

75 percent of the total commercial catch (of the total Amazon Basin?) is based on flooded forests, but his calculations are not given. The estimate is suspect, yet it is the sort of figure likely to become numerical folklore, increasingly quoted without qualification. In any case, data of this type can only suggest possible effects of deforestation. Goulding's current studies may provide direct confirmation, and this book may inspire new studies.

In addition to the data on stomach contents that are the basis for his conclusions, Goulding includes introductory chapters on the hydrology and fish fauna of the Amazon and gives accounts of the natural history and illustrations of each species of fish and food plant studied. Since Goulding's only other reference to this research is a technical report to the Brazilian Instituto Nacional de Pesquisas de Amazônia, this book is the only report most specialists will see; therefore, it must also be judged technically.

While few of Goulding's statements on food habits are novel, many of the previous reports on the subject have been anecdotal or based on hearsay. His observations are the most thorough and well-documented on Amazonian fishes published to date—based on year-round samples of large numbers of many species, identification of species of fruit or seed eaten, determination of viability of digested seeds by planting, and deposition of voucher specimens of both fish and plants. This thoroughness makes the general absence of data even more frustrating. Some of the most intriguing and original observations are of the migrations of the large characins—spawning movements from tributaries into and slightly down the main river at the onset of the floods, and nonspawning movements (the piracema) into and up the main river at low water. The nature and possible evolutionary causes of these movements are discussed, but the reader is referred to the INPA report for the evidence. The data on temporal patterns of fruit-eating are summarized too thoroughly, and no data on fat levels, gonadal development, distribution of catch within seasons, or fruiting times are presented. The format of the book seems ample, with sparse tables and wide margins, to have allowed inclusion of additional data. There are numerous minor discrepancies between data in the tables and those in the text.

Mercifully, Goulding doesn't force his data into supporting competitive exclusion, niche specialization during periods of scarcity, or other traditional theoretic-

cal suppositions. He concludes that most species specialize during high water, when food is abundant; congeners often overlap greatly; many species overlap with respect to what little is eaten during low water. Occasionally, Goulding reverts to completely speculative, competitive-evolutionary explanations (for instance that the characins "prevent—or better, have prevented, in the evolution of feeding behaviors—[the catfish] from making serious inroads into their food supply between sunset and sunrise"; p. 187). Old habits die hard.

The conflict between the demands of scientific presentation and those of popular writing has separated books of travels and natural history from scientific works. Goulding mars the presentation of some important work by trying to make this book a little of each. Nevertheless, the Amazon remains very poorly known, and this book stimulates both in what it can and in what it cannot answer. The effects of Amazonian deforestation on aquatic ecosystems are important, and Goulding's plausible argument deserves attention and further study.

RICHARD J. HORWITZ

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## Vertebrate Physiology

**Epithelial Transport in the Lower Vertebrates.** Transports Epithéliaux chez les Vertébrés Inférieurs. Jean Maetz Symposium, Villefranche-sur-Mer, France, June 1978. B. LAHLOU, Ed. Cambridge University Press, New York, 1980. xiv, 366 pp., illus. \$55.

This volume is the proceedings of a memorial symposium to Jean Maetz. A distinguished group of investigators has contributed 29 papers, five of them in French, dealing primarily with the structure and function of fish gills. Thus the title is misleading, since amphibians receive minor treatment and reptiles none. The papers are grouped into four categories, morphology, transport, biochemistry, and endocrine regulation.

The heavy reliance of this treatise on the study of fish gills illustrates a curious propensity of certain schools of comparative physiology to study a preparation despite its unsuitability for rigorous testing of hypotheses. Bentley (p. 7) acknowledges this problem in an amusing fashion: "Gills appear to have been designed to provide the ultimate intellectual exercise for those who wish to study

epithelial membrane physiology." Everyone recognizes the importance of gills and the significance of understanding mechanisms of gill transport, but I would suggest that few basic principles of transport can be discovered in such complicated, heterogeneous structures. In any case, gills have been "fashionable" for some years now, and the work of Maetz and his followers is the best of the efforts devoted to this complex epithelial structure. I wish that a similar array of talent could be brought to bear on the study of elasmobranch, reptilian, and avian salt glands, which are virtually pure populations of specialized transport cells.

The present volume is, however, an excellent introduction to epithelial transport in fish and will be of interest to all physiologists who want to keep abreast of recent developments in the field. A wide variety of experimental approaches is utilized, and the papers are of high quality. I was especially interested in the work reported by Potts on the effect of low pH on gill potentials and sodium balance. This is a rather neglected phenomenon that has great practical significance in relation to acid pollution; development of nonlethal bioassays based on changes in gill sodium transport rates is possible. Hughes's paper on the functional morphology of gills also seems a particularly valuable summary. Several of the authors discuss isolated fish skin and sheets of opercular epithelium. These topics deserve further study.

W. A. DUNSON

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## Books Received

**Above Timberline.** A Wildlife Biologist's Rocky Mountain Journal. Dwight Smith. Alan Anderson, Jr., Ed. Knopf, New York, 1981. xviii, 246 pp. + plates. \$16.95.

**Abstract Inference.** Ulf Grenander. Wiley, New York, 1981. xii, 526 pp. \$35. Wiley Series in Probability and Mathematical Statistics.

**Adolescents and Youth.** Dorothy Rogers. Prentice-Hall, Englewood Cliffs, N.J., ed. 4, 1981. xviii, 476 pp., illus. \$18.95.

**Advanced Chemical Methods for Soil and Clay Minerals Research.** Proceedings of an institute, Urbana, Ill., July 1979. J. W. Stucki and W. L. Banwart, Eds. Reidel, Boston, 1980 (distributor, Kluwer Boston, Hingham, Mass.). x, 478 pp., illus. \$58. NATO Advanced Study Institutes Series C, vol. 63.

**Biology of Collagen.** Papers from a symposium, Aarhus, Denmark, July 1978. Andrus Viidik and Jens Vuust, Eds. Academic Press, New York, 1980. xiv, 384 pp., illus. \$80.50.

**The Brains of Men and Machines.** Ernest W. Kent. Byte/McGraw-Hill, Peterborough, N.H., 1981. x, 286 pp., illus. \$15.95.

**Calmodulin and Cell Functions.** Papers from a conference, New York, May 1980. D. Martin Watterson and Frank F. Vincenzi, Eds. New York Academy of Sciences, New York, 1980. xii, 446 pp., illus. Cloth or paper, \$86. *Annals of the New York Academy of Sciences*, vol. 356.

**Disaster Planning.** The Preservation of Life and Property. Harold D. Foster. Springer-Verlag, New York, 1980. x, 276 pp., illus. \$29.80. Springer Series on Environmental Management.

**DNA Repair.** A Laboratory Manual of Research Procedures. Vol. 1, Part A. Errol C. Friedberg and Philip C. Hanawalt, Eds. Dekker, New York, 1981. xx, 274 pp., illus. \$29.75.

**Earthkeeping.** Christian Stewardship of Natural Resources. Loren Wilkinson, Ed. Eerdmans, Grand Rapids, Mich., 1980. viii, 318 pp., illus. Paper, \$10.95.

**Fundamentals of Chemistry.** James E. Brady and John R. Holum. Wiley, New York, 1981. xviii, 798 pp., illus. + plates. \$23.95.

**Fusion Plasma Analysis.** Weston M. Stacey, Jr. Wiley-Interscience, New York, 1981. xviii, 376 pp., illus. \$32.95.

**General Systems Thinking.** Its Scope and Applicability. T. Downing Bowler. North-Holland (Elsevier), New York, 1981. xiv, 234 pp. \$29.95. The North-Holland Series in General Systems Research, vol. 4.

**Hypnosis and Relaxation.** Modern Verification of an Old Equation. William E. Edmonston, Jr. Wiley-Interscience, New York, 1981. xvi, 256 pp., illus. \$24.50. Wiley Series on Personality Processes.

**Identical Twins Reared Apart.** A Reanalysis. Susan L. Farber. Basic Books, New York, 1981. xvi, 384 pp., illus. \$26.50.

**Identification and System Parameter Estimation.** Proceedings of a symposium, Darmstadt, Germany, Sept. 1979. R. Isermann, Ed. Published for the International Federation of Automatic Control by Pergamon, New York, 1980. Two volumes. xlvii, 1348 pp., illus. \$195.

**Kimberlites and Their Xenoliths.** J. Barry Dawson. Springer-Verlag, New York, 1980. xii, 252 pp., illus. \$47.25. Minerals and Rocks, 15.

**Lasers in Biology and Medicine.** Papers from a symposium, Camaiore, Italy, Aug. 1979. F. Hillenkamp, R. Pratesi, and C. A. Sacchi, Eds. Plenum, New York, 1980. xii, 464 pp., illus. \$49.50. NATO Advanced Study Institutes Series A, vol. 34.

**Linear Programming and Extensions.** Nesa Wu and Richard Coppins. McGraw-Hill, New York, 1981. xx, 476 pp., illus. \$27.95. McGraw-Hill Series in Industrial Engineering and Management Science.

**Microprocessor System Debugging.** Noordin Ghani and Edward Farrell. Research Studies Press (Wiley), New York, 1981. xii, 144 pp., illus. Paper, \$43.50.

**Mushrooms of Western North America.** Robert T. Orr and Dorothy B. Orr. Drawings by Jacqueline Schonewald and Paul Vergeer. University of California Press, Berkeley, 1981. vi, 294 pp. + plates. Paper, \$6.95. California Natural History Guides, 42. Reprint of the 1979 edition.

**Neuroethology.** An Introduction. D. M. Guthrie. Halsted (Wiley), New York, 1981. viii, 222 pp., illus. \$24.95.

**The Psychology of Apartheid.** Peter Lambley. University of Georgia Press, Athens, 1981. xxvi, 292 pp. \$16.50.

**Psychology Survey.** No. 3. Malcolm A. Jeeves, Ed. Allen and Unwin, Boston, 1980. x, 200 pp., illus. Cloth, \$25; paper, \$11.95.

**Psychophysiology.** Today and Tomorrow. N. P. Bechtereva, Ed. Pergamon, New York, 1981. x, 264 pp., illus. \$60.

**Quantitative Layer-by-Layer Perimetry.** An Extended Analysis. Jay M. Enoch, C. R. Fitzgerald, and E. C. Campos. Grune and Stratton, New York, 1980. xiv, 232 pp., illus. \$29.50. Current Ophthalmology Monographs.

**The Role of the Major Histocompatibility Complex in Immunobiology.** Martin E. Dorf, Ed. Garland, New York, 1981. x, 406 pp., illus. \$47.50.

**Science and Polity in France at the End of the Old Regime.** Charles Coulston Gillispie. Princeton University Press, Princeton, N.J., 1981. xii, 602 pp. \$40.

**Science and Technology of Rare Earth Materials.** Proceedings of a conference, Cochin, India, Mar. 1980. E. C. Subbarao and W. E. Wallace, Eds. Academic Press, New York, 1980. xiv, 440 pp., illus. \$29.

**Tulapai to Tokay.** A Bibliography of Alcohol Use and Abuse among Native Americans of North America. Compiled by Patricia D. Mail and David R. McDonald. HRAF Press, New Haven, Conn., 1980. xvi, 356 pp. \$25.

**Two-Phase Flow and Heat Transfer in the Power and Process Industries.** A. E. Bergles, J. G. Collier, J. M. Delhay, G. F. Hewitt, and F. Mayinger. Hemisphere, Washington, D.C., 1981. xii, 708 pp., illus. \$55.

**U.S. Earthquake Observatories.** Recommendations for a New National Network. National Academy Press, Washington, D.C., 1980. xx, 122 pp., illus. Paper, \$7.

**Windpower.** A Handbook on Wind Energy Conversion Systems. V. Daniel Hunt. Van Nostrand Reinhold, New York, 1981. xx, 610 pp., illus. \$39.50.

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The candidate should have a Ph.D. in a biological science or an M.D., a record of scholarly achievements and funded programs, experience in graduate education, and proven leadership and administrative abilities. Persons with active research programs are preferred.

Please send nominations or a copy of your curriculum vitae and complete bibliography before 1 September 1981 to:

**Dr. John E. Pauly**  
**Chairman of the Search Committee**  
**Department of Anatomy—Slot 510**  
**University of Arkansas for Medical Sciences**  
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7000 Portage Road  
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**Upjohn**

## DEAN

### School of Veterinary Medicine

Tufts University seeks an outstanding veterinary leader to head its School of Veterinary Medicine. An independent institution with a history of service to New England, Tufts brings together a wide range of schools and colleges within a relatively small university, providing unusual opportunities for combined research and educational programs. The Veterinary School is designed both as a unique medical, agricultural and scientific resource for New England and as an integral part of an academic health center. The school shares the Tufts Boston Campus with medical and dental schools, a major nutrition research center, and the New England Medical Center Hospital. The school has its own clinical campus and will also provide clinical education at a number of eminent associated institutions throughout New England. In addition to the routine clinical specialties, programs are being developed in such areas as Comparative Medicine, Laboratory Animal Medicine, Nutrition, Public Health, Toxicology, Aquatic Animal and Wildlife Medicine, and International Veterinary Medicine. The Dean participates with other Deans in the governance of the University. Candidates for the Deanship should be veterinarians with distinguished research accomplishments and teaching and/or clinical skills. They should have had extensive and successful experience in planning, administering and developing public and private resources for veterinary institutions or health services programs.

Position available immediately.

Send nominations and applications, before July 30, 1981, to Provost Robert B. Shira, Tufts University, Medford, MA 02155.

An Affirmative Action/Equal Opportunity Employer

**TUFTS**  
university

## U.S. PUBLIC HEALTH SERVICE EPIDEMIOLOGY TRAINING PROGRAM —1982

The U.S. Public Health Service (USPHS) invites applications for a proposed extension of a training program in medical epidemiology. Up to twelve (12) persons per year, who already have an M.D., a doctorate in an allied health profession, or Ph.D. in a biomedical or behavioral science (e.g., biochemistry, psychology, etc.), may be accepted as staff fellows of the USPHS (a non-tenured, junior professional classification under Civil Service) for a three-year period of duty. Applications received by *September 15, 1981* may be considered for service to begin on or about *July 1, 1982*. During the first year, each successful applicant will attend a university, at government expense, as a candidate for the M.P.H. or equivalent degree. During the subsequent two years, individuals will work in association with senior epidemiologists in the participating USPHS agencies (Alcohol, Drug Abuse, and Mental Health Administration; Centers for Disease Control; Food and Drug Administration; and the National Institutes of Health), primarily in research studies. A matching procedure akin to the national internship matching will be employed to assure that each individual is assigned to a preceptor whose area of expertise is of interest to the trainee, and consistent with his/her career plans.

Salaries will be provided according to the scale in effect for staff fellows in intramural research at the NIH. At this time (1981), remuneration for a physician is \$30,000 per annum for the first year, with a \$2,000 increase annually for the second and third years. Educational costs for the first year are provided in addition.

Basic requirements for application to the program are:

1. M.D., doctorate in an allied health profession, or Ph.D. in a biomedical or behavioral science, *and* one year of post-doctoral training or experience (by July 1, 1982).
2. U.S. citizenship.
3. Acceptability to an accredited university offering an M.P.H. or equivalent degree.

Further details of the program, and application forms, may be obtained from:

**Robert S. Gordon, Jr., M.D., M.H.S.**  
Special Assistant to the Director, NIH  
National Institutes of Health  
Building 1, Room 238  
Bethesda, Maryland 20205

An Equal Opportunity Employer

## POSITIONS OPEN

**BIOENGINEER**; \$19,500 per year. Qualifications: bachelor's degree in mechanical engineering, experience in miniature hydraulic bellow instrumentation, background in computer science, precision instrument machining, background in physical properties of biological materials, responsibility for data taking and analysis, directing part-time assistant, experience in student research supervision. Send résumé to: **Connecticut Job Service, 90 Washington Street, Hartford, Conn. 06106.** Refer to job order number 200597. *An Affirmative Action/Equal Opportunity Employer.*

**CELL BIOLOGIST.** Postdoctoral/research associate position will be available October 1981. We are seeking an individual with interests and experience in mammalian cell culture to participate in an ongoing NIH-supported liver program project studying various biochemical and physiologic aspects of primary monolayer cultures of adult rat hepatocytes. Possibility of joint appointment with teaching opportunities in the Anatomy Department is open to qualified candidates. Salary commensurate with experience. Those interested should send curriculum vitae and names and addresses of three references to: **P. S. Guzelian, M.D., Medical College of Virginia, Liver Study Unit, Department of Medicine, Box 267, MCV Station, Richmond, Virginia 23298.** *An Equal Opportunity/Affirmative Action Institution.*

The University of California, Irvine, College of Medicine, is seeking a **CHAIR** for the **Department of Biological Chemistry.** Candidates will have demonstrated excellence in research and teaching and will have administrative experience. Candidates should be able to provide academic leadership for the department. Applications from all qualified candidates are welcome; the *University of California is an Affirmative Action Employer.* Send curriculum vitae before 7 August 1981 to: **Dennis D. Cunningham, Chair of Biological Chemistry Search Committee, Department of Microbiology, College of Medicine, University of California, Irvine, Calif. 92717.**

### CHAIRPERSON—DEPARTMENT OF PHARMACOLOGY

The University of Vermont College of Medicine invites applications or nominations for the position of chairperson, Department of Pharmacology. Candidates should have the Ph.D. or M.D. degree and hold the academic position of professor or associate professor in a Department of Pharmacology or a related basic science department. The candidate should have a record of leadership in administration, excellence in teaching, and productivity in research as demonstrated by publications and funding support. Applications, including curriculum vitae and supporting documents, should be sent to: **Dr. Irwin H. Krakoff, Chairman, Pharmacology Search Committee, College of Medicine, University of Vermont, Burlington, Vermont 05405.** *The University of Vermont is an Affirmative Action Employer.*

### CHAIRMAN DEPARTMENT OF PSYCHIATRY UNIVERSITY OF MICHIGAN MEDICAL SCHOOL

University of Michigan Medical School is seeking an outstanding academic physician to assume the chair of its Department of Psychiatry. Qualifications include: national stature as a leader in the field of psychiatry, demonstrated commitment to teaching and administration, and an established reputation in investigative and research activities. Respond to: **Robert E. Reed, M.D., Associate Dean, M7320 Medical Science Building I, University of Michigan Medical School, 1335 East Catherine Street, Ann Arbor, Mich. 48109.** *A nondiscriminatory, Affirmative Action Employer.*

Wanted: **COORDINATOR OF ANESTHESIA RESEARCH LABORATORIES** at the rank of assistant associate in anesthesiology or assistant/associate professor, dependent upon qualifications and interest in pursuing an academic career. Minimum requirements include a master's and/or doctorate degree and administrative experience. A background in biomedical engineering and either physiology, pharmacology, or biochemistry is preferred. Duties include management of laboratories and collaboration in ongoing research. Opportunity for some independent research exists. Stipend is negotiable. Position available 1 August 1981. Send application, including curriculum vitae and bibliography, to: **J. S. Gravenstein, M.D., Search Committee Chairman, Department of Anesthesiology, University of Florida, Box J-254, Gainesville, Florida 32610,** by 17 July 1981. *Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

From time to time, positions are available in the Department of Anesthesiology, Yale University School of Medicine, at the **CLINICAL AND RESEARCH FACULTY AND RESIDENT LEVELS.** Interested individuals should apply to:

**Luke M. Kitahata, M.D., Ph.D.**  
Chairman, Department of Anesthesiology  
Yale University School of Medicine  
333 Cedar Street  
New Haven, Connecticut 06510

Please respond by 1 November 1981. *Equal Opportunity/Affirmative Action Employer. Qualified women, minority group members, and handicapped individuals are encouraged to apply.*

## DIRECTOR LEARNING CENTER

Ed.D. or Ph.D. with comprehensive background in special education and applied research. Experience in psycho-educational and educational assessment, learning disabilities, remediation, media and grantsmanship. Responsible for overall development and supervision of the Learning Center. Salary range: \$22,000 to \$24,500.

The University also seeks an: **ASSOCIATE DIRECTOR FOR COMPUTER ASSISTED LEARNING** and an **ASSISTANT DIRECTOR FOR TUTORIAL SERVICES.**

Send résumé by 17 July 1981 to: **Dr. Paul Kramer, Dean of Academic Services,**

**State University of New York**

Farmingdale, New York 11735

*SUNY is an Equal Opportunity/  
Affirmative Action Employer*

### ELECTROPHYSIOLOGIST/EVOKED-RESPONSE RESEARCH

Assistant research physiologist and/or postdoctoral fellow to do research directed toward the goal of developing noninvasive electrophysiological tests of peripheral chemical axonopathy. Interest in analysis of compound action potentials and computer-averaged evoked responses important. Ph.D. required; postdoctoral experience desirable. For further information, contact: **D. L. Jewett, M.D., D.Phil., U471 University of California, San Francisco, San Francisco, Calif. 94143.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

### ENDOCRINOLOGY ASSISTANT PROFESSOR

Fixed-term position available for 1981-1982 academic year with reappointments possible for up to four more years, based on performance. Person to teach endocrinology, graduate seminars in specialty, and other courses in biology. Research activities are possible depending upon applicant's area of interest and the anticipated term of appointment. Salary: approximately \$16,000 (for 9 months). Ph.D. required. Send curriculum vitae, statement of professional goals, and three letters of recommendation by 1 August 1981 to: **Dr. Frank L. Moore, Department of Zoology, Oregon State University, Corvallis, Oregon 97331.** *Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.*

**IMMUNOLOGIST**—Assistant professor. Strong commitment for teaching proficiency in pathogenic microbiology. Duties include participation in lecture courses and laboratory instruction to medical students. Applicants expected to initiate independent research. Salary: \$21,600 annually, starting August 1981. Send résumé and three letters of reference to: **Chairman, Microbiology Department, Ponce School of Medicine P.O. Box 7004, Ponce, Puerto Rico 00732.** *Equal Opportunity Employer.*

**IMMUNOLOGIST/IMMUNOGENETICIST.** Marshall University School of Medicine. Tenure-track position, 12-month appointment, at the assistant or associate professor level. Individual will be responsible for participating in teaching medical microbiology, presenting immunology in the M.S./Ph.D. program in biomedical sciences, and developing a research program in immunology. Salary negotiable. Send curriculum vitae and names and addresses of at least three references, no later than 17 July 1981, to: **Dr. Albert G. Moat, Professor and Chairman, Department of Microbiology, Marshall University School of Medicine, Huntington, W.Va. 25701.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

### FACULTY POSITIONS IN CANCER RESEARCH

Assistant/associate professors in: (i) molecular biology (recombinant DNA), (ii) somatic cell genetics, (iii) pharmacology, and (iv) radiobiology. Ph.D. and/or M.D. with postdoctoral experience. Successful candidates are expected to establish strong research programs relevant to cancer.

Send curriculum vitae and the names of three references to:

**Chairman, Search Committee  
Oncology Research Group  
Faculty of Medicine  
The University of Calgary  
2500 University Drive, NW  
Calgary, Alberta, Canada T2N 1N4**

### UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

Applicants are solicited for **FACULTY POSITIONS** in the following departments:

**Medicine** (Number 298). Assistant/associate professor. Teaching, patient care, and clinical research in internal medicine and rheumatic disease. Board-eligible in internal medicine, evidence of research productivity, and notable clinical and teaching skills. Closing date is 1 September 1981. (Number 299 and Number 300) Assistant professor/professor. Teaching and patient care in internal medicine, hematology, and oncology with a major interest in oncology. Clinical and/or basic research in oncology. Eligible for subspecialty Board exam in oncology and preferably in hematology. Evidence of research productivity and notable clinical and teaching skills. Closing date is 1 September 1981. **Radiological Sciences** (Number 314). Assistant professor. Clinical radiation therapy. Board-eligible in radiation therapy. Must have experience with 40 MeV acceleration in clinical use of photons and electrons. Closing date is 1 August 1981.

Applicants should send curriculum vitae, identifying vacancy number for which they are applying, to: **O. C. Coleman, Assistant Dean, College of Medicine, University of Oklahoma Health Sciences Center, P. O. Box 26901, Oklahoma City, Okla. 73190.** *We are an Equal Opportunity Employer.*

**FACULTY POSITION IN PHYSICAL BIOCHEMISTRY**—Assistant or associate professorship for individual with an independent research program in physical biochemistry. An interest in problems in molecular or membrane biology is preferred. In addition to a large research laboratory in an exciting teaching/research environment, funds will be available for the purchase of certain pieces of major capital equipment. Send curriculum vitae, names of three references, and a short description of research program to: **Dr. P. G. Katsoyannis, Chairman, Department of Bioscience, The Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, N.Y. 10029.** *An Equal Opportunity Employer.*

### MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) Human Genetics

The Whitaker College of Health Sciences, Technology, and Management of MIT announces one or more openings for faculty positions in human genetics. The post to be filled first will be at the senior level. Applicants should have demonstrated expertise relevant to the use of molecular and genetic approaches to problems in human and/or mammalian inheritance. It is likely that appointments will be made jointly with an appropriate MIT department such as Biology or Nutrition and Food Science.

Applicants should send correspondence, curriculum vitae, and research proposals to: **Professor Maurice Fox or Dr. David Botstein, Co-Chairpersons, Whitaker College Genetics Search Committee, Room 16-520, Massachusetts Institute of Technology, Cambridge, Mass. 02139.**

*MIT is an Affirmative Action/Equal Opportunity Employer.*

**JUNIOR FACULTY POSITION** available, Cell Biology Division, Cystic Fibrosis Program, Children's Hospital Medical Center, Department of Pediatrics, Harvard Medical School. For Ph.D. or M.D. with experience in molecular biology to study the complement genes and cells from cystic fibrosis patients. Position includes research and teaching responsibilities. Salary range: \$20,000 to \$30,000, depending on qualifications. Send curriculum vitae to: **Harvey R. Colten, M.D., Children's Hospital Medical Center, 300 Longwood Avenue, Boston, Mass. 02115.** *An Affirmative Action/Equal Opportunity Employer.*



## **D.V.M., Ph.D. Pathologist ACVP Diplomate**

Career opportunity with top quality toxicology and pathology research laboratory located in Wonderful Western Michigan. Responsibilities will include the design, implementation and management of studies, the evaluation of data, the histopathologic assessment of lesions and the preparation of reports and, finally, contact with clients and regulators.

A total commitment to integrity and excellence is required. Financial package will be appropriate to the chosen individual.

Contact or send resume to Bobby Joe Payne, D.V.M., Ph.D., Director of Pathology and/or Gordon S. Dean, Ph.D., President.

**TOXICITY RESEARCH LABORATORIES, LTD.**  
510 West Hackley Avenue  
Muskegon, Michigan 49444  
Telephone 6167332584

## **D.V.M., Ph.D. Veterinarian and Toxicologist**

Career opportunity with top quality toxicology and pathology research laboratory located in Wonderful Western Michigan. Responsibilities will include animal care and disease control; the design, implementation and the management of studies; the evaluation of data; the preparation of reports; and finally, contact with clients and regulators.

A total commitment to integrity and excellence is required. Financial package will be appropriate to the chosen individual.

Contact or send resume to E. C. Tompkins, Ph.D., Director of Toxicology and/or Gordon S. Dean, Ph.D., President.

**TOXICITY RESEARCH LABORATORIES, LTD.**  
510 West Hackley Avenue  
Muskegon, Michigan 49444  
Telephone 616-733-2584

## **CORONARY PHARMACOLOGIST/ PHYSIOLOGIST**

SYNTEX RESEARCH, on the SAN FRANCISCO PENINSULA, has an immediate opportunity for a Pharmacologist or Physiologist with several years training beyond the doctoral level. Candidates with directly relevant experience and published articles dealing with the study of drugs or naturally occurring agents affecting coronary circulation will be given primary consideration. Individual should possess an interest and ability to organize and implement a laboratory devoted to the study of drugs used to treat coronary artery disease conditions. (Refer to Job #AR-101).

SYNTEX offers attractive salaries and benefits in a superb scientific environment. Please send curriculum vitae, complete with publication record, to B. Amos, SYNTEX, 3401 Hillview Avenue, Palo Alto, CA 94304. We are an equal opportunity employer.



**SYNTEX**

## **Senior Research Chemists Research & Development**

The Immunodiagnostics Division of Becton Dickinson and Company, a leader in the manufacture of diagnostic products for the clinical laboratory, has research & development opportunities at our Rockland County, N.Y. facility for Senior Research Chemists with track records of independent research along with the desire to work in an industrial atmosphere.

### **Radio & Immunological R&D**

Ph.D. in organic or biochemistry with experience in peptide or protein modification. Familiarity with analytical & preparative separation techniques & instrumental analytical methodology is essential. Knowledge of immunochemistry & RIA is desirable.

### **Diagnostic R&D**

Ph.D. in immunochemistry or related field with experience in development of radioimmunoassays is required. Familiarity with iodination methodology & protein separation technology is desirable. Preference will be given to candidates with post doctoral and/or industrial experience.

We offer competitive salaries commensurate with experience and a full range of company paid benefits including medical, dental & life insurance, pension plan & participation in our employee savings incentive program. Please send your resume, including salary requirements, to:

**M. E. McGrane, Manager, Human Resources**

**BECTON DICKINSON IMMUNODIAGNOSTICS**  
Mountain View Avenue, Orangeburg, N.Y. 10962  
an equal opportunity employer m/f/h/v

**BECTON  
DICKINSON**

## POSITIONS OPEN

**IMMUNOLOGIST/MICROBIOLOGIST**—Challenging position for M.S.-degreed immunologist/microbiologist with 4 to 5 years of experience or recent Ph.D. to work in cell-mediated and humoral immunity in cancer and environment-related problems. Salary commensurate with experience, plus comprehensive benefits. Send résumé, including salary requirements, to: **Personnel Department, THE MOUNT SINAI MEDICAL CENTER, 19 East 98 Street, Mount New York, N.Y. 10029.** An Equal Opportunity Employer.

**MEMBRANE BIOCHEMISTRY.** Two postdoctoral positions available 1 August 1981. (i) With Dr. Clive Bradbeer. A study of active cobalamin transport in *E. coli* using membrane protein chemistry, photoaffinity labeling, reconstitution, and recombinant DNA experimental approaches. (ii) With Dr. Peter Holloway. A study of the interaction of cytochrome  $b_5$  with membranes, especially the topology of the complex and the mechanism of the process. Applicants should send curriculum vitae and the names of three references to one of the above at: **The Department of Biochemistry, School of Medicine, University of Virginia, Charlottesville, Va. 22908.** The University of Virginia is an Affirmative Action/Equal Opportunity Employer.

### MICROBIOLOGIST-PATHOGENESIS

The Department of Bacteriology and Immunology, University of North Carolina School of Medicine, Chapel Hill, seeks assistant or associate professor level tenure-track faculty with interest in the biology of pathogenic organisms, preferably with expertise in molecular genetics. Position(s) available immediately. Evidence of research productivity required. Applications particularly invited from women and minorities. An Affirmative Action/Equal Opportunity Employer. Reply with curriculum vitae and names of references to: **P. Frederick Sparling, M.D., 804 Faculty Laboratory Office Building, University of North Carolina School of Medicine, Chapel Hill, N.C. 27514.**

### IMPERIAL CANCER RESEARCH FUND Molecular Biologist

Applications are invited for a 3-year postdoctoral appointment (research fellow) in the Molecular Biology Laboratory at Lincoln's Inn Fields. The project involves work on the characterization of proteins affected by transformation in mammalian cells and on the control of synthesis of these proteins and their messenger RNA's. Experience with gene cloning and recombinant DNA techniques is essential.

Salary range: £7700 to £9750, plus London Allowance of £967 a year, with entry point according to qualifications and experience.

Further information from: **Dr. L. V. Crawford, telephone: 01-242 0200, extension 238.** Applications, including full curriculum vitae and names and addresses of two references, should be sent to: **The Secretary, Imperial Cancer Research Fund, Lincoln's Inn Fields, London WC2, England, by 31 July 1981,** quoting reference 110/81.

**NEUROBIOLOGIST**—Faculty position available for an individual with a research background in vertebrate neurobiology. Preference will be given to applicants in cellular and developmental neurobiology. Investigators with biochemical and electrophysiological as well as anatomical approaches are invited to apply. Please send applications to: **Dr. Donald Fischman, Chairman, Department of Anatomy and Cell Biology, State University of New York, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203.** Equal Opportunity/Affirmative Action Employer.

### PHYSIOLOGICAL OPTICS/VISUAL PSYCHOPHYSICS

**ASSISTANT RESEARCH SCIENTIST I-III/ASSOCIATE SPECIALIST I-II** wanted with Ph.D. or M.D. or O.D. with clinical and/or research experience for full-time appointment to active optometry/ophthalmology research laboratory in San Francisco Bay area. Duties include conducting research and training of postdoctoral fellows and graduate students in various aspects of applied visual science, including refraction, fields, psychophysical testing of Stiles Crawford Function, increment threshold, acuity infant vision, and accommodation. Salary from \$21,600 to \$23,800 for 11-month appointment beginning 1 September 1981. Please send curriculum vitae, statement of interest and experience, and three references before 31 July to: **Dr. Jay M. Enoch, Dean, School of Optometry, University of California, Berkeley, Calif. 94720.** An Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

Applications are invited to fill assistant/associate professor positions of **OCEAN ENGINEER** and **CHEMICAL OCEANOGRAPHER.** Teaching and research responsibilities are at both the undergraduate and graduate level. Permanent positions to commence in September 1981. Candidates must possess a Ph.D. in their respective disciplines. The department has interdisciplinary programs in biological, chemical, geological and physical oceanography, ocean engineering, and coastal zone management. Send résumé and names of references to: **Chairman of Search Committee, Department of Oceanography and Ocean Engineering, Florida Institute of Technology, Melbourne, Fla. 32901.** An Equal Opportunity Employer.

**PHARMACOLOGIST.** Assistant professor (12 months, tenure stream), cardiac electrophysiology, and/or ischemia; postdoctoral experience or equivalent, ability to teach cardiac pharmacology at professional and graduate level, capable of developing independent and/or collaborative research programs. Beginning September 1981.

Send curriculum vitae and three letters of recommendation to:

**Dr. T. M. Brody  
Department of Pharmacology and Toxicology  
Michigan State University  
East Lansing, Mich. 48824**

An Affirmative Action/Equal Opportunity Institution

**PHYSICAL OCEANOGRAPHER.** Research assistant professor. Fixed-term. Ph.D. required in physical sciences and demonstrated ability to conduct independent research in physical oceanography. Will be expected to analyze and model oceanic internal waves and ocean circulation and will be encouraged to initiate research projects of own choosing. Submit résumé and three letters of reference by 1 August 1981 to: **G. Ross Heath, Dean, School of Oceanography, Oregon State University, Corvallis, Oregon 97331.**

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

### POSTDOCTORAL APPOINTMENT FOR RESEARCH IN PREMESSENGER RNA AND NUCLEAR STRUCTURE

Position available for a candidate with recent doctorate in chemistry, biochemistry, or related areas. Problems under study include: (i) hnRNA and snRNA interactions with nuclear matrix, (ii) hnRNA-snRNA interactions, and (iii) the role of nonhistone nuclear proteins in the formation of hnRNA-snRNA complexes. Applicants should have knowledge and experience in nucleic acid biochemistry. DNA cloning, and fingerprint analysis and sequence. Send curriculum vitae and three references to: **A. O. Pogo, M.D., Head, Laboratory of Cell Biology, The L. F. Kimball Research Institute of THE NEW YORK BLOOD CENTER, 310 East 67 Street, New York, N.Y. 10021.** An Equal Opportunity Employer, M/F.

**POSTDOCTORAL FELLOW** to conduct research in the area of peptide synthesis. Selected sequences and analogs of gastropoetins are to be synthesized using an automated peptide synthesizer. Synthesized peptides will be used for structure-function studies and for raising and characterizing antibodies used in immunochemical studies. Appointee will be expected to collaborate with research biochemists and physiologists in Divisions of G.I. and Endocrine Surgery and Lipid Research. Substantial postgraduate experience in peptide synthesis is required.

Applicants should send curriculum vitae and references to: **Dr. R. F. Murphy, Department of Surgery, University of Cincinnati Medical Center, 231 Bethesda Avenue, Cincinnati, Ohio 45267.**

**POSTDOCTORAL POSITION** available immediately involving studies of acetylcholine receptor structure and function and the cause, pathological mechanisms, and treatment of myasthenia gravis. Immunology and cell biology background preferred. Position involves cellular immunology, hybridomas, and collaborating with others involved in biochemical studies of the receptor. Send curriculum vitae and three letters of reference to: **Dr. Jon Lindstrom, Salk Institute for Biological Studies, P.O. Box 85800, San Diego, California 92138.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available for study of the regulation and enzymology of the *E. coli* DNA polymerase III holoenzyme. Research will entail cloning holoenzyme subunit genes and studying their structure and expression or purification and characterization of auxiliary polymerase subunits which are required for the replication of natural chromosomes. Please send curriculum vitae and the names of three references to: **Dr. Charles McHenry, Department of Biochemistry and Molecular Biology, The University of Texas Medical School, P.O. Box 20708, Houston, Texas 77025.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION IN ENVIRONMENTAL PHYSIOLOGY/TOXICOLOGY** to study lung functional and structural changes in rats exposed to inhaled toxicants. Position to be filled as soon as possible. Applicants should call or send curriculum vitae and statement of research interests to: **Dr. Wayne Mitzner, Division of Environmental Physiology, Department of Environmental Health Sciences, The Johns Hopkins School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Maryland 21205.** Telephone: 301-955-3612.

### POSTDOCTORAL POSITION

Ph.D. in biochemistry or similar. Research on enzyme mechanism and cellular metabolism. Candidate should have demonstrated exceptional performance and promise for creative research. Knowledge of organic synthesis, instrumentation, and handling of radioactive materials will be helpful. Available August 1981; salary range: \$14,900 to \$18,700 plus fringe benefits, depending on qualifications. Send résumé and two letters of recommendation to: **Laboratory Personnel Officer, JB, University of California, Los Angeles, Laboratory of Biomedical and Environmental Sciences, 900 Veteran Avenue, Los Angeles, California 90024.** An Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION

**Metabolic regulation**—A research associate position is available immediately for a recent graduate with the Ph.D. degree to work in the area of hormonal regulation of covalent modification of glycogen-metabolizing enzymes in developing liver. Starting salary is negotiable, depending on training and experience. Send curriculum vitae and the names of three references to: **Dr. Alvin H. Gold, Department of Pharmacology, St. Louis University School of Medicine, 1402 South Grand Boulevard, St. Louis, Mo. 63104.** An Equal Opportunity/Affirmative Action Employer, M/F/H.

**POSTDOCTORAL POSITION.** Enzymologist needed to study the kinetics of nitrogenase reactivity toward  $N_2$  and alternative substrates and its interaction with physiological electron donors. Successful applicant will be part of an interdisciplinary  $N_2$  fixation team. Send curriculum vitae and three letters of recommendation to: **Dr. B. K. Burgess, C. F. Kettering Research Laboratory, 150 East South College Street, Yellow Springs, Ohio 45387.** We are an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION.** Available in laboratory investigating the physiological mechanisms of transepithelial migration of human leukocytes. Applicant with experience in the areas of cellular immunology or cell biology preferred. Please send curriculum vitae and three letters of reference to: **Dr. Eva Cramer, Department of Anatomy and Cell Biology, State University of New York/DOWNSTATE MEDICAL CENTER, 450 Clarkson Avenue, Brooklyn, N.Y. 11203.** An Equal Opportunity/Affirmative Action Employer.

### RANGELAND REHABILITATION

Tenure-track assistant or associate professor and director of an Institute for Land Rehabilitation, to teach and conduct research in plant/soil relationships relevant to rehabilitation of disturbed arid rangelands. Ph.D. in range science or closely related field required. Experience in disturbed land reclamation and range improvement desirable. Academic postdoctoral or faculty position experience preferred. Available immediately. Salary commensurate with qualifications and experience, up to the \$30,000 level. Closing date for applications: 20 July 1981 or until suitable applicant is found. Applicants should send letter of application and detailed résumé and have at least three letters of reference sent directly to: **Dr. Don Dwyer, Head, Department of Range Science, UMC-52, Utah State University, Logan, Utah 84322.** Telephone: 801-750-2471. An Equal Opportunity/Affirmative Action Employer.



## NEUROPHARMACOLOGISTS

Two excellent opportunities to participate in a multidisciplinary drug discovery project dedicated to novel therapeutic agents for disorders of the central nervous system are immediately available with one of the nation's leading manufacturers of ethical pharmaceuticals.

A Biochemical Neuropharmacologist is needed for in-vitro testing of the effects of drugs on neurotransmitter function. Selected candidate must have a PhD or equivalent in Pharmacology, Biochemistry or Neuroscience, plus at least two years of post doctoral research experience. A broad technical competence including experience in neurotransmitter transport and turnover and radioligand binding assays is desired.

A Neuropharmacologist is required to test centrally acting drugs in whole animal systems. Qualified applicant must have a PhD or equivalent in Pharmacology or Neuroscience plus a minimum of 2 years of post doctoral research experience.

We are a Johnson & Johnson Company with our ultra modern headquarters conveniently located in a pleasant Philadelphia, Pa. suburb. In addition to a competitive starting salary and a comprehensive benefits package, there is good potential for professional growth. For immediate consideration forward your resume including salary history and requirements to Employment Manager.

 **McNEIL  
PHARMACEUTICAL**

Spring House, Pa. 19477

Leadership Beyond Compliance, M/F/H/V  
A Johnson & Johnson Company

## CHAIRMANSHIP INTERNAL MEDICINE

### University of Alabama School of Medicine

Nominations and applications for the position of chairman, Department of Medicine, are being sought. Qualifications include widely recognized experience in teaching, research, patient care, and administration in academic medicine. Nominations should include curriculum vitae and bibliography and should be submitted to:

**John W. Benton, M.D.**  
Chairman, Internal Medicine Search Committee  
The Children's Hospital  
University Station  
Birmingham, Alabama 35294

Applications and nominations should be submitted by 30 September 1981.

*The University of Alabama in Birmingham is an Equal Opportunity/Affirmative Action Employer.*



The College of Science at The University of Riyadh invites applications to fill the following vacancies:

- 1 — Faculty Member in Quantum Chemistry.
- 2 — Faculty Member for the post of Associate Professor in Physical Chemistry.

Applications accompanied by non-returnable copies of academic and experience certificate as well as copies of research papers should be mailed, within one month from date, to:

The Dean  
College of Science  
P. O. Box 2455  
Riyadh, Saudi Arabia

and to:

Recruitment Office  
Riyadh University  
2425 West Loop South  
Houston, Texas 77027 USA

## GENERAL MANAGER ENVIRONMENTAL CHEMISTRY CENTER

Environmental Research and Technology, Inc., the nation's leading environmental/engineering consulting firm seeks a General Manager for its Environmental Chemistry Center, with experience in environmental chemistry, air/water measurements, toxic/hazardous waste analysis and interpretation of results for specific program applications.

Our requirements include:

- MS or PhD in Chemistry or Chemical Engineering.
- 5-10 years' experience in consulting and project/line management with P&L responsibility
- Strong interpersonal/written/oral communication skills.
- Ability to interface with clients; identify and analyze client problems.
- Ability to market and develop environmental services.
- Experience with laboratory management is desired.

We offer a comprehensive benefit package and an exciting work environment. Please forward resume and salary history in confidence to R.J. Haddad, Environmental Research and Technology, Inc., 696 Virginia Road, Concord, MA 01742.

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## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately involving studies of the regulation of Na-Ca exchange and ATP-dependent Ca transport activities in cardiac sarcolemmal membrane vesicles. Previous experience with either transport, protein phosphorylation, calmodulin, or reconstitution is desirable. Send curriculum vitae and at least two letters of recommendation to: **Dr. John P. Reeves, Department of Physiology, University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION IN THEORETICAL ATOMIC PHYSICS.** The Department of Physics at Kansas State University invites applications for a postdoctoral position beginning 1 August 1981, with a yearly salary of \$16,500. Area of research is the application of hyperspherical coordinates in atomic collision theory. Send résumé and names of three references to: **Dr. C. D. Lin, Department of Physics, Kansas State University, Cardwell Hall, Manhattan, Kansas 66506, by 17 July 1981.**

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**POSTDOCTORAL RESEARCH ASSOCIATE** position. Available August 1981. To study enzymes of aromatic oxidations and their genetic basis in bacteria. Background in microbial biochemistry required. Minimum salary of \$14,000 per year. Send curriculum vitae and references to: **Dr. Barrie F. Taylor, Division of Marine and Atmospheric Chemistry, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, Florida 33149.**

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**POSTDOCTORAL RESEARCH ASSOCIATES.** Two positions for NIH-supported project on cytochrome P-450 and carcinogen metabolism. Recent Ph.D. with strong background in biochemistry and evidence of research capability preferred. Send applications to: **Dr. C. S. Yang, Department of Biochemistry, College of Medicine and Dentistry of New Jersey-New Jersey Medical School, 100 Bergen Street, Newark, N.J. 07103. An Equal Opportunity/Affirmative Action Employer.**

### REPRODUCTIVE IMMUNOLOGY

Postdoctoral research positions (two) available immediately to study various aspects of immunoregulation during murine and human pregnancy. Model focuses on idiotype-anti-idiotype regulation of cellular immune function. Experience with tissue culture, long-term cell lines, and hydridomas is desirable. Apply with curriculum vitae and names of references to: **Daniel Stites, M.D., Department of Laboratory Medicine, 502-M, University of California, San Francisco, Calif. 94143.**

**RESEARCH ASSOCIATES**—Positions in laboratories of senior faculty persons in the areas of cellular and developmental neurobiology and circadian rhythms. Preference will be given to applicants who have proven ability to attract funding. Send curriculum vitae to: **Michael D. Gershon, M.D., Professor and Chairman, Department of Anatomy and Cell Biology, Columbia University College of Physicians and Surgeons, 630 West 168 Street, New York, N.Y. 10032. Affirmative Action/Equal Opportunity Employer.**

### RESEARCH ASSOCIATE

**CETUS CORPORATION**, a growing leader in biotechnology, is seeking an M.S. biochemist for protein-sequencing projects. Candidate must have two or more years of experience in amino acid analyzer, sequencer, and HPLC. Background in protein chemistry and modern analytical techniques is required. Training and expertise in structural analyses of proteins preferred. Send résumé, college transcripts, and three letters of recommendation to:

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## POSITIONS OPEN

**RESEARCH ASSOCIATE POSITION** in a Developmental Neurobiology Laboratory. Candidate should have extensive experience with axoplasmic tracer techniques and a background in neuroembryology. Write to: **Dr. Joseph Altman, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907.**

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**RESEARCH ASSOCIATE; \$16,000.** Effective immediately. Ph.D. in biochemistry or molecular biology. Experience necessary in area of molecular biology, particularly in recombinant DNA work. Project involves carcinogen-genome interactions. Send curriculum vitae and three letters of reference to: **Dr. Edward Bresnick, Department of Biochemistry, University of Vermont, Burlington, Vermont 05405.**

### RESEARCH FACULTY POSITIONS IN PHYSICAL OCEANOGRAPHY

The Department of Oceanography at the University of Washington invites applications for research faculty positions in physical oceanography. Applicants should have a strong experimental or theoretical background and must have a capability of developing a funded research program and teaching graduate-level courses. Level of appointment will depend on the qualifications of the candidate. The department has a broad spectrum of ongoing activities, operates three research vessels, and has strong interactions with other units in the University, such as the Applied Physics Laboratory and the Department of Atmospheric Sciences. Applications with supporting data and four letters of reference should be sent to: **Chairperson, Recruitment Committee, Department of Oceanography WB-10, University of Washington, Seattle, Wash. 98195. The University of Washington is an Equal Opportunity/Affirmative Action Employer.**

### RESEARCH POSITION

Permanent position at university hospital. Immunochemist or immunologist with biochemical background. Doctorate required. Work on immunological aspects of human cancer. Experience in radioisotope work, antibody fractionation, labeling, and immunoassays. Excellent salary and benefits. Send curriculum vitae and bibliography to: **Parimal Desai, Immunochemistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, Ill. 60201.**

**SENIOR RESEARCH ASSOCIATE** to perform studies on electron transfer reaction mechanisms in metalloenzymes and flavoproteins. Candidate must have practical experience in application of EPR spectroscopy, rapid freezing, and other rapid kinetic techniques to biochemical problems. Position available immediately. Salary negotiable. Send curriculum vitae and names of three references to: **Dr. L. M. Segel, Department of Biochemistry, Duke University, Durham, N.C. 27710. Equal Opportunity/Affirmative Action Employer.**

**SYSTEMATIC BOTANIST.** Postdoctoral 3-year term appointment as visiting assistant curator in floristic research for the Flora of Costa Rica project. Starting September 1981. Send curriculum vitae, names of references, and a statement of goals emphasizing research interests that would be compatible with preparation of family treatments for *Flora Costaricensis* to: **William Burger, Department of Botany, Field Museum of Natural History, Chicago, Ill. 60605. An Equal Opportunity Employer.**

## FELLOWSHIPS

### WILMOT CANCER RESEARCH FELLOWSHIPS

The University of Rochester School of Medicine is offering training in cancer research to individuals with an M.D. degree and at least 1 year of postdoctoral experience. Research fellows can train for up to 3 years in any discipline relevant to the cause, diagnosis, treatment, or prevention of cancer.

Stipends range from \$22,000 to \$25,000, depending on the number of years since the M.D. degree was achieved. There is also an annual allowance of \$4000 for other research costs.

For further information, contact:

**WILMOT CANCER RESEARCH FELLOWSHIP PROGRAM**  
Box 706  
University of Rochester  
School of Medicine and Dentistry  
601 Elmwood Avenue  
Rochester, N.Y. 14642

## FELLOWSHIPS

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position beginning September 1981 to study central nervous system control of water and electrolyte metabolism. Background in neurophysiological techniques, catecholamine assays, or metabolism studies desirable. Participation in teaching also expected. Send curriculum vitae and names of three references to:

**Dr. John R. Thornborough**  
Sophie Davis School of Biomedical Education  
The City College of New York  
137th Street and Convent Avenue  
Science Building, Room 909  
New York, N.Y. 10031

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**POSTDOCTORAL FELLOWSHIP.** NIH traineeship available in basic cancer chemotherapy dealing with the mechanism of action and metabolism of anticancer agents. Applicants must be either U.S. citizens or have a permanent visa. Send curriculum vitae and names of two references to: **Dr. H. George Mandel or Dr. Philip Klubes, Department of Pharmacology, The George Washington University Medical Center, 2300 Eye Street, NW, Washington, D.C. 20037.**

## ANNOUNCEMENT

**"25th Annual Report on Research under Sponsorship of The Petroleum Research Fund,"** containing 696 technical progress reports, bibliography, and information on the ACS-PRF program of grants-in-aid for "... advanced scientific education and fundamental research in the 'petroleum field,' ..." is available *gratis* upon request to: **The Petroleum Research Fund, American Chemical Society, 1155 16th Street, NW, Washington, D.C. 20036.**

## PROGRAMS

**POSTDOCTORAL TRAINING IN ENDOCRINOLOGY** at West Virginia University Medical Center. An interdisciplinary program supported by NIH. Positions filled as available, depending on candidate qualifications and needs of laboratories involved. Participating faculty, department affiliation, and research areas are: Margaret J. Albrink, M.D., Medicine, hyperlipidemia/insulin resistance; James B. Blair, Ph.D., Biochemistry, liver carbohydrate metabolism; Fred R. Butcher, Ph.D., Biochemistry, stimulus-secretion coupling; Roy L. Butcher, Ph.D., Obstetrics/Gynecology, pituitary-ovarian function; Howard D. Colby, Ph.D., Physiology, adrenal/hepatic monooxygenases; Robert A. Dailey, Ph.D., Animal Science, gonadotropins and follicular development; George A. Hedge, Ph.D. (program director), Physiology, thyroid/adrenal neuroendocrinology; E. Keith Inskeep, Ph.D., Animal Science, uterovarian relationships; Michael G. Mawhinney, Ph.D., Pharmacology, androgen/estrogen action; and John A. Thomas, Ph.D., Pharmacology, androgen actions/endocrine toxicology. Application information and more detailed descriptions of these research programs are available on request from: **Dr. George A. Hedge, Professor and Chairman, Department of Physiology, West Virginia University Medical Center, Morgantown, W.Va. 26506. West Virginia University is an Equal Opportunity/Affirmative Action Employer.**

### GRADUATE PROGRAMS IN ORAL BIOLOGY

Graduate programs leading to a Ph.D., M.S., or M.S.Den. degree are offered by the Department of Oral Biology, University of Washington School of Dentistry. Support is available for research training in the biochemistry, cell biology, microbiology, physiology, and/or pathology of salivary secretion for applicants with M.D., D.D.S., D.V.M., or equivalent degrees who are U.S. citizens or have a permanent visa. Stipends: \$13,380 to \$18,780.

For details, write to: **Dr. Patricia J. Keller, Department of Oral Biology, SB-22, University of Washington School of Dentistry, Seattle, Wash. 98195.**

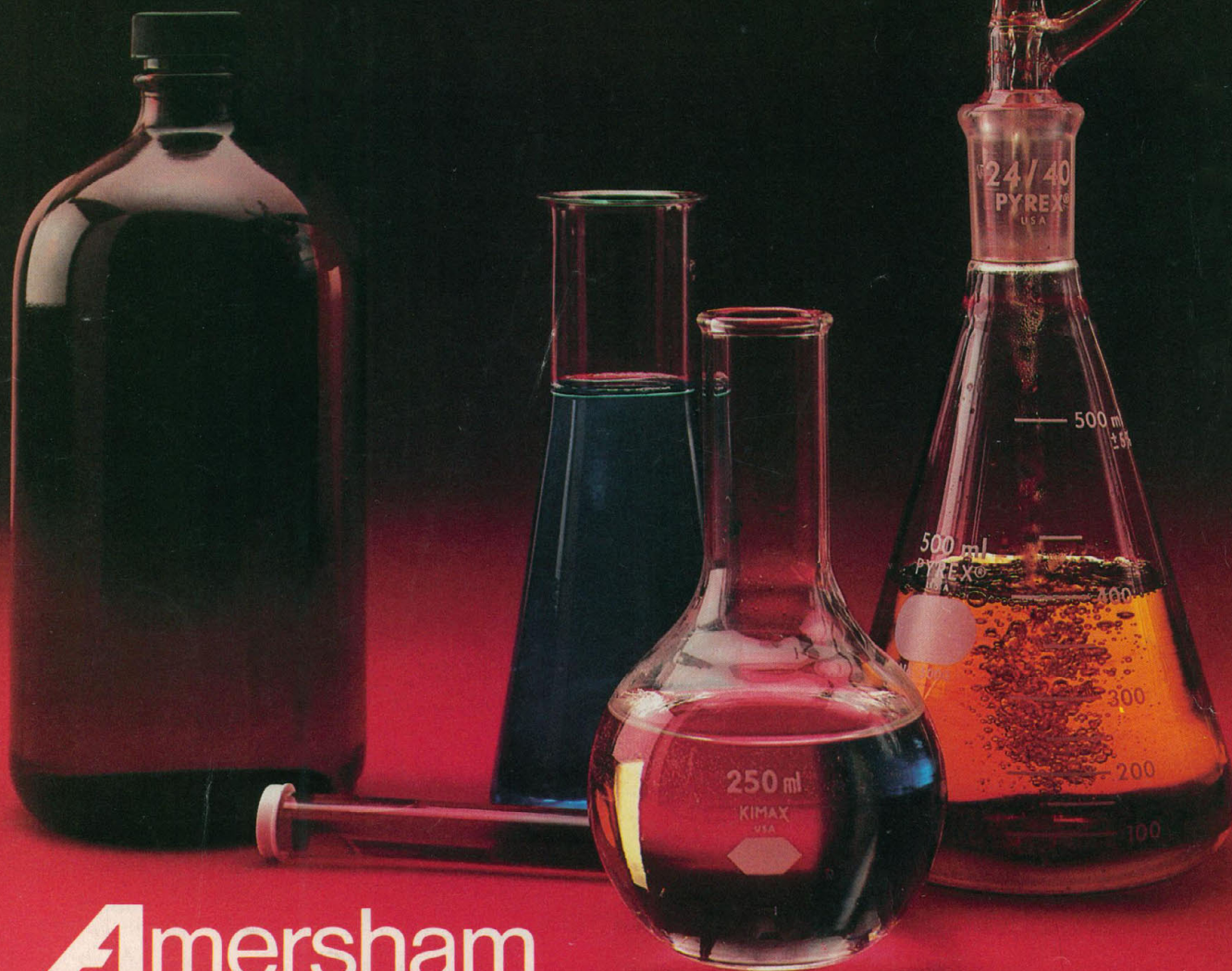
**PROFESSIONAL PROGRAM: DOCTOR OF OPTOMETRY (O.D.).** Accelerated program of two calendar years, specifically designed for the Ph.D. in the sciences to earn the O.D. degree. Opportunities exist in health-related teaching and research and an independent professional career. Program starts June 1982. Contact: **Director of Admissions, The New England College of Optometry, 424 Beacon Street, Boston, Mass. 02115. Telephone: 617-266-2030.**



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