

are very few people who would be capable of it. On the other hand, it is different from the earlier books because its subject is one in which there are large areas of theoretical and experimental uncertainty. Some of these are exposed in the book, but others are left hidden. As a result, parts of the book are controversial and other parts may need fundamental revision. For example, the concept of "minimum metallic conductivity," which is basic to several sections of the book, has never been accepted by some people and is currently under attack by P. W. Anderson and his collaborators. However, a book that avoided all controversial material in this field would be of little value, for the subject is not one that contains many certainties.

I find this a much more satisfying book than the first edition. A number of confusions have been removed, and it now flows reasonably smoothly. It has not grown in size in proportion to the growth of the subject, for the reader is referred to reviews or conference proceedings for many of the details. The book is still heavy, but not impossible, going, and I shall be much less worried about asking students to read it than I was with the first edition.

The book consists of three parts. After a brief introductory chapter two chapters on the theoretical background cover the basic concepts of transport theory, hopping conductivity, minimum metallic conductivity, the Anderson transition, and the effects of phonons and polarons. Three chapters then relate this theory to the experimental situation in rather broad terms. These chapters are "The Fermi glass and the Anderson transition," "Liquid metals and semimetals," and "Non-crystalline semiconductors." I think it is the first and third of these three chapters to which people will refer most frequently when looking for formulas applicable to particular situations. The last four chapters of the book are devoted to detailed discussions of particular classes of materials, amorphous germanium and silicon, amorphous arsenic and related materials, chalcogenide glasses, and amorphous selenium and tellurium. The most detailed of these chapters are those on germanium and silicon and on the chalcogenides.

The coverage of the book is perhaps somewhat less than the title might suggest. The main interest is in semiconductors and in metals that are almost semiconductors. There is little said about good liquid metals and metallic glasses on the one hand and about good insulating glasses on the other.

Amorphous bismuth is mentioned, but superconductivity does not even appear in the index.

The book is a welcome replacement for the first edition, and no one who works on this subject can afford not to have it at hand.

DAVID J. THOULESS

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## Books Received

**Applied Inverse Problems.** Papers from a meeting. P. C. Sabatier, Ed. Springer-Verlag, New York, 1978, vi, 426 pp., illus. Paper, \$19.50. Lecture Notes in Physics, vol. 85.

**Applied Nonlinear Analysis.** Proceedings of a conference, Arlington, Tex., Apr. 1978. V. Lakshmikantham, Ed. Academic Press, New York, 1979, xx, 726 pp. \$38.50.

**Archaeological Survey and Settlement Pattern Models in Central Illinois.** Donna C. Roper. Published for the Illinois State Museum by Kent State University Press, Kent, Ohio, 1979. 156 pp., illus. Paper, \$4.50. Illinois State Museum Scientific Papers, vol. 16. *Mid-continental Journal of Archaeology* Special Papers, No. 2.

**Archaeology of the Grand Canyon.** The Bright Angel Site. Douglas W. Schwartz, Michael P. Marshall, and Jane Kepp. School of American Research Press, Santa Fe, N.M., 1979. xii, 110 pp., illus. Paper, \$4.95. Grand Canyon Archaeological Series, vol. 1.

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**Biochemical Actions of Hormones.** Vol. 6. Gerald Litwack, Ed. Academic Press, New York, 1979. xviii, 530 pp., illus. \$39.50.

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**Biological Paths to Self-Reliance.** A Guide to Biological Solar Energy Conversion. Russell E. Anderson. Van Nostrand Reinhold, New York, 1979. xxiv, 368 pp., illus. \$18.95. Van Nostrand Reinhold Environmental Engineering Series.

**Biology of the Lymphokines.** Stanley Cohen, Edgar Pick, and Joost J. Oppenheim, Eds. Academic Press, New York, 1979. xviii, 626 pp., illus. \$42.50.

**The COBOL Environment.** Robert T. Grauer and Marshal A. Crawford. Prentice-Hall, Englewood Cliffs, N.J., 1979. xvi, 464 pp. \$19.95. Prentice-Hall Software Series.

**Cognition.** Arnold Lewis Glass, Keith James Holyoak, and John Lester Santa. Addison-Wesley, Reading, Mass., 1979. xx, 522 pp., illus. Paper, \$9.95.

**Collagen in the Physiology and Pathology of Connective Tissue.** Steffen Gay and Edward J. Miller. Gustav Fischer, New York, 1978. viii, 110 pp., illus. Paper, \$23.

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**Encyclopaedia of Antibiotics.** John S. Glasby. Wiley-Interscience, New York, ed. 2, 1979. vi, 468 pp., illus. \$60.

**Encyclopedia of Pediatric Psychology.** Logan Wright, Arlene B. Schaefer, and Gerald Solomons. University Park Press, Baltimore, 1979. xx, 934 pp. \$39.50.

**The Encyclopedia of Soil Science.** Part 1, Physics, Chemistry, Biology, Fertility, and Technology. Rhodes W. Fairbridge and Charles W. Finkl, Jr. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1979 (distributor, Academic Press, New York). xxii, 646 pp., illus. \$59.50. *Encyclopedia of Earth Sciences*, vol. 12.

**Forming Multimodal Transportation Companies.** Barriers, Benefits, and Problems. Papers from a conference, Washington, D.C., Feb. 1978. Clinton H. Whitehurst, Jr., Ed. American Enterprise Institute for Public Policy Research, Washington, D.C., 1978. xiv, 182 pp., illus. Cloth, \$10.75; paper, \$4.75.

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**Geochemistry of Bismuth.** Ernest E. Angino and David T. Long, Eds. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1979 (distributor, Academic Press, New York). xviii, 426 pp., illus. \$37.50. *Benchmark Papers in Geology*, vol. 49.

**Geometry and Convexity.** A Study in Mathematical Methods. Paul J. Kelly and Max L. Weiss. Wiley-Interscience, New York, 1979. x, 262 pp., illus. \$21.95. *Pure and Applied Mathematics*.

**Handbook of U.S. Colorants for Foods, Drugs, and Cosmetics.** Daniel M. Marmion. Wiley-Interscience, New York, 1979. x, 350 pp., illus. \$21.50.

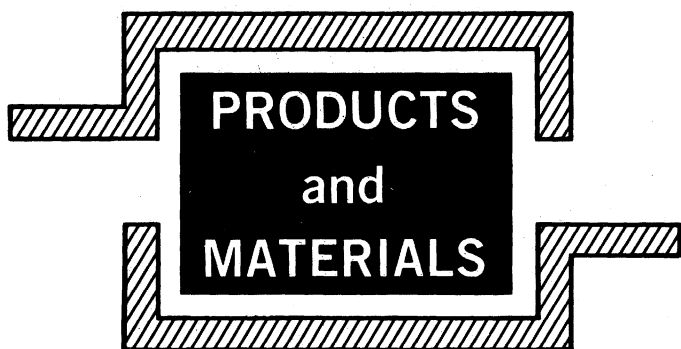
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**Hybridization.** An Evolutionary Perspective. Donald A. Levin, Ed. Dowden, Hutchinson and Ross, Stroudsburg, Pa., 1979 (distributor, Academic Press, New York). xiv, 322 pp., illus. \$25. *Benchmark Papers in Genetics*, vol. 11.

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(Continued on page 1268)



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### Literature

*Viscometer* describes vibrating-sphere models capable of measuring one sample per minute. Nametre. Circle 802.

*Environmental Test Equipment* lists a complete line of chambers and simulators for control of many test parameters in biological, chemical, and medical research. Tenney Engineering. Circle 807.

*HPLC Bibliography* includes 68 references for the liquid chromatographer. Schoeffel Instruments Division, Kratos. Circle 808.

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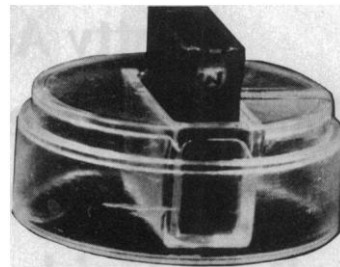
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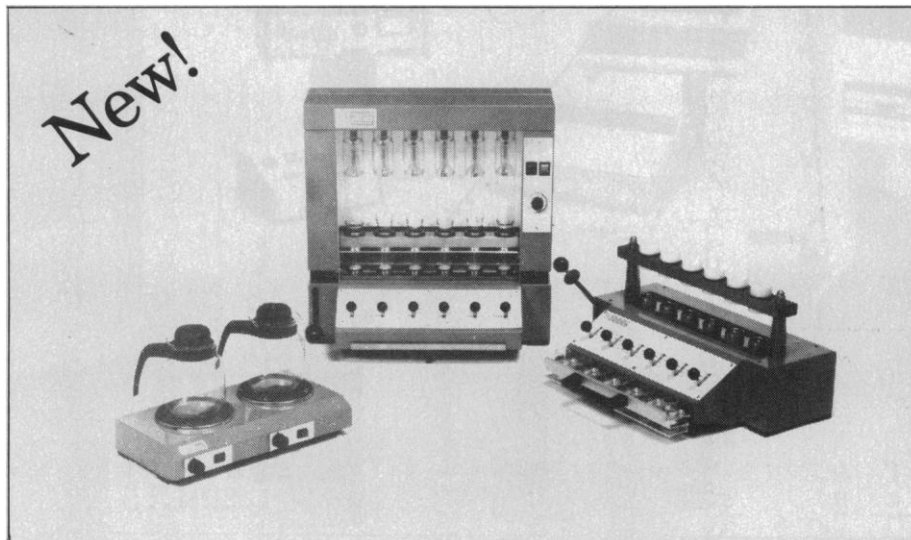
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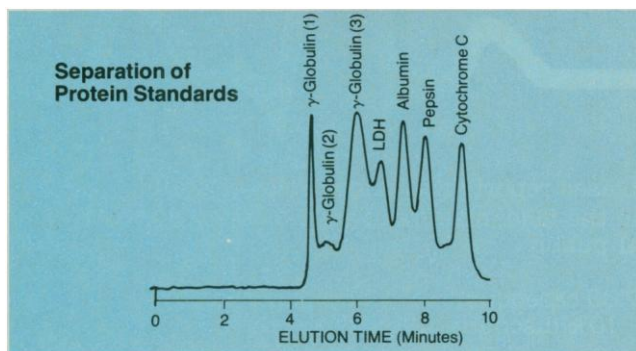
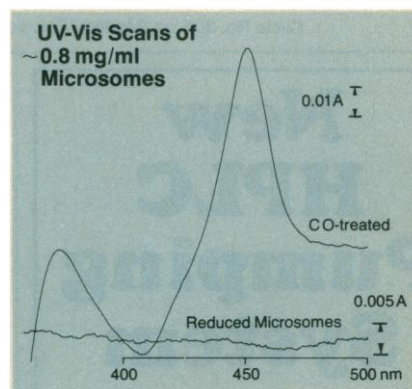
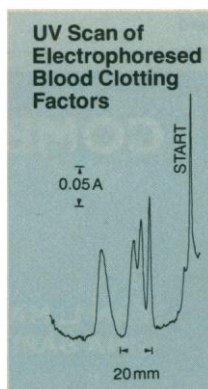
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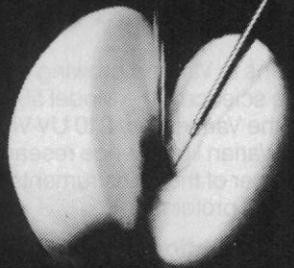
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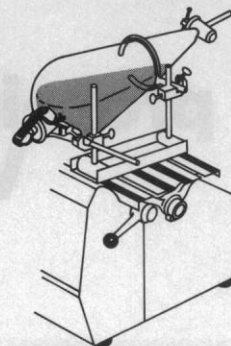
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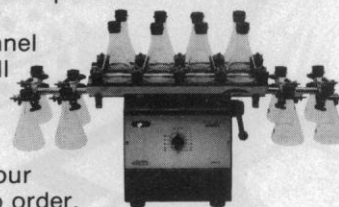
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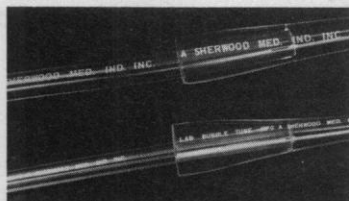
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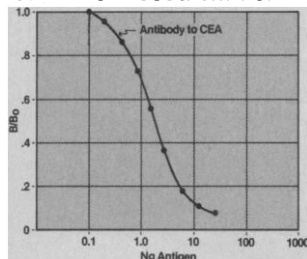
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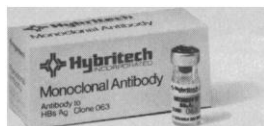
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## BOOKS RECEIVED

(Continued from page 1197)

Vol. 19, Some Monomers, Plastics and Synthetic Elastomers, and Acrolein. International Agency for Research on Cancer, Lyons, France, 1979 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). 514 pp. Paper, \$35.

**Image Formation from Coherence Functions in Astronomy.** Proceedings of a colloquium, Groningen, The Netherlands, Aug. 1978. Cornelis van Schooneveld, Ed. Reidel, Boston, 1979 (distributor, Kluwer Boston, Hingham, Mass.). xii, 340 pp., illus. \$39.50. Astrophysics and Space Science Library, vol. 76.

**Leafhopper Vectors and Plant Disease Agents.** Karl Marmorosch and Kerry F. Harris, Eds. Academic Press, New York, 1979. xvi, 654 pp., illus. \$39.

**Life-Span Development and Behavior.** Vol. 2. Paul B. Baltes and Orville G. Brim, Jr., Eds. Academic Press, New York, 1979. xiv, 348 pp. \$23.

**Liquid Chromatographic Analysis of Food and Beverages.** Vol. 2. Proceedings of a symposium, Honolulu, Apr. 1979. George Charalambous, Ed. Academic Press, New York, 1979. xii + pp. 237-564, illus. \$25.

**Man and the Biosphere.** Paul G. Risser and Kathy D. Cornelson. University of Oklahoma Press, Norman, 1979. iv, 110 pp., illus. Paper, \$6.95.

**Man in Flight. Biomedical Achievements in Aerospace.** Eloise Engle and Arnold S. Lott.

Leeward Publications, Annapolis, Md., 1979. xxviii, 396 pp., illus. \$16.95.

**Neuroanatomy Made Easy and Understandable.** Michael Liebman. University Park Press, Baltimore, 1979. viii, 104 pp., illus. Paper, \$9.95.

**Neurochemistry of Aminosugars.** Neurochemistry and Neuropathology of the Complex Carbohydrates. Eric G. Brunngraber. Thomas, Springfield, Ill., 1979. xvi, 702 pp. \$29.50.

**The Neurosciences. Fourth Study Program.** Francis O. Schmitt and Frederic G. Worden, Eds. MIT Press, Cambridge, Mass., 1979. xvi, 1186 pp., illus. \$50.

**Neurotoxins. Tools in Neurobiology.** Papers from a symposium, Venice, July 1978. Bruno Ceccarelli and Francesco Clementi, Eds. Raven, New York, 1979. xviii, 462 pp., illus. \$39.50. Advances in Cytopharmacology, vol. 3.

**New Worlds. Discoveries from Our Solar System.** Wernher von Braun and Frederick I. Ordway III. Anchor/Doubleday, Garden City, N.Y., 1979. xiv, 284 pp., illus. \$24.95.

**Optical Image Formation and Processing.** M. Françon. Translated from the French edition (Paris, 1972) by Bernard M. Jaffe. Academic Press, New York, 1979. xx, 214 pp., illus. \$19.50.

**Partial Hospitalization. A Current Perspective.** Raymond F. Luber, Ed. Plenum, New York, 1979. xviii, 206 pp., illus. \$23.50. Applied Clinical Psychology.

**Pathogenic Streptococci.** Proceedings of a symposium, Oxford, England, Sept. 1978. M.

T. Parker, Ed. Reedbooks, Chertsey, Surrey, England, 1979. 296 pp., illus. £21.

**Photoemission in Solids II. Case Studies.** L. Ley and M. Cardona, Eds. Springer-Verlag, New York, 1979. xviii, 404 pp., illus. \$49.50. Topics in Applied Physics, vol. 27.

**Physical Chemical Aspects of Cell Surface Events in Cellular Regulation.** Proceedings of a conference, Bethesda, Md., Oct. 1978. Charles DeLisi and Robert Blumenthal, Eds. Elsevier/North-Holland, New York, 1979. xii, 394 pp., illus. \$45. Developments in Cell Biology, vol. 4.

**Proceedings of the International Symposium on Stochastic Differential Equations.** Kyoto, July 1976. Kiyosi Ito, Ed. Wiley-Interscience, New York, 1979. xxx, 508 pp. \$35.

**Proceedings of the James C. Kimbrough Urological Seminar.** Vol. 12. San Antonio, Tex., Nov. 1978. Norwich-Eaton Pharmaceuticals, Norwich, N.Y., 1979. xxxii, 332 pp. Paper, \$10.

**Proceedings of the Workshop: Microbial Degradation of Pollutants in Marine Environments.** Pensacola Beach, Fla., Apr. 1978. A. W. Bourquin and P. H. Pritchard, Eds. EPA Environmental Research Laboratory, Gulf Breeze, Fla., 1979. xii, 552 pp., illus. Paper. EPA-600/9-79-012.

**Program Construction.** Papers from a summer school, Marktoberdorf, Germany, July 1978. F. L. Bauer and M. Broy, Eds. Springer-Verlag, New York, 1979. viii, 652 pp. Paper, \$27. Lecture Notes in Computer Science, vol. 69.

**Progress in Clinical Pharmacy.** Proceedings

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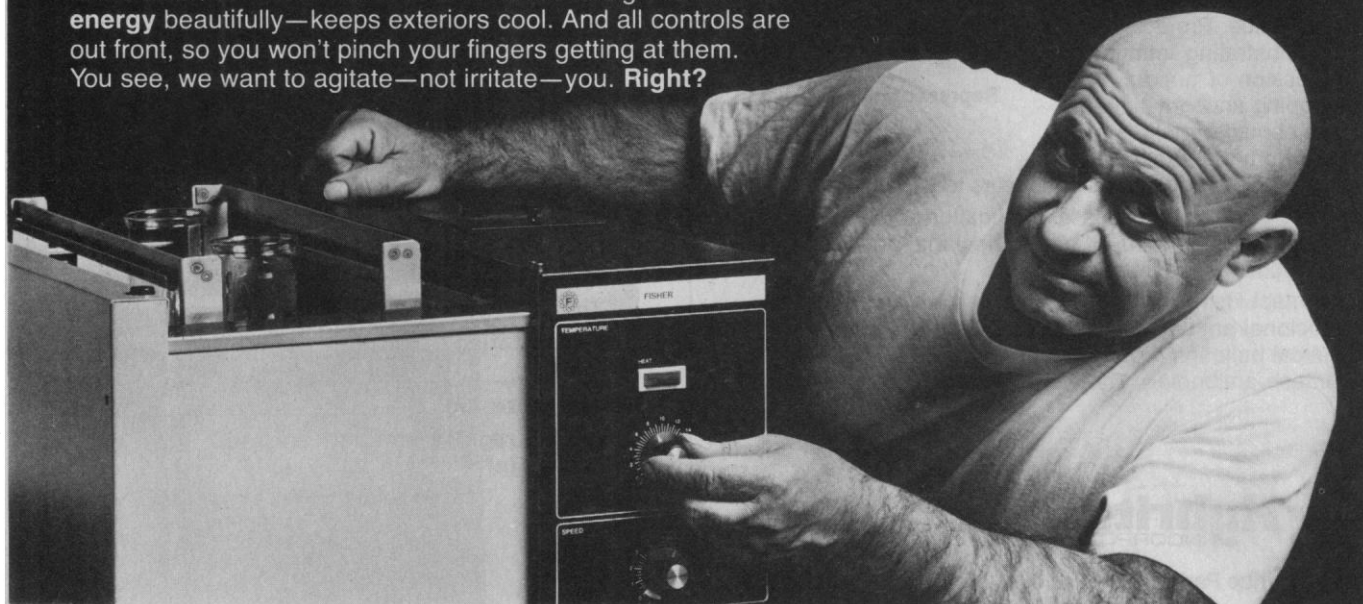
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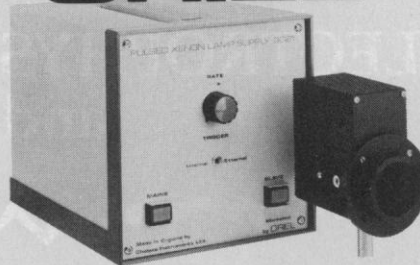
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of a symposium, Mainz, Germany, Nov. 1978. D. Schaaf and E. Van der Kleijn, Eds. Elsevier/North-Holland, New York, 1979. x, 274 pp., illus. \$44.

**Properties and Management of Forest Soils.** William L. Pritchett. Wiley, New York, 1979. xii, 500 pp., illus. \$21.

**Psychological Development from Infancy. Image to Intention.** Marc H. Bornstein and William Kessen, Eds. Erlbaum, Hillsdale, N.J., 1979 (distributor, Halsted [Wiley], New York). xx, 404 pp., illus. \$24.95. Cross-currents in Contemporary Psychology.

**The Psychological Development of the Child.** Paul Mussen. Prentice-Hall, Englewood Cliffs, N.J., ed. 3, 1979. xvi, 128 pp. Cloth, \$10.95; paper, \$5.95. Prentice-Hall Foundations of Modern Psychology Series.

**Quantum Electronics.** Part A. C. L. Tang, Ed. Academic Press, New York, 1979. xx, 380 pp., illus. \$37. Methods of Experimental Physics, vol. 15.

**The Recombinant DNA Debate.** David A. Jackson and Stephen P. Stich, Eds. Prentice-Hall, Englewood Cliffs, N.J., 1979. xiv, 386 pp. \$19.95.

**Rice Field Ecology in Northeastern Thailand.** The Effect of Wet and Dry Seasons on a Cultivated Aquatic Ecosystem. Charles W. Heckman. Junk, The Hague, 1979. vi, 228 pp., illus. \$39.50. Monographiae Biologicae, vol. 34.

**Rock Mechanics and Engineering.** Charles Jaeger. Cambridge University Press, New York, ed. 2, 1979. xii, 524 pp., illus. \$75.

**Rockefeller Medicine Men.** Medicine and Capitalism in America. E. Richard Brown. University of California Press, Berkeley, 1979. xii, 284 pp. + plates. \$12.95.

**The Role of Insectivorous Birds in Forest Ecosystems.** Proceedings of a symposium, Nacogdoches, Tex., July 1978. James G. Dickson, Richard N. Conner, Robert R. Fleet, James C. Kroll, and Jerome A. Jackson, Eds. Academic Press, New York, 1979. xiv, 382 pp., illus. \$24.

**Science, Technology and Social Order.** Ward Morehouse, Ed. Transaction Books, New Brunswick, N.J., 1979. vi + pp. 277-428. Paper, \$4.95. Originally published in *Alternatives*, vol. 4, No. 3.

**Scientific Ballooning.** Proceedings of a symposium, Innsbruck, Austria, May 1978. W. Riedler, Ed. Published for the Committee on Space Research by Pergamon, New York, 1979. xii, 220 pp., illus. \$40. Advances in Space Exploration, vol. 5.

**Scientific Images and Their Social Uses.** An Introduction to the Concept of Scientism. Iain Cameron and David Edge. Butterworths, Boston, 1979. 80 pp. Paper, \$2.95. Science in a Social Context.

**Scientific Realism and the Plasticity of Mind.** Paul M. Churchland. Cambridge University Press, New York, 1979. x, 158 pp., illus. \$19.95. Cambridge Studies in Philosophy.

**Sea Otter.** Jane H. Bailey. El Moro Publications, Morro Bay, Calif., 1979. 172 pp., illus. Paper, \$5.50.

**Selected Papers of Abraham Robinson.** H. J. Keisler, S. Körner, W. A. J. Luxemburg, and A. D. Young, Eds. Yale University Press, New Haven, 1979. Three volumes. Vol. 1, Model Theory and Algebra. xxxviii, 694 pp. \$45. Vol. 2, Nonstandard Analysis and Philosophy, xlv, 582 pp. \$40. Vol. 3, Aeronautics. xxxii, 270 pp. \$30.

**Semantics of Concurrent Computation.** Proceedings of a symposium, Evian, France, July 1979. Gilles Kahn, Ed. Springer-Verlag, New York, 1979. vi, 368 pp., illus. Paper, \$17.80.

Lecture Notes in Computer Sciences, vol. 70.

**Semiconductor and Integrated Circuit Fabrication Techniques.** Peter E. Gise and Richard Blanchard. Reston (Prentice-Hall), Reston, Va., 1979. xii, 210 pp., illus. \$12.95.

**Séminaire Bourbaki, vol. 1977/78, Exposés 507-524.** Avec Table par Noms d'Auteurs de 1967/68 à 1977/78. Springer-Verlag, New York, 1979. iv, 328 pp. Paper, \$16. Lecture Notes in Mathematics, vol. 710.

**Semi-Infinite Programming.** Proceedings of a workshop, Bad Honnef, Germany, Aug. 1978. R. Hettich, Ed. Springer-Verlag, New York, 1979. x, 178 pp. Paper, \$9.80. Lecture Notes in Control and Information Sciences, vol. 15.

**Service and Education in Medical Genetics.** Proceedings of a symposium. Ian H. Porter and Ernest B. Hook, Eds. Academic Press, New York, 1979. xiv, 426 pp., illus. \$24. Birth Defects Institute Symposia.

**Shaping the Future.** Canada in a Global Society. Proceedings of a conference, 1978. Walter Baker, Ed. Centre for Policy and Management Studies, Ottawa, Canada, 1979. xvi, 694 pp. Cloth, \$27.50; paper, \$20.

**Short-Term Dynamic Psychotherapy.** Evaluation and Technique. Peter E. Sifneos. Plenum, New York, 1979. xviii, 248 pp. \$18.95. Topics in General Psychiatry.

**Singular Points of Smooth Mappings.** C. G. Gibson. Fearon-Pitman, Belmont, Calif., 1979. viii, 240 pp., illus. Paper, \$16.50. Research Notes in Mathematics, 25.

**Skeletal Research.** An Experimental Approach. David J. Simmons and Arthur S. Kunin, Eds. Academic Press, New York, 1979. xviii, 612 pp., illus. \$55.

**Smoking and Health.** A Report of the Surgeon General. Public Health Service, Washington, D.C., 1979 (available from the Superintendent of Documents, Washington, D.C.). Various pages, illus. Paper, \$9. DHEW Publication No. (PHS)79-50066.

**The Solar Decision Book.** Your Guide to Making a Sound Investment. Richard H. Montgomery with Jim Budnick. Design and illustrations by William Brinker. Wiley, New York, 1979. Various pages. Paper, \$12.95.

**Structural Stability in Physics.** Proceedings of two symposia, Tübingen, Germany, May 1978 and Dec. 1978. W. Güttinger and H. Eikemeier, Eds. Springer-Verlag, New York, 1979. viii, 312 pp., illus. \$34.90. Springer Series in Synergetics, vol. 4.

**The Structure of Nuclear Fréchet Spaces.** Ed Dubinsky. Springer-Verlag, New York, 1979. vi, 188 pp. Paper, \$9.80. Lecture Notes in Mathematics, vol. 720.

**Symbolic and Algebraic Computation.** Papers from a symposium, Marseille, France, June 1979. Edward W. Ng, Ed. Springer-Verlag, New York, 1979. xvi, 558 pp. Paper, \$26.40. Lecture Notes in Computer Sciences, vol. 72.

**Syntax and Semantics.** Vol. 12, Discourse and Syntax. Talmy Givón, Ed. Academic Press, New York, 1979. xx, 538 pp., illus. \$39.50.

**Tests and Measurements.** Leona E. Tyler and W. Bruce Walsh. Prentice-Hall, Englewood Cliffs, N.J., ed. 3, 1979. xii, 144 pp., illus. Cloth, \$9.95; paper, \$5.95. Prentice-Hall Foundations of Modern Psychology Series.

**A Theoretical Approach to Inorganic Chemistry.** A. F. Williams. Springer-Verlag, New York, 1979. xii, 318 pp., illus. \$53.90.

**The Theory of Lie Superalgebras.** An Introduction. M. Scheunert. Springer-Verlag, New York, 1979. x, 272 pp. Paper, \$14.30. Lecture Notes in Mathematics, vol. 716.

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### ANATOMY ASSOCIATE PROFESSOR/PROFESSOR

The Medical College of Wisconsin, Department of Anatomy, invites applications for the position of associate professor/professor. Candidates must possess a strong, fundable research program and have experience in medical school instruction in one of the anatomy disciplines. The department is located in a new basic science facility in a pleasant suburban atmosphere. Salaries are commensurate with training and experience; comprehensive benefits. Send curriculum vitae and names and addresses of three references to:

**Dr. F. David Anderson, Chairman**  
Department of Anatomy  
The Medical College of Wisconsin  
P.O. Box 26509  
Milwaukee, Wis. 53226

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

**ASSISTANT PROFESSOR.** The Hormel Institute, a Research Unit of the Graduate School of the University of Minnesota, invites applications for a faculty position at the level of assistant professor. Doctorate degree and postdoctoral experience are required. The successful candidate is expected to establish an independent research program in the physical, chemical, or biological sciences complementing ongoing institute programs related to lipid and membrane research. The position is available after September 1980. Please submit, before 1 June 1980, curriculum vitae, complete list of publications, brief description of research plans, and the names of three references to: **Dr. Douglas R. Pfeiffer, Chairman, Search Committee, The Hormel Institute, University of Minnesota, Austin, Minnesota 55912.** An Equal Opportunity/Affirmative Action Employer.

### TWO ASSISTANT PROFESSOR VACANCIES

Candidates will be considered for appointment at the level of assistant professor in the tenure-track. The fields: (i) molecular genetics involving the use of cloning, sequencing, and restriction mapping to investigate the physical anatomy and functioning of pro or eucaryotic genomes; and (ii) eucaryotic cell biology involving the interplay of genetic, molecular, and morphological dynamics in cytodifferentiation and morphogenesis. Selection will be based on demonstrated potential for establishing a research program of exceptional quality plus the capacity to teach undergraduate and graduate courses competently and responsibly. Please submit curriculum vitae, including a list of publications, names of at least three references, and a brief (1 to 2 pages) description of your research plans for the immediate future for which external funding is being or will be solicited to: **Dr. Maurice Sussman, Department of Biological Sciences, University of Pittsburgh, Pittsburgh, Pa. 15260.** The University of Pittsburgh, acting in the spirit and the letter of Affirmative Action regulations, actively encourages applications from women, minority members, and other individuals covered by the mandates of Title IX.

### ASSISTANT PROFESSOR

The Search Committee of the Department of Microbiology of Miami University invites applications for a non-tenure-track position at the assistant professor level beginning 15 August 1980. An option for teaching in summer 1980 is also available. This is a 1-year appointment with possible annual reappointment for a total of 3 years. Applicants should have a Ph.D. in microbiology and be qualified to teach graduate and undergraduate courses in medical microbiology. Preference will be given to applicants who show evidence of interest in research and graduate education. Qualified applicants should submit curriculum vitae and have three letters of recommendation forwarded by 15 April 1980 to: **Dr. Ivan Kochan, Chair of Search Committee, Department of Microbiology, Miami University, Oxford, Ohio 45056.** Miami University is an Equal Opportunity/Affirmative Action Employer.

**ASSISTANT PROFESSOR.** Applications are solicited from physiologists with research expertise in the field of metabolic and hormonal alterations in shock, during exercise, or during environmental stress. Candidate should have at least 4 years of postdoctoral experience and should be able to maintain a vigorous and nationally competitive research program. Send curriculum vitae to: **John J. Spitzer, M.D., Professor and Head, Department of Physiology, Louisiana State University Medical Center, 1542 Tulane Avenue, New Orleans, La. 70112.** An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**ASSISTANT PROFESSOR, EXPERIMENTAL PHYSICAL CHEMISTRY**—The Department of Chemistry, The Florida State University, seeks an assistant professor of physical chemistry for a tenure-track position, beginning September 1980. The position will involve teaching and research at both the undergraduate and graduate levels. Preference will be given to candidates whose major field of interest includes the use of lasers, although promising scholars in all areas of experimental physical chemistry will be considered. Detailed curriculum vitae, including a list of publications and a brief prospectus of research plans, should be sent to: **Professor Robert L. Fulton, Dittmer Laboratory of Chemistry, The Florida State University, Tallahassee, Florida 32306.** The candidate should arrange to have three letters of recommendation submitted as early as possible, but no later than 1 April 1980. The Florida State University is an Equal Opportunity/Affirmative Action Employer.

### ASSISTANT PROFESSOR OF GENETICS

The Department of Genetics at The Ohio State University, Columbus, invites applications for a faculty position beginning September 1980. Research interests and postdoctoral training in human cellular or population genetics are preferred. Principal teaching duties will be in a large general biology course. The position is tenure-track with concomitant research and graduate teaching opportunities and requirements. We seek a candidate with a combination of demonstrated research potential and strong interests and ability in undergraduate teaching. Curriculum vitae, which includes a brief statement of professional goals and teaching interests, transcripts, reprints, and three letters of reference should be sent to: **Dr. C. William Birky, Jr., Department of Genetics, The Ohio State University, 1735 Neil Avenue, Columbus, Ohio 43210.**

An Equal Opportunity/Affirmative Action Employer. Qualified women and minority and handicapped persons, as well as others, are encouraged to apply.

### ASSISTANT PROFESSOR OF PHARMACOLOGY

Applications are invited for a tenure-track faculty position in a research-oriented Department of Pharmacology. Minimal qualifications include a Ph.D. or M.D. degree with strong postdoctoral experience. Candidates must be capable of mounting a vigorous research program and participating in the teaching of medical, dental, and graduate students. Field of research interest is secondary to demonstrable research capability. Prefer September 1980. Send curriculum vitae to: **E. G. Anderson, Department of Pharmacology, College of Medicine, University of Illinois at the Medical Center, P.O. Box 6998, Chicago, Illinois 60680.**

To assure full consideration, apply by 15 April 1980.

The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.

### ASSISTANT PROFESSOR—PHARMACOLOGY

Louisiana State University Medical Center, New Orleans, invites applications for a tenure-track appointment beginning in academic year 1980-1981 as assistant professor. A minimum of 1 to 2 years of postdoctoral experience is required. The appointee will be expected to establish a strong program of research and scholarship in pharmacology and to participate in graduate and Medical Center teaching. We welcome women and minority applicants.

Send curriculum vitae, résumé of past and present research, and the names of three references by 15 April 1980 to:

**Dr. Lee Roy Morgan**  
Professor of Pharmacology  
Louisiana State University Medical Center  
1542 Tulane Avenue  
New Orleans, Louisiana 70112

Louisiana State University Medical Center is an Equal Opportunity/Affirmative Action Institution.

**ASSISTANT OR ASSOCIATE PROFESSOR—DEPARTMENT OF PHARMACOLOGY.** Tenure-track position available 1 July 1980 or earlier. Qualifications include doctoral degree in pharmacology or medicine with research and teaching experience, and interest in developing interdepartmental/interdisciplinary programs in neuroscience. Send curriculum vitae, publications, and three letters of recommendation to: **A. G. Karczmar, M.D., Ph.D., Professor and Chairman, Loyola University Stritch School of Medicine, 2160 South First Avenue, Maywood, Ill. 60153; telephone: 312-531-3261.**

## POSITIONS OPEN

### DEPARTMENT OF PHARMACOLOGY AND THERAPEUTICS UNIVERSITY OF FLORIDA COLLEGE OF MEDICINE

Applicants are invited for the tenure-track position of **ASSISTANT PROFESSOR**. Applicants must have an M.D. or Ph.D. degree with postdoctoral experience in research. The applicants will be expected to contribute equitably to the department's teaching efforts and to develop an independent research program. Anticipated starting date is 1 September 1980. Curriculum vitae, bibliography, and three letters of reference should be sent by 31 March to: **Dr. A. H. Neims, Chairman, Department of Pharmacology and Therapeutics, Box J-267, JHMHC, University of Florida, Gainesville, Florida 32610.** We are an Equal Opportunity/Affirmative Action Employer.

### NATIONAL SCIENCE FOUNDATION

The National Science Foundation, Division of Environmental Biology, is seeking candidates who are willing to take leave from their university or other research position for a 1- or 2-year rotational appointment to serve as **ASSOCIATE PROGRAM DIRECTOR** for the Systematic Biology Program, EC-13/14 (equivalent to the GS-13/14), \$29,375 to \$45,126 per annum. Appointment will begin in August 1980. Responsibilities include evaluation of research proposals in systematic biology including the identities, relationships, and distribution of living species of plants, animals, and microorganisms; fossil studies of extinct species to determine organic changes throughout the Earth's history; improved methods of gathering, processing, and analyzing data; functional morphology, chemosystematics; tropical biology; and descriptive and experimental systematics. Candidates should have 6 years of research experience beyond the Ph.D. (or equivalent). Supervisory or management experience is highly desirable. Contact **Odessa G. White**; telephone, 202-632-4106, for further information. Send résumé to: **The National Science Foundation, Room 212, 1800 G Street, NW, Washington, D.C. 20550**, attention: **Odessa G. White.** The National Science Foundation is an Equal Opportunity/Affirmative Action Employer.

### NATIONAL SCIENCE FOUNDATION ASSOCIATE PROGRAM DIRECTOR

The National Science Foundation, Division of Atmospheric Sciences, is seeking qualified candidates for a 1- or 2-year rotational appointment as **ASSOCIATE PROGRAM DIRECTOR**, EC-13/14 (equivalent to the GS-13/14) \$29,375 to \$45,126 per annum, for the Global Atmospheric Research Program (GARP). Responsibilities include supplementing the scientific background of the program director and assisting in directing program activities including allocation of resources, establishing overall goals and objectives, evaluating proposals, preparing recommendations for grants, and monitoring the progress of funded projects. Candidates should have a Ph.D. or equivalent in meteorology and some background in GARP-related research and have, in addition, at least 4 years of research experience with some demonstrated administrative experience. Salary is negotiable based on qualifications and experience within the salary range mentioned above. Send résumé to: **National Science Foundation, Personnel Management Branch, 1800 G Street, NW, Washington, D.C. 20550**, attention: **E. Paul Broglio**; for further information, telephone: 202-632-4107. The National Science Foundation is an Equal Opportunity/Affirmative Action Employer.

### BIOLOGICAL OCEANOGRAPHY

The Department of Oceanography of Texas A & M University solicits applications for a tenure-track academic faculty position in biological oceanography which is expected to become available 1 September 1980. Appointment will be made at the senior assistant professor/junior associate professor level. Salary will be commensurate with experience. Candidates with process-oriented research experience in marine microbiology and/or marine productivity are especially encouraged to apply. The successful applicant should expect to develop independently funded research and graduate study programs by the second year of appointment. Applicants are invited to submit curriculum vitae, one-page summary of their current and prospective research, and names of three references to: **Dr. D. C. Biggs, Deputy Head, Department of Oceanography, Texas A & M University, College Station, Texas 77843.** Telephone: 713-845-7211.

Texas A & M University is an Equal Opportunity/Affirmative Action Employer. Deadline for applications: 1 April 1980.

### ANNOUNCEMENT OF OPPORTUNITY MARINE POLLUTION RESEARCH AND DEVELOPMENT AND MONITORING

The National Oceanic and Atmospheric Administration (NOAA), through its Office of Marine Pollution Assessment, announces a program of research with respect to the possible long-range effects of pollution, and man-induced changes of marine ecosystems (for the purposes of this program, the Great Lakes are considered "marine," and are included). This Long-Range Effects Research Program is being conducted in accordance with Section 202 of Public Law 92-532, the "Marine Protection, Research, and Sanctuaries Act of 1972."

The legislative history associated with the act indicates that the program is intended to probe the more subtle pollution-related change taking place in marine waters, those that may be detectable at an early stage, if one only looks for them. It further indicates that the program is expected to identify the "holes" in current long-range effects research, and then to examine these in enough detail to determine whether larger application of effort and other funds may be required to fill the gaps. The act and its history also show that the program is directed to seek out the best research capabilities to address the identified problems, whether within NOAA, within other federal departments, agencies, and instrumentalities, within state, interstate, or local authorities, agencies, or institutions, private agencies or institutions, or among individuals.

The "National Ocean Pollution Research and Development and Monitoring Planning Act," Public Law 95-273, requires that a comprehensive 5-year plan for the overall federal effort in ocean pollution research and development and monitoring be prepared, and revised each odd-numbered year. The first plan, prepared and submitted to Congress and the President on 10 December 1979, identified national needs and problems in marine pollution. Public Law 95-273 also requires that the Long-Range Effects Research Program be responsive to the plan as well as to the original act establishing the program.

On the basis of the plan and other available information, the Long-Range Effects Research Program has prepared descriptions of specific subject areas in which projects or activities can be considered in fiscal year (FY) 1980 for funding. The descriptions are included as part of a "guidance package" which can be requested from this Program Office. Also included in the package is information dealing with proposal preparation, submission, review and evaluation, also administration of the Long-Range Effects Research Program and the projects and activities supported by it. Each application for financial support shall be submitted in the form and manner, and shall contain such information as is specified in the guidance package.

The Long-Range Effects Research Program has only a modest amount of funds in FY 1980 for the support of outside research: approximately \$1.1 million is available. Therefore, it is possible that many highly regarded proposals will have to be declined solely because of funding limitations.

The guidance package and any further information needed can be requested from:

**Long-Range Effects Research Program  
NOAA/RD/OMPA/OP  
Old Biology Building  
State University of New York  
Stony Brook, New York 11794**

A summary of the responses to this announcement of opportunity will be made available at a later date upon formal written request.

### ANNOUNCEMENT OF OPPORTUNITY MARINE POLLUTION RESEARCH AND DEVELOPMENT AND MONITORING

The National Oceanic and Atmospheric Administration (NOAA), through its Office of Marine Pollution Assessment, announces a Financial Support Program for Research and Development and Monitoring projects or activities to address national needs and problems in marine pollution (for the purposes of this program the Great Lakes are considered "marine" and are included). This program is being initiated in accordance with Section 6 of Public Law 95-273, the "National Ocean Pollution Research and Development and Monitoring Planning Act of 1978."

Section 4 of the act requires that a comprehensive 5-year plan for the overall federal effort in ocean pollution research and development and monitoring be prepared, and revised each odd-numbered year. The first plan, prepared and submitted to Congress and the President on 10 December 1979, identifies national needs and problems in marine pollution which exist or will arise during the plan period, which continues through fiscal year (FY) 1983.

The plan also establishes the order of priority with which such needs should be met and such problems solved during the plan period. Section 6 of the act provides for financial support, in the form of grants or contracts, for research and development and monitoring projects or activities which are needed to meet priorities set forth in the plan. If such priorities are not being adequately addressed by any federal department, agency, or instrumentality.

On the basis of the plan and other available information, the Financial Support Program has prepared descriptions of specific areas in which projects or activities can be considered in FY 1980 for funding. The descriptions are included as part of a "guidance package" which can be requested from this Program Office. Also included in the package is information dealing with proposal preparation, submission, review and evaluation, also administration of the Financial Support Program and the projects and activities supported by it.

Any person, including institutions of higher education, and departments, agencies, and instrumentalities of the federal government or of any state or political subdivision thereof, may apply for financial support under this program. Each application for financial support shall be submitted, in the form and manner and shall contain such information as specified in the guidance package.

It must be pointed out that in its first year, FY 1980, the Section 6 Financial Support Program is of only modest size: approximately \$1.25 million is available. Therefore, it is possible that many highly regarded proposals will have to be declined—due solely to funding limitations.

The guidance package and any further information needed can be requested from:

**Section 6 Financial Support Program  
NOAA/RD/OMPA/OP  
Old Biology Building  
State University of New York  
Stony Brook, New York 11794**

A summary of the responses to this announcement of opportunity will be made available at a later date upon formal, written request.

## POSITIONS OPEN

The CORNEA DEPARTMENT of the Eye Research Institute of Retina Foundation has a position available at the level of **assistant or associate scientist**. We are looking for a basic scientist whose primary research interest relates to the cornea and complements ongoing programs in biochemistry, immunology, morphology, physiology, and pharmacology. Candidates should have demonstrated research abilities and a record of funding. The position also carries an appointment in the Department of Ophthalmology of Harvard Medical School.

Interested individuals should send curriculum vitae, bibliography, and the names of three references to: **Arthur H. Neufeld, Ph.D., Eye Research Institute of Retina Foundation, 20 Staniford Street, Boston, Mass. 02114. An Equal Opportunity/Affirmative Action Employer, M/F.**

**BIOLOGICAL SCIENCES**—Tenure-track position. Responsibilities involve the teaching of some combination of the following: medical physiology, gross anatomy, neuroanatomy/neurophysiology, molecular physiology, genetics, and general biology. Courses above not covered by the tenure-track position will be taught by part-time faculty. Ph.D. required with experience preferred. Send curriculum vitae, complete transcripts, and three letters of reference to: **Dr. Annette Bower, Chairperson, Biological Sciences, Mount St. Mary's College, 12001 Chalon Road, Los Angeles, California 90049.** Position available September 1980. Deadline for application: 15 April 1980.

The Bryn Mawr College **DEPARTMENT OF BIOLOGY** invites applications for two temporary 1-year appointments for the 1980-1981 academic year from persons qualified to teach undergraduate and graduate courses among the following areas: biochemistry, cell and/or molecular biology, neurobiology and/or physiology, and developmental biology. A Ph.D. is required. Facilities are available for independent or collaborative research. Send a résumé and two letters of recommendation to: **Search Committee, Department of Biology, Bryn Mawr College, Bryn Mawr, Pa. 19010. Bryn Mawr College is an Affirmative Action/Equal Opportunity Employer.**

**BIOLOGIST**, broadly trained, outstanding teacher, wanted. Two-year contract for teaching two courses per quarter including at least three of the following: developmental biology, comparative animal physiology, human anatomy and physiology, and genetics. Reply: **Jerry Woolpy, Earlham College, Richmond, Indiana 47374.** Three references. Deadline: 1 April 1980.

*Affirmative Action/Equal Opportunity Employer*

**BIOLOGY-PHYSIOLOGY.** Tenure-track teaching position at assistant professor level. Recent Ph.D. Emphasis on plant and animal physiology. Able to teach broad range of freshman-sophomore biology courses. Salary competitive and based on experience. United Methodist Church liberal arts college. Co-ed. *Equal Opportunity Employer.* Résumés to: **Arthur A. Johnson, Hendrix College, Conway, Ark. 72032** by 1 April 1980. Contract begins 1 September 1980.

### CHAIR, GRADUATE PROGRAM IN MARINE ESTUARINE-ENVIRONMENTAL SCIENCES (MEES) UNIVERSITY OF MARYLAND COLLEGE PARK CAMPUS

An interdisciplinary Program in Biological, Physical, and Chemical Sciences and Resource Management. The chair will handle administrative matters, work with MEES chairs from other campuses of the university, and be responsible for recruitment and admission of students to the program and development and management of curricular and other matters to ensure a high-quality graduate program. The chair will devote one-half time to administration and the remainder to research and teaching.

Qualifications: an earned doctorate and eligibility for a tenured faculty appointment in botany, chemistry, entomology, geology, microbiology, zoology, or one of the agricultural sciences. Must have a record of quality research and teaching.

Send nominations and applications with curriculum vitae and three letters of recommendation by 11 April 1980 to:

**Dr. George R. Helz, Chairman  
MEES Chair Search Committee  
University of Maryland  
Department of Chemistry  
College Park, Md. 20742**

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### BIOLOGY POSITION: ANATOMY— PHYSIOLOGY AND MICROBIOLOGY

The Joint Biology Department of the College of Saint Benedict and Saint John's University is accepting applications for a position in anatomy—physiology and general microbiology. Teaching responsibilities are primarily in pre-nursing programs. Applicants should have an earned doctorate and a strong commitment to undergraduate teaching. Salary in accord with salary scale. Send letter of application, curriculum vitae, and three letters of reference to: **Sister Linda Kulzer, Vice President for Academic Affairs, College of Saint Benedict, Saint Joseph, Minnesota 56374, before 1 April 1980. The College of Saint Benedict is an Equal Opportunity Employer in compliance with Title IX and Section 504 Handicapped Act.**

**ANATOMY CHAIRPERSON.** Marshall University School of Medicine is recruiting a chairperson for the Department of Anatomy. Salary negotiable. Please send curriculum vitae by 1 April 1980 to: **Donald S. Robinson, M.D., Chairperson, Department of Pharmacology, Marshall University School of Medicine, Huntington, W. Va. 25701. An Equal Opportunity Employer.**

**CHIEF OF NEUROSURGERY,** Department of Surgery, University of Texas Medical Branch, Galveston, Texas. Nominations and applicants are invited for this position. Applicants should possess nationally recognized capability in clinical neurosurgery, teaching, and neuroscientific investigation. Letter of application and curriculum vitae should be sent to: **James C. Thompson, M.D., Chairman, Department of Surgery, P.O. Box 146, University of Texas Medical Branch, Galveston, Texas 77550. We are an Equal Opportunity/Affirmative Action Employer, M/F.**

### CLINICAL IMMUNOLOGIST

To conduct studies related to childhood malignancies and immunodeficiencies. M.D. or Ph.D. with demonstrated research experience and productivity to qualify for intermediate or senior appointment. Please send curriculum vitae and bibliography to: **F. L. Adler, Chairman, Division of Immunology, St. Jude Children's Research Hospital, 332 North Lauderdale, P.O. Box 318, Memphis, Tenn. 38101.**

### DIRECTOR OF THE MEDICAL CENTER DEAN OF THE COLLEGE OF MEDICINE UNIVERSITY OF SOUTH FLORIDA (USF)

The University of South Florida invites nominations and applications for the position of director of the Medical Center and dean of the College of Medicine. The College of Medicine is one of ten colleges at the University of South Florida, an urban institution with more than 23,500 students on four campuses in Tampa, St. Petersburg, Sarasota, and Ft. Myers, with a total budget of \$100 million, and situated in one of the most rapidly growing areas in the United States.

The director of the Medical Center and dean of the College of Medicine is responsible for the overall operation of the center and college, including instruction, research, patient care, and public service. The director of the Medical Center reports directly to the president and as dean reports to the vice president for academic affairs.

Candidates should possess an M.D. degree and have had substantial experience in medical education and research.

Salary is competitive and negotiable. The position is available 1 September 1980, and application deadline is 1 May 1980.

According to Florida law, applications and meetings regarding this position are open to the public. *USF is an Equal Opportunity Employer.*

Nominations or applications should be sent to: **Dr. James A. Hallock, Secretary, Search Committee, Associate Dean, Box 5, University of South Florida, College of Medicine, 12901 North 30 Street, Tampa, Fla. 33612.**

### ENVIRONMENTAL PHYSIOLOGIST

Pepperdine University, a 4-year liberal arts university with Christian emphasis, announces a 1-year, nontenure-track position beginning September 1980. Ph.D. required to teach zoology, ecology, environmental physiology, and direct undergraduates in independent research. Limited research funding available. Send curriculum vitae, publications, and three reference letters to: **Dr. Gary Tallman, Natural Science Division, Pepperdine University, Malibu, California 90265.**

## POSITIONS OPEN

### UNIVERSITY OF SOUTHERN MAINE

Southworth Planetarium needs a **DIRECTOR/LECTURER** to present programs for public schools and the general public. Salary: \$12,000. Bachelor's degree preferred, experience uppermost in importance. Submit résumé to:

**University of Southern Maine  
College of Arts and Sciences Dean's Office  
Planetarium Search Committee  
96 Falmouth Street  
Portland, Maine 04103**

Application deadline: 15 April 1980. Position available: 1 August 1980.

*An Equal Opportunity/Affirmative Action Employer*

### ENVIRONMENTAL SCIENTIST

Major utility located in the Southwest seeks a senior environmental scientist for environmental impact assessment associated with proposed and ongoing natural gas, coal, and LNG operations. As part of a multidisciplinary team within the Environmental Affairs Department, this individual is responsible for conducting field studies, preparation of environmental impact statements and analyzing proposed legislation and regulations. Master's degree in environmental science and 5 years of related experience or a Ph.D. degree in environmental science are required. Send résumé and other credentials, including salary history, to: **Box 62, SCIENCE.**

*An Equal Opportunity Employer*

### FACULTY POSITION IN ROOT BIOLOGY

A position of assistant professor of biology at Harvard University is available with research opportunities at the Arnold Arboretum and some teaching obligations at the Department of Biology.

The Arnold Arboretum has excellent modern greenhouse facilities, sited among its living collections, with good control of temperature and water, low temperature facilities, two small laboratories, and adjacent field plots and saran houses.

The person should be a vascular plant physiologist, with background training in plant growth and development, and with special interest in woody plants, their propagation, multiplication, growth, and development. The desired field of research may be root physiology, hormonal physiology, or possibly seed dormancy and germination.

We hope that the person would have the breadth of vision to bridge the gap between pure and applied forestry and/or horticulture. As a particular instance, tropical silviculture is still immensely hampered by the lack of effective propagation techniques for hardwood species.

Application should, by 1 June 1980, be made to:

**Martin H. Zimmermann, Chairman  
Root Biology Search Committee  
Harvard Forest  
Petersham, Massachusetts 01366**

### FACULTY IN PHYSICAL OCEANOGRAPHY

Applications are invited for two positions, an assistant and an associate professorship, in theoretical physical oceanography in the School of Oceanography at Oregon State University. The applicant must have a Ph.D. in physical sciences and a demonstrated ability to conduct independent research. The applicant will be expected to obtain research funding. Strong background in numerical or analytical modeling of ocean dynamics and an interest in relating theory to observations are required. Duties include teaching and supervision of graduate students. Interested parties should submit a résumé and names and addresses of three referees willing to provide supporting letters by 1 May 1980 to:

**G. Ross Heath, Dean  
School of Oceanography  
Oregon State University  
Corvallis, Oregon 97331**

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

Positions for **VISITING FACULTY MEMBERS** may be available at the Lunar and Planetary Laboratory for academic 1980-1981. We seek temporary replacements for faculty members on leave. Preference will be given to applicants in the general area of cosmochemistry. Outstanding applicants in other areas of solar system science may also be considered. Please submit résumé, bibliography, and names of three references by 15 April to: **Dr. W. B. Hubbard, Director, Lunar and Planetary Laboratory, University of Arizona, Tucson, Ariz. 85721.**



**U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)  
ASSISTANT ADMINISTRATOR  
FOR RESEARCH AND DEVELOPMENT  
OFFICE OF HEALTH AND ENVIRONMENTAL ASSESSMENT  
EXECUTIVE DIRECTOR, CARCINOGEN ASSESSMENT GROUP**

The Office of Health and Environmental Assessment is seeking an executive director, Carcinogen Assessment Group, to serve as a technical authority and principal agency management official for the scientific aspects of cancer risk assessment. The executive director plans and coordinates comprehensive technical programs for developing carcinogenic risk assessments and establishing agency guidelines for same. The incumbent will: advise agency officials and operating programs on the qualitative and quantitative risks of suspected carcinogenic agents on public health; provide state-of-the-art methodology, guidance, and procedures for the evaluation of carcinogenicity; ensure the quality and consistency of agency risk assessments; make independent assessments of risk; maintain liaison within EPA and other agencies in synthesizing research and procedures; serve as advocate for the proper use of cancer risk assessment data in agency decisions on standards, guidelines, and regulations, and supervise the staff of the group.

Applicants must meet federal Office of Personnel Management X-118 Qualification Requirements in either the general biological sciences, general health sciences, or general physical sciences, and must possess substantial professional experience demonstrating the ability to perform in a senior executive position. Applicants must meet the following mandatory factors to be minimally qualified for the position:

1) Technical expertise or experience in the field of carcinogenicity and management experience, including planning/organizing, directing and/or supervising other scientific programs.

2) Postgraduate degree, or equivalent experience, in one of the following disciplines: life or health science, or physical science or senior level experience in managing activities (research or other) in the science fields mentioned.

Location: Washington, D.C.

Salary range: \$47,889 to \$50,112, plus civil service benefits.

The applicant selected for the position must join the Senior Executive Service.

Inquiries: **Barbara Perkins, at 202-755-2625.**

Please submit a completed SF-171, Personal Qualifications Statement (résumés without an accompanying SF-171 **WILL NOT** be considered), available at federal Job Information Centers and federal agency personnel offices, to reach EPA no later than 9 May 1980 to: **Barbara Perkins, PM-212, EPA, 401 M Street, SW, Washington, D.C. 20460.** A summary describing specifically how your background and experience relate to the mandatory factors listed above will be useful in the overall evaluation.

*An Equal Opportunity Employer*

**FACULTY POSITIONS OPEN IN:**

**ENVIRONMENTAL ENGINEERING  
MECHANICAL ENGINEERING DESIGN  
TRANSPORTATION ENGINEERING**

The Department of Civil, Mechanical and Environmental Engineering of the School of Engineering and Applied Science, The George Washington University, has openings in the following areas:

- 1) **ENVIRONMENTAL ENGINEERING.** Duties will include teaching of undergraduate and graduate courses in the water-related areas of environmental engineering. An ability to initiate and conduct research is also required. This is a nontenure-track position.
- 2) **MECHANICAL ENGINEERING DESIGN.** Duties include teaching undergraduate and graduate design related courses, with emphasis on machine design, systems dynamics and control, computer-aided design or manufacturing. An ability to initiate and conduct research is also required. This is a nontenure-track position.
- 3) **TRANSPORTATION ENGINEERING.** The position requires directing graduate programs in the area of transportation engineering, with an emphasis on multimodal transportation systems. An interest in teaching and research, particularly in the area of guideway technology is also required. This is a tenure-track position.

An earned doctorate is required. Rank and salary will be commensurate with the applicant's qualifications and experience. Forward résumés to:

**Professor A. B. Cambel, Chairman  
Department of Civil, Mechanical and Environmental Engineering  
School of Engineering and Applied Science  
The George Washington University  
Washington, D.C. 20052**

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

**JOHN E. FOGARTY INTERNATIONAL CENTER  
FOR ADVANCED STUDY IN THE HEALTH SCIENCES  
NATIONAL INSTITUTES OF HEALTH  
PUBLIC HEALTH SERVICE  
DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE**

Opening Date: March 3, 1980

Closing Date: March 31, 1980

(All applications must be postmarked by closing date)

**Director, John E. Fogarty International Center**

The National Institutes of Health invites nominations and applications for the position of Director, John E. Fogarty International Center, NIH, who will have primary responsibility in coordinating the international research activities of the NIH, maintaining liaison with other Federal components and multinational organizations, and serving as the principal advisor to the Director, NIH, on all matters relating to the substance, quality and effectiveness of these programs.

This is a Civil Service position in the Senior Executive Service with a salary range from \$47,889 to \$50,112 per year, depending on qualifications. (Alternately, 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 qualifications are: the M.D. degree, or other professional degree(s) in a biomedical science such as Biology, Microbiology, or Chemistry, or equivalent amount of education and/or experience which demonstrates a broad knowledge and understanding of the major public health problems in this country and abroad, plus research experience in a biomedical science. In addition, candidates must meet the following managerial/executive

qualifications: experience necessary to select, manage, and motivate a staff and carry out organizational goals, including the ability to implement EEO objectives. Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the extent to which they possess the following: experience in international health activities, scientific reputation/peer recognition, honors and awards, training and education, and the extent to which they exceed the level of managerial/executive qualifications specified above.

Applications (Personal Statement of Qualifications—SF-171) are to be sent to the Chairman, FIC Search Committee, National Institutes of Health, Building 1, Room 132, 9000 Rockville Pike, Bethesda, MD 20205. A current curriculum vitae, references and/or appraisals of performance, and bibliography must accompany all applications.

The National Institutes of Health is an equal opportunity employer.

**NATIONAL INSTITUTES  
OF HEALTH**

## POSITIONS OPEN

**ASSISTANT PROFESSOR—BIOLOGY.** Teach neuroscience and anatomy/physiology to allied health and biology students. Ability to teach introductory biology is also expected. Ph.D. required. Preferably from medical school. Starting salary: \$16,607. Effective 1 September 1980. Forward résumé to: **Dr. R. A. Virkar, Chairman, Department of Biology, Kean College of New Jersey, Morris Avenue, Union, N.J. 07083**, by 11 April 1980. *An Equal Opportunity/Affirmative Action Employer.*

### ECOLOGIST

The Department of Biological Sciences, De Paul University, invites applications for a tenure-track faculty appointment at the rank of assistant professor for 1 September 1980. Applicant must have a strong botanical background. The appointee is expected to serve as coordinator of a three-quarter, staff-taught general biology course with an enrollment of approximately 90 to 100 biology majors. Other assignments are quite flexible and include teaching at various levels (nonmajor, undergraduate, graduate) as well as research. Applicants should send curriculum vitae, together with the names and addresses of three references, no later than 8 April 1980, to: **Dr. Robert C. Thommes, Department of Biological Sciences, De Paul University, 1036 West Belmont Avenue, Chicago, Illinois 60614.**

*De Paul University is an Equal Opportunity/Affirmative Action Employer.*

### UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE

Qualified applicants are sought for a senior tenured **FACULTY POSITION** in the Department of Anatomy and Cell Biology. Candidates must hold the Ph.D. degree in the discipline of anatomy, or the M.D. degree and should have a minimum of 6 to 8 years of teaching and research experience. Additional training in neuroendocrinology and immunoelectron microscopy preferred. Appointment to be effective 1 September 1980. Salary negotiable. Please submit curriculum vitae and bibliography to: **Nikolajs Cauna, M.D., D.Sc., Chairman, Department of Anatomy and Cell Biology, 820 Scaife Hall, Pittsburgh, Pennsylvania 15261; telephone: 412-624-2564.**

### UNIVERSITY OF MICHIGAN MEDICAL SCHOOL DEPARTMENT OF FAMILY PRACTICE

This rapidly developing Department of Family Practice has a unique opportunity for residency-trained family physicians who are seeking further clinical experience while beginning a career in academic family practice. Appointment as instructor allows such junior faculty to participate for the majority of their time in patient care while gaining increasing experience and involvement in teaching, administration, and research. Applicants should write a personal letter and send a copy of their curriculum vitae to: **Terence C. Davies, M.D., Professor and Chairman, Department of Family Practice, University of Michigan Medical School, M2423, Medical Science I, Ann Arbor, Mich. 48109. Code 700HO. A non-discriminatory, Affirmative Action Employer.**

**THE AUSTRALIAN NATIONAL UNIVERSITY** invites applications for appointment as **FELLOW in HUMAN BIOLOGY** in the John Curtin School of Medical Research. The successful applicant will be required to take charge of the department's tissue typing laboratory, to act as an adviser on biomathematical problems, and to assist with programs on the genetics of population structure and disease susceptibility currently focused on populations in the Western Pacific region. Relevant field work experience in this area will be an advantage. Salary: A\$19,845 to A\$26,586 per annum. Present exchange rate A\$1:U.S.\$1.10:C\$1.27. Appointment: 5 years with possible reappointment to retiring age. Reasonable appointment expenses. Superannuation. Assistance with finding accommodation. Prospective applicants should write for further particulars to: **The Registrar, P.O. Box 4, Canberra ACT 2600, Australia**, with whom applications close on 30 June 1980.

**GENETICIST** to develop a research program in mammalian genetics with particular emphasis on genetics in nonhuman primates. Both independent and collaborative research are encouraged. A Ph.D. plus 3 to 5 years of postdoctoral research experience is required. Candidates should send résumé and names of three references, before 30 June 1980, to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### FACULTY POSITION

Department of Civil Engineering, University of California, Berkeley. Tenure-track position as assistant professor available in the geotechnical engineering group. Applicant must be interested in and capable of teaching undergraduate and graduate courses in engineering geology. Preference will be given to applicants prepared to teach and pursue research on the engineering geology of sediments. A doctoral degree in applied earth sciences or engineering is required, and some experience desired. The position is open starting with the 1980-1981 academic year. Send résumé by 15 April 1980 to: **T. L. Brekke, Search Committee Chairman, 434B Davis Hall, University of California, Berkeley, California 94720. The University of California is an Equal Opportunity/Affirmative Action Employer.**

### Utah State University, Logan, Utah

Applications are invited for the position of **HEAD, Animal, Dairy and Veterinary Sciences**, Utah State University, Logan, Utah. Responsibilities include administering and coordinating the teaching, research, extension, and international programs in a combined department related to animal, dairy, poultry, and veterinary sciences in the College of Agriculture. Candidate must have a doctorate degree in one of the animal or animal health disciplines, an understanding of the land-grant university system, an established record of achievement in teaching, research, or extension, and a demonstrated ability in personnel administration and obvious skills in human relations. Salary will be commensurate with candidate's qualifications and experience.

Position will close 1 April 1980 unless a suitable candidate has not been found. People interested after 1 April are encouraged to telephone. Starting date will be the earliest mutually convenient date after final selection is made. Interested persons send letter of application, curriculum vitae, other evidence of competency, and names of three references to: **C. Elmer Clark, Chairman, Search Committee, Agricultural Experimental Station, UMC 48, Utah State University, Logan, Utah 84322. Telephone: 801-750-2207.**

*An Affirmative Action Employer*

The Department of Entomology at The Ohio State University has an opening for an **INSECT TOXICOLOGIST**. This is a full-time, tenure-track appointment (9 months) at the assistant professor level and is available 1 July 1980. Applicant should have a broad background in toxicology and be qualified to teach courses in insect toxicology, pesticide regulations, and pesticides and the environment. Expected to develop an active, quality research program and advise graduate students.

Send curriculum vitae, transcripts, statement of professional goals, reprints, and names of five references to: **Chairman, Toxicologist Search Committee, Ohio State University, Department of Entomology, 1735 Neil Avenue, Columbus, Ohio 43210. The deadline for application is 15 April 1980.**

*Equal Opportunity/Affirmative Action Employer*

### UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

Three positions at **INSTRUCTOR** and **ASSISTANT PROFESSOR** level, July 1980 and January 1981 in the Department of Anesthesiology. Board-certified or -eligible anesthesiologist with Michigan Licensure. Research, clinical, and didactic experience. Reply to: **Box 63, SCIENCE. Codes 500FO, 300HO, and 500HO. A nondiscriminatory, Affirmative Action Employer.**

### LABORATORY MICROBIOLOGY FELLOW

The University of California, Irvine, Department of Pathology, is recruiting a 1- or 2-year laboratory microbiology fellowship position at the clinical instructor level. Required: M.D., Board-eligibility in anatomic and/or clinical pathology. Position consists of 50 percent clinical laboratory work and 50 percent research. Postresidency training in diagnostic bacteriology, mycology, serology, parasitology, and virology. Research in the areas of molecular pathology and viral oncology is available for interested candidates. *All qualified candidates welcome: minorities and women encouraged to apply.* Send curriculum vitae and three references to: **Luis M. de la Maza, M.D., Ph.D., Director, Division of Microbiology, University of California Medical Center, Orange, California 92668 by 28 April 1980.**

*An Equal Opportunity Employer*

## POSITIONS OPEN

### IMMUNOLOGIST—ASSISTANT PROFESSOR

Full-time faculty position available in the Department of Obstetrics and Gynaecology. Ph.D. degree required with strong interest in the immunology of reproduction. We are particularly interested in an individual with experience in infertility work who would also be able to start a human semen bank and perform research in the immunological aspects of male and female infertility. Ongoing clinical projects in the area of pregnancy maintenance and trophoblastic disease provide an opportunity for further collaborative research in the immunologic aspects of these conditions.

Send curriculum vitae to:

**Victor Gomel, M.D.  
Professor and Chairman  
Department of Obstetrics and Gynaecology  
University of British Columbia  
855 West 12 Avenue  
Vancouver, British Columbia, Canada V5Z 1M9**

**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.**

### MEDICAL COMPUTER SCIENCE

**Associate/Assistant Professor of  
Medical Computer Science**

Tenure-track, 12-month appointment, with responsibilities for teaching, research, and collaborative activities in medical computing. In addition to medical school responsibilities, activities include participation in a vigorous mathematical sciences Ph.D. program. Available immediately.

Requirements: teaching and research experience preferably in computer science in a medical environment or in computer applications to medicine, with Ph.D. and/or M.D. degree, or both.

Excellent computation facilities available in the closely related Medical Computing Resources Center, including a dual-KL processor DECSYSTEM-10/1099 running the Symmetric Multi-Processing (SMP) operating system, a TANDEM-16 high-availability dual-processor system, PDP-11 computers, microprocessors and access to an IBM 370/155. Rank and salary commensurate with qualifications. Send curriculum vitae and names of three references to:

**David J. Mishevich, M.D., Ph.D.  
Chairperson, Department of Medical  
Computer Science  
Southwestern Medical School  
The University of Texas Health Science Center  
at Dallas  
5323 Harry Hines Boulevard  
Dallas, Texas 75235**

*An Affirmative Action/Equal Opportunity Employer*

**MEMBRANE BIOCHEMIST.** A position as a research associate for a Ph.D. in biochemistry or enzymology is available. Applicant must have 1 to 3 years of postdoctoral experience in one or more of the following areas: (i) membrane protein and/or enzyme isolation and characterization, (ii) tissue culture techniques, or (iii) nucleic acid isolation and cell-free translation. Excellent opportunity to extend a research program dealing with the mechanism of action of the integral membrane-bound thyroid peroxidase and control of the biosynthesis of thyroid hormones. Send curriculum vitae and list of references by 15 April 1980 to: **Dr. Farah Maloof, Thyroid Unit, Massachusetts General Hospital, Boston, Mass. 02114. An Equal Opportunity Employer.**

**NEUROANATOMIST**—With some experience beyond postdoctoral level, to join cardiovascular neurobiology research group. Training/experience in neurotransmitter immunocytochemistry essential; some experience in TEM and cardiovascular neurophysiology desirable. Send curriculum vitae to: **C. M. Ferrario, M.D., Head, Cardiovascular Neurobiology Section, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106. An Equal Opportunity 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.

# RESEARCH SCIENTISTS

THE AMOCO RESEARCH CENTER currently requires the immediate staffing of Scientists with Ph.D degrees and Postdoctoral experience in the following fields of specialization:

**Molecular Biology  
Applied Microbial Genetics  
Recombinant DNA  
Enzymology**

**Membrane Biochemistry  
Photobiochemistry  
Plant Cell Culture  
Algology**

The above positions involve research toward industrial applications of new biology. Candidates should have recent Ph.D degrees or up to 2 years of Postdoctoral experience.

In addition to professional growth and outstanding opportunities, the AMOCO RESEARCH CENTER offers superior working conditions and is located in a highly desirable community just west of Chicago. An excellent compensation package and a comprehensive benefit package is provided. Please send a resume with a detailed qualifying letter in confidence to:

**Professional Recruiting Coordinator**

**AMOCO RESEARCH CENTER**

P.O. Box 400

Naperville, Illinois 60540



An Equal Opportunity Employer M/F/H

## CHIEF, EPILEPSY SECTION

The National Institute of Neurological and Communicative Disorders and Stroke (NINCDS), National Institutes of Health, Public Health Service, invites nominations and applications for the career position of Chief, Epilepsy Section, GS-14 or GS-15, Intramural Research Program (IRP). The Epilepsy Section serves as the NINCDS intramural focal point for investigator-initiated research on the etiology, pathogenesis, prevention, diagnosis and therapy of the convulsive and related disorders. The Chief is responsible for planning, administering, evaluating, and implementing a research program in these areas.

Applicants must have (1) advanced training in research, and (2) skills directly relevant to epilepsy. It is anticipated that the position will be filled through the U.S. Office of Personnel Management by career appointment at the GS-14 or GS-15 grade level (salary range between \$34,713 and \$50,100 per annum). The position may also be filled through the Public Health Service Commissioned Corps.

Letters of interest, SF-171 (Personal Qualifications Statement), curriculum vitae, bibliography, and evaluations of performance speaking to the qualifications of the position should be sent by April 4, 1980, to: Bonnie R. Kalberer, Personnel Officer, NATIONAL INSTITUTE OF NEUROLOGICAL AND COMMUNICATIVE DISORDERS AND STROKE, 9000 Rockville Pike, Building 31, Room 8A25, Bethesda, MD 20205. Equal Opportunity Employer.

**NATIONAL INSTITUTES  
OF HEALTH**

## Biochemist, PhD

Warner-Lambert is a diversified Fortune 100 multi-billion dollar company, a substantial marketer of ethical drugs and over-the-counter health care and consumer products, and a LEADER in several important diagnostic categories, including calibrated controls, blood gas controls and coagulation instrumentation.

This position, in our General Diagnostics Research Department, offers high visibility and an excellent opportunity to engage in research activities leading to development of new quality control products and reagents for the Hematology Laboratory.

In addition to an appropriate degree, we require 2 to 3 years post-doctoral research in Hematology and/or Protein Chemistry.

We provide a competitive salary, comprehensive benefits, and excellent potential for professional recognition and growth. Interested and qualified candidates, forward résumé with salary history in confidence to Mr. R. Benthien, General Diagnostics Personnel



**Warner-Lambert**

COMPANY

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Equal Opportunity in Action M/F

## POSITIONS OPEN

**MOLECULAR BIOLOGIST/GENETICIST** with at least 2 years of postdoctoral experience and experience in teaching medical microbiology. Assistant professor level, expected to establish independent research program and direct graduate students. Teaching includes participation in medical microbiology course and development of alternate year one-semester graduate course in molecular biology/genetics. Salary competitive. Available 1 September 1980. Send curriculum vitae and names of three references to: **Dr. Arthur K. Szaz, Department of Microbiology, Georgetown University Schools of Medicine and Dentistry, Washington, D.C. 20007.**

*An Equal Opportunity/Affirmative Action Employer*

### UNIVERSITY OF COLORADO—BOULDER

The Department of Psychology at University of Colorado—Boulder is seeking applicants for a faculty position we hope to have funded for the 1980-1981 academic year. The position description is as follows: **NEUROBIOLOGY**—A position in biological psychology for someone in developmental neurogenetics with strong research interests and training in the neurosciences and behavioral genetics.

For this position, we are seeking applicants with outstanding records or promise in teaching and research. Preference will be given to applicants at the assistant professor level, although all applications will be carefully considered. Salary will be competitive.

Applicants should send complete curriculum vitae, including a statement of research and training interests, and four letters of recommendation to: **Dr. James R. Wilson, Department of Psychology, Campus Box 345, University of Colorado, Boulder, Colorado 80309.** The deadline for receipt of applications is 31 March 1980.

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

**NEUROPHYSIOLOGIST.** Research associate position available 1 July 1980 at Stanford Medical School, for mammalian neurophysiologist, to join ongoing studies on the physiology of CNS axons. Send curriculum vitae, reprints, and three letters of reference to: **Stephen G. Waxman, M.D., Ph.D., Professor and Chief, Stanford Neurological Unit (127), VA Medical Center, 3801 Miranda Avenue, Palo Alto, Calif. 94304, An Equal Opportunity/Affirmative Action Employer.**

### PHARMACOKINETICS AND DRUG METABOLISM

EG & G Mason Research Institute (MRI), a leading contract research laboratory, is seeking a Ph.D. in pharmacology or related sciences to work as a staff scientist in the Department of Reproductive Endocrinology and Contraception. The successful candidate would be responsible for designing and conducting studies in tissue distribution, metabolism, bioavailability, and pharmacokinetics of potential contraceptive drugs. Experience in model building and tracer studies is essential. Send résumé, references, salary history, and availability to: **Personnel Manager, EG & G Mason Research Institute, 57 Union Street, Worcester, Mass. 01608.**

*EG & G MRI is an Equal Opportunity Employer*

### PHYSICIST

Vacancy exists in fully affiliated suburban Detroit-area medical center for a research physicist with collateral administrative and clinical responsibilities. A B.S. degree in physics and relevant experience or an advanced degree is required. A nuclear physics/medicine background plus an advanced degree are preferred. Entrance salary will be commensurate with the education and experience of the selectee and includes a liberal benefits package. Interested applicants should submit a Personnel Qualifications Statement (SF-171) or detailed résumé with minimum salary requirements to:

**VA Medical Center  
Personnel Service (05)  
Southfield and Outer Drive  
Allen Park, Mich. 48101**  
or telephone: 313-562-6000, extension 676.  
U.S. citizenship is required.  
*An Equal Opportunity Employer*

## POSITIONS OPEN

### PHARMACOLOGIST

The University of South Dakota School of Medicine has a 2-year nontenure-track instructorship available in the Section on Pharmacology. This faculty position requires an individual motivated to enhance their teaching and research skills in a growing program in pharmacology. The School of Medicine will graduate its fourth class in 1980. The Graduate School offers M.A. and Ph.D. degrees in the biomedical sciences.

Candidates must have the Ph.D. degree, with postdoctoral experience preferable, and be capable of teaching medical students in areas outside their own research interest. Research funds, ample laboratory space, and instrumentation are available.

Interested persons should send their curriculum vitae and the names of three references to: **Michael A. Gordon, Ph.D., Section on Pharmacology, The University of South Dakota School of Medicine, Vermillion, S.D. 57069.** Closing date 30 April 1980. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOW** to study structural dynamics of myosin and actin in solution, in gels, and in contractile cells. Salary: \$14,000 to \$16,000. Knowledge of protein chemistry required. Opportunity to learn photon correlation spectroscopy. Send résumé to: **Dr. F. D. Carlson, Department of Biophysics, The Johns Hopkins University, Baltimore, Maryland 21218.** *Equal Opportunity Employer, M/F.*

**POSTDOCTORAL FELLOW** required to work on research on the pineal gland. Experience in work with gas chromatography and mass spectrometry an asset. Apply in writing to: **Dr. W. Snedden, Division of Basic Sciences, Memorial University of Newfoundland, St. John's, Newfoundland, Canada A1B 3V6.**

**POSTDOCTORAL POSITIONS.** Studies of acetylcholinesterase and receptor. Preparation of substrates and inhibitors, kinetics of hydrolysis and inhibition, labeling of active site and receptor. Salary: \$13,000. Send résumé and recommendations to: **Professor Saul G. Cohen, Department of Chemistry, Brandeis University, Waltham, Mass. 02254.** *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION IN IMMUNOLOGY.** Research involves study of immunologic aspects of multiple sclerosis and experimental allergic encephalitis. Recent Ph.D. in immunology preferred. Write: **Lynn E. Spittler, M.D., Children's Hospital, 3700 California Street, San Francisco, California 94119.**

**POSTDOCTORAL POSITIONS** available now. First, for investigating sporulation gene expression in bacilli. Second, for investigating gene expression in the dsRNA-associated yeast killer system. Protein isolation *in vitro* translation, immunochemical analysis. A strong background in biochemistry required; experience in translation systems desirable. Send curriculum vitae and the names of three references to: **Donald J. Tipper, Department of Microbiology, UNIVERSITY OF MASSACHUSETTS MEDICAL CENTER, 55 Lake Avenue North, Worcester, Mass. 01605.** *An Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITION/RESEARCH ASSOCIATE** available in May 1980 for biophysical investigation of transfer RNA structure by NMR spectrometry. Background in NMR spectrometry and biophysics is important; 270, 300, and 360 MHz instruments will be readily available. Salary: \$12,500 to \$15,500, dependent on experience; 3-year tenure possible. Send résumé and names of three references to: **Dr. Paul F. Agris, Division of Biological Sciences, 110 Tucker Hall, University of Missouri, Columbia, Mo. 65211.**

**POSTDOCTORAL POSITIONS** in bioanalytical and environmental chemistry. Research involves development of new methodology: (i) for sequencing proteins and neuropeptides at the picomole level, and (ii) for analysis of toxic substances in industrial wastes. Both projects utilize positive and negative CIMS plus CID techniques on a new triple quadrupole mass spectrometer. Apply to: **Professor Donald F. Hunt, Department of Chemistry, University of Virginia, Charlottesville, Va. 22901.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

The Department of Neurosciences, School of Medicine, University of California, San Diego, is seeking qualified candidates (Ph.D. in biochemistry) for **TWO POSTDOCTORAL POSITIONS** (postgraduate researcher) to work in a laboratory of human biochemical genetics, available on or before 1 July 1980. Positions require background in: (i) enzymology and protein chemistry, or (ii) nucleic acid biochemistry. Salary is competitive nationally. Send curriculum vitae and names of three referees to: **John S. O'Brien, M.D., Department of Neurosciences, M-008, University of California, San Diego, La Jolla, Calif. 92093.** *The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITIONS** (two) in lipoprotein and apoprotein synthesis and metabolism available immediately. Studies include intestinal synthesis and transport of lipoproteins in lymph duct cannulated rats and in isolated intestinal cells. Experience in lipoprotein separation and analysis required. Salary: \$14,000 up, depending on experience. Send curriculum vitae and names of three references to: **Dr. George V. Vahouny, Department of Biochemistry, The George Washington University School of Medicine and Health Sciences, 2300 Eye Street, NW, Washington, D.C. 20037.** *The George Washington University is an Equal Opportunity/Affirmative Action Employer.*

**THREE POSTDOCTORAL POSITIONS** are available immediately. The focus of the research is the movement of nutrients through the soil to plant to animal food chain. The responsibilities of the three positions are: (i) identification of the forms of zinc in soils and the effects of form on uptake by plants; (ii) study of factors that affect bioavailability of zinc to animals, with emphasis on mineral interactions; (iii) development of techniques for using stable isotopes as tracers in nutrition studies. Appointments are for 1 year and can be renewed by mutual agreement. Salary: \$11,000 to \$12,000 depending upon experience. Interested persons should send a résumé and two letters of reference to: **Dr. Darrell Van Campen, U.S. Plant, Soil and Nutrition Laboratory, Tower Road, Cornell University, Ithaca, N.Y. 14853.** *An Equal Opportunity Employer.*

**POSTDOCTORAL POSITION** available 1 July 1980 for Ph.D./M.D. interested in the study of drug transport in isolated renal plasma membranes and reconstituted systems. Salary range equivalent to NIH postdoctoral stipend range. Please send curriculum vitae and three letters of recommendation to: **Richard D. Mamelok, M.D., Division of Clinical Pharmacology, Room S155, Stanford University Medical Center, Stanford, Calif. 94305.**

**POSTDOCTORAL POSITION** to study evolution via DNA sequencing. Contact: **Dr. David Gillespie, Director of Basic Research, H. L. Orlovitz Cancer Institute, Mail Stop Number 412, Hahnemann Medical College and Hospital, 230 North Broad Street, Philadelphia, Pa. 19102.**

**POSTDOCTORAL POSITION** in mammalian developmental neurogenetics. Available immediately to study gene action and CNS development using mutant mice and experimental chimeras. Background in neuroanatomy and/or developmental biology desirable. Send curriculum vitae and names of three references to: **Richard J. Mullen, Ph.D., Department of Anatomy, University of Utah, College of Medicine, Salt Lake City, Utah 84132.**

**POSTDOCTORAL POSITION/RESEARCH ASSOCIATE** available starting May 1980 for research in molecular population genetics in man involving DNA polymorphisms with restriction enzymes, and so forth. Experience in DNA manipulation science. Salary commensurate with experience. Send curriculum vitae and references to: **Dr. L. Cavalli-Sforza, Genetics Department, Stanford University Medical Center, Stanford, Calif. 94305.** *Affirmative Action/Equal Opportunity Employer.*

**POSTDOCTORAL POSITIONS IN VIROLOGY AND VIRAL ONCOLOGY.** Research topics include immunology and expression of mouse mammary tumor viruses, transformation by SV40, herpesviruses and human cancer, rotaviruses, reovirus genetics, hepatitis, and environmental virology. Positions available now and in the fall. Submit résumé and names of three references to: **Dr. Janet S. Butel, Department of Virology, Baylor College of Medicine, Houston, Texas 77030.**





UNIVERSITY OF RIYADH  
FACULTY OF AGRICULTURE

The Faculty of Agriculture of Riyadh University in the Kingdom of Saudi Arabia announces the following teaching staff vacancies for the academic year 1400/1401 H. (1980/1981):

**ASSOCIATE OR ASSISTANT PROFESSORS**

Dairy and Food Chemistry  
Meat and Fish Technology  
Soil Mineralogy  
Soil Microbiology  
Irrigation and Drainage Engineering  
Farm Machinery

**LECTURERS**

Range Management  
Range Floriculture or Landscaping  
Forestry and Wood Technology

Candidates should be competent in speaking, reading and writing the Arabic language. Arabic is the medium of instruction.

Interested candidates should send copies of qualifications and experience to:

The Dean  
Faculty of Agriculture  
University of Riyadh  
P. O. Box 2460  
Riyadh, Kingdom of Saudi Arabia

## San Francisco Peninsula Opportunities

SmithKline Diagnostics Division is a technological leader in the development and manufacture of high-quality chemistry reagents and medical diagnostics products. Due to continued growth, the following positions are immediately available in:

## RESEARCH & DEVELOPMENT

### Director of Biochemistry

Responsible for the development and direction of chemical research programs for new products, maintain competitiveness of existing products, and guide staff scientists in all R&D activities.

### Manager, Biochemical Applications

Head the group responsible for instrument applications of SKI chemical reagents, provide technical evaluations in accordance with marketing priorities.

Qualified and interested individuals are invited to respond to: SKI Employment, 880 West Maude Avenue, Mail Stop B-50, Building 2, Sunnyvale, CA 94086. We are an equal opportunity employer, m/f.

### SmithKline Instruments, Inc.

Subsidiary of SmithKline Corporation



The Institute of Meteorology and Arid Lands Studies within King Abdulaziz University in Jeddah, Saudi Arabia, announces the following vacancies in these departments:

**DEPARTMENT OF  
ENVIRONMENTAL STUDIES**

Air Pollution Scientists  
Water Pollution Scientists  
(Bacteriology)

Soil Pollution and Conservation  
Environmental Scientists

**DEPARTMENT OF  
HYDROLOGY AND WATER  
RESOURCES MANAGEMENT**

Hydrologists  
Water Resources Engineer  
Sanitary Engineer  
Chemical Engineer (Desalination)

**DEPARTMENT OF  
ARID LANDS STUDIES**

Human Ecologist  
Argonomist

**DEPARTMENT OF  
METEOROLOGY**

Synoptic Meteorologists  
Dynamic Meteorologists  
Instrumentation  
Meteorologists  
Climatologists  
Solar Energy Scientists

Pay scales are attractive and furnished accommodation is provided. Two months annual leave for the candidate and family is given with round trip air travel tickets (4 maximum) between Jeddah and candidate's home town.

Holders of Ph.D., M.S. and B.S. degrees and technical diplomas are requested to send their applications, along with copies of degrees or diplomas, at their earliest convenience to:

Dr. Fawaz Alamy, Dean  
Institute of Meteorology and Arid Lands Studies  
King Abdulaziz University  
Post Office Box 1540  
Jeddah, Saudi Arabia  
Telex No. 401141 KAUNI SJ

Successful applicants will be interviewed and recommended for suitable posts at the Institute.



### Assistant Professor Cell Biology, Developmental Biology

The University of Zurich (Switzerland), invites applications for an assistant professorship in cell and/or developmental biology at the Zoological Institute. Candidates must have several years of postdoctoral training, during which they have demonstrated independent research capabilities. They are expected to continue their active research and to build up an independent research group. Although they should be able to cooperate with the existing research groups in developmental biology and genetics, the specific area of research is open. Teaching includes 2-4 hours of lecture per week and supervising graduate students.

Applicants are invited to submit by 30 April 1980 a curriculum vitae including teaching experience, publications and the name of three referees to the: Dekan der Philosophischen Fakultät II, Universität Zürich, Rämistr. 71, CH-8006 Zürich, Switzerland.

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** available in a large immunology group. Opportunities available for study with individual faculty members in areas of immunochemistry, cellular immunology, bacterial immunology, clinical immunology, immunopathology, allergy, autoimmunity, tumor immunology, immunogenetics, inflammation, and host defense mechanisms. For information contact: **Dr. Ronald Harbeck, Department of Medicine, National Jewish Hospital, 3800 East Colfax Avenue, Denver, Colorado 80206.**

**POSTDOCTORAL OR RESEARCH ASSOCIATE (FACULTY) POSITION** available for biochemist with a background in lipid and protein biochemistry, lipoprotein metabolism, and separation of subcellular organelles. The position involves the isolation and characterization of lipoprotein particles of plasma and from livers. These biochemical studies will be correlated with morphological (light and electron microscopy) and immunocytological studies on the pathogenesis of fatty livers. Position is available immediately for a minimum of 2 years. Salary negotiable. Please send curriculum vitae to: **Dr. Phyllis M. Novikoff, Pathology Department, ALBERT EINSTEIN COLLEGE OF MEDICINE, 1300 Morris Park Avenue, Bronx, N.Y. 10461. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE** position available for an individual with expertise in biochemistry interested in research and training in the area of molecular endocrinology to start June 1980 or later. Existing studies include isolation and characterization of the estrogen receptor, modification of the receptor structure and function, ligand-binding kinetics and chromatin-protein chemistry. Stipends: \$13,000 to \$15,000 per annum, depending upon qualifications. Send curriculum vitae and names of three references to: **Dr. A. C. Notides, Department of Pharmacology, University of Rochester School of Medicine and Dentistry, 601 Elmwood Avenue, Rochester, New York 14642.**

### POSTDOCTORAL RESEARCH PATHOLOGIST

Position now available for M.D., D.V.M., or Ph.D. to work in chemical carcinogenesis. Send résumé and references to:

**Dr. B. Teicher**  
The Eppley Institute for Research in Cancer  
University of Nebraska Medical Center  
42nd and Dewey Avenue  
Omaha, Nebraska 68105  
*Equal Opportunity/Affirmative Action Employer, M/F/H*

**POSTGRADUATE RESEARCH BIOCHEMIST**—Ph.D. in biochemistry or closely related area preferred. Must have strong background in fundamental chemistry and experience with lipid metabolism and lipid analysis. Research: to study physical properties of sterols and phospholipids in nonmolecular films. Available 1 April 1980. Salary: \$14,500 to \$15,000, depending on qualifications and experience. Contact: **M. A. Williams, Department of Nutritional Sciences, 119 Morgan Hall, University of California, Berkeley, Calif. 94720.**

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**RESEARCH ASSOCIATE IN POLYMER SCIENCE** to supervise extensively equipped polymer laboratories in the Institute of Materials Science (IMS), assist students in a broad range of experimental procedures, and carry out research assignments, including industrial liaison programs. Qualifications: intimate familiarity with operation of analytical, rheological, and so forth, research equipment, and previous research experience; Ph.D. or equivalent experience. Salary depends on qualifications. Apply before 30 March 1980 to: **L. V. Azaroff, Director of IMS, University of Connecticut, Storrs, Conn. 06268. An Equal Opportunity Employer.**

**RESEARCH ASSOCIATE IN X-RAY DIFFRACTION** to supervise large, well-equipped laboratory in the Institute of Materials Science (IMS), assist students in a broad range of experimental procedures, and carry on collaborative research on liquid-crystal polymers. Qualifications: good knowledge of x-ray diffraction theory and laboratory methods; Ph.D. or equivalent experience. Salary depends on qualifications. Apply before 30 March 1980 to: **L. V. Azaroff, Director of IMS, University of Connecticut, Storrs, Conn. 06268. An Equal Opportunity Employer.**

## POSITIONS OPEN

### POSTDOCTORAL POSITION IN IMMUNOLOGY

Position available for Ph.D. or M.D. with outstanding qualifications, who is interested in studying the cell biology of mononuclear phagocytes. Emphasis will be placed on macrophage-tumor cell interactions and on the regulation of macrophage differentiation. Previous experience with macrophages, cell biology, or biochemistry desirable. Opportunity offers advanced training in a progressive laboratory in an attractive university setting. Please send curriculum vitae and the names of three referees to:

**D. O. Adams, M.D., Ph.D.**  
Departments of Pathology and Immunology  
Duke University Medical Center  
Durham, N.C. 27710  
*Duke University is an Equal Opportunity Employer.*

**POSTDOCTORAL RESEARCH—FISHERIES.** A position is available in mathematical modeling and bioeconomic analysis of California Dungeness crab and salmon populations. Background in fisheries, statistics, and population modeling are required. Knowledge of crab or salmon ecology, fishery economics, computer programming, and field experience are desired. Please send curriculum vitae and names of three references to: **Louis W. Botsford, Bodega Marine Laboratory, P.O. Box 247, Bodega Bay, California 94923. The University of California is an Affirmative Action Employer.**

**RESEARCH ASSOCIATE (biochemistry and genetics).** Position available at the postdoctoral level for research relating to the biochemical aspects of genetic hypertension in rats and mice. Projects in progress relate to the biochemical genetics of the kallikrein-kinin system, prostaglandin synthesis and metabolism, steroid receptors, and the biochemistry of the smooth muscle plasma membrane. Position available 1 July or thereafter; salary starting at \$13,380 or higher depending on experience. Send curriculum vitae to: **Dr. John Rapp, Department of Medicine, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.**

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Position available in Thrombosis Research Center for **RESEARCH ASSOCIATE** on nonenure-track. Expertise in platelet biochemistry. Studies will include exocytosis and endocytosis of acid hydrolases and other glycoproteins in platelets. Candidates should have experience in cellular protein and membrane biochemistry. Please send résumé and reference letters to: **Dr. Holm Holmsen, Thrombosis Research Center, Temple University Health Science Center, 3400 North Broad Street, Philadelphia, Pa. 19140. Equal Opportunity/Affirmative Action Employer.**

### RESEARCH BRANCH DIRECTOR U.S. FOOD AND DRUG ADMINISTRATION

The Food and Drug Administration is recruiting a director for the Field Research Branch, which is concerned primarily with the activities of 20 FDA field laboratories. The position will be available in August 1980.

The branch director is responsible for the overall management and coordination of research activities in FDA field laboratories, and the activities of National Experts and Research Centers. Responsibilities also include development of laboratory technical policies, quality-control procedures, methods to be used in the analysis of samples, and the procurement and utilization of field equipment and facilities.

Potential candidates should have a strong research background with recent research experience documented by publications in refereed scientific journals. They should have managerial experience and be actively involved in evaluating and executing research plans and activities.

The position will have permanent Civil Service status. Salary range: \$34,713 to \$45,126 (GS-14). Candidates will be evaluated on the basis of their professional training, experience, and demonstrated research accomplishments. U.S. citizenship is required.

Applicants should submit extensive curriculum vitae or résumé, including a detailed list of publications for the past 5 years, and a Personal Qualifications Statement, SF-171 (obtainable through your local U.S. Office of Personnel Management), to: **Kenneth Stevenson, EDRO 12-75, HFO-600, 5600 Fishers Lane, Rockville, Maryland 20857.** Applications will not be accepted if received after 1 May 1980. For further information, telephone: **301-443-3320.**

## POSITIONS OPEN

### PROJECT MANAGER

The Educational Technology Center at the University of California, Irvine, is seeking a project manager for a project that will produce computer-based learning material for junior high students. The project is supported by the National Science Foundation. The subject areas are science and mathematics.

The project manager will be responsible for the day-to-day management of the project activities. The following background is considered desirable, although it is recognized that most individuals will not be expert in all these areas:

- Science education,
- Experience with junior high students,
- Mathematics education,
- Computer-based learning,
- Computer programming,
- Management of computer programming, and
- Computer graphics.

Approximate salary: \$20,000.

Project manager must be qualified for a research appointment. *An Affirmative Action Employer.*

Send résumé and names of references to:

**Alfred Bork**  
Department of Physics  
University of California  
Irvine, California 92717  
Telephone: 714-833-6911

**RESEARCH ASSOCIATE.** The Department of Anesthesiology at the University of Tennessee Center for the Health Sciences (UTCHS) is seeking an individual with a Ph.D. in neurophysiology or pharmacology with demonstrated experience (bibliography and references) in research. Prefer doctorate in neuropharmacology with experience in opiate research. Salary: \$12,000 annually. Contact: **Barbara Hazelrigg or Merle Becker, UTCHS, Department of Anesthesiology, 800 Madison Avenue, Memphis, Tenn. 38163. Telephone: 901-528-5892.**

*UTCHS is an Affirmative Action/Title IX, Section 504 Employer.*

### RESEARCH PHYSIOLOGIST

Position available immediately for experienced research physiologist to join a dynamic, multidisciplinary group. Applicant will be required to direct the physiological aspects of an active program on circulating pancreatic proteolytic enzymes in health and disease. Must have successfully completed a full 4-year course of study in an accredited college or university, leading to a bachelor's or higher degree with major study in physiology or biochemistry. In addition, candidates must have had either professional experience or graduate education (or an equivalent combination of both). Successful applicant should show evidence of creative and productive research as demonstrated by publications. Annual salary: \$20,611. *The U.S. Government is an Equal Opportunity Employer.* Send curriculum vitae to: **Dr. Corey Largman, Enzymology Research Laboratory, Martinez VA Medical Center, 150 Muir Road, Martinez, Calif. 94553.**

### RESEARCH SCIENTIST

The University of Missouri Research Reactor Facility (MURR) has a new position for a research scientist to join the Radiation Applications/Radiation Damage Effects Program. This position provides the opportunity to be associated with a growing radiation effects program at the highest powered, highest neutron flux steady-state reactor at a U.S. university.

A doctoral degree with experience in radiation damage and materials science in metals is strongly preferred. Some background in radiation damage in semiconductors and other materials is also desirable.

For additional information contact:

**Dr. Jon M. Meese**  
Research Reactor Facility  
University of Missouri  
Columbia, Missouri 65211

To apply, send résumés to:

**Personnel Services**  
University of Missouri  
309 Hitt Street  
Columbia, Missouri 65211

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## MEDICAL DIRECTOR

Monsanto Company's newly reorganized Biomed Program has an important opening for a top-level Medical Director. In support of the Program Director, this individual will be responsible for worldwide clinical trials of candidate drugs targeted for the reduction or prevention of major human diseases. He/she will serve as our chief scientific officer in this area and, as such, would have vital inputs into its direction and development. Prerequisites include a medical degree from a recognized institution and at least five years experience in the field of new drug introduction.

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An international symposium will bring together scientists from laboratories around the world to discuss and integrate research in the areas of biological N<sub>2</sub> fixation, biological denitrification, and utilization of fixed nitrogen by plants. Emphasis will be on symbiotic systems with application to enhancement of agricultural productivity. Research areas to be discussed include:

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- Hydrogen uptake and energy efficiency,
- Stress tolerant *Rhizobium*,
- Evaluating superior symbiotic N<sub>2</sub> fixation,
- Integrating photosynthesis and N<sub>2</sub> fixation,
- Applications of nonlegume, N<sub>2</sub> fixing systems, and
- Conservation of fixed nitrogen: denitrification; nitrate assimilation by bacteria and plants.

The symposium will be held at Granlibakken Resort, Lake Tahoe, California, 29 June to 2 July 1980 (limited to 150).

For information on scientific program contact:

**J. M. Lyons or D. W. Rains**  
Plant Growth Laboratory  
University of California  
Davis, California 95616

For information on accommodations and arrangements contact:

**Suzanne Epperly**  
Plant Growth Laboratory  
University of California  
Davis, California 95616

Supported by a grant to J. M. Lyons, College of Agricultural and Environmental Sciences, University of California, Davis, by the National Science Foundation, Office of Problem Analysis and Directorate of Engineering and Applied Science.

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## POSITIONS OPEN

### POSTDOCTORAL RESEARCH ASSOCIATE QUANTITATIVE GENETICS

Experience in pedigree and/or path analysis of human multifactorial traits or related areas required. Available immediately. Salary: \$13,000 to \$15,000. Send résumé and three reference letters to: **R. M. Siervogel, Ph.D., Fels Research Institute, Wright State University School of Medicine, Yellow Springs, Ohio 45387.**

### Microbiology and Immunology

## RESEARCH ASSOCIATES

Two research positions are available for recent Ph.D. graduates with experience in cellular immunology and/or viral oncology to study: (i) thymic influences on the development of T cells specifically for antigen, and (ii) lymphocyte differentiation and susceptibility to oncornaviruses. Both projects are well funded and permit opportunity for interaction with students and other scientists, in a medical/graduate school environment. Respond to:

**Box 64, SCIENCE**

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### TECHNOLOGY AND PUBLIC POLICY

The Department of Engineering and Public Policy of Carnegie Institute of Technology, the Social Science Department of the College of Humanities and Social Science, and the School of Urban and Public Affairs, Carnegie-Mellon University, have one or more joint faculty openings: (i) for applied social scientists interested in doing collaborative policy research with engineers, or (ii) for engineers interested in doing collaborative policy research with social scientists. Problem areas of interest include automation and industrial productivity, social impacts of computers and telecommunications, product liability and safety, electric power load management, retrospective technology assessment, arms control and disarmament, and energy and environmental systems. Desirable areas of skill include decision analysis, optimization techniques, organizational analysis, and regulatory process and law. Send résumé with list of publications to:

**Dr. Indira Nair  
Department of Engineering and Public Policy  
Carnegie-Mellon University  
Pittsburgh, Pa. 15213**

**VIRAL GENETICIST**—Applications are invited for the position of viral geneticist. The applicant should have an M.D. or Ph.D. degree from an accredited university and a minimum of 10 years of experience. Demonstrated leadership (publications) in the field of viral genetics is required with an emphasis on the genetics of respiratory syncytial virus and expertise with other viral systems as well. Salary to be determined by the candidate's qualifications.

**VIROLOGISTS**—Staff positions for virologists available 1 July. The successful applicant should have a strong background in the genetics and biochemistry of negative-strand viruses. We are seeking individuals with demonstrable research contributions with emphasis in those areas of dealing with defective particles, and persistent infections. Salary is open. Closing date: 31 March 1980.

Please send curriculum vitae to:

**Director  
The Christ Hospital Institute of Medical Research  
2141 Auburn Avenue  
Cincinnati, Ohio 45219**

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### VISITING SCIENTIST POSITION

**The Joint Institute for the Study of the Atmosphere and Ocean (JISAO)  
University of Washington**

**VISITING SCIENTIST** with background in physical oceanography and interests in dynamical and/or geochemical aspects of climate variability including large-scale air-sea interaction. Starting date: May to December 1980. Term of appointment: 1 year, renewable for a second year, subject to the approval of a council. Closing date: 15 April 1980. Send curriculum vitae and a brief research prospectus to: **John M. Wallace, Director, JISAO, c/o Department of Atmospheric Sciences AK-40, University of Washington, Seattle, Wash. 98195.**

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## POSITIONS OPEN

**RESEARCH ASSOCIATE** position at the Aldridge Laboratory of Applied Geophysics, Columbia University, is available immediately. The position involves research in the numerical modeling of geodynamics problems (including elastodynamics, hydrodynamics, seismic inversion, and geophysical exploration). The applicant must have a Ph.D. in applied mathematics with a good physics background, or in geophysics or in engineering mechanics. Some experience with finite element methods is desirable and strong scientific computer programming skill is essential. Facilities at the Aldridge Laboratory include a dedicated PRIME 750 computer.

Send detailed résumé to:

**Professor John T. Kuo  
Aldridge Laboratory of Applied Geophysics  
Henry Krumb School of Mines  
828 S.W. Mudd Building  
Columbia University  
New York, N.Y. 10027**

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## COURSE

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## TRAINING PROGRAM

### PREDOCTORAL AND POSTDOCTORAL TRAINING IN NEUROBIOLOGY AND MEMBRANE BIOPHYSICS UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The Department of Physiology and Biophysics emphasizes cellular and molecular approaches to biological problems and offers training in neurobiology, developmental neurobiology, and membrane biophysics. Traineeships, fellowships, and assistantships are available. For details write: **Dr. S. J. Socolar, Department of Physiology and Biophysics, R430, University of Miami School of Medicine, Box 016430, Miami, Fla 33101. An Equal Opportunity/Affirmative Action Employer.**

## FELLOWSHIPS

### IMPERIAL CANCER RESEARCH FUND RESEARCH FELLOWSHIP

Postdoctoral fellow required to work on cellular and molecular aspects of the growth regulatory effect of interferon as observed with cells in culture.

The appointment in the Epithelial Cell Growth Regulation and Membrane Physiology Laboratory will be for 3 years. Salary range: £6228 to £7672.

For further information, telephone: **Dr. Joyce Taylor-Papadimitriou at 01:242:0200, extension 361/362.** Applications with curriculum vitae and the names of two referees should be sent to: **Secretary, Imperial Cancer Research Fund, Lincoln's Inn Fields, London WC2, England, quoting reference 92/80.**

**POSTDOCTORAL FELLOWSHIPS** at Duke University Center for the Study of Aging and Human Development in adult development and/or aging. Research training in most biomedical, behavioral, and social science fields. Reply, with curriculum vitae, to: **Dr. Ilene C. Siegler, Box 3003, Duke Medical Center, Durham, N.C. 27710.** Completed applications accepted 1 April to 1 June 1980. *An Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL POSITION** available immediately in leukocyte membrane immunology. The research includes (i) identification of leukocyte subpopulations and (ii) characterization of leukemia-associated surface markers. Previous training in cellular immunology or membrane biochemistry is desirable. Send curriculum vitae and three references to: **Dr. E. Rabbellino, Department of Medicine, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.**

## FELLOWSHIPS

**PREDOCTORAL AND POSTDOCTORAL FELLOWSHIPS IN BASIC MEDICAL SCIENCES.** A limited number of graduate fellowships (up to \$6,750 per year) and postdoctoral fellowships are available to qualified applicants with a science or medical background who wish to pursue an M.Sc., a Ph.D. program, or postdoctoral studies in the Basic Sciences Division of the Faculty of Medicine at Memorial University in Newfoundland. Research opportunities encompassing all basic science disciplines are available in the cardiovascular, endocrinology and metabolism, gastroenterology, human genetics, immunology, molecular biology, and neurosciences research groups. Application forms and further information may be obtained from:

**Dr. B. Sells  
Associate Dean, Basic Medical Sciences  
Faculty of Medicine  
Memorial University of Newfoundland  
St. John's, Newfoundland, Canada A1B 3V6**

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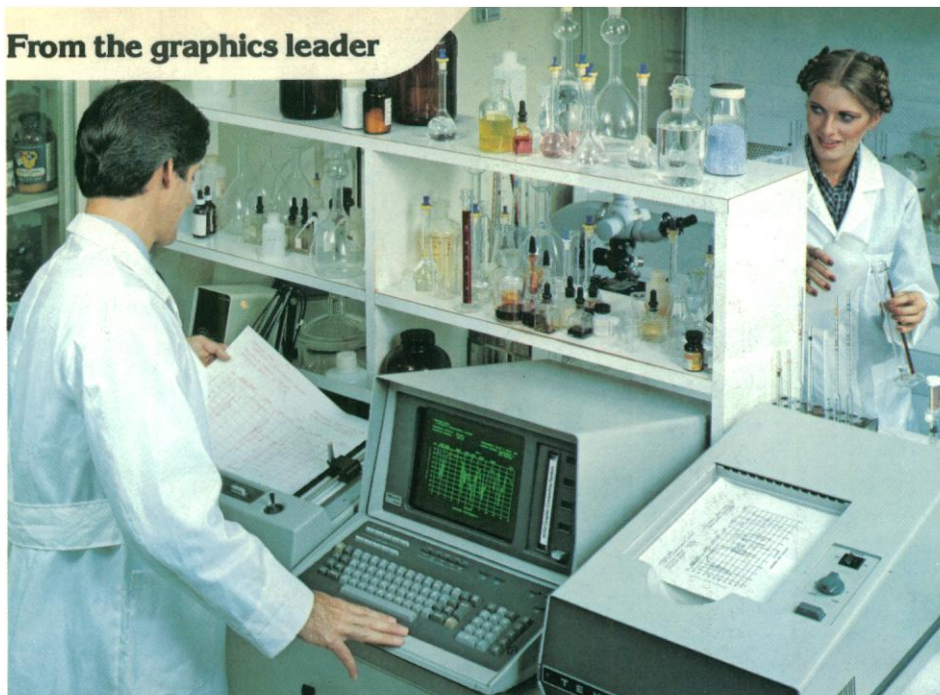
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