

uses several maps supplied by Owen to contrast the resultant differences in paleogeography. One major difference is that that familiar old seaway known as Tethys is purely epicontinental according to Owen's maps, while we must invoke subduction of oceanic crust to explain Tethyan closure if we use conventional maps. The result of Howarth's willingness to state his preference without being closed-minded, an approach seen in a number of other chapters in this volume, is a model of good science writing—and might also serve as a model for all of us seeking to characterize the scientific endeavor.

I cannot say as much for most of the chapters of *The Evolving Biosphere*. Conflict, to be sure, can be found here: there are "cladists" and "evolutionary taxonomists," "vicariance" and "dispersalist" biogeographers, even "gradualists" and (semi-, at least) "punctationalists." But there is little verve—certainly nothing to recall the recent public spectacle in which some critics of the exhibition policy of the museum have (wrongly) equated "cladistics" with "punctuated equilibria" and the latter with, of all things, Marxism. In this volume we get no histories of biological systems through time (except some restricted examples) such as *The Evolving Earth* provides with respect to geology. We do get interesting discussions, such as Greenwood's spirited introduction to the section curiously entitled Coexistence and Coevolution, where he examines some of the problems some people find with natural selection as a viable scientific notion. Throughout the book, though, natural selection is used, but nowhere does anyone bother to discuss it or even to tell us what he thinks it is. Thus, though many chapters scrutinize aspects of the evolutionary process, there is little attempt in any of them to relate the discussion to any of the several major issues in contemporary evolutionary theory. The book, in short, eschews the notion of "evolving" evinced in *The Evolving Earth*, and, in focusing primarily on processes rather than on pattern, provides little that is novel, stimulating, or useful as a comprehensive review.

Individually, however, many of the essays of *The Evolving Biosphere* are of respectably high quality. I especially liked B. R. Rosen's handy and comprehensive summary of all the various sorts of ideas ever entertained to explain why there are more different kinds of organisms in the tropics than in the higher latitudes. But, too often, most readers are likely to find these chapters hard

going—too rough in view of the rewards to be gained.

Indeed, few of the chapters of either book can be considered an easy read. It is my feeling, though, that the essays of *The Evolving Earth* repay the effort more often than not, but that the same, unfortunately, is not true of those in *The Evolving Biosphere*.

NILES ELDREDGE

Department of Invertebrates,  
American Museum of Natural History,  
New York 10024

## Books Received

**The Architecture of Pipelined Computers.** Peter M. Kogge. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1981. xiv, 334 pp., illus. \$28.

**The Archives of the Peat Bogs.** Harry Godwin. Cambridge University Press, New York, 1981. viii, 230 pp., illus. \$49.50.

**Astrophysics and Space Physics Reviews.** Vol. 1. Rashid A. Syunyaev, Ed. Translated from the Russian by Richard B. Rodman. Harwood, New York, 1981. xii, 316 pp., illus. \$82. Soviet Scientific Reviews, Section E.

**Current Trends in Optics.** Papers from a meeting, Graz, Austria, 1981. F. T. Arecchi and F. R. Aussenegg, Eds. Taylor and Francis, London, and Halsted (Wiley), New York, 1981. viii, 190 pp., illus. Paper, \$34.95.

**Denitrification.** W. J. Payne. Wiley-Interscience, New York, 1981. xvi, 214 pp., illus. \$35.

**Denotational Semantics.** The Scott-Strachey Approach to Programming Language Theory. Joseph E. Stoy. MIT Press, Cambridge, Mass., 1981. xxxii, 414 pp. Paper, \$12.50. MIT Press Series in Computer Science, 1. Reprint of the 1977 edition.

**Detection and Measurement of Hazardous Gases.** C. F. Cullis and J. G. Firth, Eds. Heinemann, Exeter, N.H., 1981. x, 226 pp., illus. \$35.

**A Dictionary of the European Communities.** Geoffrey Parker and Brenda Parker. Butterworths, Boston, 1981. vi, 84 pp. Paper, \$9.95.

**The Hospitalized Child.** Psychosocial Issues. An Abstracted Bibliography. Dianna Lyell Akins, Gillian S. Mace, and Faren R. Akins. IFI/Plenum, New York, 1981. viii, 294 pp. \$75. IFI Data Base Library.

**The Impact of Malnutrition on Immune Defense in Parasitic Infestation.** Papers from a workshop, Lutry/Lausanne, Sept. 1980. Henri Isliker and Beat Schürch, Eds. Hans Huber, Bern, 1981. 200 pp. DM 37. Nestlé Foundation Publication Series, vol. 2.

**Industrial Systems Engineering and Management in Developing Countries.** Proceedings of a conference, Bangkok, Nov. 1980. Mario T. Tabucanon and Pakorn Adulbhan, Eds. Asian Institute of Technology, Bangkok, 1981 (U.S. distributor, Pergamon, New York). xiv, 914 pp., illus. \$135.

**Life Itself.** Its Origin and Nature. Francis Crick. Simon and Schuster, New York, 1981. 192 pp., illus. \$12.95.

**Linear Algebraic Groups.** T. A. Springer. Birkhäuser, Boston, 1981. x, 304 pp. \$18. Progress in Mathematics, vol. 9.

**Mathematical Methods in Social Science.** David J. Bartholomew. Wiley-Interscience, New York, 1981. x, 154 pp. Cloth, \$26.50; paper, \$14.50. Handbook of Applicable Mathematics, Guidebook 1.

**Mathematical Physics Reviews.** Vol. 2. S. P. Novikov, Ed. Translated from the Russian. Harwood, New York, 1981. xii, 270 pp., illus. \$70.50. Soviet Scientific Reviews, Section C.

**Methods of Representation Theory.** With Applications to Finite Groups and Orders. Vol. 1. Charles W. Curtis and Irving Reiner. Wiley-Interscience, New York, 1981. xxiv, 820 pp. \$55. Pure and Applied Mathematics.

**Microbial Ecology of the Phylloplane.** Papers from a symposium, Aberdeen, Sept. 1980. J. P. Blake-man, Ed. Academic Press, New York, 1981. xiv, 502 pp., illus. \$49.

**Microcosms in Ecological Research.** Papers from a symposium, Augusta, Ga., Nov. 1978. John P. Giesy, Jr., Ed. U.S. Department of Energy Technical Information Center, Oak Ridge, Tenn., 1980 (available as CONF-781101 from the National Technical Information Service, Springfield, Va.). xxviii, 1112 pp., illus. Paper, \$54. DOE Symposium Series, 52.

**The Neurophysiology of the Cerebral Cortex.** Lynn Bindman and Olof Lippold. University of Texas Press, Austin, 1981. xii, 496 pp., illus. \$85.

**New Approaches to Nerve and Muscle Disorders.** Basic and Applied Contributions. Proceedings of a symposium, Sydney, Feb. 1981. Antony D. Kidman, John K. Tomkins, and Roderick A. Westerman, Eds. Excerpta Medica, Amsterdam, 1981 (U.S. distributor, Elsevier North-Holland, New York). xiv, 418 pp., illus. \$63.75.

**New Directions in Ophthalmic Research.** Papers from a seminar, Mirabel, France, May 1980. Marvin L. Sears, Ed. Yale University Press, New Haven, 1981. x, 358 pp., illus. \$30.

**Overwash Processes.** Stephen P. Leatherman, Ed. Hutchinson Ross, Stroudsburg, Pa., 1981 (distributor, Academic Press, New York). xviii, 378 pp., illus. \$45. Benchmark Papers in Geology, 58.

**Oxford Reviews of Reproductive Biology.** Vol. 3. C. A. Finn, Ed. Clarendon (Oxford University Press), New York, 1981. viii, 326 pp., illus. \$69.

**Oxygen and Living Processes.** An Interdisciplinary Approach. Daniel L. Gilbert, Ed. Springer-Verlag, New York, 1981. xiv, 402 pp., illus. \$58.50.

**Paleontology and Paleoenvironments.** Readings from *American Scientist*. Brian J. Skinner, Ed. Kaufmann, Los Altos, Calif., 1981. iv, 206 pp., illus. Paper, \$9.95.

**Parapsychology.** Science or Magic? A Psychological Perspective. James E. Alcock. Pergamon, New York, 1981. xii, 224 pp. Cloth, \$35; paper, \$17.50. Foundations and Philosophy of Science and Technology Series.

**Particle Physics and Introduction to Field Theory.** T. D. Lee. Harwood, New York, 1981. xviii, 866 pp., illus. Cloth, \$59.50; paper, \$19.50.

**Particle Size Measurement.** Terence Allen. Chapman and Hall, London, ed. 3, 1981 (U.S. distributor, Methuen, New York). xxii, 678 pp., illus. \$55. Powder Technology Series.

**Patients and Healers in the Context of Culture.** An Exploration of the Borderland between Anthropology, Medicine, and Psychiatry. Arthur Kleinman. University of California Press, Berkeley, 1981. xvi, 428 pp. Paper, \$9.95. Comparative Studies of Health Systems and Medical Care, No. 3. Reprint of the 1979 edition.

**Reduction, Time and Reality.** Studies in the Philosophy of the Natural Sciences. Richard Healey, Ed. Cambridge University Press, New York, 1981. xii, 202 pp. \$27.50.

**Refuse Recycling and Recovery.** John R. Holmes. Wiley, New York, 1981. x, 186 pp., illus. \$30.95. The Institution of Environmental Science Series.

**Representations of Real Reductive Lie Groups.** David A. Vogan, Jr. Birkhäuser, Boston, 1981. xviii, 758 pp. \$35. Progress in Mathematics, vol. 15.

**Reproductive Immunology.** Papers from a seminar, New York, June 1980. Norbert Gleicher, Ed. Liss, New York, 1981. xviii, 492 pp., illus. \$86. Progress in Clinical and Biological Research, vol. 70.

**Site Control of Materials.** Handling, Storage and Protection. John E. Johnston. Butterworths, Boston, 1981. viii, 140 pp., illus. \$25.95.

**Skin Microbiology.** Relevance to Clinical Infection. Howard I. Maibach and Raza Aly, Eds. Springer-Verlag, New York, 1981. xiv, 354 pp., illus. \$38.50.

**Sleep 1980.** Circadian Rhythms, Dreams, Noise and Sleep, Neurophysiology, Therapy. Papers from a congress, Amsterdam, Sept. 1980. W. P. Koella, Ed. Karger, Basel, 1981. xiv, 464 pp., illus. \$148.50.

**The Slipped Disc.** James Cyriax. Scribner, New York, ed. 3, 1981. xii, 236 pp., illus. Paper, \$7.95. Reprint of the 1980 edition.

**Smooth Muscle.** An Assessment of Current Knowledge. Edith Bülbiring, Alison F. Brading, Allan W. Jones, and Tadao Tomita, Eds. University of Texas Press, Austin, 1981. xii, 564 pp., illus. \$95.

**The Social Basis of Scientific Discoveries.** Augustine Brannigan. Cambridge University Press, New York, 1981. xii, 212 pp. Cloth, \$24.95; paper, \$9.50.

**Social History of Nineteenth Century Mathematics.** Papers from a workshop, Berlin, July 1979. Herbert Mehrtens, Henk Bos, and Ivo Schneider, Eds. Birkhäuser, Boston, 1981. xii, 302 pp. \$24.95.

**Transmission and Distribution of Electrical Energy.** Walter L. Weeks. Harper and Row, New York, 1981. xvii, 302 pp., illus. \$16.

**Treatise on Materials Science and Technology.** Vol. 21, Electronic Structure and Properties. Frank Y. Fradin, Ed. Academic Press, New York, 1981. xii, 448 pp., illus. \$51.

**Underemployed Ph.D.'s.** Lewis C. Solmon, Laura Kent, Nancy L. Ochsner, and Margo-Lea Hurwicz. Lexington (Heath), Lexington, Mass., 1981. xviii, 350 pp. \$32.95.

**The Unified Model of the Universe.** The Geometrically Unified Field Solution. Sean Sheeter. Process Press, Berkeley, Calif., 1981. vi, 166 pp., illus. Cloth, \$18.95; paper, \$9.50.

**World Atlas.** Census Edition. Rand McNally, Chicago, 1981. Various pages. \$16.95.

# Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

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## POSITIONS WANTED

**Animal Behaviorist.** Ph.D. Experience in communication, social insects. Seeks university position. Will offer G.E. toaster oven to department granting interview. Zenith portable color TV if hired. Box 37, SCIENCE. X

**Biochemist.** Ph.D. 1976. Research experience in neurochemistry, membrane structure and transport, neural regulation of circadian rhythms, chronopharmacology. Seeks industrial, medical, academic research position in the Chicago area. Box 38, SCIENCE. 2/5, 19

**Botanist/Biologist.** Ph.D. 1981. Desires to teach in a 4-year liberal arts college or 2-year junior college. Will teach courses in botany and general biology; strengths are systematics, field biology, biogeography, evolution, ecology, biochemistry, and natural history. Will establish an active program of field research. Teaching experience and publications. Excellent references. Box 39, SCIENCE. X

**Ecologist/Ichthyologist.** Ph.D. 1979. Superb teacher, excellent references. Research on community dynamics, evolution, systematics. Experienced in environmental sciences: field, laboratory inquiry; estuarine and tropical systems; EPA, RCRA, power plant siting. Broad-based biologist and naturalist seeking research, teaching position in academia or industry. Seeking survival. Box 40, SCIENCE. X

**Research Associate.** M.S. (physiology) 1980. B.A. (biochemistry/biology) 1976. Seeks research position in neuroscience area. Has broad experience in histological and biochemical techniques, such as electron microscopy, uptake, release and binding methods, gel, gas and liquid chromatography. Box 42, SCIENCE. X

## POSITIONS WANTED

**Entomologist/Pesticides Chemist.** M.S. entomology (1980); B.S. pesticides chemistry (1973). Seeks research/industrial position in agriculture/entomology. Three years supervising in plant quarantine in foreign country; 1½ years of bioassay of various insecticides; 1 year of experience in purification of granulosis virus. Box 28, SCIENCE. X

**Medical Technologist.** BSMT 1974. Four years in clinical chemistry. Past 3 years in development and supervision of genetic marker/paternity laboratory. Competent in isoelectric focusing and electrophoresis on starch, agarose, and acrylamide. Prefers Midwest or Salt Lake area. Box 41, SCIENCE. X

**Nutritionist/Biochemist.** B.S. 1978. Research experience in protein chemistry, enzyme kinetics, inhalation toxicology. Diversified administrative experience. Seeks research or research administrative position. Open to relocation. 45 Lambert Lane, Springfield, Illinois 62704. Telephone: 217-546-1209. X

## POSITIONS OPEN

**ANATOMY TEACHING POSTDOCTORAL.** Starting date: 1 July 1982 to September 1983. For 1 year, with probable renewal. Gain experience in teaching gross anatomy and work in the laboratory with a faculty member involved in neurobiology, endocrinology, regeneration, or muscle biology. Submit curriculum vitae to: A. Hess, Department of Anatomy, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY-Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854. An Equal Opportunity/Affirmative Action Employer, M/F.

## ASSISTANT PROFESSORS

The Department of Biological Sciences at the University of Maryland Baltimore County (UMBC) will make a tenure-track appointment for fall 1982 in one of the following areas:

- 1) **ANIMAL PHYSIOLOGIST** with research interests in neural, endocrine, or regulatory problems in invertebrate or vertebrate biology, or
- 2) **PHYSIOLOGICAL ECOLOGIST** with research interests to complement current faculty research in ecological genetics, population dynamics, evolutionary ecology, behavior, and neural and endocrine physiology.

Candidates must have postdoctoral training and a record of research accomplishments. Appointees are expected to continue productive research programs and to teach at the undergraduate level in a team-taught course in anatomy and physiology, as well as advanced/graduate courses in their area of specialty. The Department of Biological Sciences offers the M.S. and Ph.D. degrees and also participates in the university-wide graduate program in marine/estuarine-environmental sciences. Funds will be provided to initiate research. Send curriculum vitae, statement of future research interests, and names of four referees to:

Dr. Frank E. Hanson  
Department of Biological Sciences  
University of Maryland Baltimore County  
Catonsville, Maryland 21228

UMBC is an Equal Opportunity/Affirmative Action Employer.

**ASSISTANT PROFESSOR OF ANATOMY.** Possible opening 1 July 1982 at the University of New England College of Osteopathic Medicine. Candidate should have commitment to teaching excellence and professional growth. Send curriculum vitae and names of three references to: Chairman, Anatomy Department, University of New England College of Osteopathic Medicine, 11 Hills Beach Road, Biddeford, Maine 04005. An Equal Opportunity/Affirmative Action Employer.

**ASSISTANT PROFESSOR-VERTEBRATE BIOLOGIST.** To begin fall 1982. Teaching, research, and responsibility for curating major neotropical bird collection. Research areas: evolution, behavior, biometrics, population genetics, or ecology. Teaching load: one laboratory course or two lecture courses per term. Send curriculum vitae with publications, papers presented, research and teaching interests, and three letters of recommendation to: Dr. M. L. Morton, Biology Department, Occidental College, Los Angeles, California 90041. An Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

### ASSISTANT DEAN and ASSOCIATE DIRECTOR Massachusetts Agriculture Experiment Station

Provide leadership in setting research priorities and policies, manage necessary resources and coordinating all research activities of the College of Food and Natural Resources. Doctorate or other experience/qualifications. Demonstrated effectiveness in administration. Apply: Dean Daniel I. Padberg, College of Food and Natural Resources, University of Massachusetts, Amherst, MA 01003. The University is an Affirmative Action/Equal Opportunity Employer.

**ASSISTANT PROFESSOR, BIOCHEMISTRY-MOLECULAR BIOLOGY,** tenure-track, 12-month position. Candidates should show outstanding potential for research and be interested in team teaching biochemistry and offering a graduate course in proteins and enzymes. Areas of research interest can include (but are not limited to) membrane biochemistry, enzyme regulation, or regulation of gene expression. Postdoctoral experience is desirable. This position will be approximately 75 percent research with an appointment in the Experiment Station. Please send curriculum vitae, a short statement of research interests, and three letters of reference by 19 February 1982 to: Dr. Wayne E. Magee, Head, Department of Bacteriology and Biochemistry, College of Agriculture, University of Idaho, Moscow, Idaho 83843. Affirmative Action/Equal Opportunity Employer.

**UNIVERSITY OF FLORIDA** seeks an **ASSISTANT RESEARCH SCIENTIST IN MEDICINE** with an M.D. or Ph.D. degree. Candidate should have 1 to 2 years of postdoctoral research experience in cell biology or a related discipline. Candidate should have experience with scanning and transmission electron microscopy. Individual must have ability to instruct postdoctoral fellows and medical students and to assist in direction of their research activities within a large nephrology training program. Recruiting deadline: 1 April 1982. Anticipated starting date: 1 July 1982. Contact: C. Craig Tisher, M.D., Department of Medicine, University of Florida, Box J-224, JHMHC, Gainesville, Florida 32610. An Equal Opportunity/Affirmative Action Employer.

**ASSOCIATE DIRECTOR FOR RESEARCH.** The University of Texas Health Center at Tyler is seeking qualified candidates for the position of associate director for research. Candidates should possess a doctorate in the medical or biomedical sciences with further postgraduate specialization in a research discipline. A record of excellence in scientific achievement and attainment of a senior faculty level or equivalent in an academic or research oriented institution, as well as a proven background in administrative roles, is required. Research interest in some facet of chest diseases is preferred. Send curriculum vitae and letter of interest to:

Search Committee  
c/o Director of Personnel  
The University of Texas Health Center at Tyler  
Box 2003  
Tyler, Texas 75710  
Equal Opportunity Employer

## BIOCHEMISTS-MOLECULAR BIOLOGISTS

Tenure-track faculty positions at assistant and associate professor levels. Candidates should be interested in developing strong and independent research with long-term growth potential on the mechanisms of gene expression at the molecular level in either prokaryotic or eukaryotic systems. This area may be interpreted broadly from chemical-physical to genetic interests. Teaching includes medical, dental, and graduate students at sizable and rapidly expanding medical complex. Biochemistry department with excellent new facilities is undergoing substantial expansion. Salary commensurate with experience and competitive. Curriculum vitae, brief statement of present and future research interests, and three letters of recommendation should be sent to: Dr. Robert D. Wells, Chairman, Department of Biochemistry, University of Alabama-Birmingham, Schools of Medicine and Dentistry, University Station, Birmingham, Alabama 35294. An Equal Opportunity/Affirmative Action Employer.

**KINGDOM OF  
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The School of Graduate Studies, University of Riyadh, Saudi Arabia, invites applications for interested **ACADEMIC RESEARCHERS** having the following qualifications:

- 1) Ph.D. from a well-known university in the disciplines of science, arts, or education,
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- 4) Particular experience in graduate studies.

Applications, accompanied by non-returnable photocopies of academic and relevant experience credentials and a recent photograph of the applicant, should be mailed within 1 month from this date to:

**Dean, School of Graduate Studies  
University of Riyadh  
P.O. Box 1241  
Riyadh, Saudi Arabia**

Applications should include applicant's address and telephone number so that selected candidates can be duly notified.

**KING FAISAL UNIVERSITY  
COLLEGE OF MEDICINE  
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**Faculty Positions Open  
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King Faisal University College of Medicine, now in its eighth year, invites applications from qualified men and women for the 1982-1983 academic year in:

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| Chemistry    | Pathology          |
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| Physiology   | Community Medicine |

Doctorate or equivalent degree required. Language of instruction is English. Interviews to be held in London and Houston during spring 1982.

Salaries are highly competitive and negotiable; comparable to other Saudi universities. Benefits include free furnished housing, educational allowances, air tickets to and from Saudi Arabia once each year for a family of four, 60-day paid vacation, and liberal overweight allowance. No Saudi income tax.

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

**Dr. Tawfik Tamimi  
Dean, College of Medicine  
King Faisal University Office  
Suite 540**

**2425 West Loop South  
Houston, Texas 77027**

**OR**

**c/o Saudi Arabian Educational Office  
29 Belgrave Square  
London, S.W. IX 8QB, England**

**METEOROLOGY  
at  
PENN STATE**

The Department of Meteorology at The Pennsylvania State University seeks applications and nominations for faculty positions in dynamic and synoptic meteorology.

The department desires to strengthen its capabilities in mesoscale analysis, modeling, and prediction, in atmospheric turbulence, and in planetary boundary layer modeling. University-funded tenure-track and fixed-term positions are available; rank and salary are open and will be adjusted in accordance with the qualifications, experience, and reputation of successful candidates.

The department administers programs leading to B.S., M.S., and Ph.D. degrees, a variety of research programs, and service programs that provide meteorological information to users throughout the Commonwealth. Faculty members are expected to be competent teachers who can stimulate students from the level of introductory service courses through graduate seminars. They are expected to develop their own research programs or collaborate with existing programs; the department seeks applicants who demonstrate a record of superior accomplishment or the potential for significant scholarly achievement.

Tenure-track salaries are for 9 months, with supplementary compensation available to those who secure research support. An attractive benefit program is available.

Applications or nominations will be received through 15 March 1982 by:

**Dr. John A. Dutton, Head  
Department of Meteorology  
The Pennsylvania State University  
503 Walker Building, Box A  
University Park, Pa. 16802**

Supporting information, such as curriculum vitae, reprints, and names of references, will be helpful. *The Pennsylvania State University is an Equal Opportunity/Affirmative Action Employer.*

**Applications Invited for Director,  
Division of Research Resources**

The National Institutes of Health invites nominations and applications for the position of Director, Division of Research Resources. This is a Civil Service position in the Senior Executive Service with a salary range of \$54,755 to \$61,300 per annum (currently limited to \$58,500.00). Applications will be accepted from all qualified Federal Government employees, members of the PHS Commissioned Corps, individuals with SES reinstatement eligibility, and qualified outside candidates. A one-year probationary period must be served if the individual selected is not currently in the SES.

The Director, Division of Research Resources, provides leadership and direction for a multi-million dollar biomedical grants and contracts program supporting the development and operation of multi-categorical research resources.

Further information about the position and qualification requirements may be obtained by contacting Ms. Patheria A. Wiggins at (301) 496-1524. Applications (SF-171, Personal Qualifications Statement) accompanied by a current curriculum vitae and bibliography should be submitted to Ms. Wiggins at: DRR Personnel, Building 31, Room 5B06, National Institutes of Health, 9000 Rockville Pike, Bethesda, MD 20205.

Applications must be postmarked not later than March 3, 1982. (The SF-171 form is available at all Federal Personnel Offices and Job Information Centers.) Applications from women and minority group candidates are solicited.

# EXECUTIVE DIRECTOR

The New York Academy of Sciences invites applicants for the position of Executive Director. Stated qualifications are the minimum requirements. Position available immediately.

The New York Academy of Sciences is a non-profit membership organization of more than 32,000 members. The Academy's primary activities include the publication of 20 or more Annals each year, the publication of The Sciences ten times a year, the organizing, funding and conducting of approximately 15 major scientific conferences each year, pre-collegiate science educational programs, and science-based public policy involvement.

THE EXECUTIVE DIRECTOR is the Chief Executive Officer of the Academy responsible to the Board of Governors which is made up of 16 volunteer scientists and other professionals. The Academy consists of a staff of 50, including an Administrative Director. The Administrative Director is responsible for day-to-day fiscal and personnel matters, and reports to the Executive Director.

Responsibilities: Identify future goals and directions for the Academy. Participate in policy making. Serve as spokesperson for the Academy with liaison to governmental agencies, foundations, and other public and private organizations. Assist in the development of and possible fund raising for existing and future programs.

Qualifications: Demonstrated outstanding achievement based on a record of successfully conceiving, developing, and completing substantial programs in science and science related fields.

Applicants' professional background should also demonstrate ability to relate to the community of scientists to be served and the ability to interact with academic institutions, governmental agencies, and industrial organizations and foundations.

Salary and benefits are competitive and commensurate with experience and qualifications.

Applicants should include a complete curriculum vitae and a list of three to five references. Applications and/or nominations should be sent by March 1, 1982, to:

**DR. HEINZ R. PAGELS, Chairman, Search Committee**

**The New York Academy of Sciences**

**2 East 63rd Street, New York, New York 10021**

## POSITIONS OPEN

The Institute of Marine Science at the University of Alaska is seeking an **ASSOCIATE PROFESSOR OF MARINE SCIENCE** (marine biologist/biological oceanographer), Seward Marine Center resident scientist. The successful applicant must be able to plan, initiate, and conduct independent research in marine biology; act as the scientific coordinator of the program of the Seward Marine Center, including collaboration in the planning and implementation of that research program with other Institute faculty members; and advise graduate students in thesis and dissertation research; and lecture in area of expertise. Applicant must have a Ph.D. degree in marine biology, biological oceanography, or related field; experience in scientific investigations at field stations; and must be capable of coordinating a multidisciplinary, multi-investigator research program, involving researchers from the main campus, 500 miles distance. Salary/rank will be dependent upon qualifications and experience. Closing date: 1 May 1982. Apply to: **Dr. Howard M. Feder, Institute of Marine Science, University of Alaska, Fairbanks, Alaska 99701.** *The University of Alaska is an Equal Opportunity/Affirmative Action Employer and Educational Institution.* Your application for employment with the University of Alaska may be subject to public disclosure if you are selected as a finalist.

### ASSOCIATE SCIENTIST

Join research team studying the role of vascular functions in the response to tumors and normal tissue to radiation and hyperthermia.

Individual must have M.S. in a biological science, plus experience in tissue culture, use of radioisotopes, animal surgery, and the construction and use of microelectrodes.

Salary: \$1425 and full range of excellent benefits.

Send résumé to: **MDES, Control Number 1-124, 309 Second Avenue, South, Minneapolis, Minn. 55401, attention: Nancy Thompson.**

**BIOLOGIST.** Department of Biology, University of Colorado, Colorado Springs, seeks biologist in forefront area of biochemistry, developmental biology, microbiology, or molecular genetics. Preference given to individuals with proven research ability and funded support with future potential for both. Rank and salary open. Responsibilities include undergraduate teaching in individual's area of specialty and participation in development of graduate program. Anticipated starting date: 23 August 1982. Send curriculum vitae and three letters of recommendation before 26 February 1982 to: **Dr. Robert H. Catlett, Chairman, Department of Biology, University of Colorado, Colorado Springs, Colo. 80933-7150.** *Affirmative Action/Equal Opportunity Employer.*

### FACULTY POSITION(S) IN OCCUPATIONAL MEDICINE

University of Washington  
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Assistant or associate professor position for physician/investigator in occupational medicine, with established research skills and ability to gain competitive grant support. Opportunity for joint appointment in clinical department.

Send curriculum vitae and names of three references by 1 April 1982 to:

**Gilbert S. Omenn, M.D., Chairman**  
Department of Environmental Health  
University of Washington  
Seattle, Wash. 98195

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### FACULTY POSITION(S) IN TOXICOLOGY

University of Washington  
Department of Environmental Health

Assistant or associate professor appointment(s) for individuals with established research interests and ability to gain competitive grant support in areas of biochemical/molecular toxicology. Experience in mechanisms of mutagenesis, teratogenesis, pulmonary toxicity, or differences in host responses would be attractive. Opportunity to participate in multidisciplinary graduate training program.

Send curriculum vitae and names of three references by 1 April 1982 to:

**Gilbert S. Omenn, M.D., Chairman**  
Department of Environmental Health  
University of Washington  
Seattle, Wash. 98195

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

## POSITIONS OPEN

### CANCER RESEARCH

The AMC Cancer Research Center and Hospital is planning a major expansion of its research program. Positions will become available for individuals at all levels engaged in active and aggressive research into the pathophysiology of cancer. Established, funded research groups are particularly sought. Excellent facilities are available, with the opportunity for expansion with programmatic growth. A 32-bed cancer hospital adjoining the research laboratories, and under unified research direction, provides access to clinical materials and interactions. Located in a suburb of Denver, AMC offers an invigorating intellectual and living environment. Résumés may be sent to: **Associate Director for Laboratory Research, AMC Cancer Research Center and Hospital, 6401 West Colfax Avenue, Lakewood, Colorado 80214.**

### CHAIRMAN DEPARTMENT OF BIOLOGICAL SCIENCES UNIVERSITY OF MARYLAND BALTIMORE COUNTY

The Department of Biological Sciences at the University of Maryland Baltimore County (UMBC) is seeking a distinguished scientist to serve as **CHAIRMAN.** The department presently has a group of 20 professional faculty ranging in research interests from molecular to population biology. It is anticipated that the department will be adding additional professorial faculty members within the next 3 years. Almost all faculty have federally funded research programs. Within a year, the department will expand into a new facility, effectively doubling the research and teaching space. The department presently offers the Ph.D. in biological sciences, in addition to the M.S. and B.A. degrees.

The appointment as professor and chairman is to become effective on or after 1 July 1982. Send curriculum vitae and names and addresses of at least three references to:

**Professors T. F. Roth and P. S. Lovett**  
Chairmen, Faculty Search Committee  
Department of Biological Sciences  
University of Maryland Baltimore County  
Catonsville, Maryland 21228

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

### CELL PHYSIOLOGIST DIVISION OF BIOLOGICAL SCIENCES College of Agriculture and Life Sciences CORNELL UNIVERSITY, ITHACA

Applications are invited for a tenure-track position as assistant professor in the Section of Physiology (fall 1982). Responsibilities include a major role in the new undergraduate lecture/laboratory course cell physiology (spring semester), participation in the graduate field of physiology, and an active research program in some aspect of functional regulation at the cellular level preferably with application to animal health. Excellent opportunities for collaboration exist in the Department of Animal Science, the College of Veterinary Medicine, and other sections of the Division of Biological Sciences. Send complete curriculum vitae, including evidence of potential for teaching excellence and a description of current and future research programs, and have three letters of recommendation sent directly to: **Klaus W. Beyenbach, Chairman, Search Committee, VRT 826, Cornell University, Ithaca, N.Y. 14853,** before the closing date: 15 March 1982. *Cornell University is an Affirmative Action/Equal Opportunity Employer.*

**INSTRUCTOR/ASSISTANT/ASSOCIATE PROFESSOR,** tenure-track. Requirements: master's degree in molecular biology required (doctorate preferred); computer experience preferred. Previous teaching experience is desirable and will be a criterion used for selection. Desired starting date: September 1982. Salary: negotiable, based on 9-month contract, depending upon qualifications and experience. All applicants must submit a letter of application, curriculum vitae, placement folder, terminal transcript, and three letters of reference to: **Southern Utah State College Personnel Office, Cedar City, Utah 84720,** no later than 5 p.m., 5 March 1982. Candidates will visit the campus at their own expense.

*An Equal Opportunity/Affirmative Action Employer*

## POSITIONS OPEN

### DEPARTMENT OF MEDICINE CHAIRMAN

The University of Missouri-Columbia, School of Medicine, is seeking a **PROFESSOR AND CHAIRMAN** of the Department of Medicine to direct a program of excellence in education, research, and patient care. The clinical facilities of the School of Medicine provide a bed capacity of 1100 and include the University of Missouri Hospital and Clinics, the Rusk Rehabilitation Center, and the Harry S Truman Veterans Administration Hospital. The Columbia campus is the largest of the four University of Missouri campuses and serves 25,000 students in 15 colleges and schools, including a College of Veterinary Medicine. Columbia itself is an appealing university town of 60,000 residents in addition to the student population. It has excellent nearby recreational facilities and is equidistant from St. Louis and Kansas City.

Applications are invited from physicians who are capable of developing a strong academic program in medicine. Curriculum vitae, bibliography, and letter of application should be sent to:

**J. Donald Easton, M.D.**  
Department of Neurology  
University of Missouri Health Sciences Center  
Columbia, Mo. 65212

*The University of Missouri is an Affirmative Action/Equal Opportunity Institution.*

### CHEMISTS, METABOLISM AND PHARMACOLOGY

Borrison Laboratories, Inc., a toxicology, metabolism, and analytical chemistry facility located in suburban Washington, D.C., has immediate openings for metabolic chemists.

We are looking for individuals with Ph.D., M.S., or B.S. degrees in biochemistry, organic chemistry, pharmacology, or closely related disciplines with two or more years in metabolism.

Experience with various chemical isolation and identification techniques, and a working knowledge of radiochemistry is required.

Borrison Laboratories, Inc., offers competitive salaries and an excellent benefits package. Please send résumé, in complete confidence, to: **Bob Dunnigan, c/o:**

**Borrison Laboratories, Inc.**  
5050 Beech Place  
Temple Hills, Md. 20748

*Equal Opportunity Employer, M/F*

**DEAN FOR ACADEMIC AFFAIRS** needed to provide leadership in developing and administering instructional program. Appointment: 1 July 1982.

**HEAD OF EDUCATIONAL RESOURCE CENTER** needed for outreach, research, and evaluation programs. Immediate appointment.

For information, write: **Director, North Carolina School of Science and Mathematics, P.O. Box 2418, Durham, N.C. 27705.**

**ENTOMOLOGY.** Three positions (insect physiology, pest management, and insect morphology), each 12-month, tenure-track positions. Interested persons should contract: **T. J. Helms, Head, Department of Entomology, Mississippi State University, Drawer EM, Mississippi State, Miss. 39762** (telephone: 601-325-3243), for additional information. *Mississippi State University is an Affirmative Action/Equal Opportunity Institution.*

**EXPERIMENTAL NUTRITIONIST.** The Department of Nutrition, University of California, Davis, is seeking applicants for an 11-month, tenure-track faculty position at an entry level commensurate with the qualifications of the applicant. Teaching (50 percent): participate in graduate and undergraduate level courses in areas that emphasize current concepts in metabolic regulation and the interrelationship between nutrition and disease; research (50 percent): independent research in experimental nutrition that has application to human nutrition. A Ph.D. or M.D. is required in nutrition or closely related field. To qualify for a senior rank, the appointee must be an established investigator. Interested persons send résumé, bibliography, official undergraduate and graduate transcripts (if applicant is within 5 years of graduation date), a statement of research and teaching interests, and the names of three references who may be contacted to: **J. S. Stern, Department of Nutrition, University of California, Davis, Calif. 95616.** *The University of California is an Affirmative Action/Equal Opportunity Employer and will welcome applications from members of minority groups and women.* Apply by 1 June 1982.

# ENDOCRINOLOGIST

Sterling-Winthrop Research Institute announces an opening in our Department of Endocrinology at the PhD level (or equivalent) for an Endocrin Biochemist.

The successful candidate will have 1-2 years experience and interest in receptor physiology and enzymology. Experience in RIA methodology would also be helpful. Special consideration will be given to candidates with drug discovery experience.

We offer an attractive salary and benefit package with the opportunity for career growth. The Institute is located near Albany, New York, which is the center of major summer and winter recreational activities.

Please send your Curriculum Vitae including salary requirement in confidence to:

Mr. John Barry,  
Employment Administrator



**STERLING-WINTHROP  
RESEARCH INSTITUTE**  
*A Division of Sterling Drug Inc.*

Columbia Turnpike, Rensselaer, N.Y. 12144

An Equal Opportunity Employer M/F/H

## CSIRO

**COMPUTER SYSTEMS DEVELOPER**  
A\$19,662 to A\$28,564 per annum  
**DIVISION OF COMPUTING RESEARCH**  
CANBERRA, ACT, AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The organization has approximately 7500 employees, 2700 of whom are research and professional scientists, located in divisions and sections throughout Australia.

**GENERAL:** The Division of Computing Research operates an Australia-wide computer network to provide a computing service to CSIRO, government, and other users throughout the country. Major host computers used by the division include a CDC Cyber 76, a CDC 730, a FACOM M190, two FACOM M150s, and a Two Pi V32, and services are offered using the CDC operating systems SCOPE 2 and NOS/BE, FACOM OSIV/F4, and IBM VM370/CMS. The host computers are connected to each other and to the long distance communications network by a local high speed (50 million bits per second) contention network using a Network Systems Corporation HYPERchannel.

**DUTIES:** As a member of the division's Ultra High Speed and FACOM Systems Section, carry out development projects, and provide support and consulting functions for the FACOM host systems and the HYPERchannel local network.

**QUALIFICATIONS:** A Ph.D. or equivalent in computing science or a related field. Proven experience in communications and systems software development is essential.

**TENURE:** Five years with possibility of extension. Superannuation benefits available.

**APPLICATIONS:** In writing and stating full personal and professional details, the names of at least two referees, and quoting reference number A1121, should reach:

The Chief  
Division of Computing Research  
CSIRO  
P.O. Box 1800  
CANBERRA CITY, ACT 2601, AUSTRALIA

by 19 February 1982.

## CSIRO

**PLANT (ALGAL) PHYSIOLOGIST**  
A\$19,662 to A\$28,564 per annum  
**CSIRO MARINE LABORATORIES**  
**DIVISION OF FISHERIES RESEARCH**  
CRONULLA, NSW, AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The organization has approximately 7500 employees, 2700 of whom are research and professional scientists, located in divisions and sections throughout Australia.

**GENERAL:** The CSIRO Divisions of Fisheries Research and Oceanography collectively form the CSIRO Marine Laboratories and are Australia's principal marine laboratories, employing about 200 scientists and support staff. The main laboratory is in Sydney and there are smaller laboratories in Brisbane and Perth.

The Sydney activities will be transferred to new laboratories to be constructed on a deep waterfront site in Hobart, Tasmania, and the appointee must be prepared to transfer to Hobart at any time after December 1982. The Australian government has also agreed to the acquisition by CSIRO of a modern oceanographic ship to replace the presently chartered *Sprightly*.

**DUTIES:** To study adaptations of unicellular marine algae to underwater irradiance. Features to be investigated could include photosynthetic energy transfer reactions, light receptors, pigments, carbon fixation pathways, genetic control of adaptive responses, and ultrastructural modifications particularly within the chloroplast. A culture collection of over 100 species of unicellular marine algae is maintained for experimental purposes.

**QUALIFICATIONS:** A Ph.D. or equivalent in plant physiology or biochemistry with several years of experience and demonstrated ability in some aspect of photosynthesis research. Experience with light responses of plants and culturing techniques an advantage. Ability to work at sea occasionally essential.

**TENURE:** Three years. Superannuation benefits available.

**APPLICATIONS:** In writing, quoting reference number A2352 and giving full personal particulars, details of qualifications and experience, and the names of at least two professional referees, should reach: The Chief, Division of Fisheries Research, CSIRO, P.O. Box 21, CRONULLA, NSW 2230, AUSTRALIA, by 19 February 1982.

## RESEARCH in BIOCHEMISTRY

Under the auspices of the University Biochemistry Group comprised of members of the Faculties of Medicine and Science, the University of Calgary offers an interdisciplinary environment for graduate and post-doctoral research on a broad range of problems in modern Biochemistry. Highly qualified students with training in biochemistry, chemistry, biology, or related disciplines may be admitted to programmes leading to the MSc and PhD degrees. Research/teaching assistantships (\$8350.00 to \$9700.00/yr) are available from the university. Studentships (\$10,000/yr plus \$2500.00 research allowance) and post-doctoral fellowships (\$17,000/yr plus \$5000.00 research allowance) are available from the newly created Alberta Heritage Foundation for Medical Research and may be applied for via The University of Calgary. Removal allowances are also available. For further details send resume to:

Dr. George Drummond, Chairman, University Biochemistry Group, Division of Biochemistry, The University of Calgary, 2500 University Drive, North West, Calgary, Alberta, Canada. T2N 1N4



## POSITIONS OPEN

### DIRECTOR CENTER OF ALCOHOL STUDIES

Rutgers, The State University of New Jersey, invites applications and nominations for the position of director of the Center of Alcohol Studies in New Brunswick, New Jersey. The position is available immediately or 1 July 1982, with salary and rank being negotiable. Direct inquiries to:

**Professor Calvin Martin**  
Chairman, Search Committee  
c/o Office of the  
Vice President  
for University Personnel

**RUTGERS**

The State University  
New Brunswick, N.J. 08903

*Affirmative Action/Equal Opportunity Employer*

**FACULTY POSITION.** The School of Public Health is accepting applications for a tenure-track position at the assistant professor level. Applicant must have a Ph.D. degree and 2 to 3 years of postdoctoral experience in environmental health or related fields. Academic background must show strength in analytical chemistry with an environmental orientation. Responsibilities include graduate level teaching, research, and community service in a major environmental health program. Starting date: approximately 1 July 1982. Application deadline: 1 April 1982. Send curriculum vitae and the names and addresses of three references to: **C. E. McJilton, Ph.D., Chairman, Search Committee, 1110(C) Mayo Memorial Building, University of Minnesota, Minneapolis, Minn. 55455.** The University of Minnesota is an Equal Opportunity Educator and Employer, and specifically invites and encourages applications from women and minorities.

### GENETICIST/PLANT BREEDER

The Department of Botany and Plant Sciences, University of California, Riverside, announces a position at the assistant professor level, with both an experiment station and an academic title, available 1 July 1982. The position is a tenure-track, 11-month appointment in the College of Natural and Agricultural Sciences and in the Agricultural Experiment Station. A Ph.D. is required; postdoctoral experience is preferred, but all qualified candidates will be considered. A quantitative and/or physiological genetics background is desirable, with emphasis in the genetics of tree, agricultural, or horticultural crops preferred, but candidates with other backgrounds are encouraged to apply. The successful candidate will be expected to develop a vigorous, independent research program. Appointee must assume responsibility for an ongoing breeding program in citrus, including the development of rootstocks. A secondary program in breeding or genetics also is expected. Opportunities exist for interaction with research workers in pathology, virology, entomology, nematology, plant physiology, biochemistry, soil and environmental sciences, and statistics. Teaching responsibilities will include courses in genetics and plant breeding. Must be willing to serve as major professor for M.S. and Ph.D. students.

Send curriculum vitae and official transcripts, and arrange to have at least three letters of recommendation sent to: **Dr. Giles Waines, Chairman, Geneticist/Plant Breeder Search Committee, Department of Botany and Plant Sciences, University of California, Riverside, California 92521.** Application deadline is 15 March 1982, or later if a suitable applicant has not been selected.

### INSTRUCTOR IN RADIATION PHYSICS

An immediate opening exists for the position of an instructor in the Radiation Physics Division of the Medical College of Virginia (MCV). Minimum qualifications for this position are a Ph.D. in physics with 2 to 3 years of experience in teaching undergraduate classes and some research background in biological or medical radiation physics. Duties will include teaching basic physics principles to x-ray and radiation therapy technology students, at an undergraduate level. Starting salary will be \$19,800. MCV is an Equal Opportunity Employer. Contact: **Dr. G. Rao, Medical College of Virginia, Box 72 MCV Station, Richmond, Va. 23298.**

## POSITIONS OPEN

### FACULTY POSITIONS

The Department of Biology, Temple University, expects to make one, or possibly two, tenure-track appointments effective 1 July 1982. The primary position is for a **MOLECULAR BIOLOGIST** interested in gene regulation in prokaryote or eukaryote systems using current DNA technology. The second position is for a **MICROBIOLOGIST**. Candidates are expected to have at least 1 year of postdoctoral experience. Duties include the development of an active research program, the training of graduate students, and teaching at both the graduate and undergraduate levels. Interested candidates should send a résumé, a statement of research plans, and the names of three references by 1 March to: **Michael I. Mote, Professor and Chairman, Department of Biology, Temple University, Philadelphia, Pa. 19122.** The University is an Equal Opportunity/Affirmative Action Employer.

### FISHERIES BIOLOGIST/BIOLOGICAL STATION DIRECTOR

The Department of Biological Sciences of Murray State University announces a position opening for a fisheries biologist/ichthyologist who may also serve as director of the Hancock Biological Station located on the shore of Kentucky Lake. The position is a tenure-track faculty position, commencing with the 1982-1983 academic year. A Ph.D. degree and demonstrated experience in teaching and research are required. The successful candidate will be expected to teach ichthyology and fisheries courses, establish an active research program related to regional resources, and seek funds for and direct the activities of the station. Review of applications will begin 10 February 1982, and continue until position is filled. Salary and rank are open. Send curriculum vitae, reprints of publications, statement of research interests, and three letters of reference to: **Chairman, Search Committee, Department of Biological Sciences, Murray State University, Murray, Ky. 42071.** Murray State University is an Equal Opportunity/Affirmative Action Employer.

### HAZARDOUS MATERIALS MANAGEMENT AND CONTROL

The departments of Engineering and Public Policy and Civil Engineering at Carnegie-Mellon University (C-MU) are seeking to add a new jointly appointed faculty member at the level of assistant professor to collaborate in an existing research effort related to the management and control of toxic and hazardous materials. Problem areas of particular interest include groundwater contamination, air impacts of waste incineration, and applied risk assessment and hazard screening, and geostatistics. Send résumé with list of publications and statement of research interests to:

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

*C-MU is an Equal Opportunity Employer.*

The MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) is seeking an applicant for a **JUNIOR FACULTY POSITION, tenure-track, in PSYCHOLOGY.** We are seeking a Ph.D., with demonstrable scientific accomplishments, to engage in research and teaching in the area of biological motor control and the theories of movement of multilinked systems with many degrees of freedom. Background in motor psychophysics, artificial intelligence, mathematics, and engineering preferred. Applicants should send curriculum vitae and three letters of reference, if possible by 15 March 1982 or as soon thereafter as feasible, to: **Dr. Emilio Bizzi, Chair, Search Committee, Department of Psychology, Massachusetts Institute of Technology, Cambridge, Mass. 02139.** MIT is an Equal Opportunity Employer.

**MARINE BOTANIST.** Harbor Branch Foundation is seeking applications for a permanent position in marine botany. Candidates should hold the Ph.D. degree and have postdoctoral experience in marine phyecology, for example, marine algal physiology, ecology, aquaculture. Incumbent expected to develop innovative research program and cooperate with ongoing multidisciplinary studies. Salary and rank commensurate with experience. Send curriculum vitae, a statement of research interests, and the names of three references by 15 April 1982 to: **R. A. Gibson, Search Committee, Harbor Branch Foundation, Inc., RR 1, Box 196, Ft. Pierce, Florida 33450.** Harbor Branch Foundation, Inc., is an Equal Opportunity Employer.

## POSITIONS OPEN

**MICROBIAL GENETICIST**—Applications are invited for a position at the assistant professor level. Applicants should have a strong background in microbial genetics with demonstrable research interests in the genetics of pathogenic microorganisms. Responsibilities include teaching microbial genetics and pathogenesis to medical and graduate students. The successful candidate should also be able to develop an active research program and act as preceptor to graduate students. Applicants should submit curriculum vitae and names of three referees to: **Chairman, Search Committee, Department of Microbiology and Immunology, Temple University School of Medicine, 3400 North Broad Street, Philadelphia, Pa. 19140.** An Equal Opportunity/Affirmative Action Employer.

**MICROBIOLOGY.** Permanent, full-time teaching position at assistant/associate professor level. Ph.D. required. Salary based on credentials. Available immediately. Send résumé, transcripts, and three letters of recommendation as soon as possible to: **Academic Dean, Sherman College of Straight Chiropractic, Box 1452, Spartanburg, S.C. 29304.** Affirmative Action/Equal Opportunity Employer.

### MOLECULAR BIOLOGISTS— RECOMBINANT DNA

Several tenure-track positions for molecular biologists exist starting September 1982 at the assistant professor or more senior level. Applicants must have 2 years of postdoctoral training and be capable of establishing strong, creative, and independent research programs utilizing recombinant DNA technologies. Responsibilities include undergraduate and graduate instruction in the area of expertise. Send curriculum vitae, in-press manuscripts, copies of three representative publications, statement of research goals, and a list of three references by 1 March 1982 to:

**Chairperson, Molecular Biology Search Committee**  
College of Sciences  
San Diego State University  
San Diego, California 92182

*San Diego State University is an Equal Opportunity/Affirmative Action Employer.*

### MOLECULAR BIOLOGIST/VIROLOGIST

Assistant professor. Applications are invited for a tenure-track position in the Department of Microbiology-Immunology. The position will allow maximum opportunity to initiate an independent research program while providing teaching opportunities in the graduate and medical-dental programs. Applicants should send curriculum vitae, a summary of research interests, and the names of three references to: **Dr. Kathleen Rundell, Search Committee, Department of Microbiology-Immunology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Ill. 60611.**



### MOLECULAR BIOLOGISTS

**SYNERGEN**, an established biotechnology firm with laboratories in Boulder, Colorado, is expanding its scientific staff. We seek exceptional individuals with broad interests and records of imaginative research who will enjoy a vigorous and interactive research environment. We are particularly interested in postdoctoral scientists with the following qualifications:

**MOLECULAR BIOLOGISTS** experienced in all phases of cloning and sequencing and/or manipulation and expression of cloned genes.

We offer competitive salaries, liberal benefits, and an exceptional scientific and living environment. To apply, in confidence, please submit a résumé, a statement of your research interests, and a bibliography or reprints to:

**Recruitment Director**  
**SYNERGEN ASSOCIATES**  
1885 33rd Street  
Boulder, Colo. 80301

## BIOLOGIST

SYNTEX, on the SAN FRANCISCO PENINSULA, one of the world's leading Pharmaceutical/Life Sciences firms has an opening for a Biologist to play a key role in the preparation and characterization of monoclonal antibodies.

Requires BS/MS in Immunology or related field with a background in biochemistry and genetics. 1-5 yrs. experience in tissue culture, immunoassays and protein separation preferred. Successful candidate will be a responsible individual with ability to work with a minimum of supervision.

SYNTEX offers attractive salaries and benefits in a superb scientific environment. Please send resume to B. Amos (Refer to Job #10022), SYNTEX, 3401 Hillview Ave., Palo Alto, CA 94304. We are an equal opportunity employer/women and minorities are encouraged to apply.



**SYNTEX**



THE  
UNIVERSITY  
OF CALGARY

## PROFESSOR in BIOLOGY

The University of Calgary invites applications for the position of Assistant Professor in the Department of Biology. The successful candidate will be expected to teach a course in introductory genetics to science students, to develop an upper-level course in eukaryote genetics, and to develop an active research programme in the field of modern cellular and developmental genetics of eukaryote systems. Applicants must hold the Ph.D. degree or equivalent. Post-doctoral work and experience in university-level teaching are desirable. Candidates with training in recombinant DNA technology are particularly encouraged to apply.

The appointment will be open as of July 1st, 1982, with an expected starting salary in the range of \$25,500 to \$32,500, based on the 1981-82 scale.

Citizens and permanent residents of Canada will be given preference. Applicants are requested to submit a complete curriculum vitae and three academic references, by February 15th, 1982 to:

**Dr. D. Parkinson, Head  
Department of Biology  
The University of Calgary  
2500 University Drive N.W.  
Calgary, Alberta T2N 1N4**

## Institut Pasteur - Paris

**Two  
permanent positions**

available in the

**Groupement de  
Génie Génétique G3**

Requirements are Ph. D. or equivalent and experience in molecular biology and genetics of prokaryotes and/ or yeast, or in eukaryotic cloning and expression vectors.

Further scientific information from : J.P. Aubert, H. Eisen, P. Tiollais, M. Yaniv, Institut Pasteur, Paris, Tel. : 306.19.19 and R. Streeck, Munich, RFA, Tel. : 5996430.

Send applications to Mr. P. Duchatellier, Directeur du Personnel INSTITUT PASTEUR, 28, rue du Docteur Roux, 75724 Paris Cedex 15, France.



HARVARD  
SCHOOL  
OF  
PUBLIC  
HEALTH

## GRADUATE PROGRAMS IN ENVIRONMENTAL HEALTH SCIENCES

**1982-83**

The Harvard School of Public Health is seeking candidates for enrollment in its graduate programs in occupational and environmental health. People qualified for enrollment range from recent bachelor degree recipients to mid-career professionals. Areas in which enrollees can specialize include air pollution control, occupational health, industrial hygiene, radiation protection and environmental health management. Supplementing the teaching program are extensive opportunities for research, both for M.S. and doctoral candidates, in the development and application of techniques for monitoring worker and public exposures to airborne particulates and gases, the development of mathematical models for estimating exposures in indoor and outdoor environments, air and gas cleaning including the control of naturally occurring airborne radionuclides in buildings, the application of physical and chemical methods for identifying the sources of specific environmental containments, and the evaluation of associated risks. A range of traineeship and fellowship support is available.

The deadline for applying for fall, 1982, admission is March 1, 1982. Potential applicants should contact the Department of Environmental Health Sciences, Harvard School of Public Health, 665 Huntington Avenue, Boston, MA 02115 (617: 732-1169).

## POSITIONS OPEN

**LABORATORY SUPERVISOR** (histopathology)—Experienced technician to be in charge of histopathology laboratory in a new specialty orthopedic hospital. This department is concerned with routine and research studies on the histopathology of bones, joints, muscles, and other connective tissues with subsections for electron microscopy, histochemistry, and bone structures. A degree in a biological subject essential, together with experience in routine histopathology and supervisory background. Experience in one or more of the special areas of interest of the laboratory (electron microscopy, undecalcified bone sections, microradiology, histochemistry) advantageous. Please send detailed résumé to: **Personnel Department, HOSPITAL FOR JOINT DISEASES, ORTHOPAEDIC INSTITUTE, 301 East 17 Street, New York, N.Y. 10003.** Affiliated with Beth Israel Medical Center. An Equal Opportunity Employer, M/F.

**MOLECULAR BIOLOGIST.** Postdoctoral position available to study genetics and regulation of aromatic hydrocarbon degradation by *Pseudomonas* species. Experience with recombinant DNA technology essential. Applicants should submit curriculum vitae and three letters of recommendation to:

**Dr. David Gibson**  
Director, Center for Applied Microbiology  
University of Texas at Austin  
Austin, Texas 78712

### NEUROPHYSIOLOGIST HARVARD MEDICAL SCHOOL

Postdoctoral position to study neural basis of circadian timekeeping in primates. Experience with lesioning, histology, histochemistry, and/or chronic implantation desirable. Send curriculum vitae and names of three referees to: **Dr. Martin C. Moore-Ede, Department of Physiology, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115.**

**ORGANIC CHEMIST.** We are a young, dynamic biotechnology company located in highly desirable San Diego near University of California, San Diego, Scripps Clinic, and Salk Institute, with an immediate opening for a Ph.D. in organic chemistry to conduct publishable research on nucleotide and drug synthesis. Our major involvements are in the areas of drug delivery and recombinant DNA. Send résumé, reprints, and at least three references.

Box 35, SCIENCE.

### PATHOLOGIST

New Jersey Board-eligible or -certified preferred for an academic teaching position located primarily at the Rutgers Medical School campus in Piscataway, New Jersey. Individual with research orientation preferred; service interests will be considered; immunopathology, virology, carcinogenesis areas highly desirable. An excellent opportunity to mature professionally in a new department of a developing academic institution. Research facilities at either the Camden or Rutgers Medical School campus can be arranged. Send letter of intent, curriculum vitae, and names, addresses, and telephone numbers of at least three references to: **Dr. S. M. Epstein, Chairperson, Department of Pathology, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—New Jersey School of Osteopathic Medicine, 300 Broadway, Camden, N.J. 08103.** Equal Opportunity/Affirmative Action Employer, M/F.

**PLANT ECOLOGY.** Tenure-track assistant professor position in environmental studies. We are seeking a Ph.D. with a rare balance of professional competence, commitment to undergraduate teaching excellence, and human insight to teach introductory forestry, plant ecology and physiology, and dendrology. *Women and members of minority groups are encouraged to apply.* Send résumé and cover letter to: **Dr. Edward Paul, Dean, Faculty of Natural Sciences and Mathematics, Box 7440, Stockton State College, Pomona, N.J. 08240.**

**THE DEPARTMENT OF BOTANY, DUKE UNIVERSITY,** seeks a **PLANT MOLECULAR BIOLOGIST** with expertise in recombinant DNA technology for a tenure-track position at the assistant professor level. The individual is expected to establish an active research program, contribute to the departmental course offerings, and participate in the interdepartmental graduate program in genetics and/or cell and molecular biology. Send curriculum vitae, statement of research plans, and the names of three references to: **Dr. James N. Siedow, Chairman of the Search Committee, Department of Botany, Duke University, Durham N.C. 27706.** Application deadline is 22 March 1982. An Affirmative Action/Equal Opportunity Employer.

## POSITIONS OPEN

### PHYSICAL OCEANOGRAPHER

A postdoctoral research position in physical oceanography is available at the University of North Carolina at Chapel Hill, to begin as early as March 1982. Ph.D.'s with background and interests in mesoscale Gulf Stream dynamics, geophysical fluid dynamics, or ocean acoustics are encouraged to apply. Initial appointment will be for 1 year with a possible continuation through a maximum of 3 years. Please send curriculum vitae and the names of three references to:

**Professor John M. Bane**  
Marine Sciences Program  
12-5 Venable Hall 045A  
University of North Carolina  
Chapel Hill, North Carolina 27514

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

Two temporary positions open in a Department of Biology. One position is for a **PHYSIOLOGIST**, full-time for the 1982-1983 academic year. Undergraduate teaching duties are a course in vertebrate physiology and an advanced course in special area of choice. Other position for **ECOLOGIST** to teach general ecology, spring semester 1983. Please send curriculum vitae and at least two references by 15 March 1982 to: **Dr. Richard B. Crawford, Chairman, Department of Biology, Trinity College, Hartford, Conn. 06106.** Affirmative Action/Equal Opportunity Employer.

**PLANT PHYSIOLOGIST/PLANT PATHOLOGIST.** Assistant professor, Department of Plant Pathology, University of California, Riverside. Full-time, tenure-track position. Appointee to develop innovative research program on translocation of exogenous compounds in plants, emphasizing systemic agents that control disease. Graduate-level teaching 15 to 20 percent of time. Ph.D. required, with background in plant physiology, plant biochemistry, or plant pathology. Research experience in plant translocation desirable. Curriculum vitae, complete transcripts, and three confidential letters of recommendation should be sent to: **Dr. J. W. Eckert, Search Committee Chairman, Department of Plant Pathology, University of California, Riverside, Calif. 92521.** Application deadline is 31 March 1982 or later if a suitable applicant has not been selected. Equal Opportunity/Affirmative Action Employer.

**TWO OPENINGS AT THE POSTDOCTORAL LEVEL:** Immediate opening for Ph.D. in neurobiology to work on tinnitus using metabolic mapping, electrophysiological, and computerized image analysis techniques. Immediate opening for Ph.D. in neurophysiology or neuroanatomy to examine synaptic organization in the olfactory bulb related to odor reception. For more information: **Dr. John Kauer, Section of Neurosurgery, Yale School of Medicine, New Haven, Conn. 06510.**

**POSTDOCTORAL POSITION** available immediately to study: activity of proteolytic enzymes at the cell surface; role of proteolytic enzymes in the invasive behavior of normal and malignant cells. Experience in protein purification and/or antibody technology desirable but not essential. Salary range: \$16,000 to \$20,000. Send curriculum vitae and three reference names to: **Dr. James P. Quigley, Downstate Medical Center, Box 44, 450 Clarkson Avenue, Brooklyn, N.Y. 11203.**

### POSTDOCTORAL POSITIONS

Two positions are available in the Section of Plant Biology, Division of Biological Sciences, Cornell University.

1) Ion transport in plants. The project is primarily concerned with characterizing the transport of  $H^+$  and other ions in membrane vesicles, isolated protoplasts, and intact cells. Experience in membrane biochemistry and/or electrophysiology would be an advantage. NFS-supported.

2) Transport of amino acids and sugars into developing embryos. Evaluation of the transport steps involved in phloem unloading and uptake by developing embryos, particularly soybeans, in the context of the control of partitioning. USDA/SEA/CGRO-supported.

Salaries in the range of \$13,500 to \$14,500, depending on experience. Appointments initially for 1 year, renewable up to 3 years. Send curriculum vitae and two letters of recommendation to: **Dr. R. M. Spanswick, Department of Botany, University of California, Davis, Calif. 95616.**

Cornell University is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS** available immediately to work in the fields of liver disease and cancer of the liver. A background in immunofluorescent techniques, automated flow cytometry, virology, or tumor cell biology, with particular emphasis on cellular immunology, is required. Send résumé to: **Dr. Myron J. Tong, Huntington Memorial Hospital, 100 Congress Street, Pasadena, Calif. 91105.** Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available July 1982, to study the cell biology of ACTH/endorphin cells in neural and endocrine tissues. A strong cell biology or protein biochemistry background preferred; experience with hybridoma technology would be helpful. Send curriculum vitae and two letters of recommendation to: **Drs. Richard Mains and Betty Elpper, Department of Physiology, C240, University of Colorado School of Medicine, Denver, Colorado 80262.** The University of Colorado is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available for project involving biochemical aspects of persistent measles virus infections and relationship to MS and SSPE. Ph.D. in microbiology, (molecular) genetics, cell biology, biochemistry, virology, or related field. Superbly equipped, stimulating department. Send résumé and two recommendation letters to: **Dr. S. Wechsler, Department of Molecular Virology, Christ Hospital Institute of Medical Research, 2141 Auburn Avenue, Cincinnati, Ohio 45219.** Telephone: 513-369-2582.

**POSTDOCTORAL POSITION IN PHYSIOLOGY** available at the level of assistant professor. Work involves the physiologic regulation of bone repair processes, utilizing both in vivo and in vitro models. Experience desirable in whole animal work, kinetics, tissue culture, RIA, membrane receptors, computer, experimental design, and statistical methods. Competitive salary and exceptional opportunity in a well-equipped, multidisciplinary laboratory. Contact: **Dr. J. Baylink, M.D., Department of Medicine, Medical Center Room 1501, Loma Linda University, Loma Linda, Calif. 92350.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available for research on the mechanism and fidelity of DNA replication to candidates with Ph.D. and/or M.D. degree. Background in enzymology, protein chemistry, molecular biology, or nucleic acid metabolism preferred. Competitive stipends. U.S. citizens or permanent residents. Send curriculum vitae to: **Dr. A. G. So, Department of Medicine (R-99), University of Miami, P.O. Box 016960, Miami, Florida 33101.**

**POSTDOCTORAL POSITION** in parasite biochemistry and mechanisms of antiparasitic drug action. Applicants should be recent Ph.D. graduates with a strong background in biochemistry/molecular pharmacology and must have demonstrated a superior ability to design and conduct independent research. Submit curriculum vitae and letters of reference to: **Dr. Leslie T. Webster, Jr., Professor and Director, Department of Pharmacology, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH** position in molecular genetics available immediately for work on the structure and possible functions of repeated DNA sequences in the human genome. Salary commensurate with experience. Please send curriculum vitae and two letters of reference to:

**Dr. Prescott Deininger**  
Department of Biochemistry  
Louisiana State University Medical Center  
1901 Perdido Avenue  
New Orleans, La. 70112

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

**POSTDOCTORAL SCIENTIST** position in genetics to exploit biochemical techniques in research on baboons as an animal model for human diseases. Applicants should have experience in electrophoretic methods. Salary without previous postdoctoral experience: \$16,536. Laboratory directed by **Dr. John L. VandeBerg.** Send curriculum vitae, university transcripts, statements of current research interests and career goals, and the names and addresses of three references to: **Personnel Manager, Southwest Foundation for Research and Education, P.O. Box 28147, San Antonio, Texas 78284.**

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THE INTERNATIONAL PLANT RESEARCH INSTITUTE (IPRI) invites applicants for its rapidly expanding programs in advanced molecular genetics. Applicants with significant records of frontier achievements in eukaryotic molecular genetics are invited to join a strong team of innovative scientific leaders in the pleasant San Francisco area.

Send résumé with recent publications to:

**DIVISION OF MOLECULAR GENETICS, IPRI, 853 Industrial Road, San Carlos, Calif. 94070.**

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## Cardiovascular Electrophysiologist

We have an excellent opportunity for a Physiologist or Pharmacologist to join our research team. The right candidate will have a PhD or equivalent with a minimum of 2 years related experience. Specific interest in cardiac and smooth muscle electrophysiology and pharmacology required.

The successful applicant will be given appropriate facilities and technical staff to actively participate in drug development research within our well established cardiovascular program.

We offer an attractive salary and benefit package with the opportunity for career growth. The Institute is located near Albany, New York, which is the center of major summer and winter recreational activities.

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## NATIONAL LIBRARY OF MEDICINE NATIONAL INSTITUTES OF HEALTH DEPARTMENT OF HEALTH AND HUMAN SERVICES

Closing Date: March 31, 1982

(All applications must be post-marked by the closing date.)

### DIRECTOR, LISTER HILL NATIONAL CENTER FOR BIOMEDICAL COMMUNICATIONS

The National Library of Medicine, National Institutes of Health, seeks a Director for the Lister Hill National Center for Biomedical Communications. The Director is responsible for planning, directing and coordinating a multi-million dollar intramural program involved in research of computer and educational technologies necessary to improve or develop biomedical communications. The program development efforts have national and international impact.

This is a Civil Service position in the Senior Executive Service (SES), with authorized salary from \$54,755 to \$61,300 per year depending on qualifications. Currently, the payable salary is limited to \$58,500.00. Special Bonus of up to \$10,000 may be allowed for Physicians. The SES individual selected, if not presently in the SES, must serve a one-year probationary period.

**Qualifications and Rating Process:** All candidates will be evaluated to determine whether they meet the mandatory professional/technical qualification requirements and the mandatory managerial/executive qualifications as outlined below.

**Mandatory Professional/Technical Qualifications:** Candidates must meet the minimum education and/or experience requirements specified in the Office of Personnel Management's Handbook X-118, Qualifications Standards for Positions in General Schedule. The position can be filled in an occupational specialty such as Medical Officer (GS-602), Health Science Administrator (GS-601), Computer Scientist (GS-1550), Electronic Engineer (GS-855), Biomedical Engineer (GS-858), Physical Scientist (GS-1301), etc. In addition, applicants must have demonstrated 1) research competence and productivity as recognized by peers in either the fields of health science, computer science, medical information science, engineering, or educational technology; as well as 2) professional experience in program planning, implementation, development and scientific administration of biomedical communications research programs. (Handbook X-118 is available in Federal Personnel Offices and Federal Job Information Centers).

**Mandatory Managerial/Executive Qualifications:** Demonstrated professional competence to assume leadership responsibilities in: assuring that national and agency goals and priorities are considered in carrying out the functions and responsibilities of the organization; establishing and maintaining relationships with key individuals and groups outside the organization; directing and guiding programs and projects, including long-term and short-term planning, and establishing objectives and priorities; establishing procedures for the development and defense of the organization's budget, and allocating fiscal and personnel resources to support program implementation; developing processes and overseeing activities to assure the fair and equitable employment of qualified persons, and implementing EEO objectives; and developing and implementing procedures for monitoring program performance, including periodic analysis and evaluation.

Candidates who meet the mandatory qualifications will be further evaluated by the Search Committee on the following factors: training and education, and honors and awards. Additional information may be obtained from: **Stella Graves, Personnel Officer, National Library of Medicine, (301) 496-4943.**

Interested applicants must submit a Personal Qualifications Statement (SF-171), Curriculum Vitae and Bibliography to the above individual at this address: **Building 38, Room M107, Bethesda, MD 20209.**

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

*The National Institutes of Health is an Equal Opportunity Employer*

## POSITIONS OPEN

### POSTDOCTORAL POSITIONS

Postdoctoral training in cardiovascular studies for medical scientists and clinical investigators for M.D.'s and Ph.D.'s will be available for 1982 for 2-year periods. The training programs emphasize laboratory research coupled with course work where desired in the physical sciences, instrumentation, computer applications, and so forth. The investigative programs, focused around the Center for Bioengineering, are in biological sciences (particularly physiology and biophysics, bioengineering and biological structure, and cardiology) and engineering (chemical, electrical, and mechanical). This is a National Research Service Award Program open to U.S. citizens and landed immigrants, with stipends for \$13,380 to \$18,780. For information or application forms, write: J. B. Bassingthwaite, M.D., Ph.D., Cardiovascular Bioengineering Training Program, WD-12, University of Washington, Seattle, Wash. 98195.

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

**POSTDOCTORAL RESEARCH ASSOCIATE** position is available to work on FcγR-mediated signal transmittance. Candidate should have a strong background in membrane biochemistry or cellular immunology. Send curriculum vitae and letters of reference to: Dr. Tsuneo Suzuki, Department of Microbiology, University of Kansas Medical Center, Kansas City, Kans. 66103.

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position available immediately to investigate the molecular mechanisms involved in toxic interactions of mycotoxins. Specific projects involve analytical methods development, metabolism and pharmacokinetics, and structure-activity elucidation. Ph.D. in toxicology, biochemistry, or pharmacology with related research experience desirable. Starting salary: \$14,000 to \$16,000 per year. Send curriculum vitae, statement of research background and interests, and names and addresses of three references to: Dr. Timothy D. Phillips, College of Veterinary Medicine, Department of Veterinary Public Health, Texas A & M University, College Station, Texas 77843. *Texas A & M University is an Equal Opportunity/Affirmative Action Employer.*

MRC (Canada)-funded position available for **POSTDOCTORAL TRAINEE** with a career interest in the fields of immunohematology/immunogenetics. A letter of application should be accompanied by curriculum vitae and two letters of reference. Apply to:

Professor Marion Lewis  
Department of Pediatrics  
Faculty of Medicine  
University of Manitoba

Winnipeg, Manitoba, Canada R3E 0W3

**JULIEANNE DORN PROFESSOR OF NEUROSCIENCES**—The Department of Neurology at the Harvard Medical School and the Massachusetts General Hospital seeks to fill a tenured professorship of neuroscience with an individual whose interests and work have potential relevance to the board areas of degenerative and hereditary neurological disorders. The individual's particular interest might be in developmental neuroscience, cell-to-cell interaction, or neurotransmitter or molecular genetics. Please submit curriculum vitae and a letter of interest to: Dr. Joseph B. Martin, Chairman, Search Committee for Dorn Professorship, Department of Neurology, Massachusetts General Hospital, Boston, Massachusetts 02114. *Equal Opportunity/Affirmative Action Employers.*

### RADIATION BIOLOGIST/ONCOLOGIST

Professional research position available, level commensurate with qualifications. The Laboratory for Energy-Related Health Research is seeking a radiation biologist/oncologist to conduct immunohematologic and hematopoietic research, emphasizing radiation leukemogenesis in large and small animals and in vitro models. Bioeffects of internal and external low-level radiation, high LET, dose variables are included in this interdisciplinary major research program. Established record of scientific achievement and leadership in hematopoiesis research is essential. Veterinary degree desirable; conjoint academic appointment is possible. Send curriculum vitae and the names of three references to: Dr. Marvin Goldman, Laboratory for Energy-Related Health Research, University of California, Davis, Calif. 95616. Applications will be accepted through 12 March 1982, or until position is filled.

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

## POSITIONS OPEN

Tenure-track positions available at **ALL PROFESSIONAL LEVELS** for expanding program in molecular and developmental genetics, molecular immunology, and recombinant DNA technology. Faculty are expected to establish a strong research program and to participate in undergraduate and graduate teaching.

Please send full curriculum vitae, outline of research plans, and names of three referees to: Dr. Audrey Haschemeyer, Chair, Department of Biological Sciences, Hunter College of the City University of New York, New York, New York 10021. *Hunter College is an Equal Opportunity/Affirmative Action Employer.*

**RESEARCH ASSISTANT** with B.S. in biology and 3 years of experience in biochemistry/molecular biology required, specifically to microinject macromolecules and somatic cell nuclei into *Xenopus* oocytes. Suitable candidate should have proven skills in microinjection, recombinant DNA technology, and experience with eukaryotic in vitro transcription systems. Full-time position. Salary range: \$17,000 to \$21,000. All applications to: James Peters, California Employment Development Department, 297 West Hedding Street, San Jose, Calif. 95110. Attach this ad to résumé. *An Equal Opportunity Employer.*

**RESEARCH ASSISTANT PROFESSOR**, nontenure track; 2 years; Ph.D. pharmacology/toxicology; postgraduate work; metabolism in cell culture; knowledge of biochemical mechanisms of atherogenesis; previous work with primates; working knowledge of GLP's; teaching experience. Direct tissue culture laboratory and related in vivo primate study in atherogenesis. Send curriculum vitae, publication record, and three letters of recommendation to: Dr. A. J. Verlangieri, Department of Pharmacology, School of Pharmacy, University of Mississippi, University, Miss. 38677. *Equal Opportunity Employer.* Application deadline: 28 February 1982 to ensure consideration.

**RESEARCH ASSOCIATE** position is available immediately. To investigate the lipid requirements of Na<sup>+</sup>, K<sup>+</sup>-ATPase from lens and the involvement of inhibition of ATPase in the mechanism of cataract formation. Ph.D. in chemistry-biochemistry and previous training in lipid metabolism and/or the mechanism of transport ATPases is required. Salary is \$18,348. Send curriculum vitae and the names of three references to: Dr. Douglas R. Pfeiffer, The Hormel Institute, University of Minnesota, 801 16th Avenue, NE, Austin, Minn. 55912. *University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages women and minority applicants.*

**RESEARCH PHYSIOLOGIST/BIOENGINEER.** A position is open for an experienced cardiovascular researcher at the Ph.D. level. The position involves independent research, contribution to ongoing programs, and teaching at the graduate level. This is a senior position requiring technical leadership and a background in cardiovascular hemodynamics, analysis, and clinical applications. Send résumé to: Dr. Jeff Raines, Miami Heart Institute, 4701 North Meridian Avenue, Miami Beach, Fla. 33140. Telephone: 305-672-6222.

### SENIOR PHYSICAL OCEANOGRAPHER

A major environmental consulting company wishes to expand its professional services in Canada to include physical oceanography, with an emphasis on shallow water and coastal oceanography. The company seeks a senior individual with experience who could initiate a professional practice within a well-established organization.

The successful candidate would be based in British Columbia and would be expected to develop a professional group, by recruitment, and to develop a growing practice in Canada. The individual would be responsible for the technical management and scientific development of the group.

Professional experience and client contacts are essential. Salary is negotiable and will be commensurate with experience and professional status. Qualified applicants should send complete résumé, in confidence, to: Box 36, SCIENCE.

## POSITIONS OPEN

**RESEARCH ASSOCIATE** needed to execute semi-independent research on the nature of nuclear-estrogen receptor interactions in human breast cancer and animal models of human breast cancer. Techniques required: nuclear exchange assays for estrogen receptor; purification of nuclear material, including the nuclear protein matrix; computer-assisted analysis of binding data from multicomponent systems; assays for DNA-directed polynucleotide synthesis; chemical induction of mammary tumors in rodents; and miscellaneous biochemical techniques. Must have Ph.D. or equivalent in biological sciences; \$16,500 per year; 40 hours per week.

Apply at: Texas Employment Commission, Houston, Texas, or send résumé to: Texas Employment Commission, TEC Building, Austin, Texas 78778, Job Order Number 2930315. *Ad paid by an Equal Opportunity Employer.*

### RESEARCH ASSOCIATES

Ph.D. Biochemistry  
Cell or Molecular Biology

Are available for at least 3 years. Positions in metabolic regulation involves studies of the role of cyclic AMP-dependent phosphorylation in the hormonal regulation of gluconeogenesis and transport processes in kidney. These systems will be examined with isolated enzymes and with epithelial cells in culture.

Other positions are available to study the biosynthesis and secretion of cell surface antigens in tumor cells and acidic mucin glycoproteins in respiratory tissue. Salary: \$16,000.

Send résumé and references to: Dr. Joseph Mendicino, Department of Biochemistry, University of Georgia, Athens, Ga. 30602.

**RESEARCH INSTRUCTOR**—Postdoctoral fellow with previous experience in the biochemistry or physiology of liver disease. Capable of independent basic research in the field of liver and biliary tract disease. Facilities include two well-equipped staffed laboratories. Position available immediately. Contact: Eugene R. Schiff, M.D., Chief, Division of Hepatology (R-10), University of Miami School of Medicine, P.O. Box 016960, Miami, Florida 33101. Telephone: 305-547-5787.

### RESOURCE OR MINERAL ECONOMICS

The Department of Engineering and Public Policy at Carnegie-Mellon University (C-MU) is seeking to add a new faculty member at the level of assistant professor in resource or mineral economics to work in collaboration with engineering-based research programs primarily in materials policy but possibly also in hazardous materials, energy systems, and/or environmental systems. There are reasonable prospects for a joint academic appointment with either the School of Urban and Public Affairs or the Department of Social Science. Send résumé with list of publications and statement of research interests to:

Dr. Indira Nair  
03328

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

*C-MU is an Equal Opportunity Employer.*

**TAXONOMIC BOTANIST/GENETICIST.** Eastern Michigan University has extended the search advertised in *Science*, November 1981. Hiring date will be 31 August 1982, and a standard application MUST be received by 22 March 1982 at: Personnel Office, Eastern Michigan University, 112 S Welch Hall, Ypsilanti, Michigan 48197. Telephone: 313-487-3430.

*Affirmative Action/Equal Opportunity Employer and Educational Institution.*

**TREE PHYSIOLOGY-ASSISTANT PROFESSOR.** Develop independent research program in contemporary basic tree physiology and collaborative research on physiological aspects of ongoing applied projects (70 percent). Teach tree physiology and supervise graduate students (30 percent). Earned Ph.D. degree or background in forestry is preferred. Demonstrated ability to plan, conduct, and publish research and teach. Ability to work closely with scientists and clientele is essential. Deadline: 1 May 1982, 12-month, tenure-accruing. Send curriculum vitae, official academic transcripts, and three letters of recommendation to: Arnett C. Mace, Jr., Director, School of Forest Resources and Conservation, University of Florida, Gainesville, Fla. 32611; telephone: 904-392-1791.

*An Affirmative Action/Equal Opportunity Employer*

## RESEARCH SCIENTISTS

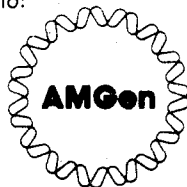
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### THE 1982 SUMMER PROGRAM— CATALINA MARINE SCIENCE CENTER (CMSC), Catalina Island

Four courses, 5 weeks each, designed for graduate students and advanced undergraduates. Enrollment may be in any or all courses. Students live on Catalina Island but have access to Southern California area by USC shuttle boats. Limited financial assistance is available. For information, contact: **Dr. Richard C. Brusca, Director of Academic Program, CMSC, University of Southern California, Los Angeles, Calif. 90007.**

#### Session I (7 June to 9 July):

##### EVOLUTIONARY ECOLOGY—A FIELD APPROACH

Dr. Daniel Simberloff (plus numerous guest instructors, including Doctors L. Abele and P. K. Dayton)

##### BIOLOGY OF OCEANIC ANIMALS

Dr. William Hamner (plus numerous guest instructors, including Doctors A. Fleminger and P. Smith)

#### Session II (12 July to 13 August):

##### KELP FOREST ECOLOGY

Dr. Valrie Gerard (plus numerous guest instructors, including Doctors W. North, J. Estes, M. Tegner, R. Bray, M. Foster, G. Jackson, and R. McPeak)

##### NEUROBIOLOGY

Dr. Alvin Siger (plus numerous guest instructors, including Doctors K. Lukowiak and J. Weeks)

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## POSITIONS OPEN

University of Maryland University College seeks **TEACHERS** for undergraduate nonlaboratory science courses offered on U.S. bases in Europe or the Far East. Geologists, zoologists, botanists, astronomers, and physicists with competence to teach in two of these areas (or mathematics) are sought. (i) Ph.D. or two M.A.'s, (ii) recent undergraduate teaching experience, and (iii) U.S. citizenship all essential. One-year renewable appointments beginning in August. Families: positions require frequent travel; housing and schools not provided. Send résumé to: Dr. Paul H. Hamlin, University of Maryland University College, College Park, Maryland 20742. *Equal Opportunity/Affirmative Action Employer.*

**TERRESTRIAL ECOLOGY/POPULATION BIOLOGY.** The Department of Biology at Oberlin College invites applications for a continuing (tenure-track) position beginning in the academic year 1983-1984. Teaching responsibilities include beginning and upper-level courses in terrestrial ecology and population biology. Candidates with botanical strengths will be favored.

Candidates with the Ph.D. degree and some teaching or postdoctoral experience are preferred. Academic rank and salary are dependent upon background and experience. Openings are normally filled at the assistant professor level.

Applications should include curriculum vitae and copies of transcripts of undergraduate and graduate work. Three letters of recommendation should be sent by the respondents directly to the chairman. Applications should be submitted by 20 March 1982 to: Dr. Anna Ruth Brummett, Chairman, Department of Biology, Oberlin College, Oberlin, Ohio 44074.

*Oberlin College is an Equal Opportunity Employer.*

**WILDLIFE ECOLOGIST:** teach upper-division wildlife and basic zoology courses. Develop field research in cooperation with agencies and industry. Ph.D. required. Tenure-track position at assistant or associate professor level available September 1982. Send letter stating goals, curriculum vitae, and the names of three references to: R. L. Puyar, Zoology Department, North Dakota State University, Fargo, N.D. 58105. *An Equal Opportunity Employer. Deadline: 1 March 1982.*

## FELLOWSHIPS

### POSTDOCTORAL FELLOWSHIPS ENDOCRINE-REPRODUCTIVE BIOLOGY

The Endocrine-Reproductive Biology Group at the Worcester Foundation for Experimental Biology announces the creation of the M. C. Chang Postdoctoral Fellowships in Endocrine-Reproductive Biology beginning in fall 1982. The fellowships will be for 2 years with possibility of renewal. Applicants should submit, in duplicate, their curriculum vitae, a brief summary of research interests, a synopsis of the Ph.D. thesis research, and the names of three persons from whom references may be requested. Candidates should indicate the research areas in which they wish to work if a fellowship is awarded. Applications should be sent to:

Chairman, Search Committee  
**ENDOCRINE-REPRODUCTIVE BIOLOGY  
FELLOWSHIP PROGRAM**  
c/o Personnel Office  
Worcester Foundation for Experimental Biology  
222 Maple Avenue  
Shrewsbury, Mass. 01545

*An Equal Opportunity/Affirmative Action Employer*

### POSTDOCTORAL FELLOWSHIPS

Departments of  
Cellular and Developmental Biology  
Organismic and Evolutionary Biology  
Harvard University

A limited number of postdoctoral research positions become available from time to time. Appointments are funded through research grants awarded to faculty members and are usually for 1 year, sometimes renewable. For a list of faculty members who have postdoctoral positions available, write, but do not send applications, to:

Departmental Offices  
16 Divinity Avenue  
Cambridge, Mass. 02138

*Harvard University is an Equal Opportunity/Affirmative Action Employer.*

## FELLOWSHIPS

The National Research Council of the National Academy of Sciences offers a small number of **RESIDENT FELLOWSHIPS** for work on science, technology, and public policy. Scientists and engineers who have received their professional degrees fewer than 10 years before the date of the application are eligible for these 1-year fellowships. The next deadline for completion of the application process (which requires about 1 month) is 1 March 1982.

Inquiries should be addressed to:

National Research Council Fellowship Program  
Executive Office  
National Academy of Sciences  
2101 Constitution Avenue, NW  
Washington, D.C. 20418

**PREDOCTORAL FELLOWSHIPS, ASSISTANT-SHIPS, POSTDOCTORAL FELLOWSHIP.** Graduate programs leading to M.S. and Ph.D. degrees in biophysics. Fellowships available through training program in molecular biophysics. Emphasis is on molecular mechanisms involved in mutagenic, carcinogenic, and radiation damage processes. The Roswell Park Graduate School is a component of the State University of New York at Buffalo and is affiliated with the nation's oldest institute for cancer research. Inquire: Chairman, Biophysics Department, Roswell Park Memorial Institute, Buffalo, New York 14263.

**PREDOCTORAL FELLOWSHIPS IN TOXICOLOGY.** Study for the Ph.D. with emphasis on either cellular and molecular, behavioral, reproductive and developmental, or inhalation toxicology. NIEHS training grant pays stipend and tuition for highly qualified U.S. citizens and permanent residents. For more information, write: Dr. Victor G. Laties, Toxicology Training Program, University of Rochester Medical Center, Rochester, New York 14642. *An Equal Opportunity/Affirmative Action Employer.*

### ENDOCRINE RESEARCH FELLOWSHIPS

Postdoctoral positions are available immediately under NIH Endocrine Research Training Grant. Interests of the faculty and relevant background of applicants are: F. C. Bancroft, Ph.D.: regulation by hormones and calcium of the expression of the growth hormone and prolactin genes [see *J. Biol. Chem.* 256, 5942 (1981)]; background in biochemistry required and familiarity with techniques of recombinant DNA research desirable; H. L. Bradlow, Ph.D.: estrogen, androgen, and corticoid metabolism and biosynthesis; hormone levels and metabolism in cancer; sex hormone receptors in target tissues; experience in separation techniques (HPLC, TLC, column chromatography), radioimmunoassay, and animal handling desirable; Jack Fishman, Ph.D.: estrogen metabolism and biosynthesis; mode of action of steroid hormones; neuroendocrine control of the pituitary; experience in enzymatic and general biochemical techniques desirable; A. S. Schneider, Ph.D.: neurohormone receptor and secretion mechanisms in adrenal chromaffin cells; experience in membrane biochemistry or biophysics, cyclic nucleotide assays, ion transport, cell isolation, culture and/or fractionation desirable. U.S. citizens and permanent residents send curriculum vitae, bibliography, and names of three references by 1 April 1982 to: Dr. Martin Sonenberg, Director of Endocrine Research Training Program, Sloan-Kettering Institute for Cancer Research, 1275 York Avenue, New York, N.Y. 10021.

### POSTDOCTORAL RESEARCH FELLOWSHIPS IN INTERNATIONAL SECURITY AND ARMS CONTROL

Fellowships for research in international security and arms control are available for the academic year 1982-1983 at Harvard University's Center for Science and International Affairs. The Center focuses on understanding the role of military force in world politics, with special emphasis on the development and evaluation of means by which constraints on nuclear weapons capabilities can contribute to international security. The research is multidisciplinary and integrative in character. Applicants should have a doctoral degree but need not have research experience in international security and arms control. Some preference is given to those with scientific, technical, or economic backgrounds. Send curriculum vitae, brief (1 to 2 pages) statement of research interests, and three letters of recommendation to: Associate Director, Center for Science and International Affairs, Harvard University, 79 Boylston Street, Cambridge, Massachusetts 02138, before 25 February 1982. Awards are based upon merit, without regard to race, color, sex, religion, national origin, or age of any applicant.

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP in BEHAVIORAL IMMUNOLOGY** for an immunologist or psychobiologist with an interest in joining a team exploring the physiological links between behavioral traits, stress, and immune system in the mouse. Send curriculum vitae by 1 May 1982 to: J. John Cohen, Department of Microbiology, B175, or Linda S. Crnic, Department of Psychiatry, C233, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado 80262. *Equal Opportunity/Affirmative Action Employer.*

**POSTDOCTORAL FELLOWSHIP FOR RESEARCH TRAINING IN MEDICAL MYCOLOGY.** Applications are invited for a 1-year fellowship (renewable) in medical mycology with special emphasis in regulation of morphogenesis, membrane biology, host-parasite relationships, and extended training in laboratory medical mycology. Background of the applicant should include recent Ph.D., M.D., D.V.M., or D.D.S. degree with training in mycology, microbiology, and/or biochemistry. Inquiries should be addressed to: George Kobayashi, Ph.D., Department of Internal Medicine, Division of Infectious Diseases, Box 8051, Washington University School of Medicine, St. Louis, Mo. 63110.

## CONFERENCE

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## PROGRAMS

### DOCTORAL PROGRAMS AT THE UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The basic science departments of the Medical School are seeking qualified candidates for its doctoral programs in the Departments of Anatomy and Cell Biology, Biochemistry, Microbiology, Pharmacology, and Physiology and Biophysics. The Medical School is part of the University of Miami/Jackson Memorial Medical Center and is a major center for biomedical research. In addition to the basic doctoral programs, candidates are also sought for the Cellular and Molecular Biology Program, which is a federally funded training program emphasizing interdisciplinary training. Any of these programs may be included in a M.D./Ph.D. program. Stipend levels for all programs are set at \$7500 per annum, with full tuition remission.

Requests for further information and application kits should be addressed in writing to: Dr. E. Y. C. Lee, Box 016129, Miami, Florida 33101, with a statement of the programs for which information is requested.

## MARKETPLACE

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announces **SHORT COURSES, SPRING 1982**, including a new offering on Light Microscopy in Biomedical Research to be conducted at the University of California Extension, Santa Cruz. These residential programs emphasize laboratory practice and are intended primarily for scientists who require the techniques and information for their own work.

### **ELECTRON MICROSCOPY IN THE BIOLOGICAL SCIENCES** - April 11-23, 1982

Blair Bowers, NIH, and Morton Maser, MBL, Co-Instructors in Chief. Course attendance is limited to 12 for this sixth offering of the program.

### **ANALYTICAL AND QUANTITATIVE LIGHT MICROSCOPY IN BIOLOGY, MEDICINE, AND MATERIALS SCIENCES** - May 9-15, 1982

Shinya Inoué, MBL, Instructor in Chief, assisted by E.D. Salmon, University of Pennsylvania, G.W. Ellis, University of Pennsylvania, and D.L. Taylor, Harvard University. This program is being offered for the third time with attendance limited to 16.

### **LIGHT MICROSCOPY IN BIOMEDICAL RESEARCH** - June 20-25, 1982

Edward D. Salmon, University of Pennsylvania, and D. Lansing Taylor, Harvard University, Co-Instructors in Chief. This newly offered course is offered cooperatively by MBL and the University of California Extension and will be conducted in Santa Cruz; attendance is limited to 24.

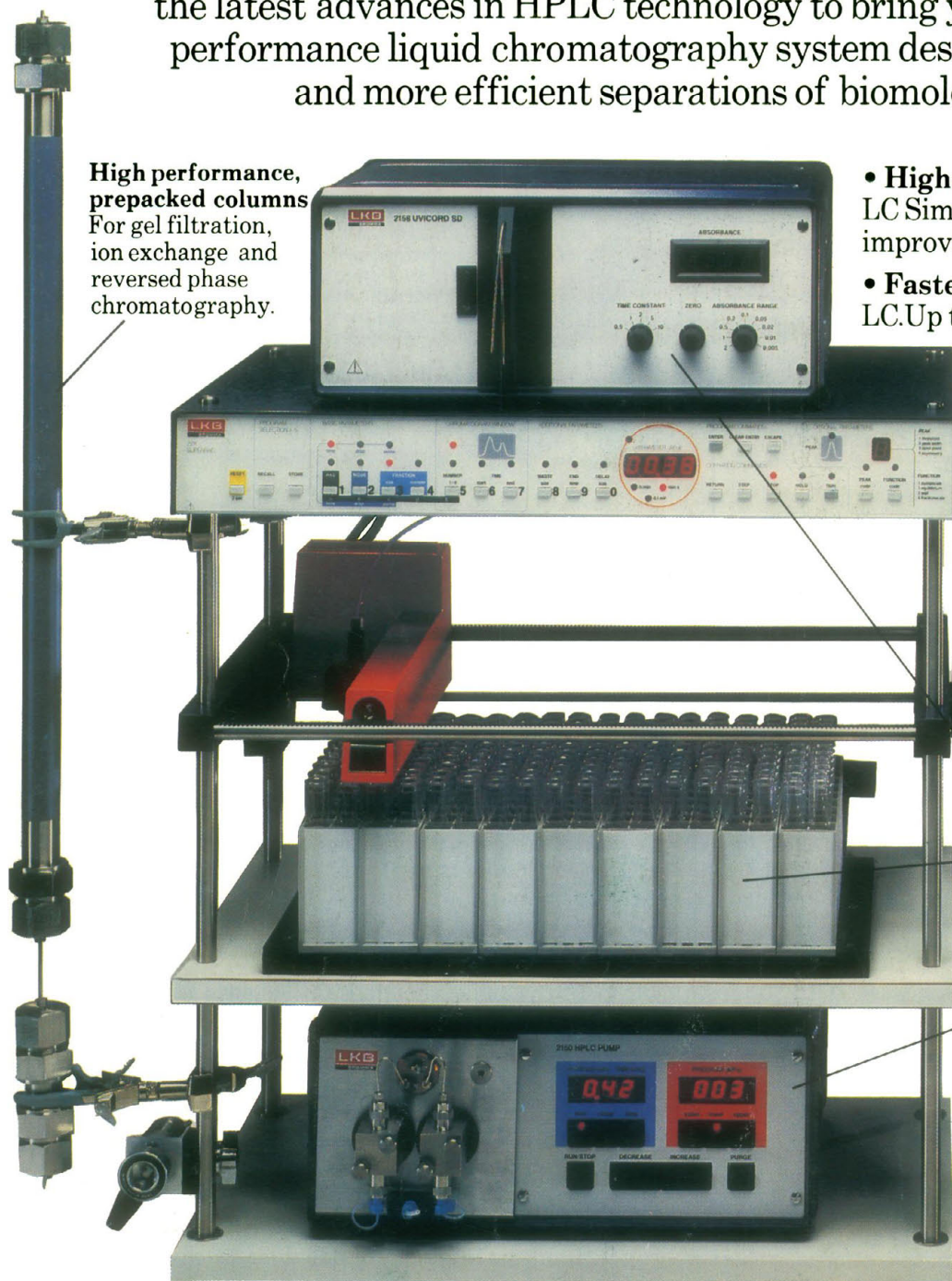
Other **SHORT COURSES** scheduled earlier in the spring are *Scanning Electron Microscopy in the Biological Sciences*, Bruce Wetzel, National Cancer Institute, Instructor in Chief; *Electron Probe X-Ray Microanalysis in Biology, Medicine, and Materials Sciences*, A.J. Tousimis, Tousimis Research Corp.; *Freeze-Etching in Electron Microscopy*, Russell Steere, U.S. Dept. of Agriculture; and another **NEW OFFERING**, *Autoradiography in Electron Microscopy*, M.A. Williams, University of Sheffield.

**ADDITIONAL INFORMATION** on course content and application materials may be obtained from the Admissions Office, Marine Biological Laboratory, Woods Hole, MA 02543; telephone 617-548-3705. MBL is an Equal Opportunity Institution.



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