statement of research and teaching experience, transcripts, and three letters of recommendation to: **Dr. Ian Burr, Acting Director of Genetics, Department of Pediatrics, Vanderbilt Medical Center, Nashville, Tenn. 37232.** *Equal Opportunity Employer.*

DEVELOPMENTAL NEUROBIOLOGIST

The Department of Psychobiology at the University of California invites applications for an anticipated faculty position at the level of assistant professor in the area of developmental neurobiology. Preference will be given to the area of neural development from the aspect of membrane biochemistry. Postdoctoral experience is preferred. Interested persons should contact: **Gary Lynch, Department of Psychobiology, University of California, Irvine, California 92717.** *The University of California is an Affirmative Action/Equal Opportunity Employer.*

POSITIONS OPEN

CHEMISTRY FACULTY POSITIONS

Two renewable 2-year appointments in Chemistry for September 1981, one in Inorganic Chemistry (Assistant Professor), one in Biochemistry (Assistant or Associate Professor). Ph.D. to teach undergraduates in specialty and related areas in Chemistry and to direct undergraduate research in the specialty. Resume, transcripts, and three recommendations by 27 February to K. Hellman, Department of Chemistry, Smith College, Northampton, MA 01063.
AN EQUAL OPPORTUNITY EMPLOYER

DEAN COLLEGE OF SCIENCE THE UNIVERSITY OF TEXAS AT EL PASO

The University of Texas at El Paso is seeking a person to lead, administratively and academically, its College of Science which is composed of five departments: Biological Sciences, Chemistry, Geological Sciences, Mathematics, and Physics. The College has 81 tenure-track faculty positions, and offers B.S. and M.S. degrees in all of its departments, and a doctor of geological science degree. Applicants must possess a Ph.D., demonstrated administrative ability, and research and teaching experience at both the undergraduate and graduate levels so as to qualify for the rank of professor in one of the College's departments. Closing date for nominations and applications is 21 March 1981, with date of appointment to be 1 September 1981.

Each applicant should send a résumé and the names of at least three persons qualified to evaluate his/her qualifications and accomplishments to:

Donald E. Bowen, Chairman
Search Committee for a Dean, College of Science
Office of the Vice President for Academic Affairs
The University of Texas at El Paso
El Paso, Texas 79968
Telephone: 915-747-5725

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

DEVELOPMENTAL PSYCHOLOGIST

The Institute for the Study of Developmental Disabilities, a joint program of the University of Illinois at Chicago Circle and the State of Illinois, has one or more postdoctoral and research positions in developmental areas of behavior and biology. Qualified investigators with a doctorate and a demonstrated history of research in areas relevant to developmental disabilities should apply. Desirable areas of specialization include cognitive, psychophysiological and social development, and developmental neuroscience. Annual salaries are competitive. Beginning date is 1 September 1981 or later. Candidates should send curriculum vitae, including the name and addresses of three references and a short statement of research interests, to: Illinois Institute for Developmental Disabilities, 1640 West Roosevelt Road, Chicago, Illinois 60608. Behavioral scientists should address their applications to: Dr. Rathe Karrer, and biological scientists to: Dr. Emmanuel Pollack. The Illinois Institute for Developmental Disabilities is an Equal Opportunity/Affirmative Action Employer.

DIRECTOR, SOLAR ENERGY INSTITUTE

The New Mexico Solar Energy Institute at New Mexico State University is seeking applications for the position of director. The Institute is responsible for conducting research, development, application, and information dissemination programs in the energy-related areas of solar heating and cooling, photovoltaics, bio-conversion, and wind. The successful applicant will maintain and enhance ongoing programs and provide leadership in stimulating solar-related research. Required qualifications include an earned doctorate in science/engineering or an equivalent combination of formal education and professional experience, a background in R & D administration, and an established interest in multiple aspects of solar and/or alternative energy research. Apply by submitting résumé and three letters of recommendation by 31 March 1981 to: Dennis D. Davis, Chairman, Search Committee, P.O. Box 3C, New Mexico State University, Las Cruces, N.M. 88003. An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

DEVELOPMENT and APPLICATION of ATOMIC and NUCLEAR ANALYTICAL METHODS

BROOKHAVEN NATIONAL LABORATORY

The Department of Physics has a research position open for an experimentalist with recent doctorate who is interested in developing and applying atomic and nuclear analytical methods (PIXE, RES, microbeams, and so forth) to problems in fields such as archeology, biology, materials science, medicine, and zoology. Candidates must have a firm grasp of physical principles and the flexibility, resourcefulness, and desire to collaborate with scientists in many different disciplines. Research will be conducted primarily with a 3.5-MeV electrostatic accelerator, MP Tandem Van de Graaff Facility, and the National Synchrotron Light Source at Brookhaven. For further information, candidates should write to:

Dr. K. W. Jones
Department of Physics, Building 901-A

BROOKHAVEN NATIONAL LABORATORY

Associated Universities, Inc.
Upton, Long Island, N.Y. 11973
An Equal Opportunity Employer, M/F

1. ECOLOGIST-TOXICOLOGIST. 2. ANIMAL ECOLOGY. Position 1. Tenure-track position as assistant professor in the Zoology Department. We seek an individual with formal training in toxicology and ecology who understands the biochemical actions of toxicants and can teach an undergraduate ecology course and an environmental toxicology course. He/she will develop an active research program, direct M.S. and Ph.D. students in toxicology, and interact with faculty who have active research programs in behavioral and environmental toxicology. Ph.D. required. Position 2. One-half time assistant professor position starting fall 1981 for 1 to 2 years. Will teach one or two ecology courses. Research and overload teaching may be arranged for additional remuneration. Ph.D. required. Send curriculum vitae, a statement of research interests, and names of four recommenders to: R. G. Sherman, Chair, Zoology Department, Miami University, Oxford, Ohio 45056. Application review will begin 23 February 1981. Equal Opportunity/Affirmative Action Employer.

FACULTY POSITION— VERTEBRATE PHYSIOLOGIST

We seek candidates for a tenure-track position at the assistant professor level. Beginning date will be August 1981. Ph.D. and publications required. Successful candidate is expected to establish grant supported research program, publish, and have interests in ecology-related problems. Teaching responsibilities will include graduate courses in area of specialization and undergraduate physiology courses such as human anatomy and physiology. Normal teaching load will be two courses each semester. Involvement in directing M.S. and Ph.D. candidates will be expected. Salary competitive. To insure consideration applications should be received by 10 March 1981. Applicants should submit curriculum vitae and request that transcripts and three letters of reference be sent to:

Dr. W. St. Amand
Physiologist Search Committee
Department of Biology
University of Mississippi
University, Miss. 38677
Equal Opportunity Employer

INSTRUCTOR OF NATURAL SCIENCE available 1 September 1981 for a one-year appointment. The natural science program services the general degree requirement in this area for nonscience majors. A person with an M.S. or Ph.D. with broad training in the biological and physical sciences is needed. A course load of 12 hours is to be expected. Send curriculum vitae with detailed description of any relevant teaching experience to: Dr. M. D. Saltzman, Natural Science Program, Providence College, Providence, R.I. 02918.

An Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITIONS IN BIOORGANIC CHEMISTRY AND EUKARYOTIC MOLECULAR BIOLOGY

The Departments of Biological Sciences and of Chemistry, University of Maryland Baltimore County (UMBC), anticipate appointing two tenure-track assistant professor for September 1981, concurrent with the initiation of an interdepartmental program in Applied Molecular Biology. Appointees will be expected to establish productive research programs and to interact with a large and active group of biochemists and molecular biologist at UMBC. Postdoctoral experience is required. Candidates for assistant professor of chemistry should be able to teach undergraduate organic chemistry and more specialized courses; research interests in synthesis of DNA/RNA are strongly preferred, but other areas of synthetic, organic chemistry will be considered. Candidates for assistant professor of biological sciences should be broadly trained in molecular biology, with research interests in a eukaryotic system; teaching duties include an advanced laboratory course in molecular biology (heavy emphasis on recombinant DNA techniques) and a graduate seminar. The Applied Molecular Biology Program, developed in conjunction with biotechnology companies in the Baltimore-Washington-Frederick area, will train students at the B.S./M.S. level to fill research positions in molecular biology at university, government, and industry laboratories, and complement existing M.S. and Ph.D. programs in the respective departments. Curriculum vitae, description of research interests, and three letters of reference should go to the respective search committee chairman: Dr. Nessly Craig, Department of Biological Sciences, or Dr. Donald Creighton, Department of Chemistry, University of Maryland Baltimore County, Catonsville, Md. 21228.

UMBC is an Equal Opportunity/Affirmative Action Employer.

UNIVERSITY OF CALIFORNIA AT IRVINE FACULTY POSITIONS IN COMPUTER SCIENCE

The Department of Information and Computer Science expects open faculty positions at tenured and nontenured levels. Preferred fields of research interest are computer architecture, theoretical computer science, software and software engineering, social analysis and social impacts of computing, and artificial intelligence.

Duties include research, teaching graduate and undergraduate courses, and participation in departmental governance. Applicants must have Ph.D. or equivalent at the time of appointment. Applicants for tenured appointments must have significant research achievements and demonstrated competence in teaching.

Opportunities for visitors for one, two, or three quarters of the 1981-1982 academic year will also be available.

Affirmative Action/Equal Opportunity Employer

Send résumé and names of three references to:

Julian Feldman, Chairman
Department of Information and Computer Science
University of California
Irvine, California 92717

To insure consideration, apply by 1 March 1981.

FACULTY POSITION—BIOCHEMISTRY

Applications are invited for a tenure-track appointment at the assistant professor level. Preference will be given to candidates with research interests complementary to those of the present members of the faculty. Please direct, by 15 March, curriculum vitae, a brief description of research plans, and letters from three references to: Search Committee, Department of Biochemistry, Dartmouth Medical School, Hanover, N.H. 03755. An Equal Opportunity/Affirmative Action Employer.

The Division of Geological and Planetary Sciences, California Institute of Technology, seeks outstanding candidates for a position in GEOPHYSICS, with primary emphasis on people interested in observational seismology. Opportunities include availability of arrays and large seismic data sets, as well as challenging regional tectonic problems. Appointment is sought preferably at the assistant professor level.

Please contact: B. Kamb, Chairman, Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, California 91125, giving résumé, bibliography, and research interests. An Equal Opportunity Employer.

POSITIONS OPEN

FACULTY POSITION IN PHARMACOKINETICS. Applications are invited for a tenure-track position for a Ph.D. or Pharm.D. with teaching expertise and an active research program in pharmacokinetics. The successful applicant will hold a joint appointment in the Clinical Pharmacy Department, School of Pharmacy, Samford University, and the Department of Pharmacology, University of Alabama in Birmingham, and will be expected to cooperate in the research and teaching activities of both departments in conjunction with clinical pharmacists, clinicians, and basic scientists. Applicants should submit complete curriculum vitae and statement of research interests and request that three letters of recommendation be sent to: **Dr. Tim Burelle, Head, Department of Clinical Pharmacy, Samford University, or Dr. Elias Meezan, Chairman, Department of Pharmacology, University of Alabama in Birmingham, Birmingham, Alabama 35294. Samford University and the University of Alabama in Birmingham are Affirmative Action/Equal Opportunity Employers.**

FACULTY POSITION IN FOOD SCIENCE

A 12-month tenure-track position at Purdue University, West Lafayette, Indiana, at the assistant or associate professor level. The appointment is 70 percent research and 30 percent teaching. The applicant should have a Ph.D. and a strong background in microbiology, chemistry, and food processing with an interest in fruits and vegetables. The appointee is expected to conduct imaginative research leading to improved preservation of horticultural crops. The individual will teach a course in food processing and preservation. Applicants should submit curriculum vitae with thesis summary, undergraduate and graduate transcripts, and names and addresses of three references to:

**Dr. Philip E. Nelson, Director
Food Sciences Institute
Smith Hall
Purdue University
West Lafayette, Ind. 47907**

Applications will be accepted through 1 March 1981 or until the position is filled.
An Equal Opportunity/Affirmative Action Employer

FACULTY POSITIONS IN BIOCHEMISTRY: Applicants are invited to apply for tenure-track faculty positions in a rapidly expanding and modern Department of Biochemistry. Rank and salary will be commensurate with professional experience and qualifications. Individuals with an M.D. or Ph.D. degree and at least 2 years of postdoctoral experience are eligible. Candidates with demonstrated research ability and a commitment to excellence in the teaching of medical and graduate students are sought. Successful candidates will be expected to establish independent research programs with external funding. All candidates will be considered, but preference will be given to applicants with research interests in the following areas: (i) The protein chemistry and function of peptide growth factors (or other bioactive peptides) or membrane proteins involved in coupling or signaling phenomena. Experience in the use of state-of-the-art instrumentation in microsequencing and other aspects of peptide or protein chemistry is expected for this candidate. (ii) The regulation of gene expression in eukaryotic cells, especially that related to hormone action or membrane function. Send curriculum vitae, outline of research interests, and the names of three references by 1 April 1981 to: **Dr. Michael P. Czech, Department of Biochemistry, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, Massachusetts 01605. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE positions available immediately and July 1981 to study: (i) structure interaction and reconstitution of hormone-sensitive adenylate cyclase components and (ii) isolation of over- and underproducing cell surface hormone receptor variants using fluorescence-activated cell sorting. For examples of recent work see *J. Biol. Chem.* **255**, 7480-7486 (1980) and *Adv. in Cyclic Nucleo. Res.* **13**, 1-37 (1980). Experience desirable in either membrane biochemistry, protein purification, chemical cross-linking techniques, eukaryotic cell genetics, or virology. Starting salary: approximately \$14,000 per year. Send résumé, including names of references, to: **Dr. Gary Johnson, Department of Biochemistry, University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, Massachusetts 01605. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

TWO FACULTY POSITIONS IN BIOCHEMISTRY

Two positions for tenure-track biochemists at the assistant professor level are open. Candidates must have a Ph.D. or M.D. and a minimum of 2 years of postdoctoral training. One of these positions is in the area of gene action in eukaryotic cells with emphasis on regulation of expression of genetic material (including synthesis and action of hormones) or membrane assembly and function. The second position is in the area of membrane recognition sites for information transfer including actions via transmembrane signaling. In both cases preference will be given to candidates working in areas which complement programs of existing faculty. Candidates must be able to establish an independent research program with external funding and to participate in the teaching of medical, graduate, and undergraduate students. Please send curriculum vitae, copies of the three most significant publications, bibliography, a brief description of research interests and career objectives, and three letters of recommendation by 20 February 1981 to: **Dr. Albert E. Dahlberg (for the first position) and Dr. John N. Fain (for the second position), c/o Gerlinde Celona, Secretary of Search Committee, Section of Physiological Chemistry, Division of Biology and Medicine, Brown University, Providence, Rhode Island 02912.**

Brown University is a nondiscrimination, Affirmative Action Employer and welcomes applications from all qualified individuals, in particular women and members of minority groups.

FACULTY POSITION—MINERAL ECONOMICS College of Mines The University of Arizona

Applicants are invited for a tenure-track faculty position in mineral economics. Preferably, applicants will be established, recognized mineral or energy economists and will qualify for an appointment at the full professor rank. However, applicants who qualify for appointment as associate professor also will be considered. Applicants must have a Ph.D. degree in mineral economics or economics. Preferably, applicants also will have acquired some background in mineral sciences or technology (either by education or experience), but this is not necessary as long as they have had abundant experience in the economics of minerals or energy. Mineral economics at the University of Arizona is exclusively a graduate degree (M.S. and Ph.D.) program; consequently, duties will include both teaching and research. Demonstration of research activity and ability is required. Send résumé and letters of reference to:

**Dr. DeVerle P. Harris
Director of Mineral Economics
Room 235, Mines Building
The University of Arizona
Tucson, Arizona 85721**

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

FELLOW of the INSTITUTE OF BIOLOGICAL CHEMISTRY

An established senior investigator with a distinguished record of research accomplishment in an area of biochemistry relevant to agriculture is being sought to fill the position of fellow of the Institute of Biological Chemistry and professor of biochemistry at Washington State University, Pullman, Washington. This permanent senior faculty member will be expected to conduct a vigorous productive research program and participate in graduate education.

Send nominations or applications, including curriculum vitae, a short description of research accomplishments and goals, and a list of three or more references, by 3 April to: **C. A. Ryan, Institute of Biological Chemistry, Washington State University, Pullman, Washington 99164.**

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

MEMBRANE BIOCHEMIST—Postdoctoral research associate position is available immediately to work on the isolation and identification of intestinal and renal brush border and basolateral membrane proteins that are involved in the transport of electrolytes and nonelectrolytes. Send curriculum vitae, names of three references, and any other supporting material to: **Dr. Robert G. Faust, Department of Physiology, University of North Carolina at Chapel Hill, Medical Sciences Research Wing 206H, Chapel Hill, N.C. 27514. Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

IMMUNOLOGIST RESEARCH DIVISION CLEVELAND CLINIC FOUNDATION

A position is available at the staff or associate staff member level in the Department of Immunology. Major responsibility is full-time research in some aspect of basic or clinical cellular-molecular immunology, preferably oriented toward lymphokines and/or immunoregulation. The individual will be expected to maintain an independent program of investigation. Interested applicants, with M.D. or Ph.D. degree, should send their curriculum vitae and three names of references to: **Scientific Director, Department of Immunology, Research Division, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106.**

INDUSTRIAL MICROBIOLOGY MICROBIOLOGIST ENZYMOLOGIST GENETICIST

Genentech, Inc., a leader in the field of recombinant DNA research and technology, is currently seeking scientists in the fields of microbiology, enzymology, and microbial genetics.

Successful candidates for these positions will have a Ph.D. and 2 to 10 years of postdoctoral experience in their fields.

The research will involve applications of modern genetic and biochemical methods to the study of metabolic pathways and control mechanisms.

Excellent starting salary and benefits.

Interested applicants should send curriculum vitae and the names of three references to:

**Genentech, Inc.
460 Point San Bruno Boulevard
South San Francisco, Calif. 94080
Attention: Jeanine Robertson
Human Resources
Equal Opportunity Employer, M/F**

MUSEUM DIRECTOR, Idaho Museum of Natural History. The Museum is a state-supported unit of Idaho State University with major collections in paleontology, archeology, botany, and ethnography. Duties of the director include fund-raising, budget management, working with professional curators, general responsibility for educational programs, and preparing interpretive materials for a diversified public. Applicants should have an advanced degree in biological science, anthropology, or museology and experience in museum management emphasizing public programs. Demonstrated ability in fund-raising for general museum support is required. The appointment is a permanent, 12-month, non-academic position at a salary of \$25,000. Deadline for applications, including at least three letters of evaluation, is 15 March 1981. Duties begin 1 July 1981. Applications and letters solicited by the application should be sent directly to: **Kenneth T. Faler, Chairperson, Museum Search Committee, Campus Box 8087, Idaho State University, Pocatello, Idaho 83209.**

An Equal Opportunity/Affirmative Action Employer

NEUROBIOLOGY AND PHYSIOLOGY. In the process of reorganizing its life science efforts, Northwestern University (NU) has created a new Department of Neurobiology and Physiology on its Evanston Campus. Several tenure-track positions should become available during the next 12 months. We are looking for outstanding individuals whose research interests in neurobiology complement the department's present strength in sensory physiology and reproductive neuroendocrinology. Applications are invited from individuals whose research interests are in one of the following areas: (i) development and plasticity in neural connectivity; (ii) ultrastructural-functional relationships; (iii) receptor biochemistry; and (iv) cellular neuroendocrinology. Submit curriculum vitae, short summary description of research interests, and names of three references to: **Christina Enroth-Cugell, M.D., NU Technological Institute, Room 3786, 2145 Sheridan Road, Evanston, Ill. 60201. Deadline for receipt of application is 6 March 1981.**

Northwestern University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

EXPERIENCED SECONDARY SCIENCE INSTRUCTOR: Needed to teach biology and chemistry at a highly competitive, rural, Roman Catholic, college-preparatory boarding school for boys. Some graduate work and experience required. Extracurricular interests desirable. Send résumé and references to: **Headmaster, Portsmouth Abbey School, Portsmouth, R.I. 02871.**

LECTURER IN CHEMISTRY. Full-time position to teach courses in the introductory chemistry program and participate in other science courses. Opportunities for research will be available on campus. This is a 9-month appointment with opportunity for renewal. Minimum qualifications: Ph.D. and demonstrated teaching ability plus experience working with minority students. Salary: \$17,500 to \$20,000. Effective fall 1981. Provide curriculum vitae, three letters of reference, and a cover letter relating teaching, research interests, and experience to: **Science Faculty Search Committee, c/o Peggy Hurley, Academic Affairs Assistant, Oakes College, University of California, Santa Cruz, Santa Cruz, Calif. 95064.** Deadline is 15 March 1981.

An Affirmative Action/Equal Opportunity Employer.

MICROBIOLOGIST

Microbiologists interested in molecular aspects of regulation are invited to apply for a tenure-track faculty position. We are seeking an individual who will develop an active program in a department committed to research excellence. Rank and salary are open. Send curriculum vitae, copies of relevant publications, and names of three references to: **Dr. David Njus, Department of Biological Sciences, Wayne State University, Detroit, Michigan 48202.** *An Equal Opportunity/Affirmative Action Employer.*

MOLECULAR GENETICS/BOTANY assistant professor. Nontenure-track position available fall 1981. Annual appointment, not to exceed 3 years. Ph.D. required. Primary responsibilities will be teaching undergraduate and graduate courses in botany, genetics, and microbiology, and advising students. Send curriculum vitae, statement of teaching experience, official transcripts, and three current letters of reference to: **Thomas L. Pearce, Chairman, Department of Biology, John Carroll University, Cleveland, Ohio 44118.** *An Equal Opportunity Employer.*

ORNITHOLOGIST—Assistant curator at The Academy of Natural Sciences of Philadelphia. Candidates should have postdoctoral experience, excellent research potential, commitment to museum collection and philosophies, interactive personality and interest in public relations, lecturing ability, and program management skill. Send curriculum vitae, statement of professional interests, and three letters of recommendation to: **F. B. Gill, The Academy of Natural Sciences, 19th Street and the Parkway, Philadelphia, Pa. 19103.**

Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL FELLOW. To collaborate in studies of environmentally induced abnormal development of the central visual pathways of the cat. Seeking person with experience in electrophysiology, neuropharmacology, anatomy, or animal psychophysics. Salary: \$17,000 per year. Available immediately. Send curriculum vitae and other pertinent information to: **Dr. George Mower, Department of Neurology, Children's Hospital Medical Center and Harvard Medical School, 300 Longwood Avenue G3, Boston, Mass. 02115.**

POSTDOCTORAL FELLOWS. Two positions now available for persons with strong background in tissue culture, somatic cell genetics, and molecular biology for studies on cellular aging; 2 to 3 years with salary depending upon experience. Apply with curriculum vitae and names and addresses of three references to: **Dr. Sam Goldstein, Division of Gerontology, Department of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.**

POSTDOCTORAL POSITION available to conduct research in the general areas of the mechanisms of action of insulin, glucocorticoids, and cAMP. Potential projects will emphasize the use of recombinant DNA technology. Send curriculum vitae and the names of three references to: **Dr. Daryl Granner, Director, Diabetes and Endocrinology Research Center, University of Iowa, Room 3E-50, Veterans Administration Hospital, Iowa City, Iowa 52240.** *The University of Iowa is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

PERINATAL TOXICOLOGY

The Environmental Protection Agency (EPA) invites applications for research positions of 1- to 2-year duration. Cooperative Agreements are available to interested persons who must be full-time employees of nonprofit research organizations/universities. Applicants must be willing to spend 1 to 2 years at the EPA facility in Research Triangle Park, North Carolina, beginning fall 1981.

The Developmental Biology Program of the Health Effects Research Laboratory is seeking researchers who will work within the area of perinatal toxicology. Researchers will take part in a multidisciplinary effort to establish normative patterns of perinatal development, and to develop and validate suitable protocols for adequate testing of environmental agents. Specific areas of interest include functional development of key organ systems, onset and maturation of enzyme function, reproductive physiology, endocrinology, and the susceptibility of the neonate to diverse toxic insults.

Applicants should send a one- or two-page outline of their research interests and curriculum vitae to:

Dr. Neil Chernoff (MD-72)
Chief, Developmental Biology Branch
Health Effects Research Laboratory
U.S. Environmental Protection Agency
Environmental Research Center
Research Triangle Park, N.C. 27711
Equal Opportunity Employer

DEPARTMENT OF PHARMACOLOGY THE MEDICAL CENTER

The University of Alabama in Birmingham. Applications are invited for tenure-track faculty positions as a result of the expansion in size and space of the Department of Pharmacology of the University of Alabama in Birmingham (UAB) comprising the Medical Center, University College, and the graduate school. UAB is a young and growing university with one of the most comprehensive health and research centers in the southeast. Candidates should have a Ph.D. or M.D. degree, postdoctoral or faculty experience, and be committed to a productive, funded, research program and excellence in teaching. Rank is open but assistant professor is the likely level of appointment. The Department is particularly interested in individuals with a biochemical or molecular approach to pharmacology including toxicology. *The University of Alabama in Birmingham, Birmingham, Alabama, is an Affirmative Action Employer and invites applications from women and minority applicants.* Applicants should send complete curriculum vitae, including a brief statement of research interests and plans and the names of three references to:

Dr. Elias Meezan, Professor and Chairman
Department of Pharmacology
The University of Alabama in Birmingham
Birmingham, Alabama 35294

PHYSICS—A tenure-track faculty position at the assistant professor level will be available starting in September 1981. Candidates must have a Ph.D. degree and a strong background in experimental physics. Preference will be given to a person in condensed matter physics, solar physics, or atmospheric physics. Postdoctoral experience is preferred but is not required. Applicants should send curriculum vitae with names of references to: **Dr. C. Sharp Cook, Chairperson, Department of Physics, The University of Texas at El Paso, El Paso, Texas 79968.** Deadline is 1 March 1981. *The University is an Equal Opportunity/Affirmative Action Employer.*

POPULATION GENETICIST with field orientation and background in botanical and molecular areas. Tenure-track position starting September 1981 at instructor or assistant professor level. Ph.D. and teaching experience preferred. Salary commensurate with qualifications/experience. Primary teaching responsibility is general biology; secondary teaching responsibilities are cell biology and genetics. Application to include résumé, transcripts, and three letters of recommendation. Deadline: 15 March 1981. Further information from and applications to: **Dr. Walter W. Gallati, Biology Department, Indiana University of Pennsylvania, Indiana, Pa. 15705.** *An Affirmative Action/Equal Opportunity Employer, offering excellent fringe benefits.*

POSITIONS OPEN

POSTDOCTORAL FELLOWS IN COGNITIVE SCIENCE AT THE UNIVERSITY OF CALIFORNIA, IRVINE

The Program in Cognitive Sciences at the University of California at Irvine has a number of openings for postdoctoral fellows for the academic years beginning fall 1981 and fall 1982, supported by a Sloan Foundation grant. Individuals with an interest in study and research in the following and related areas are invited to apply: learnability theory, linguistic theory, psycholinguistics, neurolinguistics, cognitive neuroscience, perception, and mathematical cognitive science.

Applications from senior scholars are welcome. Please send a letter outlining research interests, curriculum vitae, and names of three or more references to:

Postdoctoral Cognitive Science Committee
c/o Lykke Anderson
School of Social Sciences
University of California
Irvine, Calif. 92717
An Equal Opportunity Employer

POSTDOCTORAL POSITION available. A person with training in biochemistry, cell biology, or molecular biology. Position is for the study of the role of mammary epithelial cellular endomembranes in the synthesis, postsynthetic modification, and secretion of the constituents of milk. Applicants with experience in electron microscopy and/or in vitro translation are particularly welcomed. Please submit curriculum vitae and three letters of recommendation to: **Dr. T. W. Keenan, Department of Animal Sciences, Purdue University, West Lafayette, Ind. 47907.**

Purdue University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION in vision available 1 July 1981 to study directional mechanisms of movement detection by ganglion, amacrine, and bipolar cells of the turtle retina, using intracellular recording and staining. Prior electrophysiological experience desirable. Send curriculum vitae and names of references to: **Dr. R. DeVoe, Department of Physiology, Johns Hopkins University School of Medicine, Baltimore, Md. 21205; telephone: 301-955-8322.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION available to study DNA biosynthesis in parasitic protozoa. Experience in DNA biochemistry is desirable. Please send curriculum vitae and three references to: **Dr. Paul T. Englund, Department of Physiological Chemistry, Johns Hopkins School of Medicine, Baltimore, Maryland 21205.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITION. Recent Ph.D. to study the infection of human endothelial cells with *Rickettsia rickettsii*, the etiologic agent of Rocky Mountain spotted fever. Experience in mammalian cell tissue culture and electron microscopy desirable. Salary: \$13,500 to \$15,000 per year, depending on qualifications. Send curriculum vitae and two letters of reference to: **David J. Silverman, Ph.D., Department of Microbiology, University of Maryland School of Medicine, Baltimore, Md. 21201.**

POSTDOCTORAL POSITION IN PROTEIN STRUCTURE

Position available immediately for studies on the primary structure of hemocyanin. Prior experience in amino acid sequencing desired. Appointment is for 1 year renewable up to 5 years. Submit curriculum vitae and three letters of recommendation to: **Austen Riggs, Department of Zoology, University of Texas, Austin, Texas 78712.** *An Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL POSITIONS. Cellular and/or renal physiologists to study the mechanism and hormonal regulation of ion transport across epithelial cells and tissues, using: (i) isolated perfused renal tubules or micropuncture with electron probe microanalysis (elements) and new ultramicrofluorescence analysis (organic compounds) in picoliter volume samples; (ii) electron probe microanalysis to measure the extra- and intracellular elemental composition in epithelial samples maintained frozen hydrated at -190°C to avoid ionic translocation; and (iii) electron probe and microfluorescence techniques on isolated epithelial cells grown in culture and on isolated cell organelles. Send curriculum vitae to: **Dr. Claude Lechene, Harvard Medical School, 45 Shattuck Street, Boston, Mass. 02115.**

**THE PENNSYLVANIA
STATE UNIVERSITY
DEAN OF THE COLLEGE
OF AGRICULTURE
AND DIRECTOR OF
THE AGRICULTURAL EXPERIMENT
STATION AND THE DIRECTOR OF
THE COOPERATIVE
EXTENSION SERVICE**

The Pennsylvania State University is seeking nominees for the position of DEAN of the College of Agriculture. The dean serves as principal academic leader and chief executive officer of the College and reports directly to the provost of the University. The dean is responsible for planning, budgeting, implementation, and evaluation of programs of resident instruction, cooperative extension service, and research.

The Pennsylvania State University is the Land-Grant institution in the state with the main campus at University Park and 21 campuses located throughout the Commonwealth of Pennsylvania. The College of Agriculture, a leading College of Agriculture in the nation and one of ten colleges at University Park, has an enrollment of 2750 undergraduate students and 420 graduate students. The College has 11 academic departments and a School of Forestry with 695 full-time equivalent faculty and staff throughout the state and a FY 80-81 budget of \$30 million.

Candidates should be available by summer 1981. Nominations and letters of application should be postmarked by 20 February 1981. Send to:

Dr. John W. Malone, Jr.
Chairman of the Search Committee for the
Dean of the College of Agriculture
The Pennsylvania State University
205 Old Main, Box SM-9
University Park, Pa. 16802

The Pennsylvania State University is an Affirmative Action/Equal Opportunity Employer.

**UNIVERSITY OF OKLAHOMA
COLLEGE OF MEDICINE**

Applicants are solicited for **faculty positions** in the following departments:

PATHOLOGY (Number 278) Associate Professor. The individual filling this position will be appointed as Associate Director of Clinical Laboratories at Oklahoma Memorial Hospital (OMH) and Oklahoma City Veterans Administration Medical Center, and will function primarily in a service capacity with additional teaching and research responsibilities. A doctoral degree (M.D. or equivalent) with certification by the American Board of Pathology in AP-CP and hematopathology are required. Deadline for application is 28 February 1981. (Number 279) **Assistant Professor.** The individual filling this position will be appointed Assistant Director of Clinical Chemistry at OMH Clinical Laboratories, and will function primarily in a service capacity with additional teaching and research responsibilities. A doctoral degree (Ph.D.) in chemistry, and completion of a formal postdoctoral training program in clinical chemistry or equivalent experience is required. Deadline for application is 28 February 1981.

PEDIATRICS (Number 282) Assistant or Associate Professor. The responsibilities of the individual are to develop a research program in the area of exocrine secretion and to be involved in the teaching of medical students, house staff officers, and clinical fellows, advanced training and expertise in the area of exocrine physiology and biochemistry. Specialty training in a doctorate degree (M.D. or Ph.D.) with expertise in secretory physiology and biochemistry. Closing date for application is 30 May 1981. (Number 283) **Professor or Associate Professor.** This individual will head the section of Pediatric Pulmonary Medicine within the Department of Pediatrics and Oklahoma Childrens Memorial Hospital, will develop an active research program in the area of pulmonary diseases and physiology and develop a training program in the area, and will be involved in the teaching of house officers, medical students, and postgraduate fellows. M.D. with Board-certification in pediatrics and have completed a 2-year fellowship in pulmonary medicine. Closing date for application is 30 May 1981. Applicants should send curriculum vitae identifying vacancy number for which they are applying to: O. Caylon Coleman, Assistant Dean, College of Medicine, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Okla. 73190. We are an Equal Opportunity Employer.

**KING FAISAL UNIVERSITY
COLLEGE OF VETERINARY MEDICINE
AND ANIMAL HEALTH
Hofuf, Saudi Arabia**

Faculty positions are presently open for the 1981-1982 academic year in the following fields:

Biology	Veterinary Medicine and Therapeutics
Mathematics	Veterinary Anatomy and Histology
Veterinary Surgery	Veterinary Clinical Pathology
Veterinary Ob/Gyn	Food Hygiene and Meat Inspection
Clinical Parasitology	Toxicology and Forensic Medicine
Animal Production	Forensic Medicine
Genetics and Breeding	Fish Diseases
Veterinary Bacteriology	
Forensic Medicine	
Veterinarian	

PREREQUISITES: Advanced degrees (B.A., Ph.D., or D.V.M.) with both practical and teaching experience.

Language of instruction is English. Positions open in September 1981. Interview dates to be announced.

BENEFITS: Free furnished apartments (2-bedroom), educational allowance for up to four children, annual air tickets to and from Saudi Arabia for up to four persons, 60-day paid vacation each summer, baggage allowance of one-half of one month's salary one time only. No Saudi income tax. Contracts for 1 year, renewable.

SEND curriculum vitae, copies of certificates, and names, addresses, and telephone numbers of three references to:

Dr. Ibrahim El Desougi Mustafa
Dean, College of Veterinary Medicine
King Faisal University
c/o Saudi Arabian Educational Mission
2425 West Loop South
Houston, Texas 77027

OR
c/o P.O. Box 2
Sudbury-on-Thames
Middlesex TW16 5JP, England

DEPARTMENT CHAIRMAN

The Woods Hole Oceanographic Institution invites applicants for the position of **Chairman, Department of Physical Oceanography**. This position requires an appointment as Senior Scientist, with tenure, in the department. The candidate should have a record of distinguished publication in the field and the ability to raise support for research. A chairman's own research usually occupies slightly more than half time. The remainder is devoted to teaching and to administrative tasks. The chief task of the successful candidate will be to maintain and to enhance the quality of the department. The salary is negotiable. Please send curriculum vitae and list of publications to:

Dr. Derek W. Spencer
(Chairman of the Search Committee)
Box 54P

**WOODS HOLE
OCEANOGRAPHIC
INSTITUTION**

Woods Hole, MA 02543



Applicants should respond before 15 March 1981 if possible.

An equal opportunity employer M/F/H

**CHAIRPERSON
DEPARTMENT OF
ENVIRONMENTAL HEALTH
UNIVERSITY OF WASHINGTON**

Nominations and applications are sought for the position of **CHAIRPERSON** of the Department of Environmental Health at the University of Washington. The department has 46 faculty and staff organized into divisions of Industrial Hygiene and Safety, Occupational Medicine and Toxicology, Environmental Health/Sanitation, Environmental Health Effects Research, and Radiological Sciences. It offers undergraduate and graduate degrees, and has a substantial service component, receiving funding from the State of Washington, Department of Labor and Industries, to perform industrial hygiene studies, analyses, and other services. Many faculty have research grants and contracts, and the department is located in a school and university which place a strong emphasis on research.

Qualifications: M.D., Ph.D., or other earned doctorate; demonstrated administrative ability; experience with industrial and/or environmental health; research record in one or more environmental health areas; experience in academic process desirable.

Salary: Competitive, commensurate with qualifications and experience.

Deadline for applications and nominations: 15 March 1981.

Applications and nominations, along with curriculum vitae and any other appropriate supporting materials, should be mailed to:

Dr. Timothy A. DeRouen, Chairman
Environmental Health Search Committee
Office of the Dean, SC-30
School of Public Health and Community Medicine
University of Washington
Seattle, Washington 98195

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

**KING FAISAL UNIVERSITY
COLLEGE OF MEDICINE
DAMMAN, SAUDI ARABIA
FACULTY POSITIONS OPEN
1981-1982**

King Faisal University College of Medicine, now in its seventh year, invites applications from qualified men and women for the 1981-1982 academic year in:

CHEMISTRY	PATHOLOGY
BIOLOGY	EPIDEMIOLOGY
PHYSICS	MICROBIOLOGY
BIOCHEMISTRY	PARASITOLOGY
ANATOMY	PHARMACOLOGY
PHYSIOLOGY	COMMUNITY MEDICINE

Doctorate or equivalent degree required. Language of instruction is English. Interviews to be held in London and Houston during February and April 1981.

SALARIES are highly competitive and negotiable; comparable to other Saudi universities.

BENEFITS include free, furnished housing, educational allowances, air tickets to and from Saudi Arabia once each year for a family of four, 60-day paid vacation, liberal overweight allowance. No Saudi income tax.

Send curriculum vitae with current telephone number and the names and addresses of three references to:

Dr. Tawfiq Tamimi
Dean, College of Medicine
King Faisal University
c/o Saudi Arabian
Educational Mission
2425 West Loop South
Houston, Texas 77027

OR
c/o P.O. Box 2
Sudbury-on-Thames
Middlesex TW16 5JR
England

POSITIONS OPEN

POSTDOCTORAL POSITION

Position available for individual interested in areas of gene structure and regulation or molecular mechanisms of site-specific recombination: previous experience with, or desire to learn, DNA cloning, nucleic acid biochemistry, genetics, or in vitro systems. Please send résumé with desired starting date and list of three references to: **Arthur Landy, Division of Biology and Medicine, Brown University, Providence, R.I. 02912.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION in membrane biochemistry to study transport processes, protein profiles, and protein degradation in normal and abnormal human fibroblasts. Opportunities to learn two-dimensional gel electrophoresis, monoclonal antibody production, analysis of ion fluxes, and transmembrane potential. Send curriculum vitae and names of three references to: **Dr. Eric Gruenstein, Department of Biological Chemistry, University of Cincinnati Medical School, 231 Bethesda Avenue, Cincinnati, Ohio 45267.**

POSTDOCTORAL RESEARCH ASSOCIATE (Marshall University School of Medicine). Salary: negotiable. Available immediately for a period of 2 years to study the role of DNA repair in the chemotherapeutic response of tumor cells. Application deadline: 20 February 1981. Send résumé and two references to: **Helene Z. Hill, Ph.D., Department of Biochemistry, Marshall University, School of Medicine, Huntington, W. Va. 25701.** An Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE. Amino acid sequence determination and interaction properties of smooth muscle desmin. Background in protein chemistry and/or acid sequencing required. Position available September 1981, contingent upon continued funding. Résumé and three letters of reference to: **Dr. P. Johnson, Department of Chemistry, Ohio University, Athens, Ohio 45701.** Affirmative Action/Equal Opportunity Employer.

RICE UNIVERSITY—POSTDOCTORAL RESEARCH ASSOCIATE IN NEUROPHYSIOLOGY. Available immediately for 18 to 36 months to study synaptic interactions and neural networks involved in information processing and behavior in crustacean brain. The applicant should have some prior training in cellular neurophysiology, neuroanatomical or histochemical techniques. Compensation is at the NIH established postdoctoral levels. Send résumé and two letters of reference to: **R. M. Glantz, Department of Biology, Rice University, Houston, Texas 77001.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH ASSOCIATE

Research in area of DNA-protein interactions specifically RNA polymerase and restriction enzyme recognition of altered DNA, techniques include cloning, DNA fragment constructions, sequencing, in vitro binding studies, DNA-antibiotic complexes. Available June 1981 for 1 to 3 years. Send references and curriculum vitae to: **Dr. G. Bennett, Department of Biochemistry, Rice University, Houston, Texas 77001.**

POSTDOCTORAL RESEARCH ASSOCIATES. Positions are available immediately in the Department of Biochemistry, New York Medical College, for research in the following areas: structure of polysaccharides and glycoproteins, proteases and protease inhibitors, and structure-function relationships in ribosomes by photoaffinity labeling. These openings also offer the possibility of a faculty appointment. Applicants should submit curriculum vitae, statement of research interests, and the names of three references to: **Dr. Ira Schwartz, Search Committee, Department of Biochemistry, New York Medical College, Valhalla, N.Y. 10595.** New York Medical College is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL RESEARCH BIOCHEMIST; \$17,000 per year; begin April 1981 for 3 years; Ph.D. in biochemistry, experience in immunochemistry, carbohydrate chemistry, and protein chemistry. To study structure-function of plant lectins. Send curriculum vitae including research experience and three references, to: **Dr. L. M. Shannon, Biochemistry Department, University of California, Riverside, Calif. 92521.** The University of California is an Equal Opportunity/Affirmative Action Employer. Closing date: 27 February 1981.

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITION available immediately. Position available for studies on the regulation of cholesterol and isoprenoid biosynthesis in mammalian cells. Background in tissue culture techniques, methods of protein separation, enzyme assays, and immunological assays is desirable. Send curriculum vitae and names of references to: **Dr. Harry Rudney, Department of Biological Chemistry (522), College of Medicine, University of Cincinnati, 231 Bethesda Avenue, Cincinnati, Ohio 45267.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL SCHOLAR

Ph.D. in bio-organic chemistry. Position involves the synthesis of unsaturated phospholipids present in the brain, isolation of metabolic intermediates, and purification of brain lipid enzymes, and their kinetics analysis in an effort to understand the metabolism of the brain and the nervous system. Must be familiar with current literature and able to operate ultracentrifuge, scintillation counter, and spectrometers; \$12,000 per year. Send curriculum vitae and names of three references to: **Dr. B. W. Agranoff, University of Michigan, Mental Health Research Institute, 205 Washtenaw Place, Ann Arbor, Michigan 48109.**

An Equal Opportunity/Affirmative Action Employer

DISTINGUISHED PROFESSOR OF RENEWABLE ENERGY RESOURCES UNIVERSITY OF HAWAII AT MANOA

This endowed chair was made possible through a generous gift from Coral Industries, Inc. to provide leadership and expertise in establishing and maintaining academic and research programs of excellence in renewable energy resources. The recipient of this appointment will assist in the development and instruction of new energy courses and programs; engage in research on Hawaii's indigenous energy resources; guide thesis projects; attract extramural research support; interact with both on- and off-campus groups in furthering knowledge on renewable energy; and provide visibility at both the local and national levels on UHM's quest for excellence in renewable energy instruction and research. The scientist or engineer selected for this position must be a recognized national authority on one of the renewable energy resources indigenous to Hawaii—direct solar, biomass, wind, ocean thermal, geothermal—and his/her experience and qualifications, which should include a doctoral degree in an appropriate discipline, must demonstrate this stature. This will be a joint appointment in the Hawaii Natural Energy Institute and in one of the seven academic colleges on the Manoa Campus. In addition to a salary commensurate with a distinguished professorship, a stipend will be provided for research-related travel and other support services. Closing date for nominations and applications is 1 March, with the position to be filled by 1 July 1981. Inquiries regarding this position may be directed to:

Dr. John W. Shupe
Energy Research Coordinator
University of Hawaii at Manoa
2540 Dole Street
Honolulu, Hawaii 96822

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

The University of Minnesota Medical School is seeking a **PROFESSOR AND HEAD** of the Department of Microbiology who will be the academic, scientific, and administrative leader of this major department which serves the entire University. The head has administrative responsibility for all teaching and research activities in microbiology and participates actively in institutional policy making.

Candidates must have a Ph.D. and/or M.D. degree and have at least 8 years of postdoctoral academic/research experience. Candidates with demonstrated leadership qualities, international scientific stature in microbiology, and productivity in research are sought.

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

Please submit curriculum vitae plus the names of three references to:

Dr. Ellis S. Benson
Chairman, Search Committee
University of Minnesota Medical School
Hospital Box 198
420 Delaware Street, SE
Minneapolis, Minnesota 55455

The deadline for receipt of applications will be 1 May 1981.

POSITIONS OPEN

The University of Houston College of Optometry has created a **VISITING PROFESSORSHIP** intended to be filled on a rotating basis by established research scientists on sabbatical leave for the purpose of developing the applicability of their specialties to clinical optometry or to the visual or biological sciences as they bear upon optometry. This is a temporary appointment to be filled by a different specialist each year. While any biologically oriented field will be given consideration, our preferences for the 1981-1982 academic year are: (i) microbiology; (ii) immunology; or (iii) pharmacology.

The person hired would be expected to conduct a graduate level seminar and to prepare and present pertinent lecture materials from own field to the appropriate didactic course in the professional optometry program. The University would provide, through its clinical patient population, research laboratories, and ongoing research programs, the opportunity for an established researcher to assess how his/her specialty bears upon optometric practice and to adapt a research program to clinically oriented programs.

Applicants send curriculum vitae and particulars to: **Dr. Paul Abplanalp, Health Science Tract, College of Optometry, University of Houston Central Campus, Houston, Texas 77004.** An Equal Opportunity Employer.

NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) is seeking additional qualified applicants for 1- or 2-year rotational appointments to the positions of **PROGRAM DIRECTOR** and **ASSOCIATE PROGRAM DIRECTOR** for the Condensed Matter Theory and Low Temperature Physics Programs in the Condensed Matter Sciences Section of the Division of Materials Research. A vacancy in the Solid State Physics Program is also anticipated. The positions, equivalent to the GS-14/15, carry a salary ranging from \$37,871 to \$50,112.50 per annum. Applicants must have a Ph.D. or equivalent, at least 6 years of research experience, and be active in the relevant field. Supervisory or management experience is highly desirable. These positions will be available for staffing between now and September 1981 and will be open until filled. Those interested should send current résumés to: **National Science Foundation, Personnel Administration Branch, 1800 G Street, NW, Room 212, Washington, D.C. 20550; Attention: E. Paul Broglie, EX 81-24.** For further information, telephone: 202-357-7841. NSF is an Equal Opportunity Employer.

University of Michigan Medical School, Department of Psychiatry, has a full-time appointment as **ATTENDING AND SUPERVISING PSYCHIATRIST** on 24-bed inpatient ward of University Hospital. Tenure-track appointment at academic rank appropriate to qualifications and experience. Emphasis on clinical teaching of residents and medical students, and on development of career in clinical research. Excellent departmental research support and resources. Send curriculum vitae and names and addresses of three references to: **Bernard J. Carroll, M.D., Ph.D., Department of Psychiatry, University Hospital, Ann Arbor, Michigan 48109; telephone: 313-763-6857.** A nondiscriminatory, Affirmative Action Employer. Code 101FO.

RESEARCHERS WANTED

Employment opportunity: Two scientists (Ph.D.) on research associate level to conduct research in: (i) nucleic acids, and (ii) protein synthesis in newly established laboratory. Requirements: imagination, willingness to fight establishment thinking, ability to work hard on unorthodox ideas. Some travel required, but based primarily in California. Postdoctoral experience helpful. Salary: \$25,000 to \$35,000. British scientists are especially invited to reply. Send curriculum vitae to: **Cyto-Transfer, Inc., c/o Van Ginkel & Benjamin, 245 Park Avenue, New York, New York 10167, Attention: R. Wessely.**

RESEARCH ASSOCIATE—A position is available for in vitro studies of hemopoietic cell proliferation, particularly erythroid cell development. Requirements include a doctoral degree and additional laboratory experience, including a record of publications in cell biology or a related discipline. Salary is commensurate with qualifications. An appropriate academic appointment with Harvard Medical School will be arranged. Please send curriculum vitae, publication list, and names of three references to: **Dr. Stephen H. Robinson, Beth Israel Hospital, 330 Brookline Avenue, Boston, Mass. 02215.** Telephone: 617-735-2131. An Equal Opportunity Employer.

**THE UNIVERSITY OF IOWA
VICE PRESIDENT FOR
ACADEMIC AFFAIRS AND
DEAN OF THE FACULTIES**

The Vice President for Academic Affairs and Dean of the Faculties is the chief educational officer of the University, reporting to the President, and is concerned with all academic programs; all faculty and academic administrative appointments and promotions, collegiate budgets and faculty welfare, including affirmative action. The Vice President for Academic Affairs and Dean of the Faculties is expected to give leadership and guidance in all academic areas of the University, and, more specifically, works with the President and collegiate deans to improve University-wide undergraduate, graduate and professional programs. While administrative experience is desirable, this person must already have a professorial rank and be a scholar and teacher of acknowledged accomplishment.

The position will be available July 1, 1981. Send nominations or letter of application and resume to:

Professor Derek Willard
Chair of Search Committee
101 Jessup Hall
University of Iowa
Iowa City, Iowa 52242

Screening will begin immediately.

The University of Iowa is an equal opportunity and affirmative action employer.

NUTRITIONIST

Kellogg Company, a Fortune 200 food manufacturer, has an opening for a Nutritionist.

The purpose of this position is to provide Kellogg Company with nutrition information relating to current scientific findings and regulation and legislation. By applying the science to the business, the nutritionist will be able to foster the manufacturing and marketing of high-quality food products worldwide.

This position is available at our Corporate Headquarters in Battle Creek, Michigan, and reports to the Director of Nutrition.

A Ph.D. in Nutrition is required. Related experience is preferred. A broad background including physiology, biochemistry, statistics, computer programming, etc. would be helpful.

This position offers a competitive salary, comprehensive benefits and the opportunity for advancement.

If you are qualified and interested, please send a letter and/or resume and academic transcripts, along with salary requirements in complete confidence to:

Kellogg's

Bill Steele
Kellogg Company
235 Porter Street
Battle Creek, MI 49016

An equal opportunity employer M/F/V/H

**Full Time
Faculty Positions
Available
Sept. 1981**

**FAIRLEIGH DICKINSON
UNIVERSITY
SCHOOL OF DENTISTRY
DEPARTMENT OF
HUMAN ANATOMY**

**ASSOCIATE PROFESSOR (1)
ASSISTANT PROFESSOR (1)**

Both positions involve teaching research and service in the dental student anatomy curriculum, under the direction of the Chairman of the Department. Must have Ph.D. in human anatomy or DDS, DMD, or MV from an accredited medical or dental school plus 5 years teaching experience in gross anatomy, neuroanatomy, histology and embryology.

Please send covering letter and resume no later than March 15, 1981, to: Ms. Alice Mailander, Campus Personnel Services, Fairleigh Dickinson University, 1000 River Road, Teaneck, New Jersey 07666. An equal opportunity/Affirmative action employer, M/F.

THE HARRY DIAMOND LABORATORIES (HDL)

A leading Federal Electronics Research and Development organization is looking for several individuals with top level management and technical leadership experience for challenging assignments involving management of high dollar value R&D programs associated with Military Electronics Equipments and Systems.

Candidates must have, as a minimum, a bachelor's degree in Engineering or Physics from a recognized college or university. They must also have a proven record of accomplishment and professional recognition in their field of specialization. Experience in Government or industrial laboratories related to one or more of the positions for which candidates are presently being considered is required. These positions include:

DIRECTOR, RESEARCH AND TECHNOLOGY DIVISION. The Director has responsibility for the management of a scientific organization consisting of three laboratories with a total of 250 civilian scientists, engineers and technicians engaged in a broad spectrum of research activities related to target sensing and propagation, optics and electro-optics, laser applications, power sources, fluidics, electronic components, electronics materials, microelectronics and integrated circuits.

DIRECTOR, NUCLEAR WEAPONS EFFECTS DIVISION. The Director has responsibility for the management of a scientific organization of 200 scientists, engineers and technicians engaged in the evaluation of nuclear survivability, vulnerability and hardening of weapons, communications and materiel systems, electro-magnetic pulse, nuclear weapons effects on electronic equipment/systems, and nuclear environment definition, including initial radiation, ionization fallout prediction and shielding, and radiation effects including the operation of radiation producing research facilities.

DIRECTOR, DEVELOPMENT AND ENGINEERING DIVISION. The Director is responsible for the management of a scientific and engineering organization consisting of two laboratories employing 150 professional and technical engineering personnel engaged in a broad spectrum of engineering development, systems hardware design, product and production engineering, cost reduction and engineering design in support of production for non-communications electronic equipment and systems.

Salary to \$50,112 with incentives and substantial bonus opportunities.

These positions are with the Federal Senior Executive Service. They are located at Adelphi, MD in modern well-equipped facilities within easy commuting distance of Washington, DC. Relocation expenses will be paid.

If interested, send resume or Application for Federal Service (SF 171) to:

Technical Director
Harry Diamond Laboratories
2800 Powder Mill Road
Adelphi, MD 20783

AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

RADIATION PHYSICIST MASSACHUSETTS GENERAL HOSPITAL

A new position is open for a Ph.D. physicist in the Cox Cancer Management Center at the Massachusetts General Hospital. In addition to clinical responsibilities, the position involves research and teaching activity in the physics of cancer radiation therapy. Therapy facilities consist of three linear accelerators: two Clinac-18's, a Clinac-35, and two Cobalt-60 teletherapy units. Ancillary facilities include a Picker simulator, an AECL TP-11 for routine treatment planning, a VAX 11/780 (Digital Equipment Corporation) digital computer, and an EMI 7070 CT scanner dedicated to radiation therapy. The Department has a fully equipped machine shop and electronics shop. Substantial laboratory space and equipment for clinical and research purposes are available. Research projects currently under way within the department include intraoperative radiation therapy, proton radiation therapy using the Harvard 160-MeV synchro-cyclotron three-dimensional treatment planning for photons, electrons and protons, biophysical studies at ultrahigh dose rates ($\sim 10^{13}$ rad/sec) and, so forth. The position offers an excellent opportunity for career development. A concurrent faculty appointment at Harvard University will be available for a qualified candidate. Consideration will be given to individuals with no prior experience in this field but with strong physics backgrounds in high-energy particle or nuclear physics who may wish to consider entering medical radiation physics. Salary and university rank will be proportional to experience and qualifications. Send résumés to: **Edward R. Epp, Ph.D., Head, Division of Radiation Biophysics, Massachusetts General Hospital, Boston, Mass. 02114.** An Affirmative Action/Equal Opportunity Employer.

RESEARCH ASSISTANT PROFESSOR. Department of Physiology, School of Medicine, University of Pennsylvania. Applicant will be expected to conduct research on cellular mechanisms of pulmonary oxygen toxicity. M.D. or Ph.D. in biochemistry or physiology acceptable. Must have had 2 years or more of experience in enzymology, cell culture, and organ perfusion techniques. Applicant will be expected to obtain independent grant support for at least 50 percent of salary, which will be commensurate with experience and qualifications. Send curriculum vitae and names of three references to:

Dr. Robert E. Forster, Chairman
Department of Physiology
School of Medicine
A-201 Richards Building/G4
University of Pennsylvania
Philadelphia, Pa. 19104

An Equal Opportunity/Affirmative Action Employer

RESEARCH ASSOCIATE Human Nutrition Research Center on Aging at Tufts University, USDA/SEA

The Human Nutrition Research Center on Aging has openings for doctoral-level persons to assist in conducting research. A doctoral degree in nutrition is highly desirable but related disciplines are acceptable. Research associates may be assigned time-limited projects to plan and implement scientific programming and facility operations for the Nutrition Center at Tufts University.

Salary, types of research, and assignment of special projects will be determined according to applicant qualifications.

Curriculum vitae and bibliography should be submitted to:

Mary Somers
Human Nutrition Research Center on Aging
at Tufts University
15 Kneeland Street, 5th Floor
Boston, Mass. 02111

Tufts University is an Equal Opportunity/Affirmative Action Employer.

RESEARCH ASSOCIATE—The Division of Hematology of the State University of New York, Upstate Medical Center, Syracuse, is seeking a research associate to carry out studies in the field of platelet biochemistry as it relates to various physiologic and pathologic states including diabetes. Background: Ph.D. or Ph.D. equivalent with experience in HPLC, RIA, and lipid metabolism (including preferably previous prostaglandin- and/or platelet-related research). Salary: \$15,000 to \$23,000. Send curriculum vitae and names of three references to: **Dr. Marie Stuart, Department of Pediatrics, State University of New York, Upstate Medical Center, 750 East Adams Street, Syracuse, New York 13210.**

POSITIONS OPEN

RESEARCH ASSOCIATE IN IMMUNOLOGY (TWO)

For grant-supported studies of: (i) the interactions of monoclonal antibodies attached to liposomal membranes and (ii) the physical-chemical properties and interactions of V_H fragments isolated from monoclonal antibodies. Starting annual salary is \$17,000. Appointments to begin by July 1981. Send curriculum vitae and three letters to: **Dr. Fred Karush, Department of Microbiology, School of Medicine, University of Pennsylvania, Philadelphia, Pa. 19104.** Equal Opportunity Employer.

RESEARCH ASSOCIATE in immunology, biochemistry to investigate membrane antigens on the surface of normal and abnormal human tissue cells. The applicant will be a key member of a high priority NCI Research Project. Although the project is funded through the Sloan-Kettering Institute, the laboratory where the research will be conducted will be in Raritan, N.J. Applicants must have extensive background in immunologic procedures. Send curriculum vitae to: **Dr. Philip Levine, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, N.Y. 10021, or telephone: 201-524-2203.**

RESEARCH ASSOCIATE—POSTDOCTORAL POSITION MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT)

MIT research associate—postdoctoral position involving the development and animal testing of an immobilized enzyme filter to remove heparin for use in artificial organs and medical procedures.

Ph.D. or M.D. with a background in biological sciences, bioengineering, or chemical engineering. Write to: **Professor Robert S. Langer, Massachusetts Institute of Technology, 16-309, Cambridge, Massachusetts 02139.**

RESEARCH ASSOCIATE/POSTDOCTORAL

Two positions available for Ph.D. in biochemistry, cell biology, or related field, with or without postdoctoral experience. Research involves regulation of lipid synthesis in developing neural systems, especially in cell cultures. Approach emphasizes regulation at the enzyme level. Stimulating academic environment. Salary competitive. Send curriculum vitae to: **Dr. Joseph Volpe, Departments of Pediatrics, Neurology, and Biological Chemistry, Washington University School of Medicine, St. Louis Children's Hospital, Box 14871, St. Louis, Mo. 63178.**

RESEARCH BIOLOGIST—One position. M.A. or Ph.D. with a solid background in fish ecology and aquatic ecology. Emphasis will be on data analysis and report writing. Experience with industry and industrial requirements for writing of 316A&B and 402 documents is desirable. Knowledge of computer use and statistical analysis of data are important to this position. Starting salary: \$25,000 to \$30,000, depending upon background and experience. Position available immediately. Send résumé and covering letter to: **P.O. Box 2705, Buffalo, N.Y. 14226.** All replies confidential.

STAFF FELLOW (POSTDOCTORAL), CENTERS FOR DISEASE CONTROL. Special Pathogens Branch, Virology Division, has a 2-year position available for a virologist/biochemist to continue studies on the molecular biology and antigenic analysis of Class 4 viruses, for example, Ebola, Marburg, and Lassa. Anticipated studies include characterization of viral macromolecules and production of monoclonal antibodies to investigate structure-function relationships and viral epidemiology and pathogenesis. The majority of studies are conducted within the CDC Maximum Containment Laboratory. U.S. citizenship and doctorate earned within the past 5 years are requirements for the position. Position available on or about 1 July 1981. Submit résumé and three letters of reference to: **Michael P. Kiley, Ph.D., Building 7-SSB 8, Centers for Disease Control, 1600 Clifton Road, NE, Atlanta, Ga. 30333; telephone: 404-329-3308.** Affirmative Action/Equal Opportunity Employer.

STAFF FELLOW. Position available 1 April. Ph.D. in biochemistry to study subunit composition and topography of H^+ -ATPase. Membrane proteins experience and organic chemistry background essential. Experience in cell culture, immunological methods desirable. Salary: \$13,500 to \$15,000. Send curriculum vitae and three references to: **Dr. Saroj Joshi, BOSTON BIOMEDICAL RESEARCH INSTITUTE, Boston, Mass. 02114.** Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

SCIENCE ASSOCIATE—Ph.D. in physiology with emphasis in renal function. Duties include research in systematic effects of fluoride and other agents and laboratory instruction of medical and graduate students. Position available immediately. Send a letter, curriculum vitae, and three letters of reference to:

Dr. J. F. Gaugl
Department of Physiology
Texas College of Osteopathic Medicine
Camp Bowie Boulevard at Montgomery Street
Fort Worth, Texas 76107
An Equal Opportunity/Affirmative Action Employer

REQUEST FOR PROPOSALS

NRFFSS NATIONAL RESEARCH AND RESOURCE FACILITY FOR SUBMICRON STRUCTURES

Proposals are now being accepted for research to be carried out at NRFFSS, the National Research and Resource Facility at Cornell University, Ithaca, New York. This facility has been established to promote research in submicron fabrication, to provide a resource for the fabrication of advanced devices and research structures requiring submicron dimensions, and to stimulate innovative research in areas of science outside the electronic device field by providing access to advanced submicron technology.

Research at the facility is expected to explore advanced areas which go beyond current integrated circuit practice and which depend intimately on submicrometer dimensions. To be appropriate, proposed projects should substantially further the art of submicron technology or its applications to science and engineering. Proposed projects should not be of a service nature where such services are commercially available and should be of a nature that centrally depends on the specialized equipment and expertise of the facility.

Most approved projects will be expected to begin after the completion of the new laboratory, summer 1981. Some projects can, however, be initiated earlier.

For a copy of a users manual which contains information on available instruments and proposal submission forms, write or telephone: **NRFFSS, Phillips Hall, Cornell University, Ithaca, New York 14853; telephone: 607-256-2329.**

SUMMER RESEARCH

FIELD BIOLOGY. Postdoctoral fellowships are available for summer research at the Mountain Lake Biological Station of the University of Virginia. Proposals will be considered for a wide variety of ecological and evolutionary studies. Stipend: \$1700. Deadline: 1 April 1981. Write to: **Director, Mountain Lake Biological Station, Gilmer Hall, University of Virginia, Charlottesville, Va. 22901.** Equal Opportunity/Affirmative Action Employer.

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS in the molecular biology and biochemistry of ocular cells. Available now and in mid-1981 for research in the following areas: mechanism of action of growth factors; control of cell growth in culture; monoclonal antibodies to ocular cells; purification and preparation of ocular peptide hormones. Supported by NIH training grant. Send curriculum vitae to: **Dr. Ted W. Reid, Yale University School of Medicine, Department of Ophthalmology, New Haven, Conn. 06510.** An Equal Opportunity/Affirmative Action Employer.

TRAINEESHIPS

The Medical Scientist Training Program at the Medical University of South Carolina offers traineeships for a select number of individuals for training in an integrated basic and clinical medical science program leading to a combined M.D./Ph.D. degree in 6 to 7 years. For further information, please contact: **Director, Medical Scientist Training Program, Dean's Office, College of Graduate Studies, Medical University of South Carolina, Charleston, South Carolina 29403.**

MOLECULAR DIAGNOSTICS

HYBRIDOMA/CLINICAL IMMUNOLOGY

The Molecular Diagnostics Division of BRL currently has available several positions, at B.S., M.S., and Ph.D. levels, within our Hybridoma/Clinical Immunology Unit.

An immunology background, with an emphasis on cell surface or viral antigens, or immunochemistry is required, and hybridoma experience is desired.

Qualified applicants should send their resumes or C.V.'s and other pertinent material to:

Personnel Director, Dept. S
Bethesda Research Laboratories,
P.O. Box 577
Gaithersburg, Maryland 20760
(A suburb of Washington, D.C.)

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DIRECTOR

IMMUNOPHARMACOLOGY

Ann Arbor, Michigan

The Pharmaceutical Research Division of Warner-Lambert is seeking an outstanding scientist to lead a research group of 12 professionals dealing with the discovery of drugs for allergic disorders.

The successful applicant will have:

- A Ph.D. with formal training in pharmacology and/or immunology.
- Experience within the pharmaceutical industry in a drug discovery program.
- A significant bibliography indicating contributions to the scientific literature.
- Administrative and communication skills with the ability to motivate staff to high levels of scientific performance.

and be responsible for:

- Discovery and development of drugs for immunologically based diseases in general with specific orientation toward pulmonary and gastrointestinal disorders.
- Representing the company in regulatory matters and within the scientific community.
- Attracting and developing personnel within the Section.

The Director of the Immunopharmacology Section will liaise closely with other scientists in Pharmacology, Chemistry and Toxicology as well as the Clinical Research Group.

Our research facilities, located next to the University of Michigan campus in Ann Arbor, Michigan, are among the finest and best equipped in the world and are devoted exclusively to the discovery and development of new drugs.

Join the exciting Research and Development Team at Warner-Lambert in this very key position and enjoy outstanding compensation, benefits and work environment.

Send your resume and salary history/requirements in confidence to: Ms. D. Love, Personnel Supervisor, **WARNER-LAMBERT/PARKE-DAVIS**, PHARMACEUTICAL RESEARCH DIVISION, 2800 Plymouth Road, Ann Arbor, MI 48105. An Equal Opportunity Employer M/F/H.

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LAMBERT**

Molecular Genetics, Inc. is a young and rapidly expanding company designing products based upon recombinant DNA and hybridoma technologies. Our laboratory facility supports projects involving molecular biology, immunology, genetic, tissue culture and animal research. We are now seeking additional personnel in the fields of:

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Qualified candidates should have doctoral degrees with postdoctoral experience and an interest in participating in a unique, academically-oriented work program.

We are located in the pleasant environs of Minnesota offering easy access to some of the country's authentic wilderness areas and an excellent quality of life in Minneapolis.

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GRADUATE STUDY

GRADUATE TRAINING IN PHYSIOLOGY

The Department of Physiology at the University of Missouri-Columbia invites applications from individuals interested in the Ph.D. degree in physiology. Predoctoral fellowships and teaching assistantships available. Primary areas of research interest among faculty include cardiovascular, renal, and neurophysiology. Very active research programs in hypertension, ion transport, myocardial metabolism, and the microcirculation. Department on main university campus. Close association with faculty and postdoctoral fellows. University town atmosphere. Direct inquiries to: **James O. Davis, Ph.D., M.D., Professor and Chairman, Department of Physiology, University of Missouri School of Medicine, Columbia, Missouri 65212.** *The University of Missouri is an Equal Opportunity/Affirmative Action Employer.*

DOCTORAL PROGRAM IN MOLECULAR AND CELLULAR BIOLOGY AND PATHOBIOLOGY

Interdisciplinary program leading to Ph.D. degree seeks qualified candidates interested in fundamental molecular and cellular biology and its application to disease states in man. Research training is available in a broad range of basic and clinical disciplines.

Stipends are available on a competitive basis. Contact: **Graduate Training Director, Program in Molecular and Cellular Biology and Pathobiology, Dean's Office, College of Graduate Studies, Medical University of South Carolina, Charleston, South Carolina 29403.**

DOCTORAL PROGRAM

Ph.D. in Engineering and Public Policy

The Department of Engineering and Public Policy at Carnegie-Mellon University offers an interdisciplinary research-oriented Ph.D. for persons with an undergraduate degree in engineering or the mathematical or physical sciences. Persons with more advanced training or experience are especially welcome. Some financial support is available. Contact:

**Engineering and Public Policy
Carnegie-Mellon University
Pittsburgh, Pa. 15213**

WORKSHOPS

FIFTH ANNUAL WORKSHOP ON INDUSTRIAL TOXICOLOGY

Thomas Jefferson University offers its fifth annual 3 1/2-day **Workshop on Industrial Toxicology**, 31 March to 3 April 1981. The workshop will emphasize basic concepts as well as practical approaches to problems, issues, and questions facing industrial hygienists, safety engineers, industrial physicians, toxicologists, chemists, biochemists, health administrators, and other supervisory personnel in industry and government.

Topics include: Introduction to Mutagenesis, Carcinogenesis and Teratogenesis; Organ Toxicity—Liver, lung, kidney, CNS, skin, eye, and so forth; Safety Evaluation; Interpretation and Application of Toxicity Data; Role of Behavioral Toxicology in Safety Evaluation; Federal Regulation of Industrial and Environmental Exposure to Chemicals; Regulatory Affairs; and Biological Monitoring for Exposure to Chemicals.

For brochure and information on credits for maintenance of Board-certification: **Dean, College of Graduate Studies, Thomas Jefferson University, Philadelphia, Pa. 19107. Telephone: 215-928-8982.**

1981 GROUNDWATER MODELING WORKSHOPS, Indianapolis, Indiana. (I) Introduction to Modeling Groundwater Flow and Transport, 27 to 29 May. (II) Mathematical Foundations and Computer Implementation of Groundwater Modeling, 1 to 5 June. (III) Analytical Groundwater Modeling, 18 to 22 May. (IV) Adaptations of Prickett/Lonnquist Model Including Mass Transport, 8 to 12 June. Parts I and II taught by Dr. James Mercer and Dr. Charles Faust, GeoTrans, Inc. Parts III and IV taught by Thomas Prickett, Consulting Groundwater Hydrologist, and William Walton, Camp Dresser and McKee. Contact, by 30 April: **Richard Hyde, Holcomb Research Institute, Butler University, Indianapolis, Indiana 46208. Telephone: 317-283-9555.**

ASSISTANTSHIPS

RESEARCH ASSISTANTSHIPS Plant and Mammalian Ecology DEPARTMENT OF BIOLOGY IDAHO STATE UNIVERSITY

Research assistantships leading to Ph.D. in biology for two qualified applicants with M.S. and strong background in: (i) plant-water relations and ecology and (ii) population ecology of small mammals. Support level approximately \$6800 plus tuition. Positions begin 1 June 1981 (plant) or 1 September 1981 (mammal). Successful applicants will study plant-water status in relation to fire or the effects of fire on small mammal communities in sagebrush-steppe communities on the Idaho National Engineering Laboratory National Environmental Research Park in southeastern Idaho. Application deadline: 13 March 1981. Send three letters of reference, official transcript, résumé, and GRE scores to: **Dr. Jay E. Anderson** (plant position) or **Dr. Barry L. Keller** (animal position), **Department of Biology, Idaho State University, Pocatello, Idaho 83209.**

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TEACHING ASSISTANTSHIPS: The Biology Department at Villanova University offers a graduate program leading to the M.S. degree (thesis and non-thesis options). Villanova is west of Philadelphia, convenient to New York and Washington and adjacent to public transportation. **TEACHING ASSISTANTSHIPS** carry a stipend of \$3700 and waiver of tuition. Thesis research is available in general and plant physiology, neurophysiology, vertebrate and invertebrate zoology, microbiology, parasitology, ecology, developmental biology, and biochemical genetics. Villanova is a private, religiously affiliated university. Advise applicants to contact: **Dr. Joseph A. Orkiszewski, Department of Biology, Villanova University, Villanova, Pa. 19085** by 1 April 1981.

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FELLOWSHIPS

PREDOCTORAL FELLOWSHIPS IN PHYSIOLOGY. Training in cardiovascular, cell, endocrine, muscle, neuro-, renal, and respiratory physiology. Applicants must submit GRE scores (verbal, quantitative, and one advanced test). Deadline for application is 15 April 1981. For application materials, write: **Department of Physiology, West Virginia University Medical Center, Morgantown, W. Va. 26506.**

POSTDOCTORAL FELLOWSHIP IN TUMOR IMMUNOLOGY (1 to 2 years). Immediate opening to perform research in tumor antigenicity. Grant-supported projects involve isolation and characterization of murine tumor-specific transplantation antigens, immunotherapy models, and isolation of genetically uniform tumor sublines. Experience in the production of monoclonal antibodies is desired but not essential. Salary: \$13,000 per annum. Send curriculum vitae, graduate transcripts, and three letters of reference to: **Dr. Neal R. Pellis, Division of Organ Transplantation, Department of Surgery, University of Texas Medical School, Houston, Texas 77030.**

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POSTDOCTORAL RESEARCH FELLOWSHIP available to study the relationships of structure and physical properties of mucous glycoproteins in airways secretions. This work will interface with ongoing studies of glycoprotein biosynthesis, mucus gelation, and modulation of glycoprotein secretion by airways epithelium. Interested applicants should send curriculum vitae to: **Dr. Thomas F. Boat, Department of Pediatrics, Case Western Reserve University, Cleveland, Ohio 44106.** *An Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL RESEARCH FELLOWSHIPS IN NEUROENDOCRINOLOGY

Emphasis on the relation between the brain and the renin-angiotensin system and the regulation of vasopressin, ACTH and growth hormone secretion. Supported by NIH training grant. Send curriculum vitae and references to:

**William F. Ganong, M.D.
Director, Neuroendocrine Laboratory
Department of Physiology
University of California
San Francisco, Calif. 94143**

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FELLOWSHIPS

BIOMEDICAL ENGINEERING AND SCIENCE INSTITUTE ERNEST N. CALHOUN GRADUATE FELLOWSHIPS

Drexel University is pleased to announce competition for **CALHOUN GRADUATE RESEARCH FELLOWSHIPS** in Biomedical Engineering and Science. Supported by the Calhoun endowment to Drexel University, each fellowship provides a minimum of \$6000 tax-free stipend, plus waiver of all tuition and fees for 12-month appointments. Exceptional first-year graduate students are eligible for awards beginning fall term 1981. Deadline for completed application is 20 March 1981. For applications, please write:

**Dov Jaron, Ph.D., Director
Biomedical Engineering and Science Institute
Drexel University
Philadelphia, Pennsylvania 19104**

POSTDOCTORAL FELLOWSHIP to study molecular cloning and genetic engineering. Send curriculum vitae to: **Dr. Jean-Paul Thirion, Microbiology Department, University Medical School, Sherbrooke, Quebec, Canada J1H 5N4.**

POSTDOCTORAL FELLOWSHIPS. Positions are available starting 1 July 1981 for research training in environmental toxicology and physiology in one of the following areas: perinatal toxicology; biochemistry, physiology, and pharmacology of lung function; factors affecting release of mediators of inflammation; regulation of circulation and body fluids during exercise and thermal strain; sensory measurement in olfaction and taste. The position is open to U.S. citizens or permanent residents with M.D., D.V.M., Ph.D., or equivalent degrees. Applicants should send curriculum vitae with two references and specify area of interest to: **M. Hitchcock, Ph.D., John B. Pierce Foundation Laboratory, Yale School of Medicine, 290 Congress Avenue, New Haven, Conn. 06519.** *Yale University is an Affirmative Action/Equal Opportunity Employer.*

POSTDOCTORAL FELLOWSHIPS IN ENVIRONMENTAL TOXICOLOGY. Our 2-year NIEHS-supported program is designed to equip Ph.D.'s in biomedical sciences (courses in biochemistry and physiology desirable) for research careers in toxicology. National Research Service Awards support U.S. citizens and permanent residents only. Areas include biochemical, behavioral, developmental, and inhalation toxicology. Write: **Dr. Victor G. Laties, Toxicology Training Program, University of Rochester Medical Center, Rochester, N.Y. 14642.** *Equal Opportunity/Affirmative Action Employer.*

PREDOCTORAL FELLOWSHIPS IN TOXICOLOGY. Graduate study in areas including biochemical, behavioral, developmental, and inhalation toxicology. NIEHS training grant in environmental toxicology pays a \$5040 per year stipend and all tuition charges for qualified U.S. citizens and permanent residents. Deadline for applications is 1 March for entry in September. Write: **Dr. Victor G. Laties, Toxicology Training Program, University of Rochester Medical Center, Rochester, N.Y. 14642.** *Equal Opportunity/Affirmative Action Employer.*

POSTDOCTORAL FELLOWSHIP IN IMMUNOBIOLOGY. Postdoctoral fellowships in cancer immunobiology are available at Sloan-Kettering Institute for Cancer Research. Fellows will be trained in cellular immunology, development and interaction of lymphoid cells, molecular immunology, clinical immunology and cancer, human and mouse immunogenetics, tumor immunology, cell surface immunochimistry, and immunogenetics. Training methods include individualized research with qualified mentor training in clinical laboratory analysis, lectures, courses, seminars, discussions, rounds, clinics, and conferences. Individual research program will be offered either in New York City or at Walker Laboratory, Rye, N.Y. Only U.S. citizens or foreign nationals with permanent resident or immigrant visas will be considered. Send inquiry with brief résumé to: **Dr. Y. S. Choi, Immunobiology Training Program Director, Sloan-Kettering Institute for Cancer Research, 145 Boston Post Road, Rye, N.Y. 10580.** *An Equal Opportunity/Affirmative Action Employer.*

Microbiologist Assay Laboratory

Microbiologist or Biologist with strong microbiological assay and statistical background. A Ph.D. or M.S. (or equivalent training) with several years of antibiotic assay experience is essential. The person chosen will direct two professionals and be required to design or modify existing assay procedures and interpret new data.

Please send resume to: Mr. J. Bazyl, Personnel Manager, Schering-Plough Corporation, 2000 Galloping Hill Road, Kenilworth, New Jersey 07033.



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NRL

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DUTIES: As head of a division of 130 scientific, technical and support personnel, directs a broad program of basic and applied research in space science. Areas of particular interest are upper atmospheric physics, ionospheric physics, magnetospheric physics, solar physics, x-ray astronomy, UV astronomy, gamma-ray astronomy, and radio and infrared astronomy. The division is involved in extensive joint programs with the National Aeronautics and Space Administration (NASA). The division also includes the E.O. Hulburt Center for Space Research which provides a program for graduates and postgraduate students and visiting faculty members to cooperate with NRL in space research.

TO APPLY: Interested applicants should contact James Horn of the personnel office at (202) 767-3030 (call collect) to obtain application forms and information on procedures for applying:

All applications must be received by 28 February, 1981.

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Applications are invited for positions at the junior faculty level in **ANATOMY/ELECTRON MICROSCOPY** in The University of Calgary Faculty of Medicine. One such person will work in freeze-fracture studies, particularly of synaptic contacts and membrane receptors, in affiliation with the Research Group on Neurosciences and The Lions' Sight Centre. Another will work in the ultra-structure of chromosomes and macromolecules, in affiliation with the Research Group on Growth and Development. Candidates will be eligible to apply for support of salary and all research costs from The Alberta Heritage Foundation for Medical Research. Send curriculum vitae, summary of research interests, reprints, and names of three references to:

William K. Stell, Ph.D., M.D.
Head, Department of Anatomy
Faculty of Medicine
The University of Calgary
2500 University Drive N.W.
Calgary, Alberta, Canada
T2N 1N4

Reproductive Cytogeneticist San Francisco Bay Area

The Lawrence Livermore National Laboratory is an applied science R & D facility, operated by the University of California for the U.S. Department of Energy, and located in a rural suburb of the San Francisco Bay area. We are currently seeking a biomedical scientist to study chemically induced heritable translocations and heritable sperm abnormalities in mice. Duties include design of breeding experiments, cytogenetic and genetic analyses of offspring and statistical evaluation of results. Scientist to become part of larger, highly interactive group studying the heritable consequences of chemically induced sperm defects in animals and man.

We require a PhD in genetics, cytogenetics, reproductive biology or equivalent. The candidate should have at least one year of direct experience with heritable translocations or germ cell mutagenesis and some knowledge of mammalian breeding techniques.

We invite you to submit your resume in confidence to: Ted Wilson, Employment Division, LAWRENCE LIVERMORE NATIONAL LABORATORY, P.O. Box 808, L-425, Dept. KSC-021, Livermore, CA 94550. U.S. citizenship is required. We are an equal opportunity employer.

University of California



**Lawrence Livermore
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