

## The Mollusca

**Pathways in Malacology.** Papers from a congress, Amsterdam, Aug. 1977. S. VAN DER SPOEL, A. C. VAN BRUGGEN, and J. LEVER, Eds. Bohn, Scheltema and Holkema, Utrecht, and Junk, The Hague, 1979. vi, 296 pp., illus. \$72.

The basic mollusk body plan, originating in Precambrian time, combined a distinctive complex of adaptive characteristics and initiated one of the major success stories of animal evolution. Comprising a soft, unsegmented body with dorsal shell and a secondary dorsal-ventral axis, superimposed on the major anterior-posterior axis, the molluscan theme proved both adaptable and plastic. Its variations radiated in time and in geographic and habitat space, so that in number of species and structural diversity mollusks are now among the most successful types of animals.

Thus mollusks have always provided rich material for comparative biological study. *Pathways in Malacology* explores developmental, physiological, and biochemical pathways leading to some of the complex structures, functions, and behaviors that characterize the second largest phylum. The authors of its most successful chapters took the book's title most seriously, reviewing the dynamics of life processes and interpreting the present status of knowledge of their control mechanisms.

Two authors follow the ontogeny of the characteristic asymmetry of gastropods, attempting to show how it develops from the bilateral bauplan. J. Lever adds a new twist to theories of torsion, and N. H. Verdonk reviews evidence supporting the hypothesis that events initiated in the left quadrant of the four-cell embryo may lead directly to torsion.

A. S. M. Saleuddin thoroughly reviews the formation, structure, and role of the periostracum, the organic outermost layer of the shell. His model of transport of precursor molecules from hemolymph through epidermal cells to the outside world identifies similarities with insect cuticle secretion, and he reviews new information on sensory cells and the innervation of the periostracum-producing epithelium.

When disturbed, a snail typically withdraws the shell-secreting mantle as well as the body into its shell. When danger passes or conditions improve, it must reposition the mantle exactly in order to continue shell growth. Saleuddin identifies neural pathways in the mantle that may regulate this and other aspects of shell production. Neurophysiological studies may provide the next major ad-

vance in understanding of general biomineralization processes, to which the study of molluscan shell has already contributed a great deal. Here comparative studies of bivalves should be of interest, because their mantles have less freedom of movement, being fixed to the shell by a muscle near the growing edge.

Bivalves are the mollusks most successful at occupying sea-floor sediments. J. Knudsen relates mode of reproduction, distribution, physiological tolerance, genetic variability, and species diversity of abyssal zone bivalves. Because the sea floor at abyssal depths occupies half the earth's surface area, its poorly known biota deserves entrée into the mainstream of modern biology.

Attachment by calcareous secretion has enabled some bivalves to return to hard surfaces, probably the primitive molluscan habitat. The grand master of the mollusks, C. M. Yonge, who in the past half century has contributed more to knowledge of the phylum than any other

person, reviews cementation in bivalves, lucidly clarifying its independent origins and the importance of the transient foot and the periostracum in cementation processes.

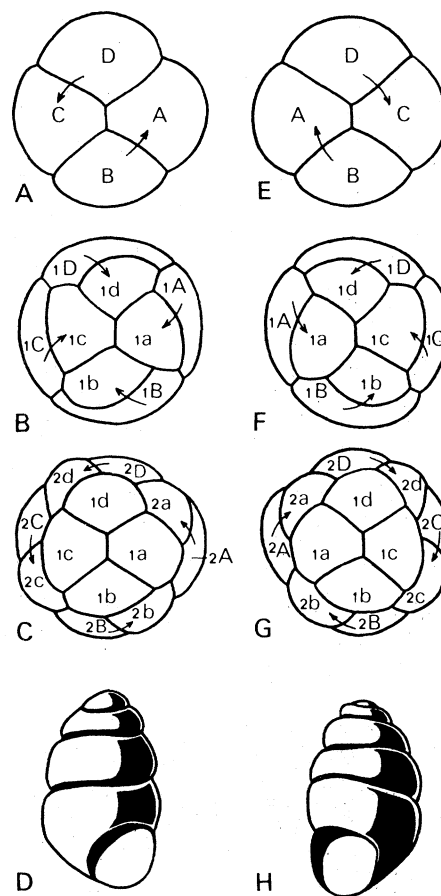
Mollusks with large external shells live in very different perceptual worlds from their softer and more complex brethren, the shell-less cephalopods. M. J. Wells reviews the capacities and constraints of learning in octopus and shows that whereas its visual world is much like ours its tactile world differs greatly, largely because it is much more difficult for a soft cephalopod to attain a sense of body position than it is for an animal that can monitor the joints of rigid appendages and the angles between them.

The remaining chapters review energy metabolism and endocrinology in mollusks, the use of planktonic gastropods as indicators of water masses, and the historical biogeography of land snails. Finally, in the only chapter concerning direct human-mollusk relationships, E. A. Malek evaluates the present use of chemical molluscicides to control the snail-borne disease schistosomiasis, estimated to affect 200 million people.

The invited authors of this book were asked to review the present status of knowledge of important aspects of malacology, originally in lectures to a congress of the *Unitas Malacologica Europaea*. The volume fulfills its purpose; most of the reviews are lucid and compact and meet the standards of regularly issued review volumes.

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"Diagram comparing the development of dextral [A-D] and sinistral [E-H] snails. Dextral snails originate from eggs with dextrotropic cleavage and a clockwise arrangement of the quadrants, sinistral snails from eggs with laetotropic cleavage and an anti-clockwise arrangement of the quadrants." [From N. H. Verdonk, "Symmetry and asymmetry in the embryonic development of molluscs," in *Pathways in Malacology*]

## Books Received

**Advances in X-Ray Analysis.** Vol. 22. Proceedings of a conference, Denver, Aug. 1978. Gregory J. McCarthy, Charles S. Barrett, Donald E. Leyden, John B. Newkirk, and Clayton O. Ruud, Eds. Plenum, New York, 1979. xviii, 492 pp., illus. \$42.50.

**An African Dam.** Ecological Survey of the Kamburu/Gtaru Hydro-electric Dam Area, Kenya. R. S. Odingo, Ed. Swedish Natural Science Research Council, Stockholm, 1979. 184 pp., illus. Paper, \$10. Ecological Bulletins No. 29.

**Albert Einstein.** His Influence on Physics, Philosophy and Politics. Peter C. Aichelburg and Roman U. Sexl, Eds. Vieweg, Braunschweig, Germany, 1979. xvi, 220 pp., illus. DM 48.

**Boswell's Clap and Other Essays.** Medical Analyses of Literary Men's Afflictions. William B. Ober. Southern Illinois University Press, Carbondale, and Feffer and Simons, London, 1979. xviii, 292 pp., illus. \$17.50.

**Botanische Versuche und Beobachtungen mit einfachen Mitteln.** Ein Experimentierbuch

für Schulen und Hochschulen. Hans Molisch. Gustav Fischer Verlag, Stuttgart, 1979. xxii, 282 pp., illus. Paper, DM 22.

**Brain Acetylcholine and Neuropsychiatric Disease.** Kenneth L. Davis and Philip A. Berger, Eds. Plenum, New York, 1979. xvi, 598 pp., illus. \$39.50.

**Brain Surgeon.** An Intimate View of His World. Lawrence Shainberg. Lippincott, Philadelphia, 1979. 276 pp. \$10.95.

**The Broken Fountain.** Thomas Belmonte. Columbia University Press, New York, 1979. xviii, 152 pp. \$10.95.

**Cancer Registration and Its Techniques.** Robert MacLennan, Calum Muir, Ruth Steinitz, and Ali Winkler. W. Davis, Ed. International Agency for Research on Cancer, Lyon, 1978 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). xii, 258 pp., illus. \$25. IARC Scientific Publications No. 21.

**Causes of Climate.** John G. Lockwood. Halsted (Wiley), New York, 1979. x, 260 pp., illus. \$32.95.

**Chelation Therapy in Chronic Iron Overload.** Papers from a symposium, New York, May 1977. Edward C. Zaino and Richard H. Roberts, Eds. Symposia Specialists, Miami, 1978 (distributor, Year Book Medical Publishers, Chicago). x, 148 pp., illus. \$17.95.

**Chemical Compounds in the Atmosphere.** T. E. Graedel. Academic Press, New York, 1978. xii, 440 pp., illus. \$29.50.

**Chemical Engineering Drawing Symbols.** D. G. Austin. Godwin, London, and Halsted (Wiley), New York, 1979. xvi, 96 pp. \$19.95.

**Chemical Zoology.** Vol. 11, Mammalia. Marcel Florin and Bradley T. Scheer, Eds. Academic Press, New York, 1979. xxiv, 342 pp., illus. \$46.50.

**Cloning.** A Biologist Reports. Robert Gilmore McKinnell. University of Minnesota Press, Minneapolis, 1979. x, 130 pp., illus. \$8.95.

**Coloring of Plastics.** Theory and Practice. Mukhtar Ahmed. Van Nostrand Reinhold, New York, 1979. xii, 228 pp., illus. \$17.50.

**Evaluating the Impact of Nutrition and Health Programs.** Papers from a conference, Isla Contadora, Panama, Aug. 1977. Robert E. Klein and five others, Eds. Plenum, New York, 1979. xiv, 462 pp., illus. \$29.50.

**Everyday Mother Talk to Toddlers.** Early Intervention. Frances Fuchs Schachter with Ruth E. Marquis, Ellen Shore, Carole L. Bundy, and June H. McNair. Academic Press, New York, 1979. xx, 212 pp., illus. \$14.50.

**The Experiencing of Musical Sound.** Prelude to a Phenomenology of Music. E. Joseph Smith. Gordon and Breach, New York, 1979. 256 pp. \$14.50. Musicology Series.

**The Experiential Taxonomy.** A New Approach to Teaching and Learning. Norman W. Steinaker and M. Robert Bell. Academic Press, New York, 1979. xviii, 200 pp. \$15. Educational Psychology.

**Field Theory and Its Classical Problems.** Charles Robert Hadlock. Mathematical Association of America, Washington, D.C., 1978. xvi, 324 pp., illus. \$16. Carus Mathematical Monographs, No. 19.

**Human Behavior and Adaptation.** Papers from a symposium, Oxford, England, Jan. 1977. N. Blurton Jones and V. Reynolds, Eds. Taylor and Francis, London, and Halsted (Wiley), New York, 1978. viii, 314 pp., illus. \$30. Symposia of the Society for the Study of Human Biology, vol. 18.

**The Human Connection.** Ashley Montagu and Floyd Matson. McGraw-Hill, New York, 1979. xviii, 212 pp. \$10.95.

**Human Malignant Melanoma.** Wallace H. Clark, Jr., Leonard I. Goldman, and Michael J. Mastrangelo, Eds. Grune and Stratton, New York, 1979. xiv, 510 pp., illus. \$39.50.

**The Hypercycle.** A Principle of Natural Self-Organization. M. Eigen and P. Schuster. Springer-Verlag, New York, 1979. viii, 92 pp., illus. Paper, \$9.80. Reprinted from *Die Naturwissenschaften*, November 1977 and January and July 1978.

**IAHS Cairo Workshop on Evaluation of Industrialized Housing Systems.** Nov. 1976. Adel Fareed, Mostafa El-Hifnawi, and Oktay Ural, Eds. Pergamon, New York, 1979. Variously paged, illus. Paper, \$40.

**Low-Cost Rural Care and Health Manpower Training.** An Annotated Bibliography with Special Emphasis on Developing Countries. Vol. 4. Compiled by Frances M. Delaney. International Development Research Centre, Ottawa, Canada, 1979. 186 pp. Paper, \$10. IDRC-125e.

**Manual on Early Treatment of Possible Radiation Injury.** With an Appendix on Sodium Burns. International Atomic Energy Agency, Vienna, 1978 (U.S. distributor, Unipub, New York). xii, 144 pp., illus. Paper, \$13. Safety Series No. 47.

**Marine Biology.** John Reseck, Jr. Reston (Prentice-Hall), Reston, Va., 1979. x, 258 pp., illus. \$16.50.

**Marine Production Mechanisms.** M. J. Dunbar. Cambridge University Press, New York, 1979. xiv, 338 pp., illus. \$59.50. International Biological Programme 20.

**Mary Swartz Rose, 1874-1941.** Pioneer in Nutrition. Juanita Archibald Eagles, Orrea Florence Pye, and Clara Mae Taylor. Teachers College Press, New York, 1979. xx, 172 pp., illus. \$9.95.

**Monetarism.** Theory, Evidence and Policy. Howard R. Vane and John L. Thompson. Halsted (Wiley), New York, 1979. viii, 200 pp., illus. \$27.50.

**Multidimensional Diffusion Processes.** Daniel W. Stroock and S. R. Srinivasa Varadhan. Springer-Verlag, New York, 1979. xii, 340 pp. \$34.90. Grundlehren der mathematischen Wissenschaften 233.

**Multiple Objective Decision Making.** Methods and Applications. A State-of-the-Art Survey. Ching-Lai Hwang and Abu Syed Md. Masud in collaboration with Sudhakar R. Paidy and Kwangsun Yoon. Springer-Verlag, New York, 1979. xii, 352 pp., illus. Paper, \$17.80. Lecture Notes in Economics and Mathematical Systems, vol. 164.

**A Nation of Guinea Pigs.** Marshall S. Shapo. Free Press (Macmillan), New York, and Collier Macmillan, London, 1979. xvi, 300 pp. \$12.95.

**National Electrical Code Reference Book.** Based on the 1978 Code. J. D. Garland. Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1979. xii, 612 pp., illus. \$18.95.

**The Nature of Change in Geographical Ideas.** Brian J. L. Berry, Ed. Northern Illinois University Press, DeKalb, 1979. x, 168 pp. \$17.50. Perspectives in Geography 3.

**Pregnancy Metabolism, Diabetes and the Fetus.** Papers from a symposium, London, Mar. 1978. Excerpta Medica, Amsterdam, 1979 (U.S. distributor, Elsevier, New York). viii, 326 pp., illus. \$39.50. Ciba Foundation Symposium 63 (new series).

**Reviews in Perinatal Medicine.** Vol. 3. Emile M. Scarpelli and Ermelando V. Cosmi, Eds. Raven, New York, 1979. x, 484 pp., illus. \$36.

**Rice.** Soil, Water, Land. Frans R. Moorman and Nico van Breemen. International

Rice Research Institute, Manila, Philippines, 1978. viii, 186 pp., illus. Paper, \$5.

**Robert Fludd.** Hermetic Philosopher and Surveyor of Two Worlds. Joscelyn Godwin. Shambhala, Boulder, Colo., 1979 (distributor, Random, New York). 96 pp., illus. Paper, \$6.95.

**Scientific and Engineering Manpower for Fossil Energy.** Supply—Demand—Quality. Bernard S. Friedman. U.S. Department of Energy, Washington, D.C., 1979 (available from the National Technical Information Service, Springfield, Va.). viii, 202 pp. Paper, \$9.25; microfiche, \$3. ANL-FE-49635-1.

**The Seasons of a Man's Life.** Daniel J. Levinson with Charlotte N. Darrow, Edward B. Klein, Maria H. Levinson, and Braxton McKee. Ballantine, New York, 1979. xiv, 364 pp. Paper, \$5.95. Reprint of the 1978 edition.

**Second Sight.** A Miraculous Story of Vision Regained. Charlotte Sanford and Lester David. Evans, New York, 1979. 204 pp. \$7.95.

**Selected Papers (1937-1976) of Julian Schwinger.** M. Flato, C. Fronsdal, and K. A. Milton, Eds. Reidel, Boston, 1979 (distributor, Kluwer Boston, Hingham, Mass.). xxviii, 410 pp. Cloth, \$29.50; paper, \$11.95. Mathematical Physics and Applied Mathematics, vol. 4.

**Semigroups and Combinatorial Applications.** Gerard Lallement. Wiley-Interscience, New York, 1979. xiv, 376 pp., illus. \$27.50. Pure and Applied Mathematics.

**Sleeping Pills, Insomnia, and Medical Practice.** Report of a Study. Institute of Medicine, National Academy of Sciences, Washington, D.C., 1979. x, 198 pp. Paper, \$6.

**Social Darwinism.** Science and Myth in Anglo-American Social Thought. Robert C. Banister. Temple University Press, Philadelphia, 1979. x, 292 pp. \$17.50. American Civilization.

**Social Work Practice.** People and Environments. An Ecological Perspective. Caryl B. Germain, Ed. Columbia University Press, New York, 1979. xiv, 370 pp. Cloth, \$20; paper, \$10.

**Sociology of Science.** Jerry Gaston, Ed. Jossey-Bass, San Francisco, 1979. xiv, 226 pp., illus. \$12.95. Special issue of *Sociological Inquiry*, vol. 48. Nos. 3-4.

**Theory of Population Genetics and Evolutionary Ecology.** An Introduction. Jonathan Roughgarden. Macmillan, New York, and Collier Macmillan, London, 1979. xii, 634 pp., illus. \$24.95.

**Theory of Stein Spaces.** H. Grauert and R. Remmert. Translated from the German edition (Heidelberg, 1977) by Alan Huckleberry. Springer-Verlag, New York, 1979. xxii, 252 pp. \$39.80. Grundlehren der mathematischen Wissenschaften 236.

**Thera and the Aegean World.** Vol. 1. Papers from a congress, Santorini, Greece, Aug. 1978. Thera and the Aegean World, London, 1978 (U.S. distributor, ISBS, Forest Grove, Ore.). 824 pp., illus. \$80.

**Therapeutic Systems.** Pattern-Specific Drug Delivery: Concept and Development. Klaus Heilmann. Thieme, Stuttgart, and PSG Publishing Company, Littleton, Mass., 1978. xii, 144 pp., illus. \$20.

**World Economic Development.** 1979 and Beyond. Herman Kahn. Westview Press, Boulder, Colo., 1979. xii, 520 pp., illus. Cloth, \$20; paper (published by Morrow [New York]), \$7.95.

**The Year Book of Nuclear Medicine 1979.** James L. Quinn, III, and Stewart M. Spies, Eds. Year Book Medical Publishers, Chicago, 1979. 374 pp., illus. \$27.95.

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**Biochemist/Bio-organic Chemist/Ph.D.,** experience in teaching, nucleic acids biochemistry, and recent experience in membrane chemistry. Interested in research in clinical medical school/hospital department or in industrial laboratory. R. D. Faulkner, Biochemistry Department, University of South Alabama, Mobile, Alabama 36688. Telephone: 205-460-6402. 2/1, 8

**Electrophysiologist.** Ph.D. 1977; 15 years of gastroenterology and renal research; pH and pCO<sub>2</sub> micro-electrodes. Publications. Industry, academia, research, no postdoctorals. Box 25, SCIENCE. X

**Fisheries/Environmental Biologist.** Ph.D. with 10 years of research/supervisory/consulting experience. Publications on ecology, behavior, natural history of fish and invertebrates. Seeks research and/or teaching position with emphasis on general biology in smaller institutions, application of biological principles to current issues, and involvement with local community. Box 20, SCIENCE. X

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**Pharmacotoxicologist.** Dr. med. vet. from Germany; 4 years in biochemical pharmacology, teratology, inhalation toxicology, mycotoxins, immunology, electrophoresis, chromatographies, enzymology, development of new drugs, analysis, and 4 years in practice. Seeks any challenging position. Write to: Ghosh, Marschstrasse 9, 2848 Vechta, West Germany. 2/1, 8

## POSITIONS WANTED

**Environmental/Biology/Biochemistry.** B.S. plus work toward M.S. Managerial capability and governmental experience. Currently small town chemist. R. Wattinger, Route 1, Box 39-D, Reva, Virginia 22735. 2/1, 8

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**Physician-Pharmacologist/Toxicologist.** (M.D., Ph.D.), research background, industrial and regulatory experience. Desires significant responsibility in toxicology/health impact assessment with major corporate organization. Reply to: Box 333, SCIENCE. X

**Protein Biochemist.** Ph.D. 1973. Eight years of experience in protein purification and analysis. Publications on cathepsins, histone variants, human serum albumin variants. Desires position in commercial R & D. 507 Windsor Court, C-1, Andalusia, Pennsylvania 19020. X

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**POSTDOCTORAL POSITIONS** available spring, summer, or fall for a combined spectroscopic, kinetic, and enzymatic study of the structure and thermodynamics of drug-nucleic acid complexes. I am particularly interested in individuals with experience in either the synthesis of oligonucleotides or a background in spectroscopy, although all applicants will be given serious consideration. State of the art instrumentation is available to support these projects (for example, 400 MHz NMR, computer interfaced Cary 219, and Jasco CD). Candidates should forward curriculum vitae, transcripts, and three letters of recommendation to: Professor Thomas R. Krugh, Department of Chemistry, University of Rochester, Rochester, N.Y., 14627; telephone: 716-275-4224.

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Applications are invited from ANATOMISTS experienced in teaching functional gross anatomy. Applicants must have research experience in evaluating the biomechanical properties of the musculo-skeletal system. Appointment will be made in conjunction with the Department of Orthopedic Surgery. Academic rank will be commensurate with qualifications. Closing date for applications is 15 March 1980; applications should include curriculum vitae with complete bibliography and names of three references. Submit to: Dr. Robert S. McCuskey, Chairman, Department of Anatomy, West Virginia University Medical Center, Morgantown, West Virginia 26506. West Virginia University is an Equal Opportunity/Affirmative Action Employer.

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The research interests of candidates should be at the molecular and/or cellular level and related to important problems of endocrine physiology. Candidates should hold a doctoral degree (Ph.D. or M.D.), have postdoctoral training, and have shown the excellence and originality in research expected of potential leaders in their fields. Duties will include teaching endocrinology to medical students and biophysics and physiology to graduate students.

Send curriculum vitae, several representative publications, and the names of four references to:

Professor Stephen H. White, Chairman  
Department of Physiology  
University of California  
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**ASSISTANT PROFESSOR—ZOOLOGY.** Tenure-track position available August 1980 at independent Christian college with enrollment of 850 students. Duties include teaching each semester a course in anatomy and physiology (for allied health majors) plus, on a rotating basis, genetics, developmental biology, and comparative anatomy/histology; directing student research; and developing an active personal research program. Ph.D. is required. Tissue culture experience desirable. Salary: \$12,500 to \$16,500. Application deadline: 15 February 1980. Send résumé and three letters of recommendation to: Joseph A. Kawatski, Department of Biology, Viterbo College, La Crosse, Wis. 54601. Affirmative Action/Equal Opportunity Employer.

### ASTRONOMER/PROGRAMMER UNIVERSITY OF MARYLAND ASTRONOMY PROGRAM

The Astronomy Program of the University of Maryland is looking for a Ph.D.-level person to carry out software development and scientific research on the long wavelength radioheliograph/synthesis telescope at the University of Maryland Clark Lake Radio Observatory, Borrego Springs, California. Ph.D. in physics or astronomy with a deep background in digital computing preferred. Salary is dependent on experience. Position is available as soon as a suitable person can be found. Send applications to: Dr. William C. Erickson, Astronomy Program, University of Maryland, College Park, Md. 20742. The University of Maryland is an Equal Opportunity/Affirmative Action Employer. Applications from women and members of minority groups are welcome.

### FACULTY POSITIONS UNIVERSITY OF MARYLAND ASTRONOMY PROGRAM

The Astronomy Program of the University of Maryland has two openings for fall 1980. **Senior Level Position.** The position would be for a distinguished astronomer to be appointed at the full professor level. No constraints are currently anticipated on the field of research. The directorship of the program will also be open and the person selected for this position could also be a candidate for the directorship. **Assistant Professor.** Appointment is expected to be made in one of the current fields of research in the Astronomy Program, which are galactic structure, interstellar medium, stellar atmospheres, high energy astrophysics, solar radio astronomy, cometary studies, and the study of extragalactic radio sources. Applications received by 29 February 1980 will be given full consideration. Send résumé to: Dr. Mukul Kundu, Acting Director, Astronomy Program, University of Maryland, College Park, Md. 20742. The University of Maryland is an Equal Opportunity/Affirmative Action Employer. Applications from women and members of minority groups are welcome.

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**ASSISTANT PROFESSOR: UNIVERSITY OF MINNESOTA.** Position available immediately in the Medical School requires training and experience in genetics, statistics, and computing. Duties include collaborative research in chronic diseases, with some teaching in health computer sciences and consulting in the Department of Laboratory Medicine and Pathology. Send curriculum vitae and names of three references to: **Professor Lael C. Gatewood, University of Minnesota, Box 511 Mayo, 420 Delaware Street, SE, Minneapolis, Minn. 55455, or telephone: 612-373-0325.**

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**ASSISTANT PROFESSOR (tenure-track)** position to start 1 September 1980. Major teaching responsibilities include courses in ornithology, mammalogy, man and wildlife, and introductory biology. Curator of a regionally and nationally significant natural history collection (primarily ornithological). Opportunity to teach at graduate level and direct graduate student research. Emphasis in systematics is desirable. Earned Ph.D. or nearing completion in zoology or a related field. Salary dependent upon qualifications and experience. Send résumé, transcripts, and three letters of reference by 10 March 1980 to: **Dr. Robert B. Wenger, Chairperson, Science and Environmental Change, University of Wisconsin-Green Bay, Green Bay, Wis. 54302.**

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The Space Sciences Laboratory of the University of California at Berkeley has an opening for an **ASSISTANT RESEARCH ASTRONOMER** for a period of 2 years beginning 15 April 1980. The responsibilities of the position include carrying out fundamental research in x-ray astronomy using x-ray and optical data.

Applicants should have: (i) a Ph.D. in high energy astronomy and at least 1 year of postdoctoral experience in x-ray astronomy, (ii) a demonstrated ability to carry out basic research, (iii) familiarity with optical astronomy techniques and procedures, and (iv) knowledge of data processing techniques using mini-computers. *The University of California is an Affirmative Action Employer.*

Send résumé and the names of three references by 1 March 1980 to:

**Professor C. Stuart Bowyer  
Space Sciences Laboratory  
University of California  
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**BOTANIST** with Ph.D. in area of vascular plant taxonomy and broad training in biosystematics to teach courses in plant taxonomy and general botany. In addition to imaginative and creative teaching, candidate will be expected to conduct an active research program. Preferences will be given to candidates specializing in chemotaxonomy and experimental taxonomy. Position begins 1 September 1980. Rank and salary are open. Please submit curriculum vitae, statement of research interests, and three letters of reference by 8 March to: **Lois Pfister, Department of Botany and Microbiology, 770 Van Vleet Oval, University of Oklahoma, Norman, Okla. 73019. An Equal Opportunity Employer.**

**Ph.D. in a field compatible with programs in botany and microbiology** to direct and teach in an introductory level biology course for nonmajors, conduct research, and teach a course in field of specialization. The position requires interest in developing an imaginative and substantive biology course for nonmajors and potential to attract extramural research funds. Position available 1 September 1980. Assistant professor level. Please submit curriculum vitae, statement of career goals and research interests, and three letters of recommendation to: **James Estes, 770 Van Vleet Oval, University of Oklahoma, Norman, Oklahoma 73019. An Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available for person with training in ecology and plant physiology. The person will identify appropriate plant species and formulate bioassays to evaluate the toxicity of chemicals on the growth and reproduction of vascular plants native to the United States. The salary will be \$12,000 to \$14,000 per year, for a 2-year period. Send curriculum vitae and three letters of reference to: **Paul Risser, Chairman, Department of Botany and Microbiology, University of Oklahoma, Norman, Oklahoma 73019.** Position is open immediately with a closing date of 29 February. *An Equal Opportunity Employer.*

## POSITIONS OPEN

**ASSISTANT RESEARCH ENGINEER IN EXPERIMENTAL AND THEORETICAL PLASMA RESEARCH,** Electronics Research Laboratory, University of California, Berkeley. Temporary full-time position available immediately for 12 months, with possibility of extension contingent upon funding. Perform experiments on a multiple-mirror plasma containment device to determine stability and containment properties. Design and operate the required diagnostics. Perform analytic and computer calculations as required for design and interpretation of results. Ph.D. with experimental, theoretical, and computational experience in plasmas required. Send résumés by 15 March 1980 to: **Professor A. J. Lichtenberg, Department of Electrical Engineering and Computer Sciences, University of California, Berkeley, Calif. 94720. The University of California is an Affirmative Action Employer.**

**BIOCHEMIST, B.S. minimum.** Background of protein chemistry and enzymes. Microbiology experience desirable. Some quality control related responsibilities. Upstate New York. Excellent area for family. *Dellwood Foods is an Equal Opportunity/Affirmative Action Employer, M/F.* Reply to:

**Box 23, SCIENCE**

### BIOCHEMICAL GENETICIST CENTER FOR DISEASE CONTROL ATLANTA, GEORGIA

The Center for Disease Control is recruiting a biochemical geneticist to serve as **chief** of a new Biochemical Genetics Activity, located in the Genetics Laboratory, Pathology Division, Bureau of Laboratories. The position will involve applied and basic research in biochemical genetics, provide consultation and limited diagnostic service, and conduct both classroom and bench training.

Applicants must have substantial experience in research and teaching, preferably gained at a major medical center. The position requires demonstrated ability to communicate with persons at all organizational and educational levels. The position requires an M.D. or Ph.D. degree, and may be filled in either the Career Civil Service or the Public Health Service Commissioned Corps. Salary will be commensurate with qualifications.

Further inquiries should be directed to: **Dr. Andrew T. L. Chen, Chief, Genetics Laboratory, Pathology Division, Center for Disease Control, 1600 Clifton Road, NE, Atlanta, Georgia 30333; telephone: 404-329-3213.** Applicants should submit résumé to: **David F. Rogers, Personnel Management Office, Center for Disease Control, 1600 Clifton Road, NE, Atlanta, Georgia 30333. The Center for Disease Control is an Equal Opportunity Employer.**

### BIOLOGY

Zoologist for medium-sized, Catholic, liberal arts college. Required: Ph.D. and ability to teach invertebrate zoology, embryology, animal histology, and general physiology. Apply by 1 April 1980 to: **Personnel Coordinator, St. Ambrose College, 518 West Locust Street, Davenport, Iowa 52803.**

*Affirmative Action/Equal Employment Opportunity*

### CHAIRMAN DEPARTMENT OF MOLECULAR BIOLOGY NORTHWESTERN UNIVERSITY MEDICAL AND DENTAL SCHOOLS

Northwestern University is searching for a chairman of the Department of Molecular Biology which is to be newly established in the Medical and Dental Schools on the Chicago campus. Applications are invited from individuals who have established national and international reputations as outstanding scholars in research and teaching, and who have demonstrated leadership and administrative abilities. Northwestern University has made a major commitment to the development of life sciences in the coming years. Establishment of the new Department of Molecular Biology represents a step toward this goal, and it will be a truly challenging opportunity for a well-qualified individual to serve as the first chairman. The new chairman will join with the chairman of the basic medical science departments, several of whom have recently come to Northwestern, to promote a rapidly growing tradition of research and teaching excellence. Applicants should send curriculum vitae, list of publications, and the names of three references to: **Dr. Toshio Narahashi, Chairman of Search Committee, Department of Pharmacology, Northwestern University Medical and Dental Schools, 303 East Chicago Avenue, Chicago, Ill. 60611. Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**BIOLOGICAL SCIENTIST.** The Bureau of Land Management has a GS-14 vacancy (\$34,713 to \$45,126) in its Resources Sciences Staff in Washington, D.C. Responsibilities include providing advice and assistance on a Bureauwide basis for the identification, application, and use of developments, technology, and research results that pertain to natural resource management on the public lands. Desirable placement factors include a Ph.D. in ecology and evidence of original research accomplishments. Submit an SF-171 and résumé by 15 February 1980 to: **Jeanne Zurkullen, Bureau of Land Management (831), U.S. Department of the Interior, Washington, D.C. 20240.**

**BLOOD BANK DIRECTOR**—Blood bank director (M.D.) for medical school teaching hospital. Applicant must have appropriate qualifications for faculty appointment as an assistant or associate professor of pathology. Interest in teaching and research essential. Board-certification in clinical pathology or other appropriate discipline required. Please submit curriculum vitae and letters of reference to: **George P. Studzinski, M.D., Ph.D., Professor and Chairman, Department of Pathology, COLLEGE OF MEDICINE AND DENTISTRY OF NEW JERSEY—NEW JERSEY MEDICAL SCHOOL, 100 Bergen Street, Newark, N.J. 07103. Equal Opportunity/Affirmative Action Employer, M/F.**

**CELLULAR BIOLOGIST**—Associate/assistant professor position effective prior to 1 September 1980. Position requires Ph.D. degree (pharmaceutical sciences, biochemistry, microbiology, or pathology), instructing pharmacy students in applied immunology, developing a drug-related, cellular processes research program in a new facility. Send application, résumé, and names of three references to: **Dr. E. J. Staba, College of Pharmacy, University of Minnesota, Minneapolis, Minn. 55455** by 1 April.

### CHAIRPERSON— DEPARTMENT OF PHARMACOLOGY

Applications and nominations are invited for the position of chairperson of the Department of Pharmacology in the School of Medical Sciences, University of Nevada, Reno. Qualifications include an M.D. and/or Ph.D., or equivalent degree, demonstrated commitment to excellence in teaching medical students, established reputation as a research scientist with grant funding, leadership and administrative abilities. Candidates should qualify for rank of full professor. Preference will be given to individuals who specialize in some aspect of neuropharmacological research, but other areas of pharmacology will be considered. Salary will be competitive with western regional medical schools and commensurate with candidate's qualifications and experience. Application deadline is 1 March 1980. Interested applicants should send a letter of application, curriculum vitae, and names of three references to: **J. D. Wood, Chairman, Pharmacology Search Committee, Anderson Medical Sciences Building, University of Nevada-Reno, Reno, Nevada 89557. An Equal Opportunity/Affirmative Action Employer.**

### CHAIRPERSON DEPARTMENT OF POULTRY SCIENCE MICHIGAN STATE UNIVERSITY

Applications are invited from persons with a Ph.D. in poultry or other closely related areas. The chairperson must take a leadership role in research, teaching, and extension activities within the department to ensure its expansion as an integral and viable component of the College of Agriculture and Natural Resources, Michigan State University, and Michigan's poultry industry. The position will be available 1 April 1980. Applications will be received until 29 February 1980 or until suitable applicants have been identified. Send complete résumé and names of three references to: **Dr. Steve Bursian, Department of Poultry Science, Michigan State University, East Lansing, Mich. 48824. An Equal Opportunity/Affirmative Action Employer.**

**DEVELOPMENTAL BIOLOGIST.** Tenure-track position at assistant professor level available August 1980. Ph.D. required. Primary duties are teaching undergraduate courses in embryology, comparative anatomy, and introductory biology. In addition to quality teaching, the candidate will be expected to develop an active research program. Applicants should provide curriculum vitae, a brief description of teaching and research interest, reprints, unofficial transcripts, and three letters of recommendation to: **Dr. Robert L. Watson, Chairman, Department of Biology, University of Arkansas at Little Rock, 33rd and University, Little Rock, Ark. 72204. An Affirmative Action Employer.**

## POSITIONS OPEN

### CHAIRPERSON DEPARTMENT OF PSYCHIATRY

The University of Kansas School of Medicine-Wichita is seeking a chairperson for the Department of Psychiatry. M.D. degree and certification by the American Board of Psychiatry and Neurology in psychiatry or equivalent is required. An individual with a record of productivity in clinical research, and an interest in teaching and clinical service is desired. Salary: \$55,000 to \$65,000. Position available 1 July 1980. Letters of application with curriculum vitae should be mailed to: **Robert Manning, M.D., Chairman, Search Committee, University of Kansas School of Medicine-Wichita, 1001 North Minneapolis, Wichita, Kansas 67214.** Applications accepted through 31 March 1980. *The University of Kansas School of Medicine-Wichita is an Equal Opportunity Employer. Men and women of all races and with handicaps are encouraged to apply.*

### SEARCH FOR GRADUATE DEAN UNIVERSITY OF SOUTH ALABAMA

The University of South Alabama invites applications and nominations for the position of dean of the Graduate School. The graduate dean reports directly to the vice president for academic affairs and is responsible for the supervision and coordination of the programs of the Graduate School of the university. Along with other academic deans, this officer participates in the instructional planning necessary to maintain and augment the university's role in the higher education of its state and region.

A candidate for this position must have a proven record and continuing participation in scholarly research and a minimum of 5 years of academic experience at the graduate level. Administrative experience is desirable.

Applications should include complete curriculum vitae, complete transcripts from all colleges and universities attended, and three letters of reference/recommendation.

Nominations and applications should be addressed to:

**The Office of Graduate Dean  
ILB 211, University of South Alabama  
Mobile, Alabama 36688**

The deadline for completed applications is 29 February 1980.

*Equal Opportunity Employer*

### DEVELOPMENTAL BOTANIST

The Department of Biology, Virginia Polytechnic Institute and State University (VPI and SU), invites applications for a tenure-track position at the assistant professor level. Applicants should have the Ph.D. degree. The candidate will be expected to develop an active research program in developmental botany and offer training to undergraduate and graduate students in both the morphology and development of higher plants. The applicant may also be asked to assist in the general biology program. Salary is competitive and commensurate with experience. Letters of application, curriculum vitae, a brief description of career goals and proposed research program, and three letters of recommendation must be received by 7 March 1980. Address to: **Dr. Orson K. Miller, Jr., Chairman Search Committee, Department of Biology, VPI and SU, Blacksburg, Va. 24061.**

*An Equal Opportunity/Affirmative Action Employer*

### CANCER CENTER DIRECTOR FOR EPIDEMIOLOGY

The Northern California Cancer Program (NCCP) in collaboration with University of California, San Francisco (UCSF), is seeking an associate director for its epidemiology program. NCCP is a consortium cancer center with programs in clinical research and cancer control. Candidate should be an M.D. with strong background in cancer and epidemiology and with demonstrated capability of providing leadership to the development and coordination of collaborative programs within the region. Position includes a faculty appointment at UCSF. Interested candidates should send curriculum vitae to:

**Stephen K. Carter, M.D., Director  
Northern California Cancer Program  
1801 Page Mill Road, Building B, Suite 200  
Palo Alto, Calif. 94304**

Applications must be received by 15 March.

*Affirmative Action Employer*

## POSITIONS OPEN

### SCIENTIFIC DIRECTOR FOR BLOOD CENTER

Ph.D. with 5 years of postdoctoral experience in research and laboratory management. Must have background knowledge of blood banking. Will be responsible for establishing new procedures and coordinating research projects with clinical departments. Opportunity for participating in ongoing research and pursuing own initiatives. Academic appointment commensurate with qualifications. Send curriculum vitae to: **Tibor J. Greenwalt, M.D., Director, The Paul I. Hoxworth Blood Center of the University of Cincinnati, 3231 Burnet Avenue, Cincinnati, Ohio 45267.**

### GEOPHYSICIST/SEISMOLOGIST

Expected tenure-track slot for Ph.D. seismologist. Rank and salary open depending upon qualifications and experience. Seismological research facilities are available at Weston Observatory. Contact: **J. Christopher Hepburn, Chairman, Department of Geology and Geophysics, Boston College, Chestnut Hill, Mass. 02167; telephone: 617-969-0100.** *Boston College is an Affirmative Action/Equal Opportunity Employer.*

### IMMUNOLOGIST

Dartmouth Medical School invites applications for the position of assistant professor, or in the case of exceptionally well qualified applicants, associate professor of immunology. We anticipate filling this position in July 1980. This tenure-track appointment could be in either the Department of Microbiology or the Department of Medicine, depending upon the interests of the applicant. Responsibilities include the development of an independent research program and teaching immunology to medical students, Dartmouth College undergraduates, and graduate students. *Women and minority candidates are especially encouraged to apply.* Minimal qualifications include an M.D. or Ph.D. and several years of postdoctoral research experience. Send detailed curriculum vitae, a statement of research interests, and the names of three referees to: **Immunology Search Committee, Microbiology Department, Dartmouth Medical School, Hanover, N.H. 03755.** *An Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### EXECUTIVE DIRECTOR— RAPTOR CONSERVATION

Hawk Mountain Sanctuary Association is seeking an executive director in order to expand its programs in conservation and raptor biology. Some management experience is preferred. For further information, send curriculum vitae to: **Dr. Frank B. Gill, Academy of Natural Sciences of Philadelphia, Philadelphia, Pa. 19103.**

**TWO FACULTY POSITIONS.** The Department of Chemistry, Illinois Wesleyan University, is seeking applicants for two tenure-track positions. The area of specialty is open for both positions, excluding physical chemistry. The first position is for **DEPARTMENT HEAD**, and is expected to be made at the associate professor rank. Duties include administering a liberal arts college department, teaching, and promoting undergraduate research activities. The second appointment will be made at the **INSTRUCTOR/ASSISTANT PROFESSOR** level. Excellence in teaching and a commitment to research are requirements for both positions. *Applications from women and minority candidates are particularly welcome.* Send curriculum vitae and three letters of reference to: **Roger Schnaitter, Director of Natural Science, Illinois Wesleyan University, Bloomington, Illinois 61701.** The closing date for applications is 21 February 1980. *Illinois Wesleyan University is an Equal Opportunity Employer.*

### IMMUNOLOGY—FACULTY

Two junior faculty positions available in immunology (immunogenetics or immunochemistry) with emphasis in oncologic or gerontologic problems. Major activities research but will participate in instruction of medical, graduate, and undergraduate students. Excellent facilities and equipment with expanding group affiliated with cancer and aging centers. Two years of postdoctoral training necessary. Submit curriculum vitae and three references before 1 March 1980 to: **Dr. D. M. Goldenberg, Division of Experimental Pathology, University of Kentucky Medical Center, Lexington, Ky. 40536.**

## HEALTH CARE INDUSTRY Medical Affairs Clinical Coordinator

McGaw Laboratories is seeking qualified individuals to fill positions in the medical affairs department. The job title is Associate Clinical Coordinator and the basic responsibilities include:

1. Assist in the development and design of clinical investigation.
2. Develop and write clinical protocol.
3. Coordinate and monitor external clinical studies.
4. Evaluate clinical data for safety and efficiency.
5. Write study reports.

The position available is for an individual who has the ability to work independently and the capability to coordinate the above factors. Good interpersonal, written and verbal skills would be essential. If the nature of this position sounds interesting, please forward a copy of your resume to:



**McGaw Laboratories**

P.O. Box 11887, Dept. 7-100-A  
Santa Ana, CA 92711

*An Equal Opportunity Employer M/F*

## AMERICAN HOSPITAL SUPPLY CORPORATION



## POSITIONS OPEN

### DIRECTOR PROGRAM IN SOCIAL ECOLOGY UNIVERSITY OF CALIFORNIA, IRVINE

The Program in Social Ecology, an interdisciplinary program of the University of California, Irvine, invites applications for director of the program and professor or associate professor of social ecology. Candidates for the position should have a strong background in research and teaching suitable for tenured appointment in the University of California. Demonstrated experience in academic administration is desirable. Area of expertise of the director is open, but must reflect the interdisciplinary goals of the program. Preference: desire those whose research interests complement those of the existing faculty.

The director's responsibilities include the leadership of a faculty of 27, more than 70 graduate and 700 undergraduate students. The program seeks to apply insights and techniques drawn from both the social and life sciences to the analysis and solution of major social and environmental problems. Current faculty include urban sociologists and planners, criminal justice specialists, community psychologists, environmental psychologists, lawyers, environmental health experts, and developmental psychologists.

The campus, located 40 miles south of Los Angeles, is close to the beach, mountain, and desert recreational areas.

Please submit curriculum vitae and names of three references as soon as possible to:

Chair  
Search Committee for New Director  
Program in Social Ecology  
University of California, Irvine  
Irvine, California 92717  
*An Affirmative Action Employer*

**ENTOMOLOGIST**—Florida Medical Entomology Laboratory. The laboratory has an opening for an entomologist III (Ph.D. required). The successful applicant will pursue research on the biology and control of biting midges in Florida, with a view to regulating their populations as related to public health and diseases of livestock. The laboratory has just been transferred by legislative act to the University of Florida, Institute of Food and Agricultural Sciences, centered administratively at Gainesville. Salary will be in the range \$15,117 to \$20,253 per annum. Applicants should, by 1 March 1980, send full curriculum vitae with two supporting letters of reference to: Dr. J. R. Linley, Florida Medical Entomology Laboratory, P.O. Box 520, Vero Beach, Florida 32960.

### FACULTY POSITION IN IMMUNOLOGY

A position as assistant professor is available in the Department of Microbiology and Immunology at the University of Washington. The position involves research and testing, including medical student education in the regional Medical School (WAMI) program. Applicants with experience and interest in immunology related to infectious diseases are particularly sought. Applications should include full curriculum vitae and names of three referees, and must be received prior to 15 February. Apply to:

Dr. Ingegerd Hellström  
Search Committee Chairperson  
Fred Hutchinson Cancer Research Center, ZD-08  
1124 Columbia  
Seattle, Washington 98104

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

### FACULTY POSITIONS—BIOLOGY

The Department of Biology of Hood College invites applications for two faculty positions, available August 1980.

**DEVELOPMENTAL BIOLOGIST** to teach genetics, embryology, graduate (M.S.)-level course in area of specialization, and

**ENVIRONMENTAL BIOLOGIST** to teach environmental studies, aquatic (estuarine) biology, graduate (M.S.)-level course in area of specialization.

Positions are tenure-track; assistant professor rank; Ph.D. required; salary range: \$15,500 to \$18,300, depending on qualifications. Emphasis on excellence in teaching.

Send résumé, three letters of reference, and transcripts to: Dr. W. Kundig, Chairperson, Department of Biology, Hood College, Frederick, Maryland 21701.

Deadline for application: 15 March 1980.

*Hood College is an Equal Opportunity Employer.*

## POSITIONS OPEN

### FACULTY POSITIONS—BIOCHEMISTRY

Several tenure-track positions at a level to be determined by qualifications are open in the Biochemistry Department, School of Medicine, at the University of North Carolina at Chapel Hill. We seek to establish expertise in any of the following research areas: culture, genetics, and differentiation of eukaryote cells; cell surface interactions; mammalian gene transfer. Excellence in teaching is expected. Send curriculum vitae, the names of three references, and an outline of research plan to: Dr. Mary Ellen Jones, Chairwoman, Biochemistry Department, University of North Carolina, Chapel Hill, N.C. 27514. We are keenly interested in attracting outstanding women and/or minority scientists to this department. *Equal Opportunity/Affirmative Action Employer.*

### HEAD, Department of Physiology and Biophysics University of Illinois at the Medical Center School of Basic Medical Sciences Chicago, Illinois

Applications and nominations are invited for the headship of the Department of Physiology and Biophysics. The successful candidate will be responsible for the leadership of an active, multidisciplinary department with a strong research mission. Candidates must have an outstanding record of accomplishment in research as well as a demonstrated commitment to medical and graduate education. Letters of application and/or curriculum vitae should be sent to: Dr. M. D. Maines, Chairperson of Search Committee, Department of Pharmacology, University of Illinois at the Medical Center, P.O. Box 6998, Chicago, Illinois 60680. To receive full consideration, applications should be received by 15 March 1980.

*An Affirmative Action/Equal Opportunity Employer*

### IMMUNOCHEMIST—IMMUNOBIOLOGIST

Ph.D. or M.D. for new immunotherapeutic cancer project at Baylor College of Medicine. Postdoctoral experience desirable. Please send curriculum vitae and bibliography to: Box 22, SCIENCE.

**IMMUNOPARASITOLOGIST**—Associate professorship. Involves teaching, research and service. D.V.M. and/or Ph.D. with experience in hemotropic disease research. Position open 1 June 1980; deadline for applications: 29 February 1980. Apply to: Dr. C. A. Carson, Department of Veterinary Microbiology, College of Veterinary Medicine, University of Missouri, Columbia, Mo. 65211. *The University of Missouri is an Equal Opportunity Employer.*

**MAMMALIAN PHYSIOLOGISTS AND BIOPHYSICISTS.** Positions open for the 1980-1981 academic year in the areas of cardiovascular physiology, renal physiology, gastrointestinal physiology, endocrinology, reproductive physiology, and respiratory physiology at King Faisal University College of Medicine in Dammam, Saudi Arabia. Ph.D. and/or M.D. and at least 2 years of teaching experience. Salaries are highly competitive and benefits are excellent. Language of instruction is English. Send complete curriculum vitae with telephone numbers and three references to: Dr. Tawfig Tamimi, Dean, College of Medicine, King Faisal University, c/o Saudi Arabian Educational Mission, 2221 West Loop South, Houston, Texas 77027.

### MEMORIAL UNIVERSITY OF NEWFOUNDLAND DEPARTMENT OF GEOLOGY

Applications are invited for a faculty position in **METAMORPHIC PETROLOGY**, commencing 1 July 1980 or as soon as possible thereafter. Candidates must be strongly field-oriented and committed to establishing a research programme in Labrador. Teaching duties will include senior undergraduate and graduate level courses in petrographic, kinetic, and thermodynamic aspects of metamorphic petrology. Applications at any rank will be considered, but the successful applicant must hold the Ph.D. degree at the time of appointment.

Applications, which must include detailed curriculum vitae and the names and addresses of three referees, should be sent by 15 March 1980 to: Dr. D. Skevington, Head, Department of Geology, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3X5, telephone: 709-753-1200, extension 3142/3, from whom further particulars can be obtained.

## POSITIONS OPEN

**THE BIOLOGICAL SCIENCES DEPARTMENT** at the University of California, Santa Barbara, invites applications for an appointment at the level of **LECTURER**. The appointment is for a 1-year period with the possibility of renewal up to a maximum of 4 years. Candidates should possess a strong background in biochemistry and virology, and a demonstrated commitment to excellence in teaching and research. The department is particularly interested in persons whose training and research is relevant to the biochemical understanding of animal virus-cell systems.

Applicants should submit curriculum vitae, a summary of teaching interests and research experience, copies of two representative publications, and names of three references to: **Chairman, Department of Biological Sciences, University of California, Santa Barbara, California 93106**. Applications must be postmarked no later than 1 March 1980. *The University of California is an Equal Opportunity/Affirmative Action Employer.*

### LOW TEMPERATURE GEOCHEMIST

State University of New York at Binghamton invites applications for a permanent position in low temperature geochemistry, starting fall 1980. It is desirable that applicant have teaching and research interests in one or more of the following: diagenesis of sedimentary rocks, surficial or groundwater geochemistry, and environmental geochemistry. However, applicants with interests in other areas will be considered. Research facilities include: electron microprobe, scanning electron microscope, x-ray diffractometers, atomic absorption spectrophotometers, and high temperature/high pressure laboratory. Teaching responsibilities would include undergraduate and graduate courses with opportunity to develop courses at any level. Appointment is planned to be at the junior assistant professor level.

Applicants should submit résumé and arrange for three letters of recommendation to be sent to: **Herman E. Roberson, Department of Geological Sciences, State University of New York at Binghamton, Binghamton, New York 13901**.

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

### UNIVERSITY OF MIAMI Rosenstiel School of Marine and Atmospheric Science 4600 Rickenbacker Causeway Miami, Florida 33149 MARINE SCIENCE LIBRARIAN

Head librarian with rank of assistant/associate professor (tenure-earning track). Applicants should have M.L.S. degree or equivalent and at least 2 years of experience in a scientific or technical library, preferably in the marine sciences. A degree in the natural or physical sciences would be preferred. Experience with computerized bibliographical retrieval systems an advantage.

Responsibilities: administer a rapidly growing collection of 30,000 volumes covering all fields of marine and atmospheric science, and a staff of six.

Salary competitive. Closing date: 1 April 1980.

Send detailed résumé to:

Dr. David E. Fisher  
Chairman, Search Committee  
Division of Marine Geology and Geophysics  
University of Miami  
Rosenstiel School of Marine and Atmospheric Science  
4600 Rickenbacker Causeway  
Miami, Florida 33149  
Telephone: 305-350-7394

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A private, independent, international university*

### MARINE SCIENCE UNIVERSITY OF SOUTH CAROLINA

The Marine Science Program at the University of South Carolina anticipates that one or more tenure-track positions will be available in the near future. Individuals with research expertise in the following areas are especially urged to apply: physical oceanography, nutrient dynamics, air-sea interaction, marine plant and animal ecology. Preference will be given to outstanding candidates regardless of discipline. Applicants should send curriculum vitae and names of three references to:

Dr. Douglas F. Williams, Chairman  
Search Committee  
Marine Science Program  
University of South Carolina  
Columbia, S.C. 29208

*The University of South Carolina is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

### MICROBIOLOGIST OR BIOCHEMIST

Postdoctoral research associate position available immediately in a research group studying the physiology and biochemistry of anaerobic bacteria. The emphasis is interspecies interactions in fermentations using mixed cultures of mesophilic and thermophilic microorganisms. The applicant, if interested, may also have the opportunity to work in our fermentation plant on applied research, which is directed toward the production of feedstock chemicals from biomass. Send curriculum vitae and names of three references to: **Dr. Harry D. Peck, Jr., or Dr. Lars G. Ljungdahl, Department of Biochemistry, University of Georgia, Athens, Ga. 30602.** *The University of Georgia is an Equal Opportunity/Affirmative Action Employer.*

**MOLECULAR GENETICIST, ASSISTANT PROFESSOR OF MICROBIOLOGY.** Tenure-track position. Ph.D. required, with postdoctoral experience preferred. The University of Tennessee/Knoxville wishes to appoint a person whose major research interest is the molecular genetics of procaryotic or eucaryotic organisms. Experience in recombinant DNA technology is desirable. Applicants should be committed to quality instruction at the undergraduate and graduate levels and the development of an active research program. Applications should be received by 15 March 1980 and include a résumé and three letters of reference. Send information to: **Dr. Richard J. Courtney, Chairman, Search Committee, Department of Microbiology, University of Tennessee, Knoxville, Tenn. 37916.** *University of Tennessee is an Equal Opportunity/Affirmative Action Employer.*

**MYCOLOGIST/BOTANIST.** Recent Ph.D. to teach courses in the fungi and introductory courses to biology majors and nonscience students. Active research interests in host-parasite relationships preferred. Ten-month, tenure-track appointment at the assistant professor level anticipated, beginning September 1980. Submit résumé, transcripts, and three letters of recommendation by 15 March 1980 to: **Dr. Alexander P. Spence, Chairman, Department of Biological Sciences, State University of New York College, Cortland, N.Y. 13045.** *An Affirmative Action/Equal Opportunity Employer.*

### DEAN OF THE OGDEN COLLEGE OF SCIENCE AND TECHNOLOGY WESTERN KENTUCKY UNIVERSITY

The Ogden College of Science and Technology of Western Kentucky University invites nominations and applications for the position of dean. The dean reports to the vice president for academic affairs and is responsible for the operation of a college with 145 faculty members. The college provides courses of study leading to 31 undergraduate and 14 graduate degrees in the Departments of Agriculture, Biology, Chemistry, Engineering Technology, Geography and Geology, Mathematics and Computer Science, and Physics and Astronomy. Western Kentucky University is a state-supported institution with an enrollment of more than 13,000.

The successful candidate must have a Ph.D. in a discipline appropriate to the college, administrative experience, and a long-term, full-time commitment to professionalism. In addition, the candidate is expected to have a record of sustained scholarly research and publication, a history of distinguished teaching, and a record of obtaining grants and contracts in support of research.

This is a 12-month position available summer 1980. The successful candidate will qualify for tenure with the rank of professor in the appropriate department. Salary will be commensurate with the responsibilities of the position and the qualifications of the successful applicant.

Applications together with complete résumés and three letters of reference must be received by 15 March 1980. Applications should be sent to: **Dr. Elmer Gray, Chairman, Search Committee, The Graduate College, Western Kentucky University, Bowling Green, Ky. 42101.**

*Western Kentucky University is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

### University of Alberta Department of Genetics MOLECULAR GENETICIST

The Department of Genetics, University of Alberta, invites applications for a tenure-track appointment at the assistant professor level. The successful candidate will be expected to develop an active research programme using molecular approaches to genetic problems in either eukaryotes or prokaryotes. The appointee will participate in undergraduate and graduate teaching. Applicants are asked to submit curriculum vitae, publication list, and the names and addresses of three referees before 15 March 1980. In addition, applicants are asked to arrange for these referees to send confidential assessments to: **R. C. von Borstel, Department of Genetics, University of Alberta, Edmonton, Alberta, Canada T6G 2E9.** *The University of Alberta is an Equal Opportunity Employer.*

**POSTDOCTORAL (2 years)** in experimental hematology. Project studies the loss of capability for self-replication in repeatedly transplanted or naturally aged hemopoietic stem cells and alterations in their differentiated descendants. Techniques: whole body irradiation of mice, bone marrow transplantation, cell cycle intervention and measurement, histologic studies, short-term hemopoietic cell culture. Send curriculum vitae and references to: **Dr. Norman Wolf, Pathology SM-30, University of Washington, Seattle, Washington 98195.**

**POSTDOCTORAL POSITION** in biochemical pharmacology for 2 to 3 years is available immediately for research on heme and cytochrome metabolism. Research is directed to the regulation of the synthesis and the activity of enzymes by environmental factors including metal ions. Applicants with a strong background in protein chemistry and/or chemistry are preferred. Cell culture experience useful. Salary: \$12,500 to \$14,000. Send curriculum vitae and names of three references to: **Dr. M. D. Maines, Department of Pharmacology, University of Illinois at the Medical Center, P.O. Box 6998, Chicago, Illinois 60680.**

*Equal Opportunity/Affirmative Action Employer*

### FACULTY POSITIONS OPEN COLLEGE OF AGRICULTURAL SCIENCES AND FOODS KING FAISAL UNIVERSITY HOFUF, SAUDI ARABIA Academic Year 1980-1981

The expanding College of Agricultural Sciences and Foods of King Faisal University invites inquiries from qualified applicants for the 1980-1981 academic year in the following fields: **Agronomy, Horticulture, Beekeeping, Poultry Science, Biology, Chemistry, Physics, Botany, Biochemistry, Agricultural Extension, Plant Pathology, Agricultural Economics, Animal Science, Animal Ecology, Dairy Science, Agricultural Engineering, and Water Resources and Climatology.**

**PREREQUISITES:** Master's or equivalent degree; practical and/or teaching experience. Knowledge of Arabic is helpful but not required. Language of instruction is English. Positions available September 1980; interviews scheduled with the dean in Houston, London, and Ottawa in April/May 1980.

**SALARY RANGES:** Approximate annual U.S. equivalent; professor, \$25,469 to \$33,965; associate professor, \$22,779 to \$28,973; assistant professor, \$18,570 to \$27,487; and lecturer, \$11,611 to \$16,035. Salaries are paid monthly in Saudi riyals. Substantial increase in these salaries is being considered for 1980-1981.

**BENEFITS:** Free, furnished accommodations; substantial educational allowance for up to four children. Air tickets to and from Saudi Arabia once per year for family of four. Sixty-day paid summer holiday; yearly bonus; overweight allowance. No Saudi income tax. Contracts are for 1 year and are renewable.

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

**Dr. Hussein M. Elarosi**  
Dean, College of Agricultural Sciences and Foods  
King Faisal University  
c/o Saudi Arabian Educational Mission, 2221 West Loop South, Houston, Texas 77027;  
OR  
c/o P.O. Box 2, Sudbury-on-Thames, Middlesex TW16 5JP England.

## POSITIONS OPEN

**ORAL MICROBIOLOGIST**—University of Washington, primary appointment in Department of Oral Biology, School of Dentistry, with a joint appointment in the Department of Microbiology, School of Medicine, and an affiliate appointment in the Center for Research in Oral Biology. Rank and salary to be negotiated on basis of previous rank and experience. We are looking for an individual with demonstrable research contributions as well as teaching experience in the field of microbiology, especially as related to the oral cavity. The candidate should be able to develop, coordinate, and participate in appropriate courses (for example, cariology) for both professional degree and graduate students and to coordinate the basic science and clinical aspects of microbiology within the dental school curriculum. This individual will also be expected to initiate and sustain a productive research program and advise graduate students. Please send curriculum vitae and names of four references to: **Dr. A. Tamarin, Professor of Oral Biology, Department of Oral Biology SB-22, University of Washington, Seattle, Wash. 98195.** Applications received after 31 March 1980 may not be considered. *The University of Washington is an Equal Opportunity Employer.*

### PHYSIOLOGICAL ECOLOGIST/ INVERTEBRATE ZOOLOGIST

The University of Pittsburgh at Johnstown (UPJ), an undergraduate college of the University of Pittsburgh system, invites applications for a tenure-stream position in the Division of Natural Sciences starting September 1980. Applicants will be expected to teach animal physiology, participate in the general biology program, and contribute to biological offerings in general ecology and invertebrate zoology. Applicants should have a Ph.D. and teaching experience. In addition, applicants must demonstrate a continued commitment to professional development. Send letter of application, curriculum vitae, and three letters of reference before 20 February 1980 to: **Dr. Neil D. Woffinden, Division of Natural Sciences, University of Pittsburgh at Johnstown, Johnstown, Pa. UPJ is an Equal Opportunity/Affirmative Action Employer.**

### ECONOMIST

Research group leader: career conditional appointment at either the GS-14 (\$34,713 per annum) or GS-15 (\$40,832 per annum) level. To serve as chief of the Systems Analysis Group in the Water Resources Division. The Systems Analysis Group is an interdisciplinary team with broad responsibilities in research and program design and evaluation. Skills within the group include hydrology, economics, ecology, mathematics, statistics, and operations research. Assignments to the group are quite varied and range from building complex mathematical models to making policy recommendations to the division.

The candidate selected for this position, in consultation with the division senior staff, will be responsible for developing and maintaining a program of research, demonstration, and evaluation particularly related to the socioeconomic aspects of water resources development as they affect the division's basic mission of providing water resources information. Professionals in the field of water resources with a demonstrated research capability and a desire for leadership of an interdisciplinary research team are encouraged to apply.

The position is permanent career and will be filled in accordance with Office of Personnel Management regulations. U.S. citizenship is required. Selectee will be eligible for a wide range of fringe benefits, including health and life insurance, leave benefits, and an attractive retirement plan.

Applicants must file SF-171 (Personal Qualifications Statement), available at local offices of the Office of Personnel Management. Résumé in lieu of SF-171 is not acceptable. Forward SF-171 to: **U.S. Geological Survey, Recruitment and Placement Section (MS 215), 12201 Sunrise Valley Drive, Reston, Va. 22092.** SF-171's must be on file in the Personnel Office by close of business 3 March 1980. For further information about specific qualifications required and copies of agency Vacancy Announcement 80-1, telephone inquiries may be directed to: **703-860-6131 or FTS 928-6131.**

**THE UNITED STATES GEOLOGICAL SURVEY**  
*An Equal Opportunity Employer*

## POSITIONS OPEN

### PETROLEUM RESERVOIR MODELER

Immediate opening for individual capable of providing technical leadership in verification/validation studies of existing petroleum reservoir models and the development of new models. Applicants should send résumé to: **Walter McFall, Box EES 9945, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, Ill. 60439.** An Affirmative Action/Equal Opportunity Employer. Women, minorities, the handicapped, and veterans urged to apply.

**PHYSICAL OCEANOGRAPHER.** Assistant or associate professor, tenure-track position available 1 August 1980, primarily graduate-level teaching and research. Doctoral degree and solid oceanographic background required. Research interests should be field oriented, estuarine and/or shelf areas, circulation, mixing, or other. Send curriculum vitae by 1 March 1980 to: **Dr. John C. Ludwick, Chairman, Department of Oceanography, Old Dominion University, Norfolk, Va. 23508.** An Affirmative Action/Equal Opportunity Employer.

### PLANT CELL CULTURES AND SECONDARY PRODUCTS

We wish to employ a person full-time in the active program of study of plant cell cultures as sources of secondary products directed by Dr. D. K. Dougall. Persons applying should have experience with plant cell cultures, GLC, and HPLC. Salary will be determined by the extent of experience in these areas and academic qualifications. Persons wishing to pursue this opportunity should send their curriculum vitae, academic record, and three letters of recommendation to:

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

An Equal Opportunity/Affirmative Action Employer

### THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS

#### Postdoctoral Associate in Molecular Biology and Biochemical Genetics

Applications are invited for postdoctoral positions available immediately in the biochemistry, molecular biology, and genetics of mitochondrial biogenesis in yeast. Candidates should have some experience in molecular biology and nucleic acid techniques. Applications with curriculum vitae and the names of two references should be sent to: **Dr. R. A. Butow, Department of Biochemistry, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235.**

An Equal Opportunity/Affirmative Action Employer

**POSTDOCTORAL POSITION** in molecular endocrinology. Available March 1980 or thereafter. Biochemistry Ph.D. with strong background in membrane protein isolation and studies of interaction between peptide hormones and adenylate cyclase will be helpful, but not required. Send résumé and letters of reference to: **Dr. S. N. Nayfeh, Department of Biochemistry, University of North Carolina School of Medicine, Chapel Hill, N.C. 27514.** Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION

Corneal tissue culture, biochemistry involving collagen, GAG, and glycoprotein. Faculty rank at Tufts University School of Medicine. Send curriculum vitae to:

**Dr. Baum  
Department of Ophthalmology  
New England Medical Center Hospital  
171 Harrison Avenue  
Boston, Mass. 02111**

An Affirmative Action/Equal Opportunity Employer

**POSTDOCTORAL POSITION** available 1 June 1980 to study the molecular structure of the genes directing the synthesis of the storage protein (Zein) in corn. The work involves techniques including the single-stranded DNA phage (M13) cloning system (Recombinant DNA Technical Bulletin, 1979 Vol. 2 No. 2, p. 43), "Dideoxy" DNA sequencing, mRNA isolation using the above cloning system, cell free translation, and so forth. Ph.D. in biochemistry or molecular genetics required. Candidates with experience in phage, viral, or plasmid systems preferred. Send curriculum vitae and three references to: **Dr. Joachim Messing, Department of Biochemistry, University of Minnesota, 1479 Gortner Avenue, St. Paul, Minn. 55108.** An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITION**—Research on the effects of ethanol or mammalian hepatic inflammation and fibrosis including studies of protein and collagen metabolism. Position is available immediately for 2 to 3 years. Please send curriculum vitae, statement of research interest, and three letters of recommendation to: **Charles S. Lieber, M.D., Alcoholism Research and Treatment Center, BRONX VA HOSPITAL, 130 West Kingsbridge Road, New York, N.Y. 10468.** An Equal Opportunity Employer.

**POSTDOCTORAL POSITION** for a Ph.D. in pharmacology who, using various biochemical and behavioral techniques, will study alterations in central nervous system dopaminergic function during chronic administration of dopamine agonists or antagonists. The position is available immediately and for up to 30 November 1981. Please send curriculum vitae and three letters of recommendation to: **Dr. William H. Riffe, Department of Pharmacology, College of Pharmacy, The University of Texas at Austin, Austin, Texas 78712.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** in enzymology, protein chemistry, and lipids. Send résumé and three letters of recommendation to: **P. E. Kolattukudy, Department of Agricultural Chemistry, Washington State University, Pullman, Wash. 99164.** An Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION/RESEARCH ASSOCIATE.** Available immediately; 12-month appointment. Experience in enzyme purification and RNA tumor virus replication. Research will involve the characterization of human DNA polymerases. Contact: **Dr. J. C. Leong, Department of Microbiology, Oregon State University, Corvallis, Oregon 97331,** before 1 March 1980. Salary range: \$11,000 to \$13,000. *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

**POSTDOCTORAL POSITION IN FETAL AND NEONATAL BIOLOGY.** Fields of investigation include the physiology, biochemistry, and pharmacology of the cardiovascular, respiratory, renal, and central nervous systems. Emphasis is on theoretical (mathematical modeling) and experimental studies. The fellowship commences 1 July 1980, and is available for 2 years. Please send curriculum vitae and bibliography to: **Dr. Lawrence D. Longo, Division of Perinatal Biology, School of Medicine, Loma Linda University, Loma Linda, Calif. 92350.**

**POSTDOCTORAL POSITION** available immediately. For study of spinal cord mechanisms responsible for generation of scratch reflex in turtle. Background in motor control and/or intracellular recording useful. Salary: \$13,500 minimum. Send curriculum vitae and names of three references to: **Dr. Paul S. G. Stein, Department of Biology, Washington University, St. Louis, Missouri 63130.** Telephone: 314-889-6824. An Equal Opportunity Employer.

**POSTDOCTORAL POSITIONS.** Research into the mechanism of action of gut hormones, including mucosal hormone receptor physiology and biochemistry. Other projects are related to the endocrine regulation of epithelial tissue growth. Prefer someone with biochemical orientation. Stipends set to NIH guidelines. Available 1 May 1980. For more information or to apply, write: **Leonard R. Johnson, Ph.D., Professor, Department of Physiology, University of Texas Medical School, Houston, Texas 77030.** An Equal Opportunity Employer.

**POSTDOCTORAL POSITION: AQUATIC ECOLOGY.** Develop project within field experimental research program on effects of turbidity on thermal and oxygen regimes of impoundments and their constraints on resource partitioning among biota—especially fishes. Two-year period beginning summer 1980. Send résumé and names of three references to: **J. M. Miller, Zoology Department, North Carolina State University, Raleigh, N.C. 27650.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available immediately, for biochemical studies of hormone receptors. Ph.D. in biochemistry, pharmacology, or related areas is required. Send curriculum vitae and names of references to: **Dr. T. K. Harden, Department of Pharmacology, University of North Carolina School of Medicine, Chapel Hill, N.C. 27514.** Equal Opportunity Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITION: NEUROBIOLOGY.** Research involves combination of double-labeling techniques for tracing pathways and single neuron recording techniques in mammalian somatosensory system. Send curriculum vitae, reference names, and addresses to: **Dr. Aldo Rustioni, Department of Anatomy, University of North Carolina, Chapel Hill, N.C. 27514.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available immediately. Purification and characterization of endo- and exoglycosidases employing novel ligands for affinity chromatography. Protein purification experience desirable. Minimum salary: \$10,500, negotiable. Send curriculum vitae to: **Dr. K. L. Matta, Department of Gynecology, Roswell Park Memorial Institute, 666 Elm Street, Buffalo, New York 14263.** An Equal Opportunity Employer, M/F.

**POSTDOCTORAL POSITION** available immediately for research on the isolation and characterization of a neurosecretory hormone regulating ecdysone synthesis in an adult insect. Experience in peptide biochemistry desirable. Salary: \$13,800. Send résumé and names of three references to: **Dr. H. H. Hagedorn, Department of Entomology, Cornell University, Ithaca, N.Y. 14853.** Cornell University is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION. GLENN FOUNDATION FELLOWSHIP IN EXPERIMENTAL GERONTOLOGY AT THE DAVIS INSTITUTE ON AGING, UNIVERSITY OF COLORADO.** Salary: \$15,000 per year, plus benefits; initial appointment for 1 year, renewable up to 3 years. Recent Ph.D. or M.D. preferred. Send curriculum vitae and references to: **Dr. E. L. Schneider, Davis Institute on Aging, 700 Delaware Street, Denver, Colorado 80204.**

**POSTDOCTORAL RESEARCHER.** Ph.D. biochemist with training in lipid biochemistry. Experience in glycolipid isolation and structural characterization highly desirable. Research directed to study of immunoregulatory lipids; work involves close interaction with immunologists. Available 1 April. Send résumé and two letters of reference to: **Stephan Ladisch, M.D., Department of Pediatrics, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024.** Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE** position available for recent Ph.D. interested in studying in vivo striated muscle development, muscle growth, and the reaction of muscle to disease and trauma. Techniques involved include light and electron microscopy, autoradiography, and three dimensional reconstruction utilizing computer assisted analysis of micrographs. Send résumé and letters of reference to: **Marcia Ontell, Ph.D., Department of Anatomy and Cell Biology, University of Pittsburgh School of Medicine, 3550 Terrace Street, Pittsburgh, Pa. 15261.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL RESEARCH IN AUTOIMMUNITY

A vacancy will exist in the Joint Diseases Laboratory, Shriners Hospital (McGill University), 1529 Cedar Avenue, Montreal, Quebec, Canada H3G 1A6, for a postdoctoral person to join an established multidisciplinary team studying experimentally induced and naturally occurring autoimmunity to collagen and proteoglycan in inflammatory arthritis and connective tissue disease.

The position is for 2 years and is available in summer 1980. The starting salary will be \$14,000 per annum. Applications should be addressed to: **Dr. A. R. Poole, Director,** at the above address.

### PRESIDENT, ENVIRONMENTAL LAW INSTITUTE (WASHINGTON, D.C.)

Chief executive officer particularly responsible for guiding research, directing fund-raising, and representing institute nationally. Staff of 60 includes executive director, administrative support, and multidisciplinary researchers. Program centers on air and water pollution, toxic substances, resource economics, energy, land use. Publications include monthly *Environmental Law Reporter*, books, reports. Estimated 1980 budget of \$2.2 million from revenues, government, and foundation support. Salary near government, academic levels. Apply by 15 February 1980 to: **Dr. David Challinor, Search Committee Chair, Environmental Law Institute, 1346 Connecticut Avenue, NW, Washington, D.C. 20036.**

Equal Opportunity Employer



**FACULTY POSITION  
FOREST REGULATION  
AND MANAGEMENT  
UNIVERSITY OF CALIFORNIA, BERKELEY**

**POSITION**—Assistant, associate, or professor level, depending on qualifications, for the full calendar year. Teaching constitutes 50 percent of the duties. Research duties in the university's Agricultural Experiment Station constitute the other 50 percent.

**QUALIFICATIONS**—(i) B.S. degree with a major in forestry or a professional master of forestry degree; and (ii) Ph.D. with specialization in one of the following areas (or a combination of them): forest management, forest economics, operations research, systems analysis, and business administration.

**RESPONSIBILITIES**—(i) Teach one undergraduate course in forest regulation and management; a graduate course in the use of operations research techniques in forest regulation and management; and a third course to be assigned on the basis of departmental needs; and (ii) research duties will include studies in such areas as production relationships, timber harvest scheduling methods and policies, impacts of timber management practices on nontimber resources, and investigation of managerial aspects of forestry operations. Choice of specific research areas will depend on the interests and abilities of the appointee and research needs of the state and nation.

**APPLICATIONS**—Applications will be considered if received prior to 30 April 1980. A résumé (including list of publications), academic transcripts, and the names of three or more references should be sent to:

**Professor J. Zivnuska, Chairman  
Search Committee (Forest Management)  
Department of Forestry and Resource Management  
145 Mulford Hall  
University of California  
Berkeley, Calif. 94720**

*The University of California is an Affirmative Action Employer.*

**KING FAISAL UNIVERSITY  
COLLEGE OF MEDICINE  
DAMMAN, SAUDI ARABIA  
FACULTY POSITIONS OPEN  
1980-1981**

The expanding College of Medicine, now in its sixth year, is accepting applications from qualified men and women for the 1980-1981 academic year in:

<b>CHEMISTRY</b>	<b>PATHOLOGY</b>
<b>BIOLOGY</b>	<b>EPIDEMIOLOGY</b>
<b>PHYSICS</b>	<b>MICROBIOLOGY</b>
<b>BIOCHEMISTRY</b>	<b>PARASITOLOGY</b>
<b>ANATOMY</b>	<b>PHARMACOLOGY</b>
<b>PHYSIOLOGY</b>	<b>COMMUNITY MEDICINE</b>

Doctorate or equivalent degree required. Language of instruction is English. Interviews to be held in London, Houston, and Ottawa during February 1980.

**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, and liberal overweight allowance. No Saudi income tax.

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

**Dr. Tawfig Tamimi  
Dean, College of Medicine  
King Faisal University  
c/o Saudi Arabian  
Educational Mission  
2221 West Loop South  
Houston, Texas 77027  
OR  
c/o P.O. Box 2  
Sunbury-on-Thames  
Middlesex TW16 5JP England**

**UNIVERSITY OF TORONTO  
The Charles H. Best Professorship  
in Medical Research**

The University of Toronto has established a **Chair of Medical Research** in the Faculty of Medicine to honour the memory of Dr. Charles H. Best, the co-discoverer of insulin together with Dr. Frederick G. Banting.

Candidates for this position should have achieved international recognition in an area of fundamental research related to the life sciences. Special consideration will be given to those candidates with proven ability to apply, or encourage the application of, the results of basic research to clinical practice and health problems of the community. Because the successful candidate will be expected to take a leadership role in the development of the newly established Banting and Best Diabetes Centre, it would be desirable if the candidate's research, in a broad sense, is related to diabetes mellitus and/or its complications.

This is a research appointment and the incumbent will be relieved of major teaching service and administrative responsibilities, but will be encouraged to develop a graduate and/or a postgraduate training programme. The term of appointment will be for 5 years with the possibility of renewal, in keeping with the rules and procedures which apply to department chairmen. The successful candidate will hold a tenured academic appointment in an appropriate department and may hold an active hospital appointment.

In addition to salary, the university will provide some support for the C. H. Best Professor's research programme, although the incumbent will be expected to attract major additional support from extramural sources.

Nominations and applications should be sent to: **Dean R. B. Holmes, Chairman of the Search Committee, Faculty of Medicine, University of Toronto, Toronto, Ontario, Canada M5S 1A8.** Completed applications, which should include curriculum vitae, outline of current and future research plans, and the names of three referees, should be submitted by 1 April 1980.

**POSITION VACANCY  
CHAIRMAN  
RADIOLOGY DEPARTMENT**

The College of Medicine and Dentistry of New Jersey-New Jersey Medical School is seeking an individual to serve as Chairman for its Department of Radiology and Radiologist in Chief of the College Hospital.

Candidates must be board certified and have had experience in diagnostic radiology with a major interest in teaching and research. Administrative experience is desirable. The candidate must meet the academic requirements for Professor of Radiology at the New Jersey Medical School.

The individual chosen as Chairman will be responsible for undergraduate, graduate and resident training programs in the College Hospital and other affiliated hospitals. As Radiologist in Chief, he is responsible for patient care with interface with other major services such as medicine, surgery and pediatrics.

It is hoped he or she will have vision and vigor and will energetically carry the charge to build a major department commensurate with the mission of CMDNJ to bring high quality patient care, teaching and research to the citizens of New Jersey.

The College of Medicine and Dentistry of New Jersey is an equal opportunity employer.

Please send curriculum vitae and names of three (3) references to:

**Lee B. Reichman, M.D., M.P.H.  
Professor of Medicine  
Chairman, Radiology Search Committee**



**COLLEGE OF MEDICINE  
& DENTISTRY  
OF NEW JERSEY  
New Jersey Medical School  
College Hospital—1-354  
100 Bergen Street  
Newark, New Jersey 07103**

**Director of  
Program  
Planning**

This executive-level position requires the technical expertise and professional stature to direct all program planning activities at one of the nation's most respected R & D organizations—Argonne National Laboratory.

Reporting to the Laboratory Director, you will work closely with top management, developing laboratory-wide objectives for critical, broad-based R & D areas.

The scope of this position will require considering present and planned resources—particularly manpower, organization, facilities and technology—and coordinate the scientific and technical input needed for program development and selection.

Credentials must include an MS/PhD or equivalent in a technical discipline and a demonstrated record of achievement leading large programs or projects. Ideal candidate will combine 5-15 years of experience handling engineering/scientific responsibilities with 2-5 years as a manager.

We will provide a salary/benefits package fully commensurate with the importance of your role. Success will bring significant recognition both within Argonne and the technical community. For more details, send resume and salary history in confidence to:

**Mr. Ronald Johns, Box PPC  
Personnel Division  
Argonne National Laboratory  
9700 So. Cass Avenue  
Argonne, IL 60439**



**ARGONNE  
NATIONAL  
LABORATORY**

An Affirmative Action/Equal Opportunity Employer. Women, Minorities, the Handicapped and Veterans Urged to Apply.

## POSITIONS OPEN

**PROTEIN CHEMIST** to study primary structure and immunochemistry of several human plasma proteins. Strong sequencing experience required. Please send résumé, reprints, and letters of reference to: **Dr. Frederick Aladjem, Department of Microbiology, University of Southern California, School of Medicine, 2025 Zonal Avenue, Los Angeles, Calif. 90033, Equal Opportunity/Affirmative Action Employer.**

### QUATERNARY ECOLOGIST

Applications are invited for the position of assistant professor in biology. Ph.D. required. Duties include teaching at undergraduate and graduate levels and developing a program of research in quaternary ecology, with emphasis on palynology. Salary minimum for 1979-1980 is \$18,000 (assistant professor). Send applications (including the names of three referees) to: **Dr. J. K. Morton, Chairman, Department of Biology, University of Waterloo, Waterloo, Ontario, Canada N2L 3G1, before 30 April 1980.** The appointment is for a 2-year definite term, subject to the availability of funds.

### RESEARCH ASSOCIATE IN BIOCHEMISTRY

Available immediately for a Ph.D. in biochemistry. Project involves developmental studies in glycolipid metabolism in rat brain. Salary: \$12,000 to \$13,500, funded for 3 years. Please send curriculum vitae and three letters of recommendation to:

**Dr. Liselotte Hof  
Department of Biochemistry  
Albany Medical College  
Albany, New York 12208**

*An Equal Opportunity/Affirmative Action Employer*

**RESEARCH ASSOCIATE**—A postdoctoral position starting 1 July 1980 or thereafter is open for a developmental biologist or biochemist for work on chromosomal proteins. Please send curriculum vitae and have references sent to: **Irvin Isenberg, Department of Biochemistry and Biophysics, Oregon State University, Corvallis, Oregon 97331. An Affirmative Action/Equal Opportunity Employer which complies with Section 504 of the Rehabilitation Act of 1973.**

**RESEARCH ASSOCIATES** on projects involving geochemistry of volcanic gases and deposits and on marine chemistry involving trace element analysis of aquatic surface microlayer. Experience desirable in gas chromatography, atomic absorption, neutron activation analysis, and/or x-ray fluorescence.

Send curriculum vitae to:

**Dr. J. M. Bellama  
Department of Chemistry  
University of Maryland  
College Park, Maryland 20742**

*The University of Maryland is an Equal Opportunity Employer.*

The U.S. Department of Agriculture's (USDA) Science and Education Administration is recruiting for a **RESEARCH BIOCHEMIST** position in the Biological Control of Insects Research Unit in Columbia, Missouri. This position will be filled at Grade 11, 12, or 13, with a salary range from \$20,611 to \$29,375 per year. The incumbent directs and participates in research to isolate and identify chemicals and natural toxins of beneficial insects. Applicants must have knowledge of biochemistry, physiology, and statistics. Applicants should send résumés to: **James P. Campbell, USDA-SEA-AR, 2000 West Pioneer Parkway, Peoria, Ill. 61615, and should refer to COL-79-56 when applying. The USDA-SEA-AR is an Equal Opportunity Employer.**

**RESEARCH POSITION**—Functional anatomy of retina involving histology, cytochemistry, and physiology of neural interactions. Grant supported. Prerequisites: interest and general chemical and biological laboratory skills. Salary to \$24,000, depending upon education and experience. Send curriculum vitae and three references to: **Dr. H. G. Sperling, University of Texas, Sensory Sciences Center, P.O. Box 20708, Room 7.238B, Houston, Texas 77025. An Equal Opportunity Employer.**

**TOXICOLOGIST.** Assistant level position; Ph.D. required. Background in clinical biochemistry and analytical chemistry or medicinal chemistry preferred. To conduct clinical and drug analyses in postmortem medical legal investigations. Experience in toxicologic analysis desirable but not essential. Send résumé to: **Yale H. Caplan, Ph.D., Office of the Chief Medical Examiner, State of Maryland, Baltimore, Maryland 21201.**

## POSITIONS OPEN

**SCIENCE TECHNOLOGY AND SOCIETY,** Professor; Ph.D. required, preferably in science, and excellent full-time teaching experience, evidence of research, commitment to curriculum development in general/liberal education. The College of General Studies offers no major in the area. We provide an extensive curriculum of liberal education for all day students engaged in professional programs (8500 in 1979-1980). Please send curriculum vitae, dossier, and three references by 22 February 1980 to: **Dr. Mary Sullivan, Dean, College of General Studies, Rochester Institute of Technology, Rochester, New York 14623.**

### SENIOR AND INTERMEDIATE LEVEL ENVIRONMENTAL MODELERS

Sigma Data Computing Corporation's Division of Information and Scientific Applications invites applications from individuals qualified to participate in an environmental modeling/chemical fate assessment team effort. Applicants' qualifications must match either of the following criteria:

**Scientific applications analyst/programmer** experienced in the development of single or multimedia environmental models, or

**Scientist (hydrologist, meteorologist, chemist, civil engineer, and so forth)** experienced in the use of air and/or water quality models.

Senior level position applicants must have project management experience.

Senior level salary commensurate with experience. Intermediate level salary: \$18,000 to \$25,000 per year, commensurate with qualifications. Submit résumé and references to:

**Sigma Data Computing Corporation  
2021 K Street, NW, Suite 207  
Washington, D.C. 20006  
Attention: Roger Long**

**SOLID EARTH GEOPHYSICS.** The Lunar and Planetary Institute in Houston, Texas, is seeking to fill one or two scientific staff positions in solid earth geophysics. The successful candidates will possess a broad knowledge of global and regional problems and will be interested in problem-solving and applying theory to real observations. Areas of interest include mantle dynamics, lithospheric stress distribution and deformation, asthenosphere-lithosphere interactions, and planetary thermal modeling. For further information, write: **Director, Lunar and Planetary Institute, 3303 NASA Road 1, Houston, Texas 77058.**

### VIROLOGY

**Postdoctoral traineeships** in biochemical genetics of phage and tumor viruses at The University of Michigan Medical School are available now through an NIH-funded interdisciplinary program. Research interests include animal cell transformation by papova and herpes viruses, virus and phage DNA replication and recombination, regulation of gene expression, morphogenesis, and virus-cell interactions. Applicants need not have research experience in virology. An appointment as lecturer in the Medical School is possible, if desired. Submit curriculum vitae and a list of three references to: **Virology Postdoctoral Training Program Committee (Department of Biological Chemistry), or to one of the following faculty: Dr. W. R. Folk, Dr. G. R. Greenberg (Department of Biological Chemistry); Dr. W. Brockman, Dr. D. I. Friedman, Dr. D. Jackson, Dr. E. Jackson (Microbiology); Dr. M. Levine (Human Genetics), The University of Michigan Medical School, Ann Arbor, Mich. 48109.**

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## GRADUATE STUDY

### PREDOCTORAL FELLOWSHIPS IN PHYSIOLOGY

**GRADUATE STUDY.** The Department of Physiology invites applications for the Ph.D. degree from persons having or receiving the bachelor's or master's degree. Applications are being accepted for admission 1 July 1980. Teaching assistantships, \$5100 per year, are available for the most qualified applicants. Research training is provided in: acid-base, cardiovascular, endocrinology, gastroenterology, membrane transport, neurophysiology, renal and respiration. For further information, write: **Director, Graduate Studies, Department of Physiology, University of Kansas Medical Center, Kansas City, Kansas 66103. An Equal Opportunity/Affirmative Action Employer.**

## GRADUATE STUDY

**GRADUATE STUDY** in physiology, biochemistry, or pharmacology-toxicology. Cornell University has openings for research and training leading to M.S. or Ph.D. degrees. Specific areas include digestive physiology, metabolism, enzymology, behavioral physiology, food intake, neuropharmacology, and toxicology. Salary for those with D.V.M. is \$11,000 to \$12,500 per year. Salary for those with B.S. is \$6037 to \$6312. Tuition and fees are waived in all cases. Send letters of inquiry, curriculum vitae, and transcripts to: **Dr. E. N. Bergman, Department of Physiology, Biochemistry and Pharmacology, New York State College of Veterinary Medicine, Cornell University, Ithaca, N.Y. 14853.**

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### GRADUATE STUDY

#### Predoctoral Opportunities in the Basic Medical Sciences

Loyola University Stritch School of Medicine offers graduate training leading to the Ph.D. degree in each of the following disciplines: anatomy, biochemistry, microbiology, pharmacology, and physiology. The medical campus, located in the western Chicago suburb of Maywood, is easily accessible by major interstate routes. Modern, well-equipped facilities together with a low student to faculty ratio provide optimum conditions for qualified students to pursue a graduate education in the medical sciences. The diversity of research interests offers a wide range of opportunities for intra- and interdepartmental studies. Tuition remission and stipend are available for successful applicants. Address requests for application forms to:

**Director of Graduate Program  
(for appropriate department)  
Loyola University  
Stritch School of Medicine  
2160 South First Avenue  
Maywood, Illinois 60153**

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## CONFERENCE

### NORTH SHORE UNIVERSITY HOSPITAL NEUROPSYCHOLOGY SECTION

is sponsoring its first annual  
**PERSPECTIVES IN CHILD  
NEUROPSYCHOLOGY**  
24 through 26 April 1980

Lectures, workshops, and symposia on research and applied issues in clinical child neuropsychology.

Faculty includes Dirk Bakker, Ph.D., Paedologisch Instituut, Amsterdam; Byron Rourke, Ph.D., University of Windsor, Western Hospital Center, Canada; Isabelle Rapin, M.D., Albert Einstein College of Medicine, New York; Peggy Ferry, M.D., University Health Sciences Center, Arizona; Esther Minskoff, Ph.D., James Madison University, Virginia; and Barbara Wilson, Ph.D., North Shore University Hospital-Cornell University Medical College, New York.

Registration limited to 175 participants; registration fee \$250.

For further information, please telephone: **Rhea Finnell, at 516-562-3054.**

## SYMPOSIUM

**SYMPOSIUM: FRONTIERS IN BIOMEMBRANE RESEARCH**  
15 and 16 May 1980—McGregor Conference Center  
Wayne State University

The Biomembrane Research Center at Wayne State University will sponsor a symposium and workshop on current developments in biomembrane concepts and research methods. The program will consist of invited papers in morning and afternoon sessions and afternoon poster sessions. The first day will be devoted to recent conceptual and dynamic aspects of biomembranes; the second day will cover recent developments in and applications of methodology. Those interested in attending as well as in submitting abstracts to the poster sessions (submission deadline: 15 February 1980) should write immediately to:

**Symposium Committee  
Biomembrane Research Center  
Department of Biological Sciences  
Wayne State University  
Detroit, Michigan 48202**

**U.S. ENVIRONMENTAL PROTECTION AGENCY  
ENVIRONMENTAL HEALTH SCIENTIST  
ENVIRONMENTAL SCIENTIST  
SUPERVISORY BIOLOGIST  
(BRANCH CHIEF)**

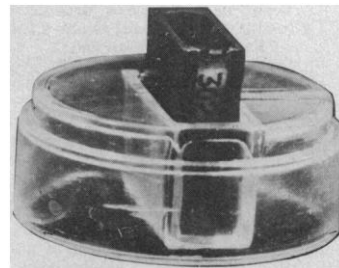
The Hazard Evaluation Division of the Office of Pesticide Programs, Environmental Protection Agency (EPA), invites applicants for the position of chief Health Effects Branch (HEB). The position is open to individuals with strong scientific credentials in the health, biological, or physical sciences who are also experienced managers. HEB, through a \$5 million program of cooperative agreements with nine major medical schools and three state public health departments, and with 25 in-house staff, develops data on the exposure and the health effects of pesticides. The branch has access to consultant specialists in veterinary and human medicine, oncology, toxicology, physiology, epidemiology, pathology, environmental and analytical chemistry, biostatistics, and other relevant disciplines. Specific programs include field studies to determine effects on farmworkers and other exposed populations, systematic collection and analysis of pesticide poisoning data, evaluation of pesticide hazard and exposure data, and investigation and special studies related to incidences of unintentional exposure.

Serious applicants will have considerable knowledge and experience in the development and evaluation of scientific data on the health impacts of pesticides or similar chemicals as well as experience in managing extramural program activities, particularly in a matrix-management environment. Knowledge of the federal pesticides regulatory program, experience in the administration of health-related regulatory programs, and successful experience in communicating with government officials, industry, and the concerned public are also important qualifications.

This position may be filled by Civil Service or Public Health Service appointment. Applicants must have at least a bachelor's degree in a health-related field, plus 3 years of appropriate professional experience in a health-related field. Salary ranges from \$40,832 to \$50,112 depending on qualifications.

**APPLICATION SUBMISSIONS**—Please submit a completed SF-171, available at Federal Job Information Centers and federal agency personnel offices, to reach EPA no later than 29 February 1980, to: Ginny Hoover, Environmental Protection Agency, Hazard Evaluation Division, Mail Code (TS-769-C), 401 M Street, SW, Washington, D.C. 20460. Also submit SF-171 to Office of Personnel Management, if this has not been done previously, or if previous submission needs to be updated. (Please do not send résumés.) If you are now or have ever been employed in the Federal Service, you must also submit a performance appraisal and an appraisal of supervisory potential dated within 1 year of the closing date of the announcement. All applications (SF-171's) postmarked after the above date will be returned.

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## STAFF FELLOW

The National Institutes of Health, Public Health Service has a postdoctoral research and training position in xenobiotic metabolism by extrahepatic tissues, especially skin.

This is a non-tenure track appointment, renewable yearly to a maximum of 3 years for exceptional students. The student will work in the personal laboratory of and in the research program of Dr. James R. Fouts. Opportunity for interactions with many different kinds of pharmacology/toxicology research, and for attending seminars/courses at the many local research centers and major universities (Duke, University of North Carolina, North Carolina State University).

Successful candidate must have recent Ph.D. (awarded within last 2 years) in pharmacology/toxicology or closely related fields with emphasis on pharmacology. Extensive laboratory experience (focus of thesis) should be in some area of xenobiotic/drug metabolism for top consideration. Histology/pathology training must be presented or acquired during the training period. Research productivity must be documented (by publications, etc.).

Please send curriculum vitae, bibliography and 3 letters of recommendation from those who best know your qualifications by March 14, 1980, to: Chief, Laboratory of Pharmacology, National Institute of Environmental Health Sciences, P.O. Box 12233, Research Triangle Park, NC 27709. Equal Opportunity Employer.

**NATIONAL INSTITUTES  
OF HEALTH**

Oak Ridge Associated Universities

## Courses\*

A two-week \*BASIC USE OF RADIONUCLIDES IN RESEARCH COURSE will be conducted July 21-August 1, 1980; December 8-19, 1980; and July 13-24, 1981. This laboratory-oriented course will emphasize the fundamentals of radiation physics, radiation biology, and nuclear instrumentation. The course will familiarize scientists with laboratory and theoretical applications of radionuclides in research. Lecture and laboratory experiments include nuclear theory, radiation detection, radiation safety, biomedical applications, x-ray fluorescence analysis, instrumentation, radiation dosimetry, and activation analysis.

A five-week \*APPLIED HEALTH PHYSICS COURSE will be conducted May 19-June 20, 1980; October 20-November 21, 1980; and May 18-June 19, 1981. This course emphasizes the fundamentals of health physics, problems and practices in providing radiation protection, the mechanism of radiation damage, and methods and procedures for evaluating radiation hazards. Lecture and laboratory experiments include radiation physics, health physics instrumentation, shielding and facility design, waste disposal, legal and public relations, handling of radiation emergencies, health physics principles, radiation dosimetry, radiation biology, radiation control techniques, and environmental monitoring.

For additional information on these courses contact the registrar, Professional Training Programs, Oak Ridge Associated Universities, P. O. Box 117, Oak Ridge, TN 37830 or telephone (615) 576-3434.

## SYMPOSIA

### RADIOPHARMACEUTICALS: STRUCTURE-ACTIVITY RELATIONSHIPS

Invited speakers, discussion  
21 to 23 March 1980 in Hartford, Conn.  
For information contact:

Dr. Richard P. Spencer  
Department of Nuclear Medicine  
University of Connecticut Health Center  
Farmington, Conn. 06032  
Telephone: 203-674-3120

### The Psychobiology of Human Food Selection

Sixteen international participants and discussants covering biology, physiology, psychology, ecology, and sociocultural aspects of human food selection, with emphasis on improving interdisciplinary understanding. Papers and discussion will be published; \$15 registration fee. Contact: LaNelle Chancellor, A. Webb Roberts Center, Baylor University Medical Center, 3500 Gaston Avenue, Dallas, Texas 75246.

## TRAINING PROGRAM

**HYPERTENSION RESEARCH TRAINING PROGRAM** funded by NHLBI. Postdoctoral (Ph.D., M.D., D.V.M., or D.O.) research traineeships available July 1980, for 1 or 2 years in the following areas: salt-dependent hypertension (H. P. Dustan, M.D.); membrane sodium transport (H. W. Overbeck, M.D., Ph.D.; D. D. Ku, Ph.D.); neural mechanisms (S. Oparil, M.D.); nephron function (L. G. Navar, Ph.D.; D. W. Ploth, M.D.); cardiac hypertrophy (S. P. Bishop, D.V.M., Ph.D.); membrane ion channels (D. W. Urry, Ph.D.; M. M. Long, Ph.D.; M. A. Khaled, Ph.D.); vascular wall molecular pathology (D. W. Urry, Ph.D.; M. M. Long, Ph.D.); vascular connective tissue (L. Roden, M.D., Ph.D.); exercise training in borderline hypertensives (A. Oberman, M.D.); renin-angiotensin-aldosterone (S. Oparil, M.D.); and hemodynamics (H. P. Dustan, M.D.; H. W. Overbeck, M.D., Ph.D.; S. Oparil, M.D.). Positions for predoctoral (Ph.D.) trainees (physiology, biochemistry, pathology, or pharmacology) are also available. Applicant must be U.S. citizen or hold immigrant's visa. Send curriculum vitae and three letters of recommendation to: Harriet P. Dustan, M.D., Director, Cardiovascular Research and Training Center, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294. An Affirmative Action/Equal Opportunity Employer.

## TRAINEESHIPS

### PREDOCTORAL AND POSTDOCTORAL TRAINING IN MOLECULAR VIROLOGY

Several predoctoral and postdoctoral traineeships are available for qualified applicants through NIH training grants. Preceptors include: Drs. J. C. Bennett, D. H. L. Bishop, R. W. Compans, E. Hunter, E. Lamon, J. Lebowitz, J. Mole, and J. P. Segrest. Research areas include: virus structure, genetics and replication, and viral immunology and membrane biology. Send applications and inquiries to: Dr. R. W. Compans, Department of Microbiology, University of Alabama Medical Center, Birmingham, Alabama 35294. An Affirmative Action/Equal Opportunity Employer.

## FELLOWSHIPS

The Weizmann Institute of Science is pleased to announce the establishment of the **JOSEPH MEYERHOFF FELLOWSHIPS**

The Meyerhoff Fellowships are intended to attract outstanding scientists to the Weizmann Institute. They will be awarded to candidates from all over the world and are offered in two categories: to senior scientists for a period of 2 months to 1 year; and to candidates who have completed their Ph.D. requirements within the past 8 years.

Candidates are requested to apply to:

The Meyerhoff Fellowship Program  
c/o The Academic Secretary  
The Weizmann Institute of Science  
Rehovot, Israel

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIPS—Visual Science

Applications for NRSA fellowships in the 1980-1981 academic year are being accepted in the Department of Retina Research of the Eye Research Institute of Retina Foundation. Preceptors and programs are: A. R. Adolph, pharmacology of vertebrate retina; B. Chakrabarti, physicochemical properties of vitreous; P. H. Hartline, kinetics of transduction and adaptation in photoreceptors; L. Reif-Lehrer, control mechanisms in vertebrate retina; M. Snodderly, human psychophysics, effects of eye movements, and monkey electrophysiology. Write to the preceptor of interest at: Eye Research Institute of Retina Foundation, 20 Staniford Street, Boston, Mass. 02114.

### POSTDOCTORAL FELLOWSHIP IN DEVELOPMENTAL BIOLOGY

Department of Zoology  
University of California, Davis

Responsibility includes teaching and research, with approximately equal time devoted to each. Appointment will be at the level of visiting assistant professor and is for 1 year, with reappointment for a second year contingent upon satisfactory progress. Following an apprenticeship period, the appointee will assume responsibility for one section of the introductory undergraduate lecture and laboratory courses in developmental biology/embryology. Teaching will be supervised by faculty members associated with the course. Research component of the position involves collaboration with one of the developmental biologists on the faculty. Staff interests include problems of fertilization, cell adhesion and motility, neural crest development, and coplasmic localization. Qualifications: recent Ph.D. in developmental biology or cell biology. Starting date: 1 July 1980. Salary: \$16,140 plus possible range adjustment if approved by Governor. Send application letter, curriculum vitae, and names of three references to: Dr. R. D. Grey, Chairman, Department of Zoology, University of California, Davis, Calif. 95616. Deadline for applications: 1 March 1980.

### POSTDOCTORAL FELLOWSHIP IN ANIMAL ECOLOGY

Department of Zoology  
University of California, Davis

Responsibility includes teaching and research, with approximately equal time devoted to each. Appointment will be at the level of visiting assistant professor and is for 1 year, with reappointment for a second year contingent upon satisfactory performance. Following an apprenticeship period, the appointee will assume responsibility for one section of the introductory undergraduate lecture course in animal ecology. Teaching will be supervised by faculty members associated with the course. Research component of the position involves collaboration with one of the ecologists on the faculty. Staff interests include problems of species interactions including predator-prey, and competition; community structure and resource partitioning; optimal foraging; and related problems. Qualifications: recent Ph.D. in biology, ecology, or zoology. Starting date: 1 July 1980. Salary: \$16,140. Send application letter, curriculum vitae, including statement of teaching experience and research interests, and names of three references to: Dr. R. D. Grey, Chairman, Department of Zoology, University of California, Davis, Calif. 95616. Deadline for applications: 1 March 1980.

### HUMAN GENETICS FELLOWSHIP JULY 1980—\$16,000

A 2-year fellowship with both clinical training and research in somatic cell genetics/immunogenetics. Send curriculum vitae and names of three references to: Dr. Stephen Litwin, Department of Medicine, Division of Human Genetics, F-209, Cornell University Medical College, New York, N.Y. 10021. An Equal Opportunity Employer.

### POSTDOCTORAL FELLOWSHIP

A postdoctoral fellowship is available in the area of mitochondrial biogenesis in mammalian cells with emphasis on genetics, protein biosynthesis, and membranes.

Send curriculum vitae and names of two referees to:

Dr. K. B. Freeman  
Department of Biochemistry  
McMaster University  
Hamilton, Ontario, Canada L8S 4J9

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIP

A postdoctoral fellowship in the area of immunology of parasitic infections is available immediately in the Laboratory of Parasitology, Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania. Persons holding a Ph.D., D.V.M., or M.D. degree and with a strong background in immunology or parasitology will be considered for this position. Individuals must be citizens or resident aliens of the United States. Initial appointment is for 1 year; this may be renewed on an annual basis up to a maximum of 3 years.

Interested individuals should send a summary of previous research and its significance, a statement of career goals, and the names of three referees to: Dr. G. A. Schad, Department of Pathobiology, School of Veterinary Medicine, University of Pennsylvania, 3800 Spruce Street, Philadelphia, Pa. 19104.

### POSTDOCTORAL TRAINING OPPORTUNITIES

at the University of Alabama in Birmingham in molecular and cellular aging. Research fellowships (\$10,000 and up) are available from 1 September 1980, under preceptors from the Faculty of Medicine, Dentistry and Basic Sciences. Individuals interested should send their curriculum vitae with three references to: Dr. Raymond N. Hiramoto, Department of Microbiology, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294; telephone: 205-934-4482. United States citizens and individuals with immigrant status will be considered. An Equal Opportunity/Affirmative Action Employer.

### ENDOCRINE RESEARCH FELLOWSHIPS

Postdoctoral positions are available for interdisciplinary training in basic and/or clinical research in endocrinology. Fellowships supported by an NIH training grant are available to U.S. citizens or permanent residents with an M.D. or Ph.D. degree, starting 1 July 1980 for 1 or 2 years. The training faculty, with laboratories at Memorial Sloan-Kettering Cancer Center and the Rockefeller University, have the following research interests: F. C. Bancroft: hormonal regulation of pituitary gene expression; R. S. Bockman: prostaglandins, hormones in hemopoiesis and calcium metabolism; H. L. Bradlow: androgen and glucocorticoid metabolism; D. B. Donner: peptide hormone-receptor binding; J. Fishman: biosynthesis, metabolism, action of estrogens; I. A. Kourides: molecular regulation of thyrotropin; M. R. Sherman: steroid receptor structure, purification; A. S. Schneider: neurohormone secretion and action at cell membranes; and M. Sonenberg: peptide hormone and catecholamine action. Applications, including a statement of research background and interests, a complete résumé, and two letters of recommendation should be received by 1 March 1980 by: Dr. Martin Sonenberg, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, New York 10021. Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH FELLOWSHIP** in neurovirology and immunology. NIH training grant. M.D., D.V.M., Ph.D. with background or interest in neurologic diseases. Comprehensive training program jointly by Departments of Neurology, Microbiology, and Pathology. Candidate may select projects with any of five investigators in molecular biology of viruses, immunology and immunogenetics, pathogenesis of CNS viral infections, and in vitro viral effects on CNS function. Send curriculum vitae to: Leslie P. Weiner, M.D., Department of Neurology, University of Southern California School of Medicine, 2025 Zonal Avenue, Los Angeles, California 90033. Equal Opportunity/Affirmative Action Employer.

## MARKETPLACE

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## DIRECTOR

### National Center for Atmospheric Research

The University Corporation for Atmospheric Research (UCAR) invites nominations and applications for Director of the National Center for Atmospheric Research (NCAR) in Boulder, Colorado. UCAR, a 48-university consortium, operates NCAR under sponsorship of the National Science Foundation. UCAR seeks to have the Director in office no later than 1 September, 1980.

NCAR formulates and carries out research on fundamental problems of national and international scope and importance, and develops and operates major facilities required by the research community.

The Director is the principal executive officer and scientific leader of NCAR, reporting and responsible to the President of UCAR. The appointment is authorized by the Board of Trustees.

To be considered for the directorship of NCAR, a person should have a record of scientific achievement similar to that required for the highest level of scientific appointment at NCAR and related to at least one major area of NCAR scientific interest. Also required are experience in effective planning and management of complex research activities; skills necessary to assess priorities among missions and objectives and produce consensus that will yield high-quality results; breadth of vision and judgment; and the energy required to be successful at a multi-faceted job. A complete description of duties, responsibilities, and criteria for evaluation may be obtained by writing the President of UCAR. Applications and nominations must be postmarked no later than 22 February, 1980. Applications should be accompanied by a curriculum vitae. All correspondence should be addressed:

**President, University Corporation  
of Atmospheric Research  
P.O. Box 3618  
Boulder, Colorado 80307**

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## DEPARTMENT HEAD

### PHARMACOLOGY

We are currently seeking an outstanding scientist to lead research efforts in the discovery of new human therapeutic agents as head of an established Department of Pharmacology. The candidate should have an M.D. or Ph.D. with interest in the development of new drugs and an exceptional record of research accomplishments in the fields of cardiovascular and renal pharmacology or physiology. A good understanding of biochemistry is desirable. Previous experience in the pharmaceutical industry may be helpful but not required.

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Please send curriculum vitae complete with publication record to:

Mr. George W. Brodhead

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**Closing Date: February 19, 1980**

**(All applications must be postmarked by closing date)**

## DIRECTOR, MICROBIOLOGY AND INFECTIOUS DISEASES PROGRAM

The National Institute of Allergy and Infectious Diseases expects to appoint a permanent Director of its Microbiology and Infectious Diseases Program. This Director is responsible for the development and operation of extramural programs (grants and contracts) in infectious diseases and related disciplinary areas of basic science.

This is a Civil Service position in the Senior Executive Service with salary from \$47,889 to \$50,112 per year depending on qualifications. (Alternatively, candidates may be eligible for appointment in the Commissioned Corps of the U.S. Public Health Service). The SES individual selected, if not presently in the Senior Executive Service must serve a one-year probationary period. Mandatory professional/technical qualifications are: a Doctor of Medicine together with research experience in an area related to infectious diseases. In addition, candidates must meet the following mandatory managerial/executive qualifications: experience necessary to select, manage, and motivate a staff and carry out organizational goals, including the ability to implement EEO objectives, and administrative leadership experience in the

management and leadership of a science program. Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the following factors: scientific reputation/peer recognition, research experience and leadership, honors and awards, training and education, and the extent to which they exceed the level of mandatory managerial/executive qualifications specified above.

Applications (Personal Statement of Qualification—SF-171) are to be sent to the Chairperson, Search Committee, National Institute of Allergy and Infectious Diseases, NATIONAL INSTITUTES OF HEALTH, Building 31, Room 7A-33, 9000 Rockville Pike, Bethesda, MD 20205. A current curriculum vitae, bibliography and performance information must accompany all applications.

Applications of women and/or minority group members are especially solicited.

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**NATIONAL INSTITUTES OF HEALTH**



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