

## Yeast Molecular Biology

**The Molecular Biology of the Yeast *Saccharomyces*.** JEFFREY N. STRATHERN, ELIZABETH W. JONES, and JAMES R. BROACH, Eds. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., 1981-1982. In two volumes. Volume 1, Life Cycle and Inheritance. xii, 752 pp., illus. \$75. Volume 2, Metabolism and Gene Expression. xii, 680 pp., illus. \$75. Cold Spring Harbor Monograph Series.

The field of yeast molecular biology has exploded in the last five years. Its remarkable growth has resulted from the intrinsic advantages of working with a lower eukaryote (short generation time and ease of manipulation), the fundamental contributions of the classical yeast geneticists, the advent of recombinant DNA technology, and the ability to transform yeast cells. This combination of factors made it inevitable that yeast would play a major role in present-day endeavors to understand eukaryotic gene regulation.

This two-volume work attempts to review the range of subjects that are under investigation by yeast researchers. It grew out of a meeting on the molecular biology of yeast at Cold Spring Harbor Laboratory in 1979; however, it is a collection of solicited reviews rather than a compilation of research papers. The first volume covers mapping procedures, mutagenesis, genome structure, meiosis, mitosis, gene conversion, the life and cell cycles, mating type, and extrachromosomal inheritance. The second volume covers gene regulation of carbohydrate and nitrogen metabolism, the biosynthesis of lipids, amino acids, nucleotides, and cytochrome *c*, and the utilization of galactose and phosphate, as well as the roles of tRNA's, ribosomes, polymerases, the cell wall, secretion, transport, and suppression. A chapter on recombinant DNA technology reviews procedures and vector systems developed recently that have contributed so much to the popularity of yeast as an experimental system.

The editors have undertaken the ambitious task of synthesizing an enormous amount of information and have succeeded in creating a most noteworthy collection. The papers vary in both length and level of sophistication. Some can be understood by any well-informed biologist, whereas others require previous knowledge of the intricacies of nomenclature peculiar to yeastologists. Many of the papers were clearly intended to be definitive reviews of a subject, for example, a 130-page chapter on mitochondria. Others are treatises of from 15 to 40 pages on more defined subjects. A

number of authors thoroughly review their fields, whereas others confine their remarks more narrowly to summaries of their own work. However, regardless of length or emphasis, the papers are uniformly excellent.

One of the strengths of the book is its coherence, with frequent references within a given chapter to material covered in other chapters. There is an extensive bibliography following each chapter, which should prove convenient for anyone wishing to explore a particular subject in depth. However, one of the drawbacks of the second volume is that many of the reviews have bibliographies that only go up to 1980.

Additional highlights of the books are the appendixes. An up-to-date genetic map of the yeast genes and alphabetical listings by gene name, function, and product provide in one source an extremely valuable cross-referencing guide for all identified genes. The index is also a thoughtful compilation.

In summary, it can be said that the two volumes are eminently readable and convey the extraordinary excitement that now pervades research on the molecular biology of yeast. After reading them, one is left with an appreciation of the phenomenal impact that the study of this lower eukaryote is having and will continue to have on the molecular biological studies of other organisms as well. The book is a must for all yeast researchers and is highly recommended for all biologists studying gene expression and development in other prokaryotic and eukaryotic systems.

HELEN GREER

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### Books Received

**Advances in Catalysis.** Vol. 31. D. D. Eley, Herman Pines, and Paul B. Weisz, Eds. Academic Press, New York, 1982. x, 352 pp., illus. \$68.50.

**Advances in Cell Culture.** Vol. 2. Karl Maramorosch, Ed. Academic Press, New York, 1982. xvi, 334 pp., illus. \$36.

**Advances in Cement Technology.** Critical Reviews and Case Studies on Manufacturing, Quality Control, Optimization and Use. S. N. Ghosh, Ed. Pergamon, New York, 1982. x, 804 pp., illus. \$100.

**Advances in Food Research.** Vol. 28. C. O. Chichester, E. M. Mrak, and G. F. Stewart, Eds. Academic Press, New York, 1982. x, 410 pp., illus. \$64.50.

**Advances in Image Pickup and Display.** Vol. 5. B. Kazan, Ed. Academic Press, New York, 1982. xvi, 288 pp., illus. \$56.

**Advances in Infrared and Raman Spectroscopy.** Vol. 9. R. J. H. Clark and R. E. Hester, Eds. Heyden, Philadelphia, 1982 (distributor, Wiley, New York). xvi, 384 pp., illus. \$112.

**Advances in Myocardiology.** Vol. 4. Papers from a congress, Moscow, Sept. 1980. E. Chazov, V. Saks, and G. Rona, Eds. Plenum, New York, 1983. xiv, 650 pp., illus. \$69.50.

**Advances in Organometallic Chemistry.** Vol. 21. F.

G. A. Stone and Robert West, Eds. Academic Press, New York, 1982. viii, 304 pp., illus. \$52.

**Annual Reports on NMR Spectroscopy.** Vol. 13. G. A. Webb, Ed. Academic Press, New York, 1982. x, 400 pp., illus. \$99.50.

**Biological Monitoring of Heavy Metal Pollution.** Land and Air. M. H. Martin and P. J. Coughtrey, Applied Science Publishers, London, 1982 (U.S. distributor, Elsevier, New York). xii, 476 pp., illus. \$80. Pollution Monitoring Series.

**The Biology of Crustacea.** Dorothy E. Bliss, Ed. Vol. 2. Embryology, Morphology, and Genetics. Lawrence G. Abele, Ed. Academic Press, New York, 1982. xxii, 440 pp., illus. \$49.50.

**The Biology of Cyanobacteria.** N. G. Carr and B. A. Whitton, Eds. University of California Press, Berkeley, 1983. xii, 688 pp., illus. \$75. Botanical Monographs, vol. 19.

**The Biology of Nectaries.** Barbara Bentley and Thomas Elias, Eds. Columbia University Press, New York, 1983. x, 260 pp., illus. \$33.50.

**Biomedical Thermology.** Proceedings of a symposium, Strasbourg, France, June 1981. Michel Gautherie and Ernest Albert, Eds. Liss, New York, 1982. xxxii, 924 pp., illus. \$176. Progress in Clinical and Biological Research, vol. 107.

**Building Economy.** Design, Production and Organisation. A Synoptic View. P. A. Stone. Pergamon, New York, ed. 3, 1982. xvi, 260 pp. Cloth, \$45; paper, \$17.

**Cell Function and Differentiation.** Proceedings of a symposium, Athens, Apr. 1982. G. Akoyunoglou and five others, Eds. Liss, New York, 1982. Three volumes. Part A, Erythroid Differentiation, Hormone-Gene Interaction, Glycoconjugates, Liposomes, Cell Growth, and Cell-Cell Interaction. xxx, 520 pp., illus. Part B, Biogenesis of Energy Transducing Membranes and Membrane and Protein Energetics. xxvi, 518 pp., illus. Part C, Enzyme Structure-Mechanism, Metabolic Regulations, and Phosphorylation-Dephosphorylation Processes. xxviii, 354 pp., illus. Each volume, \$60. FEBS, vols. 64, 65, and 66. Progress in Clinical and Biological Research, vol. 102.

**Digital PLL Frequency Synthesizers.** Theory and Design. Ulrich L. Rohde. Prentice-Hall, Englewood Cliffs, N.J., 1983. xviii, 494 pp., illus. \$49.95.

**Direct Use of the Sun's Energy.** Farrington Daniels. Yale University Press, New Haven, Conn., 1983. xviii, 374 pp., illus. Paper, \$7.95. Reprint of the 1964 edition.

**Disorders of Neurohumoral Transmission.** T. J. Crow, Ed. Academic Press, New York, 1982. x, 402 pp., illus. \$58.

**Electricity Generation and the Ecology of Natural Waters.** T. E. Langford. Liverpool University Press, Liverpool, 1983. xxiv, 342 pp., illus. Paper, £14.50.

**Energy Graphics.** Graphs, Charts, Tables, Maps on U.S. and World Production, Consumption, and Reserves. Duncan L. Gibson. Prentice-Hall, Englewood Cliffs, N.J., 1983. viii, 136 pp., illus. \$19.95. Prentice-Hall Series in Energy.

**Enzymology of Carbonyl Metabolism.** Aldehyde Dehydrogenase and Aldo/Keto Reductase. Proceedings of a workshop, Bern, July 1982. Henry Weiner and Bendicht Wermuth, Eds. Liss, New York, 1982. xvi, 412 pp., illus. \$44. Progress in Clinical and Biological Research, vol. 114.

**Essential Mathematics.** Mary Kay Beavers. Harper and Row, New York, 1983. xii, 612 pp., illus. Paper, \$21.50.

**Experimental Approaches to Drug Targeting.** A. J. S. Davies and M. J. Crumpton, Eds. Published for the Imperial Cancer Research Fund by Oxford University Press, New York, 1982. vi pp. + pp. 347-564, illus. Paper, \$26. *Cancer Surveys*, vol. 1, No. 3.

**Faba Bean Improvement.** Proceedings of a conference, Cairo, Mar. 1981. G. Hawtin and C. Webb, Eds. Published for the ICARDA/IFAD Niley Valley Project by Nijhoff, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). viii, 398 pp. \$42.50. World Crops, vol. 6.

**Focus on Vision.** R. A. Weale. Harvard University Press, Cambridge, Mass., 1982. x, 194 pp., illus. Paper, \$15.

**Food Texture and Viscosity.** Concept and Measurement. Malcolm C. Bourne. Academic Press, New York, 1982. xii, 328 pp., illus. \$36. Food Science and Technology.

**Geo-Electromagnetism.** James R. Wait. Academic Press, New York, 1982. x, 268 pp., illus. \$34.

**Geothermal Reservoir Engineering.** Malcolm A. Grant, Ian G. Donaldson, and Paul F. Bixley. Academic Press, New York, 1982. xiv, 370 pp., illus. \$45. Energy Science and Engineering.

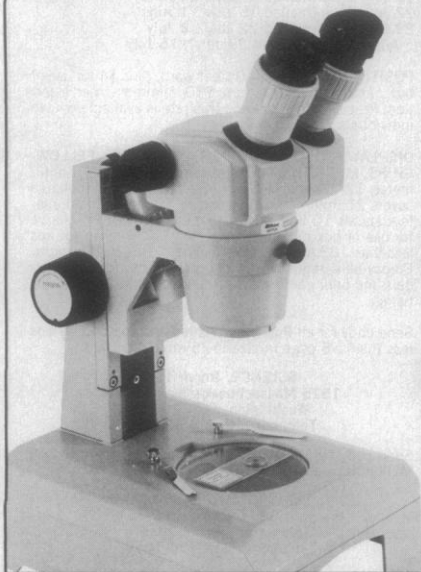
**Host Factors in Human Carcinogenesis.** Proceedings of a symposium, Cape Sunion, Greece, June 1981. H. Bartsch, B. Armstrong, and W. Davis, Eds. International Agency for Research on Cancer, Lyon, 1982 (U.S. distributor, WHO Publications

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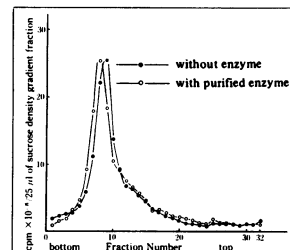
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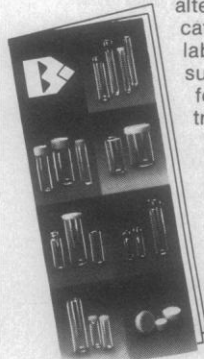
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## BOOKS RECEIVED

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Centre USA, Albany, N.Y.). xxii, 586 pp., illus. \$50. IARC Scientific Publications No. 39.

**Linguistics and Literacy.** Proceedings of a symposium, Newark, Del., Oct. 1981. William Frawley, Ed. Plenum, New York, 1982. viii, 496 pp., illus. \$55. Topics in Language and Linguistics.

**Lisuride and Other Dopamine Agonists.** Basic Mechanisms and Endocrine and Neurological Effects. Donald B. Calne, Richard J. McDonald, Reinhard Horowski, and Wolfgang Wuttke, Eds. Raven, New York, 1983. xxii, 554 pp., illus. \$39.50.

**Living with Herpes.** The Comprehensive and Authoritative Guide to the Causes, Symptoms, and Treatment of Herpes Virus Illnesses. Deborah P. Langston. Doubleday, Garden City, N.Y., 1983. xviii, 198 pp. + plates. Paper, \$7.95.

**The Mind in Conflict.** Charles Brenner. International Universities Press, New York, 1983. vi, 266 pp. \$25.

**The Molecular Biology of Plant Development.** H. Smith and D. Grierson, Eds. University of California Press, Berkeley, 1983. xiv, 618 pp., illus. \$65. Botanical Monographs, vol. 18.

**Molecular Gas Lasers.** Physics and Application. E. P. Velikhov, Ed. Translated from the Russian edition (1981) by S. Kittell. Mir, Moscow, 1982 (U.S. distributor, Imported Publications, Chicago). 270 pp., illus. \$8. Advances in Science and Technology in the USSR.

**Molecular Theory of Evolution.** Outline of a Physico-Chemical Theory of the Origin of Life. Bernd-Olaf Küppers. Translated from the German by Paul Woolley. Springer-Verlag, New York, 1983. x, 324 pp., illus. \$32.

**Mutagens in Our Environment.** Proceedings of a meeting, Espoo, Finland, June 1982. Marja Sorsa and Harri Vainio, Eds. Liss, New York, 1982. xx, 504 pp., illus. \$50. Progress in Clinical and Biological Research, vol. 109.

**The Nature and Growth of Modern Mathematics.** Edna E. Kramer. Princeton University Press, Princeton, N.J., 1982. xxvi, 758 pp., illus. Paper, \$9.95. Reprint of the 1970 edition.

**New Information Technology in Education.** David Hawkrige. Johns Hopkins University Press, Baltimore, 1983. x, 238 pp. \$20.

**Of Mice and Molecules.** Technology and Human Survival. Eric Skjei and M. Donald Whorton. Dial Press, New York, 1983. xx, 348 pp., illus. \$17.95.

**Organ and Species Specificity in Chemical Carcinogenesis.** Proceedings of a symposium, Raleigh, N.C., Mar. 1981. Robert Langenbach, Stephen Nesnow, and Jerry M. Rice, Eds. Plenum, New York, 1983. x, 694 pp., illus. \$79.50. Basic Life Sciences, vol. 24.

**Oslo Symposium 1982.** Ion Exchange and Solvent Extraction. June 1982. Joan Frost Urstad and Gerd Borgen, Eds. Society of Chemical Industry, London, 1982. Various pages, illus. Paper, £35.

**The Pathogenesis of Alcoholism.** Psychosocial Factors. Benjamin Kassin and Henri Begleiter, Eds. Plenum, New York, 1983. xxviii, 696 pp., illus. \$57.50. The Biology of Alcoholism, vol. 6.

**Psychosocial Factors Affecting Health.** Papers from meetings. Mack Lipkin, Jr., and Karel Kupka, Eds. Praeger, New York, 1982. xx, 376 pp. \$37.95.

**Trace Analysis.** Vol. 2. James F. Lawrence, Ed. Academic Press, New York, 1982. xii, 276 pp., illus. \$35.

**Treatment Issues and Innovations in Mental Retardation.** Johnny L. Matson and Frank Andrasik, Eds. Plenum, New York, 1983. xviii, 648 pp. \$49.50. Applied Clinical Psychology.

**Turbidity in the Aquatic Environment.** An Environmental Factor in Fresh and Oceanic Waters. Charles G. Wilber. Thomas, Springfield, Ill., 1983. x, 134 pp. \$18.75. American Lecture Series Publication Number 1057.

**Type A Behavior Pattern.** A Model for Research and Practice. Virginia Ann Price. Academic Press, New York, 1982. xviii, 308 pp., illus. \$26.50.

**Urea Cycle Diseases.** Proceedings of a symposium, Okayama, Japan, Sept. 1981. A. Lowenthal, A. Mori, and B. Marescau, Eds. Plenum, New York, 1982. xvi, 528 pp., illus. \$62.50. Advances in Experimental Medicine and Biology, vol. 153.

**The Warning.** Accident at Three Mile Island. Mike Gray and Ira Rosen. Contemporary Books, Chicago, 1983. 288 pp., illus. Paper, \$7.95. Reprint of the 1982 edition.

**World-wide Problems of Nutrition Research and Nutrition Education.** Weltweite Probleme der Ernährungsforschung und Ernährungsaufklärung. Papers from a symposium, Luzern, July 1981. J. C. Somogyi and D. Hötzel, Eds. Karger, Basel, 1983. xvi, 76 pp. Paper, \$45. Bibliotheca Nutritio et Dieta, No. 32.

**The Youngest Science.** Notes of a Medicine-Watcher. Lewis Thomas. Viking, New York, 1983. xviii, 270 pp. \$14.75.

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**Natural Resource Biologist.** B.S., M.S. Eight years of fisheries-wildlife scientific/technical experience, including salmonid management, culture, nutrition, pathology; waterfowl/upland game lease-management; mined land reclamation; range, soil, water resources evaluation for environmental statements/consolidated permits. Variety of publications. Desires challenging research/development position. Will relocate. William Logan, P.O. Box 4325, Boulder, Colorado 80306. X

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**Geologist/Paleontologist/Paleobotanist.** M.S. Seeks industrial or research position. Research and teaching experience; additional background in computer assisted statistical analyses; reading comprehension in German and French. Willing to travel or relocate. Résumé upon request. Box 155, SCIENCE. X

**Immunoassay.** Ph.D.; 10 years of RIA development, production, troubleshooting experience with major diagnostic companies. Antibody production, protein purification, radiolabeling. Postdoctoral organic synthesis. Management, publications. Box 160, SCIENCE. X

**Immunologist.** Ph.D. Ten years of university experience in cellular immunology. Excellent publications and references. Seeks academic position. Box 162, SCIENCE. 6/24; 7/1, 8

**Medical Scientist;** 25 years of directing clinical chemistry laboratories, and with extensive research experience. Has much to offer in the study of the circulation and its disorders. Seeking position in medical research utilizing clinical chemistry background. Ph.D. biochemistry. New York metropolitan area preferred. Box 153, SCIENCE. X

**Microbiologist.** B.S. in bacteriology, M.S. December 1983. Six years of experience. Excellent references. Seeks challenging position in industry. Willing to relocate. R. M. Plantadosi, 2271 81st Street, Brooklyn, N.Y. 11214. X

**Research Technician (Plant Pathology).** Ten years of experience in field tests and interpretation of test results for discovery of new commercial fungicides and screening of germplasm against various fungal and viral plant diseases of a variety of crops. Box 157, SCIENCE. X

**Ultrastructural Scientist.** M.A. Laboratory director, experienced in all phases of TEM, SEM, and histology, desires position as research scientist or liaison scientist. Presentations at research forums with publications. Coordinates multi-institutional, industry studies. Box 154, SCIENCE. 6/24; 7/1

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Cetus Corporation, a leader in biotechnology is currently seeking a Research Assistant to assay and produce human lymphokines.

Candidates should possess a B.S. in Biology, Immunology or related field and two-three years experience with tissue culture and immunological methods.

This is an opportunity to join a dynamic growth-oriented company that offers an excellent benefits program and compensation package. For confidential consideration, please send your resume to:

**Cetus Corporation**  
Box SCAC  
600 Bancroft Way  
Berkeley, CA 94710



We are an Equal Opportunity Employer, M/F/Handicapped

## POSITIONS OPEN

**ASSISTANT PROFESSOR—BOTANY.** The Department of Biology, Cleveland State University (CSU), invites applications for a tenure-track position at the assistant professor level. Candidates must have a Ph.D. in a biological science, with teaching and postdoctoral experience highly desirable. Area of specialty may involve any aspect of botany. Participation in undergraduate and graduate teaching is expected, and establishment of an active research program is essential. CSU's Biology Department offers B.S., M.S., and Ph.D. degrees. Position available 19 September 1983, but a later starting date may be arranged for a suitable candidate. Salary competitive. Forward curriculum vitae and statement of research and teaching interests and have three letters of recommendation sent by 15 July to: **Dr. A. Ralph Gibson, Chairperson, Botany Search Committee, Biology Department, Cleveland State University, 1983 East 24 Street, Cleveland, Ohio 44115.** *An Equal Opportunity Employer, M/F/H.*

**RURAL MEDICAL SCHOOL** seeks applications for a tenure-track position as **ASSISTANT PROFESSOR OF MICROBIOLOGY/IMMUNOLOGY.** We seek a faculty member with a background and postdoctoral training in any subdiscipline of bacteriology. The ideal candidate will be motivated toward excellence in medical education and to the development of a strong independent research program; he or she should find a small community lifestyle attractive. Applicants should submit a letter of application, curriculum vitae, and names of three individuals to serve as references. For additional information or submission of application, contact: **Gerald J. Tritz, Ph.D., Professor and Chairman, Department of Microbiology and Immunology, Kirksville College of Osteopathic Medicine, 800 West Jefferson Street, Kirksville, Mo. 63501; telephone: 816-626-2474.** *We are an Equal Opportunity/Affirmative Action Employer.*

**ASSISTANT/ASSOCIATE RESEARCH SCIENTIST** faculty position available immediately. Applicants should have postdoctoral experience in conducting research in reproductive endocrinology with special emphasis on heterogeneity of polypeptides, neuroendocrinology, and biochemistry. Participation in existing research projects and procurement of independent research project funding is expected. Reply to: **Inese Z. Beitins, M.D., Director, Pediatric Endocrinology, Department of Pediatrics, F2125 Mott Hospital, University of Michigan, Ann Arbor, Michigan 48109.** *The University of Michigan is a nondiscriminatory, Affirmative Action Employer.*

**MEDICAL UNIVERSITY, DEPARTMENT OF BIOMETRY, CHARLESTON, SOUTH CAROLINA 29425.** Two tenure-track positions in multidisciplinary department in College of Graduate Studies. Positions in biomedical system sciences to teach and conduct research in systems theory, signal processing, image enhancement, microprocessors, and/or information systems. Ph.D. in biomedical engineering, electrical engineering, computer science, or biophysics preferred. Level of appointment and salary commensurate with education and experience. Send curriculum vitae, reprints, and names of three references to: **Dr. M. Clinton Miller, at address above.** *An Equal Opportunity/Affirmative Action Employer, M/F.*

## HARVARD MEDICAL SCHOOL

**CELL AND DEVELOPMENTAL BIOLOGY/ENDOCRINOLOGY.** Applications are invited for postdoctoral and/or research associate positions to study mammalian spermatogenesis, fertilization, and embryogenesis. The research projects, directed by Dr. Anthony R. Bellvé and Dr. John D. Biggers, focus on events regulating the proliferation and differentiation of somatic, germinal, and embryonic cells. Candidates experienced in protein purification, endocrinology (growth factors), cell culture, microinjection and/or hybridoma techniques are particularly welcome. Appointments are for 2 to 3 years. Send curriculum vitae and list of references to: **Dr. Anthony R. Bellvé, Laboratory of Human Reproduction and Reproductive Biology, Harvard Medical School, 45 Shattuck Street, Boston, Mass. 02115.**

*Equal Opportunity/Affirmative Action Employer*

**CHEMIST—RESEARCH BIOCHEMICAL Ph.D.** We require a skilled protein chemist with experience in developing electrophoretic protocols. "Heads and hands" knowledge a must! Send résumé and curriculum vitae to: **Department "B," R. Jacquin, HABER, INC., 470 Main Road, Towaco, N.J. 07082.** *An Equal Opportunity Employer.*

## POSITIONS OPEN

# Assistant Professor Plant Ecology

Applicants are invited for an assistant professorship to be appointed for up to 3 years, commencing 1 September 1983; tenure-track a possibility. Applicant should have a solid background in the plant sciences, with primary interest in plant ecology or plant population biology (or possibly biosystematics). Duties will include teaching plant ecology and related undergraduate and graduate courses, advising graduate students, independent research. Applications will be accepted until 10 July 1983. Send a letter of application and curriculum vitae and arrange for three letters of recommendation to be sent to: **Dr. Douglas J. Futuyma, Chairperson, Search Committee, Department of Ecology and Evolution, State University of New York (SUNY), Stony Brook, Stony Brook, N.Y. 11794.**

*SUNY, Stony Brook, is an Equal Opportunity/Affirmative Action Employer.*

**CANCER EPIDEMIOLOGIST**—Position available for M.D. or Ph.D. with a record of accomplishment in cancer epidemiology. Prefer candidate with interest in conducting field studies related to occupational epidemiology or cancer genetics. However, outstanding investigators in any area will be considered. Excellent facilities for research including patient material, statistical support, in-house computing, and software. Salary commensurate with education and experience. Send curriculum vitae and three letters of recommendation to: **Suresh Moolgavkar, M.D., Ph.D., Chairman, Epidemiology Search Committee, Fox Chase Cancer Center, 7701 Burholme Avenue, Philadelphia, Pa. 19111.** *An Equal Opportunity/Affirmative Action Employer.*

**CELL OR MOLECULAR BIOLOGIST.** Postdoctoral position available for 3 years from 1 October to study aspect of cellular differentiation in culture, using human epidermal cells as a model system. Experience in characterization of membrane proteins an advantage but not essential. Send curriculum vitae and names of three referees to: **Dr. F. M. Watt, Kennedy Institute, 6 Bute Gardens, London W6 7DW, England, before 30 July 1983.**

## CHAIRPERSON DEPARTMENT OF PHYSICAL MEDICINE AND REHABILITATION University of Colorado School of Medicine

The University of Colorado School of Medicine is interested in receiving nominations for the position of chair of the Department of Physical Medicine and Rehabilitation. The individual must have exceptional qualities and demonstrable accomplishments as a physiatrist, teacher, and investigator. Board-certification or Board-eligibility in physical medicine is desirable. He or she must be willing to assume administrative responsibilities in directing a department devoted to professional and graduate education, clinical service, and research. Qualified individuals are requested to submit their curriculum vitae and bibliography to:

**Glenn W. Kindt, M.D.**  
Division of Neurosurgery  
University of Colorado School of Medicine  
4200 East Ninth Avenue  
Denver, Colo. 80262

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

## CHEMISTS

**EXCELLENT OPPORTUNITIES** for synthetic organic chemists, biochemists, analytical chemists, and immunoassay development chemists. **BIO-DIAGNOSTICS, INC.**, a well-financed, start-up company located in the Dallas-Fort Worth metroplex, is involved in the proprietary development and manufacture of **FLUORESCENT IMMUNOASSAYS.** Requirements: advanced degree in organic chemistry, biochemistry, or immunology plus experience in industrial or academic environments. Experience with a variety of chromatographic and spectroscopic techniques desirable. Competitive compensation plus possible equity position. Send brief work history and résumé to: **Bio-Diagnostics, Inc., 2100 Road to Six Flags, Arlington, Tex. 76011.** *Equal Opportunity Employer.*

## Associate Senior Investigator

### Pharmacokinetics

SmithKline Beckman's Animal Health Products Division, located 30-miles west of Philadelphia, has an exciting growth opportunity for a skilled individual with a PhD in biochemistry, chemistry or pharmacology to design, organize and conduct drug metabolism, pharmacokinetic and tissue residue studies using HPLC, GLC, TLC and radioisotope techniques. Demonstrated quality experience in drug metabolism studies, pharmacokinetic studies and method development required as is proven technical writing ability. Strong background in bioanalytical chemistry (HPLC, GLC), supervisory experience, mini computer programming experience (BASIC) and demonstrated excellent interpersonal skills are preferred.

Our compensation and benefits package, including our relocation policy, are geared to today's economy and are among the best in industry. Investigate our growth and your potential to grow with us by sending your C.V. and names of 3 references in confidence to: Jim Beyea, SmithKline Animal Health Products, a division of, **SMITHKLINE BECKMAN CORPORATION**, 1536 Spring Garden Street, Philadelphia, PA 19101. We are an equal opportunity employer, M/F/H/V.

**SmithKline  
ANIMAL HEALTH  
PRODUCTS**

## RESEARCH ASSOCIATES

AMGen, an established genetic engineering company with a broad technological base, is seeking Research Associate level scientists. Qualified candidates will have an M.S., or a B.S. degree with recent laboratory experience in one of the following areas:

**Protein Purification  
Protein Chemistry  
Bio-Organic Chemistry  
DNA Sequencing/Cloning  
Fermentation Research  
Process Development  
Cell Biology/Immunology  
Pharmacology**

AMGen offers a stimulating research environment and maintains close association with academic institutions through its Scientific Advisory Board. Our staff currently includes over 100 employees in two locations, Thousand Oaks, California and Boulder, Colorado. Research activity at AMGen will lead to health care and industrial chemical products based on recombinant DNA and hybridoma technologies. A pharmaceutical pilot plant will be constructed in Chicago's High-Technology Park with completion scheduled for late 1984.

We offer an excellent salary and benefits package as well as equity participation. Applications, including a curriculum vitae and the names of three references should be sent to:



**Personnel Director  
AMGen  
1900 Oak Terrace Lane  
Thousand Oaks, CA 91320 1789**

## ASSISTANT PROFESSORS

### Research-track Medical School Department of Physiology

Candidates must have PhD or MD Degree and at least 4 years post doctoral experience. Competitive salary and comprehensive benefits. Unique requirements for the research areas are experience in:

1. Voltage clamping of cardiac muscle, calcium channel blockers and single cell techniques. Background in theoretical analysis of currents in electrical syncytia and experience with microcomputers is specifically desirable.
2. Physiology and biochemistry related to Cell O<sub>2</sub>, CO<sub>2</sub> exchange, hemoglobin and enzyme separation, particularly carbonic anhydrase. Experience with mass spectrometry highly desirable.
3. Voltage and patch clamp technique in excitable membranes. Knowledge of analog and digital electronics, and computer programming and interfacing is necessary. Experience in primary tissue and cell culture desirable.
4. Tissue and cellular oxygenation in fetus and newborn placental exchanges and mechanisms of metabolic and neurogenic control of brain and heart blood flow.
5. Lipid biochemistry, expertise in lung surfactant analysis and cell culture techniques and sub-cellular fractionation is desirable.

Send curriculum vitae and names of 3 references to: Dr. R.E. Forster, Chairman, Department of Physiology, University of Pennsylvania School of Medicine, Philadelphia, PA 19104.

An Equal Opportunity/Affirmative Action Employer

## RESEARCH MANAGEMENT Diagnostics

**We have an exceptional opportunity for the experienced creative professional who is ready to advance to the research supervisory level.**

Candidates should have a Ph.D. in Biochemistry, Immunology or related disciplines and 6 or more years of professional experience in immunodiagnostic research with a minimum of 2 years technical group leader experience. The selected candidate will supervise an established group of scientific and technical personnel engaged in development of non-isotopic immunodiagnostic assays.

We are a Fortune 500 chemical company engaged in the manufacture and sale of chemicals and chemical related products and committed to a new and rapidly growing research program. The position is located in the Northeast, convenient to New York City. We offer excellent career advancement opportunities, salary and benefits. All replies will be held in the strictest confidence. Send résumé and salary requirements to:

**Box 152, SCIENCE**

An Equal Opportunity Employer

## POSITIONS OPEN

### ANGENICS

- Growing biotechnology company has a position available for a Ph.D. with expertise and postdoctoral experience in biochemistry and a familiarity with modern recombinant DNA techniques.
- The candidate will have the responsibility for specific research projects and the opportunity for interaction with an active, multidisciplinary research group.
- Angenics is distinctive in the novel application of biotechnology to contemporary biological problems and seeks candidates of outstanding accomplishment.

Applicants are invited to submit curriculum vitae and the names of three references to:

Vicki L. Sato  
Director of Research  
Angenics, Inc.  
100 Inman Street  
Cambridge, Mass. 02139

*An Equal Opportunity Employer*

**DIRECTOR OF THE ILLINOIS AGRICULTURAL EXPERIMENT STATION AND ASSOCIATE DEAN OF THE COLLEGE OF AGRICULTURE—UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN (UIUC).** As an associate dean of the College of Agriculture, the director is responsible to the dean of the College for encouraging and supporting the development and maintenance of a strong, dynamic research organization within the College, including the receipt and disbursement of research funds received by the Illinois Agricultural Experiment Station from the U.S. Department of Agriculture. There are approximately 400 faculty members involved in research with an annual research budget of about \$21 million. The director serves as a member of the College Administrative Committee with the three other associate deans and other college administrators in the conduct of the affairs of the College. Further responsibilities include collaboration with administrative heads and units concerning programs, the selection and evaluation of faculty, and budget preparation. The director represents the station at state, regional, and national meetings related to the research programs of the College. Candidates for this position must have a Ph.D. or equivalent degree in a field relevant to agriculture, demonstrated excellence in research, recognized leadership capability, and a strong interest in research administration. Familiarity with the purposes and goals of the land-grant system is required.

The position is available 21 August 1983. To ensure full consideration, letters of application, including résumé, should be submitted before 8 July 1983 to: **Dr. H. J. Hopen, Chair, Search Advisory Committee, College of Agriculture, University of Illinois at Urbana-Champaign, 124 Mumford Hall, 1301 West Gregory Drive, Urbana, Ill. 61801.** *UIUC is an Affirmative Action/Equal Opportunity Employer.*

**ELECTRON MICROSCOPIST**—Position in cardiovascular research laboratory for individual with minimum of 2 years of research experience. Should have extensive experience in electron microscopy and different histological techniques. Prefer individual who has had background in ultra-autoradiography and labeling microscopy as well as immunological background. Salary is negotiable. Submit current curriculum vitae to: **Carol Wilson, Administrator, DEBORAH CARDIOVASCULAR RESEARCH INSTITUTE, One Trenton Road, Browns Mills, N.J. 08015.** *Equal Opportunity Employer, M/F.*

**ENDOCRINE PHYSIOLOGIST.** Tenure-track position. Teaching responsibilities include medical endocrine physiology. Preferred research area is one that combines endocrine and cardiovascular interests. An independent research program is expected; collaborative research is encouraged. This position offers a professional career in an attractive rural community. Applicants should provide curriculum vitae, a brief summary of research and teaching experience/goals, and names of three references. Submit requests for additional information or applications to: **Konrad W. Scheel, Ph.D., Chairman, Department of Physiology, Kirksville College of Osteopathic Medicine, Kirksville, Mo. 63501.** *An Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**TENURE-TRACK ASSISTANT PROFESSORSHIP OF BIOLOGY,** beginning September 1983. Ph.D. in biology to teach human anatomy and physiology and related biology courses. A commitment to liberal arts required. Teaching experience preferred. Send letter of application, résumé, transcripts, and three letters of recommendation to: **Dr. B. J. Gibbins, Box 370S, Lake Erie College, Painesville, Ohio 44077.** Deadline: 20 July 1983. *Lake Erie College is an Affirmative Action/Equal Opportunity Employer.*

### CHAIRPERSON DEPARTMENT OF BIOCHEMISTRY THE UNIVERSITY OF TEXAS HEALTH SCIENCE CENTER AT DALLAS SOUTHWESTERN MEDICAL SCHOOL

Applications and nominations are invited for the position of **professor and chairperson** of the Department of Biochemistry. Candidates should have an outstanding record of research accomplishments and be dedicated to the provision of leadership in research and teaching for a department that currently includes more than 25 faculty. Nominations and applications will be received until the position is filled and should be addressed to: **Alfred G. Gilman, Chairman of the Biochemistry Search Committee, Department of Pharmacology, The University of Texas Health Science Center at Dallas, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** *An Equal Opportunity Employer.*

The University of Virginia, Diabetes Research and Training Center (DRTC), is seeking a **DIABETES NUTRITION SPECIALIST** (R.D. with M.S. required) to assist in the design, implementation, and evaluation of a research-based interdisciplinary diabetes care team. This position would be an appointment on the general medicine faculty in the department of clinical pharmacology. Interested applicants should submit curriculum vitae to: **University of Virginia, DRTC, Box 448, Jordan Hall, Charlottesville, Va. 22908.**

**ECOLOGIST.** The Institute for Desert Research, Ben-Gurion University, Sede Boquer, Israel, offers a tenure-track position for an ecologist specializing in population biology, community ecology, and ecosystem analysis. Individuals with postdoctoral experience, and who might eventually wish to settle in Israel, will be given special consideration. Send curriculum vitae, reprints, and three letters of reference by 1 August 1983 to: **Professor Uriel Safriel, Department of Zoology, The Hebrew University, Jerusalem 91905, Israel.**

### ENZYMOLOGIST

Enzymologist needed immediately for postdoctoral research position to study effects of trace element deficiency or excess in relation to the etiology and pathophysiology of ischemic heart disease. Requires a Ph.D. in biochemistry. Experience in measurement of enzymes preferred. One-year position with possibility for renewal. Salary: \$15,000 to \$17,000, plus benefits. Send curriculum vitae, names of three references, and relevant publications to:

Ramona J. Martin  
Human Nutrition Research Center  
P.O. Box 7166, University Station  
University of North Dakota  
Grand Forks, N.D. 58202

*We are an Equal Opportunity/Affirmative Action Employer.*

### POSITION AVAILABLE: EXECUTIVE DIRECTOR

River Road Charitable Corporation seeks an Executive Director of its Coolidge Farms project in Topsfield, Massachusetts, a 340-acre integrated farm in transition to biological management. The purpose of the farm is to demonstrate commercial viability of integrated organic farming techniques and to provide a base for specific applied research projects in conjunction with universities in New England, and the University of Kassel, West Germany, and its European affiliates. River Road seeks candidates with a Ph.D. in agricultural sciences, with 5 to 10 years of professional experience including the administration of programs and projects. Salary range: \$30,000 to \$40,000 per year. Please send résumé by 1 September 1983 to: **T. J. Coolidge, Jr., Suite 923, One Boston Place, Boston, Mass. 02108.** Please include names and addresses of three references.

## POSITIONS OPEN

### CURATOR OF BOTANY

The New Mexico Museum of Natural History is seeking a Curator of Botany, Museum Specialist III-G. Deadline for applications is 15 July 1983. The curator will supervise the management of plant collections for exhibits and educational and research purposes; select themes, concepts, and species for plant exhibits; participate in educational activities of the Museum; edit Museum botanical publications; and establish a field research program in New Mexico. Applicants should have a demonstrated field research ability, with a combination of 8 years of experience/education, including 2 years of museum or teaching experience, and be broadly trained botanists. Salary: \$18,816 plus benefits. Send résumés to: **New Mexico Museum of Natural History—OCA, P.O. Box 7010, Albuquerque, New Mexico 87194-7010.** *New Mexico is an Equal Opportunity Employer.*

### CURATOR OF ZOOLOGY

The New Mexico Museum of Natural History is seeking a Curator of Zoology, Museum Specialist III-G. Deadline for applications is 15 July 1983. The curator will supervise the management of animal collections for exhibits and educational and research purposes; select themes, concepts, and species for animal exhibits; participate in educational activities of the Museum; edit Museum zoological publications; and establish a field research program in New Mexico. Applicants should have a demonstrated field research ability with a combination of 8 years of experience/education, including 2 years of museum or teaching experience, and be broadly trained zoologists. Salary: \$18,816 plus benefits. Send résumés to: **New Mexico Museum of Natural History—OCA, P.O. Box 7010, Albuquerque, New Mexico 87194-7010.** *New Mexico is an Equal Opportunity Employer.*

### DIRECTOR VA Longitudinal Aging Study

Applicant should be an M.D. or Ph.D. with expertise in longitudinal studies and interdisciplinary aging research. The VA Normative Aging Study is a large-scale study of both non-pathological and pathological age-related changes. The study, initiated in 1963, is located at the Veterans Administration Outpatient Clinic in Boston. The position permits the incumbent to conduct his/her own independent research as well as direct the research of other medical and behavioral scientists. The primary focus of this study is the biomedical aspects of aging with a strong emphasis on clinical epidemiology. The position also provides an opportunity for an academic appointment with teaching as well as research responsibilities. The incumbent's research and medical expertise may also integrate with the broader ambulatory patient care mission of the Clinic and the Geriatric Research, Education, and Clinical Center located at this facility. Salary commensurate with experience. Send curriculum vitae and three references to: **Chairman, Search Committee for Director of Normative Aging Study, c/o Associate Chief of Staff for Research and Development, VA Outpatient Clinic, 17 Court Street, Boston, Mass. 02108.** *An Equal Opportunity/Affirmative Action Employer.*

**EPIDEMIOLOGIST/BIostatistician, Ph.D.,** to join an expanding Department of Biostatistics at The Cleveland Clinic Foundation. Primary responsibilities will include collaboration and consultation in the design and analysis of research studies in all areas of medical science. Additional responsibilities include the development of an independent research program, participation in other departmental research efforts, as well as minimal teaching duties. Appointment will be at the associate staff level and includes excellent salary and fringe benefits. The Cleveland Clinic Foundation is one of the world's largest private, nonprofit medical centers and employs a staff of 350 salaried physicians and scientists as well as 7000 support personnel. Apply to: **Dr. George W. Williams, Department of Biostatistics, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, Ohio 44106.**

**MOLECULAR GENETICS/MICROBIOLOGY** assistant professor. Tenure-track position available fall 1984. Ph.D. required. Primary responsibilities will be teaching undergraduate and graduate courses in genetics, microbiology, and introductory courses, and advising students. Send curriculum vitae, statement of teaching experience, official transcripts, and three current letters of reference by 31 December 1983 to: **E. Bruce McLean, Chairman, Department of Biology, John Carroll University, Cleveland, Ohio 44118.** *An Equal Opportunity Employer.*



**KING SAUD UNIVERSITY  
DEPARTMENT OF FACULTY  
AND PERSONNEL AFFAIRS**

The College of Agriculture of King Saud University, Branch of Qaseem, wishes to fill vacant positions in the following departments:

Agricultural Economics & Extension, Horticulture & Forestry, Soil & Water, Veterinary Medicine and Agricultural Engineering.

**FIRST — Faculty Members:** (A) Professor, (B) Associate Professor, (C) Assistant Professor and (D) Lecturer

**APPLICANT MUST:** (1) Hold a Ph.D. or equivalent for (A-B-C) and a Master's Degree or equivalent for (D) — (2) Have relevant experience for the last three years (1980-1982)

**SECOND — Non-Teaching Staff:** (A) Researcher, (B) Research Assistant and (C) Technician

**APPLICANT MUST:** (1) Hold a university degree, a Master's Degree is preferable — (2) Have a minimum of three years relevant experience

**ARABIC IS THE MEDIUM OF INSTRUCTION.**

Applications should be accompanied by resume and copies of academic and experience certificates (non-returnable).

Letters of application should be sent to:

Dean, College of Agriculture - Qaseem  
King Saud University Branch in Qaseem  
P.O. Box 1482 Buraida  
Saudi Arabia

## THE FIRST WORD IN... IMMUNODIAGNOSTICS

The Cancer Product Development Group of Abbott Laboratories, an international leader in immunoassay development for cancer patient management, is currently seeking scientists in the following areas:

### Ph.D./M.S. BIOCHEMISTS/ IMMUNOLOGISTS

These positions in our Cancer Product Development Group will focus on:

- Development of assays for tumor markers
- Process development and trouble-shooting

Qualified candidates will have a Ph.D. or M.S. in Biochemistry or Immunology. An in-depth knowledge of macromolecular purification techniques, protein biochemistry, and the principles of enzyme and radioimmunoassay will be essential. Good communication skills and ability to interact effectively with project team members is also required.

Abbott Park, Abbott's headquarters, is located in an attractive suburban setting on the Lake Michigan shoreline, 30 miles north of Chicago. We offer excellent salaries and a full benefits package that includes profit sharing, stock retirement plan and relocation assistance. For consideration, send your resume with salary history to: **Jeffrey Luke / Corporate Placement.** Abbott is an Affirmative Action Employer.

**ABBOTT**  
ABBOTT PARK ILL. 60064

"HEALTH CARE WORLDWIDE"

**THE FIRST WORD IN...SUCCESS**

## Director, Stanford Linear Accelerator Center

The Stanford Linear Accelerator Center (SLAC), is a high-energy physics research laboratory used as a resource by scientists from across the country and around the world. It is operated by Stanford University, and under contract with the U.S. Department of Energy. The principal research instruments are the two-mile linear electron accelerator, and two electron-positron colliding beam storage rings.

To function as the Director of this facility, an individual must demonstrate the ability to plan, coordinate and administer all aspects of the program. This leadership position directs a staff of 1400 people working in a range of research, technical and administrative areas. Additionally, the Director will be a Professor on the SLAC faculty.

Candidates for this position must have extensive and widely recognized experience as practicing scientists in the field of elementary particle physics. Administrative experience and knowledge of government relations are desired.

As an institution committed to the principle of diversity, Stanford University welcomes applications from women and members of ethnic minority groups. Deadline for application is August 1, 1983. Tentative starting date is September 1984. Applicants should submit a curriculum vitae, and references to: Provost Albert H. Hastorf, Chairman, SLAC Director Search Committee, Building 10, Stanford University, Stanford, CA 94305. An equal opportunity employer through affirmative action.



**STANFORD  
UNIVERSITY**



## POSITIONS OPEN

The Department of Surgery, Southwestern Medical School, is seeking applicants for:

**INSTRUCTOR**—M.D., accredited general surgery residency, interest in peripheral vascular surgery. Deadline for submission of applications for 1984–1985 is 30 June 1983; for 1985–1986, 30 October 1983; and for 1986–1987, 1 January 1984. Contact: **William J. Fry, M.D., Hudson-Penn Professor and Chairman, Department of Surgery, 5323 Harry Hines Boulevard, Dallas, Texas 75235.** *The University of Texas Health Science Center at Dallas is an Equal Opportunity Employer.*

### TITLE: LECTURER.

**SALARY:** Base salary: \$21,700.

**DESCRIPTION:** The Department of Obstetrics and Gynecology, University of California at Los Angeles (UCLA), School of Medicine, announces the availability of an academic position in **reproductive endocrinology** commencing 1 July 1983. This position is for teaching and research in female reproductive endocrinology and infertility. Participation in several ongoing research projects and teaching will be required. Candidates are required to have the M.D. degree or equivalent, a California medical license, and completion of 4 years of Ob-Gyn residency training. Candidates must also have 2 years of training in the field of neurophysiology as well as a solid background in internal medicine and must have published research results and otherwise demonstrated competency to do independent research in part by being primary author on several research papers. Experience teaching medical and postgraduate students is also required.

**TO APPLY:** Send inquiries and current curriculum vitae to:

**Howard L. Judd, M.D.**  
Chief

Division of Reproductive Endocrinology  
Department of Obstetrics and Gynecology  
UCLA School of Medicine  
Los Angeles, Calif. 90024

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

### MANAGER MEDICAL WRITING

If you are able to communicate with an interdisciplinary professional medical research team and have at least five years of medical/scientific editing and management experience, we want to talk with you about this outstanding management opportunity that exists with the Science & Technology Division of Bristol-Myers.

The successful applicant will have solid editorial skills and the ability to motivate and guide a writing staff in the development of clear and well-organized reports to be included in NDA submissions to the FDA. A knowledge of statistics, FDA requirements, and clinical trials would be beneficial. An advanced degree in a medical or scientific discipline is desirable, but will not replace proven writing and management skills.

Evansville is a community of beautiful residential areas, outstanding recreational opportunities, exceptional educational and cultural facilities, and more. In Evansville, you can experience the changing beauty of four seasons, including mild winters and a low cost of living.

For prompt consideration, send résumé in confidence to:

**D. R. Stone**  
Department 965  
Mead Johnson & Co.  
2404 Pennsylvania Street  
Evansville, Ind. 47721

A Subsidiary of Bristol-Myers Corporation  
*An Equal Opportunity Employer, M/F/H/V*

### POSTDOCTORAL ASSOCIATE

Available immediately; screening will begin immediately. Requires Ph.D. and background in biochemical metabolism with experience in the use of radioactive isotopes, determination of rates of protein synthesis, extraction and identification of lipids using thin-layer chromatography and assay to determine binding affinity. Experience in tissue culture helpful but not necessary. Salary commensurate with qualifications and experience. Send curriculum vitae, official transcripts, and names of two referees to: **Dr. Murray Hill, Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, Iowa 52242.**

## POSITIONS OPEN

### NEW ZEALAND UNIVERSITY OF CANTERBURY LECTURER IN BOTANY

Applications are invited for the above position in the Department of Botany.

Applicants should have a proven record in molecular biology and an ability to interact with existing staff in plant and microbial biochemistry, microbiology, genetics, and plant physiology. The successful applicant will also be expected to contribute to undergraduate teaching in plant biochemistry. A sound knowledge and experience of contemporary molecular biology techniques are essential.

The salary for lecturers is on a scale from NZ\$21,660 to NZ\$25,684 per annum.

Applications close on 31 July 1983.

Further particulars and conditions of appointment may be obtained from: **W. Hansen, Registrar, University of Canterbury, Private Bag, Christchurch, New Zealand.**

Two tenure-track, state-supported **MOLECULAR BIOLOGY FACULTY POSITIONS** available beginning in the 1983–1984 academic year. Individuals sought who will develop active and independent research programs in the molecular biology area. Training and instruction of medical, graduate, and postdoctoral students in molecular biology/biochemistry also expected. Appointments will be made at the junior faculty level, but rank and salary are negotiable. Send current curriculum vitae, summary of research plans, and a minimum of three letters of reference to: **Dr. Lindsay Black, Coordinator, Molecular Biology Search Committee, Department of Biological Chemistry, University of Maryland School of Medicine, 660 West Redwood Street, Baltimore, Md. 21201.** Deadline: 31 August 1983. *An Equal Opportunity/Affirmative Action Employer.*

### MOLECULAR BIOLOGY AND BRAIN UNIVERSITY OF COLORADO

Applications are invited for a **postdoctoral or research associate position** to work with team investigating genes expressed specifically in the brain. Investigation involves use of recombinant DNA, sequencing, in situ hybridization, monoclonal antibodies, expression plasmids, and so forth.

Individual must have sound background in molecular biology. Salary negotiable and commensurate with experience. **Telephone: 303-394-5604** for details. Send curriculum vitae, reprints, and list of references to: **William E. Hahn, Professor, University of Colorado School of Medicine, B-111, 4200 East 9 Avenue, Denver, Colo. 80262.** *An Equal Opportunity/Affirmative Action Institution.*

### MOLECULAR NEUROBIOLOGIST

An assistant or associate professorship (tenured or tenure track) is available to applicants using molecular genetic approaches for the study of neurons or neuroendocrine cells. Areas of interest include neuropeptides, hormone or neurotransmitter receptors, and membrane structures (ion channels and transport proteins). The successful applicant will be expected to develop an independent research program, and to train graduate students and postdoctoral fellows. Liberal start-up funds and highly competitive salary are available. The position requires a doctoral degree and postdoctoral training. Send curriculum vitae, a summary of future research plans, and names of three referees by 1 August 1983 to:

**Professor J. D. Neill**  
Department of Physiology and Biophysics  
University of Alabama in Birmingham  
Birmingham, Ala. 35294

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

## POSITIONS OPEN

**GENETIC ENGINEERING POSITION, COLLEGE OF AGRICULTURE.** Ph.D. Assistant, associate, or professor. Tenure-track; half-time teaching; half-time research. Strong record of accomplishment in research and laboratory management; molecular biology and genetics background. Closing date for applications: 1 August 1983; available 15 August 1983. Send curriculum vitae and official transcripts and have three letters of recommendation sent to: **Dr. LeMoyne Hogan, Head, Department of Plant Sciences, The University of Arizona, Tucson, Arizona 85721.** **Telephone: 602-621-1945.** *Equal Opportunity/Affirmative Action Employer.*

**NEUROENDOCRINE PHYSIOLOGIST/PHARMACOLOGIST** with research focus on cellular/molecular basis of mediator action. Tenure-track position at rank commensurate with qualifications. Two years of postdoctoral experience required. First considerations will be given to individuals with established, funded research programs and demonstrated success as teachers. A letter describing current research, a list of references, and curriculum vitae addressed to: **Endocrine Search Committee, Department of Physiology 206H, School of Medicine, Chapel Hill, N.C. 27514,** should be received by 10 September 1983. *The University of North Carolina is an Equal Opportunity/Affirmative Action Employer. Females and minorities are encouraged to apply.*

**NUTRITIONIST:** Ph.D. in nutrition or closely related area to assume the responsibility for instructing and coordinating an academic program in nutrition. Applicants must be knowledgeable in biochemistry, nutrition, and dietetics. Résumés should be sent to: **Dr. T. J. Kalthoff, Academic Dean, Cleveland Chiropractic College, 6401 Rockhill Road, Kansas City, Missouri 64131.** Closing date: 8 July 1983.

**PLANT PATHOLOGIST.** Suburban Experiment Station, University of Massachusetts, Waltham. Eleven-month, tenure-track position for plant pathologist, assistant professor. Ph.D. in plant pathology required. Duties include development and implementation of program for study and control of diseases and disorders of commercial flower and vegetable crops in Massachusetts. Assignment is 50 percent extension, 50 percent research. Will carry adjunct appointment in Department of Plant Pathology on Amherst campus. Available September 1983. Salary negotiable. Applications and three letters of reference, curriculum vitae, and so forth will be received until 1 September 1983 or until suitable candidate is found, and should be sent as soon as possible to: **Professor William A. Feder, Plant Pathology Search Committee, Suburban Experiment Station, University of Massachusetts, 240 Beaver Street, Waltham, Mass. 02254.** *An Affirmative Action/Equal Opportunity Employer.*

### POLYMER CHEMIST AND COMPOSITE ENGINEER

**REQUIREMENTS:** Master's degree in macromolecular science, 4 years of experience in field of polymer chemistry and composite engineering. Position involves responsibility for research and development of composite parts for high temperature aerospace use and chemical resistance for industrial use. Position requires scientific and technological expertise to formulate specific and composite structures tailored to differing customer needs. Applicant must be able to supervise product quality control by mechanical, physical, and chemical testing for mechanical strength, abrasion, chemical resistance, and required dimensional and physical specifications. Applicant must be experienced in polymer chemistry and composite engineering technology and be capable of running and analyzing physical and chemical testing properties. **SALARY:** \$30,000 per year. **HOURS:** At least 40 hours per week. **EMPLOYER:** Plastics International Inc., Avon, Ohio. Résumés to be sent to: **Ohio Jobs Service, Attention: M. McGill, 3135 Euclid Avenue, Cleveland, Ohio 44115, Re: Order Number 0235578.**

Department of Physiology, Uniformed Services University of the Health Sciences, is recruiting for a **POSTDOCTORAL FELLOW.** Applicant must have experience in heart physiology and metabolism. Send curriculum vitae and references to: **Director, Civilian Personnel/Manpower, attention: Dr. Rolf Bunker, M.D., Department of Physiology, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814.** *Uniformed Services University is an Equal Opportunity/Affirmative Action Employer.*

# AFGL SCEEE

## AIR FORCE GEOPHYSICS LABORATORY RESEARCH SCHOLAR PROGRAM 1983 - 84

The Air Force Geophysics Laboratory (AFGL) and The Southeastern Center for Electrical Engineering Education (SCEEE) announce that applications are invited for research appointments during the 1983-1984 year in the Geophysics Scholar Program. This new program will provide research opportunities of 11 months duration for selected Engineers and Scientist to perform research in residence at the AFGL, Hanscom AFB, near Boston, Massachusetts. Scholars will be selected primarily from such fields as Geophysics, Atmospheric Physics, Meteorology, Ion Chemistry, Applied Science, Mathematical Modeling using Computers, and Engineering. To be eligible, candidates must be a U.S. citizen and have a Ph.D. or equivalent in an appropriate technical field. All qualified applicants will receive consideration without regard to race, color, religion, sex, or national origin. SCEEE supports Equal Opportunity/Affirmative Action. Application Deadline: July 15, 1983. For further information and application forms contact: SCEEE, 1101 Massachusetts Avenue, St. Cloud, FL 32769, Telephone: (305) 892-6146.

## AUSTRALIAN INSTITUTE OF MARINE SCIENCE

### RESEARCH POSITION PHYSICAL OCEANOGRAPHY

The Australian Institute of Marine Science was established as a Statutory Authority of the Commonwealth Government in 1972 and in 1977 moved into a modern comprehensively equipped laboratory complex at Cape Ferguson near Townsville. The Institute is well situated for studies in tropical marine science including phenomena at the land-sea interface, on the complex environment of the Great Barrier Reef and in the adjacent Coral Sea. The ongoing programs of the Institute are augmented by active collaboration and interaction with visiting investigators from research organizations within Australia and overseas.

**Applications** are invited from researchers with interests and experience in turbulent geophysical fluid dynamics to collaborate in studies of resource cycling within and around reefal environments. Challenging problems exist for aspects of wind, tide, and wave forcing on reef fronts, over shallow reef flats, and in backreef environments. Motion scales encompass oscillatory and fully turbulent boundary layers, lagoonal circulations, and wakes. Within the overall program, an understanding is sought of the physical, chemical, and biological interactions within reefal systems and adjacent waters.

**Qualifications:** The appointee must possess Ph.D. level qualifications and preferably experience demonstrably applicable to the research program outlined.

**Salary:** The salary offered will be determined by the qualifications and experience of the successful candidate and will be within one of the following ranges:

Research Scientist: A\$23,340 to \$28,800 per annum,

Senior Research Scientist: A\$29,810 to \$34,330 per annum, and

Principal Research Scientist: A\$35,630 to \$40,470 per annum.

Applications, including complete curriculum vitae and the names of at least three but not more than five referees should be forwarded to:

**The Secretary  
Australian Institute of Marine Science  
P.M.B. Number 3  
M.S.O. Townsville, Queensland 4810  
Australia**

**Closing date** for applications is 5 August 1983.



## THE NEW YORK COLLEGE OF OSTEOPATHIC MEDICINE NEUROSCIENTIST

### DIRECTOR

## INSTITUTE FOR NEURO-MUSCULO- SKELETAL DISORDERS

Institute for Neuro-Musculo-Skeletal Disorders  
through its parent organization

The New York College of Osteopathic Medicine  
invites nominations and applications for the position of

### DIRECTOR OF THE INSTITUTE

The responsibility of the Institute is to foster, conduct and support research, research training and clinical training in the causes, prevention, diagnosis and treatment of neurological, sensory and neuro-musculo-skeletal disorders.

The duties of the Director are, in general, in concert with carrying out the responsibilities of the Institute and include in brief, all aspects of instituting and maintaining complete and sophisticated basic and clinical research programs whose core is the neuro-musculo-skeletal interface.

This is an open-ended contractual agreement position, the periodicity of the renewable open-ended contracts and the salary to be mutually agreed upon at the time of negotiation. The successful candidate for the position is expected to assume responsibilities by November, 1983.

Applicants with earned Ph.D. DO or MD degrees are requested to send curricula vitae in prose or detailed outline form with all supportive information, i.e., letters of recommendation, award, affiliation, etc., to:

**SEARCH COMMITTEE  
OFFICE OF THE DEAN  
PROVOST FOR MEDICAL AFFAIRS  
NEW YORK COLLEGE OF OSTEOPATHIC MEDICINE  
OLD WESTBURY, NEW YORK 11568**

Candidates considered for interview will be  
so notified and interviewed in August, 1983.

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## POSITIONS OPEN

**POSTDOCTORAL PLANT ECOLOGIST.** Available fall 1983 to design and conduct community succession studies on Nantucket. Research experience in coastal/island community ecology and systems techniques desired. Send curriculum vitae and three letters of reference to: **Dr. John H. Fitch, Director, Environmental Science Department, Massachusetts Audubon Society, Lincoln, Mass. 01773.**

**POSTDOCTORAL POSITIONS IN CANCER RESEARCH—OAK RIDGE NATIONAL LABORATORY.** Appointments are available in an interdisciplinary cancer research program which includes study of mechanisms of action of chemical and physical agents in the initiation and promotion of cancer; the biochemistry, cell biology, and pathology of carcinogenesis; carcinogen metabolism, molecular genetics, virology, immunology, and DNA repair. Beginning stipend is \$18,000; U.S. citizenship or permanent residency required. Persons soon to be awarded or holding recent Ph.D., M.D., or D.V.M. degrees are invited to write for information to: **Training Office, University of Tennessee—Oak Ridge Graduate School of Biomedical Sciences, Biology Division, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37830. An Equal Opportunity/Affirmative Action Employer.**

**ARGONNE NATIONAL LABORATORY/CHEMISTRY DIVISION.** An immediate **POSTDOCTORAL POSITION** is available for atmospheric chemistry studies based on stable isotope analytical methods. Research topics: source budgets and temporal trends of atmospheric trace gases; determination of atmospheric OH free radical concentrations using stable isotope tracers. Send résumé to: **Walter McFall, Personnel Division, Box D-CHM-55, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, Illinois 60439. An Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available for research in molecular hematology utilizing gene mapping and cloning techniques. Experience in nucleic acid technology desirable. Send curriculum vitae to: **Dr. R. F. Rieder, State University of New York—Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, New York 11203. Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available September 1983 to use purified proteins and monoclonal antibodies to study malignant cell behavior and the biochemical basis of invasion and metastasis. Experience with protein purification and/or immunochemistry essential. Salary: \$20,000 to \$22,000; 1- to 3-year appointment. Please send curriculum vitae and names of three references to: **Dr. James P. Quigley, Box 44, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Equal Opportunity/Affirmative Action Employer. DMC 266.**

### POSTDOCTORAL POSITIONS

Positions are available for research in the following areas: cellular and molecular studies of resistance to anticancer agents; DNA damage and repair following combination chemotherapy or radiation-chemotherapy treatment; hyperthermia research; experimental chemotherapy. Phase I clinical pharmacokinetics, human tumor stem cell studies; and biochemical pharmacology of anticancer agents. Stipends are \$18,000 per year. Apply to: **Dr. Fred Valeriote, Division of Oncology, Department of Medicine, Wayne State University School of Medicine, P.O. Box 02188, Detroit, Mich. 48201. Wayne State University is an Equal Opportunity/Affirmative Action Employer.**

A **POSTDOCTORAL POSITION** is available at Case Western Reserve University. Successful applicant should have Ph.D or M.D. and will be expected to investigate calcium-prostaglandin interrelationship. Salary: \$15,000 to \$18,000 per year, depending on experience. Send curriculum vitae and the names of three references to: **A. Hassid, Ph.D., Department of Medicine, Case Western Reserve University, Cleveland, Ohio 44106. Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL POSITION

**Available immediately.** To study the interrelationship between enzyme structure and function by analysis of mutant versions of aspartate transcarbamylase [see *J. Mol. Biol.* 153, 569-587 (1981)]. Experience in several of the following areas is desirable: recombinant technology, enzyme kinetics and purification, HPLC, amino acid and protein sequence analysis. Send résumé and two letters of reference to: **Dr. Evan R. Kantrowitz, Department of Chemistry, Boston College, Chestnut Hill, Mass. 02167.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** in endocrine electrophysiology studying bursting electrical activity and insulin secretion in pancreatic islets using patch-clamp and intracellular electrodes, and single islet insulin release measurements. Candidates must have a Ph.D. or M.D. with experience in electrophysiology or endocrine secretion. Salary per NIH guidelines to begin winter 1983, in the Departments of Physiology and Biophysics, and Medicine, University of Washington. Send curriculum vitae to: **Daniel L. Cook, M.D., Ph.D., Division of Metabolism (151), 4435 Beacon Avenue South, Seattle, Wash. 98108. An Equal Opportunity Employer.**

**TWO POSTDOCTORAL POSITIONS** available in **BIOLOGY/BIOCHEMISTRY.**

**Immediate:** To study synthesis, turnover, and interactions of basement membrane macromolecules.

**September 1983:** To study the cellular processing of hyaluronidase and its role in morphogenesis.

Send curriculum vitae to: **Dr. J. Gross/Dr. R. Orkin, Developmental Biology Laboratory, Massachusetts General Hospital, 32 Fruit Street, Boston, Mass. 02114.**

**POSTDOCTORAL POSITION AVAILABLE.** Research areas are centered around the calcium regulation of various enzyme systems (for example, muscle contraction, myosin light chain kinase, and so forth). Techniques available include use of monoclonal antibodies, calcium-binding techniques, calcium-induced structural changes (fluorescence, C.D. or NMR, for example), protein interactions, protein drug interactions and so forth, and skinned fibers for the correlation of physiological events in muscle contraction. Candidates with backgrounds in biochemistry, immunology, biophysics, or pharmacology are encouraged to apply. Send curriculum vitae and names of three references to: **Dr. James D. Potter, Chairman, Department of Pharmacology (R-189), University of Miami School of Medicine, P.O. Box 016189, Miami, Florida 33101. An Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL POSITIONS

**BIOCHEMISTRY:** Three postdoctoral positions are available immediately for studies on: (i) tissue lipid metabolism and the metabolic fates of nutrient polyunsaturated fatty acids (requires some experience with lipid methodology); (ii) enzymatic mechanisms in the regulation of prostaglandin H synthase activity (some experience with protein chemistry and hemoproteins is desirable); and (iii) the role of hydroperoxides in the regulation of eicosanoid biosynthesis and cellular physiology (experience with cell culture techniques and lipid methodology is desirable). Applicants should send curriculum vitae and the names of three references to: **Dr. William E. M. Lands, Department of Biological Chemistry, University of Illinois at Chicago, 1853 West Polk Street, Chicago, Ill. 60612.**

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

**POSTDOCTORAL/RESEARCH ASSOCIATE POSITION** available immediately in Developmental Neurobiology Laboratory. Primary research focus utilizes cell type-specific monoclonal antibodies to examine neuronal differentiation in the CNS. Experience in molecular biology, protein biochemistry, or cell surface biology desirable. Send inquiry, curriculum vitae, and names of three references to: **P. Levitt, Department of Anatomy, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129. Equal Opportunity Employer, M/F.**

**POSTDOCTORAL/RESEARCH ASSOCIATE** offered in immunogenetics, to help in the study regulation of gene expression in multi-gene families controlling lymphocyte antigens. A broad approach will require knowledge in cell biology and molecular biology. Candidates with expertise in either field are invited to send curriculum vitae and references to: **Dr. Ulrich Hammerling, SLOAN-KETTERING INSTITUTE, 410 East 68 Street, New York, N.Y. 10021. An Equal Opportunity Employer, M/F/H.**

**PROFESSOR OF PHYSIOLOGY** (M.D. or Ph.D.). Research in cellular neuroendocrinology. Nontenured senior position. Research grant essential with substantial portion for personal salary. Teaching in neurophysiology, endocrinology. Send curriculum vitae and names of at least three references by 11 July. **B. Kammer, Department of Physiology, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**POSTDOCTORAL POSITION** available immediately in a research group studying molecular mechanisms of linear duplex DNA replication, protein-primed initiation of DNA replication. Please send curriculum vitae and three letters of reference to: **Dr. Junetsu Ito, Department of Molecular and Medical Microbiology, College of Medicine, The University of Arizona, Tucson, Arizona 85724.**

**POSTDOCTORAL POSITION** available immediately to collaborate on an NIH-sponsored research project on the "Cloning and Regulation of *Drosophila hydei* tyrosine aminotransferase." This enzyme is induced at the transcriptional level by its coenzyme (pyridoxine) in *D. hydei* larvae. An integrated approach employing the techniques of recombinant DNA technology, genetics, and indirect immunofluorescence will be utilized. Applicants should have some experience in recombinant DNA technology including cDNA and genomic cloning. Ph.D. required. The position is for 1 year with the possibility of renewal. Starting salary: \$15,000 to \$18,000. Send curriculum vitae and three letters of reference to: **Dr. Tom Brady, Department of Biological Sciences, Texas Tech University, Lubbock, Texas 79409. An Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL/RESEARCH ASSOCIATES

To investigate **TRANSCELLULAR IgG TRANSPORT** at the ultrastructural and biochemical levels in a unique tissue culture system, or to use existing monoclonal Ab to study **COATED VESICLE STRUCTURE** and assembly. Send curriculum vitae and telephone numbers of three referees to: **Dr. Thomas F. Roth, Department of Biological Sciences, University of Maryland Baltimore County, Baltimore, Md. 21228.**

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**POSTDOCTORAL RESEARCH ASSOCIATES.** Project involves biochemical study to understand the regulation of actin-myosin interaction and contraction in normal and pathological smooth muscles. The approach is interdisciplinary and possibilities for physiological, biochemical, and structural studies exist. A strong background in protein purification, protein phosphorylation, enzyme kinetics, or metal binding protein is preferable. However, a highly motivated person with background in electron microscopy, smooth muscle physiology, or developmental biology will be considered. The postdoctoral fellow may work either with Dr. Chacko or with Dr. Robert Cox (Department of Physiology, School of Medicine). Send curriculum vitae and names of three references to:

**Dr. Samuel Chacko  
Department of Pathobiology  
305 Veterinary School of Medicine  
University of Pennsylvania  
3800 Spruce Street  
Philadelphia, Pa. 19104**

*University of Pennsylvania is an Equal Opportunity Employer.*

### RESEARCH ASSOCIATES—MARINE BIOLOGY

Huntsman Marine Laboratory invites applications from individuals wishing to be sponsored for the 1984-1985 NSERC University Research Fellow program. Canadian citizens and landed immigrants to Canada who have at least 2 years of postdoctoral experience and a strong research record in any aspect of marine sciences will be considered. Send curriculum vitae and three letters of reference by 15 September 1983 to: **Dr. T. Moon, Director, Huntsman Marine Laboratory, St. Andrews, New Brunswick, Canada E0G 2X0.**

**RESEARCH ASSOCIATE/POSTDOCTORAL POSITION** available to study the gene structure and regulation of expression of cloned muscle genes in *Drosophila*. Ph.D. and research experience in recombinant DNA desirable. Salary open. Contact: **Dr. Robert Storti, Department of Biochemistry, University of Illinois Medical Center, 1853 West Polk Street, Chicago, Illinois 60612.**

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

**RESEARCH ASSOCIATE.** Experience in cellular immunology, monoclonal antibodies, protein separation and characterizations, and immunoassays. Research on autoimmune disease. M.S. or Ph.D. Send curriculum vitae and names of three references to: **T. Cavallo, M.D., 201 Keiller Building, The University of Texas Medical Branch, Galveston, Texas 77550. Affirmative Action/Equal Opportunity Employer.**

# The MX Missile and the Strategic Balance of Power

A collection of recent articles from SCIENCE on contemporary strategic ideology is now available for use by professionals, teachers, and researchers interested in the nuclear arms race.

"Anyone seeking a better understanding of the MX debate would do well to look at [this] series of brief, clearly written analyses."

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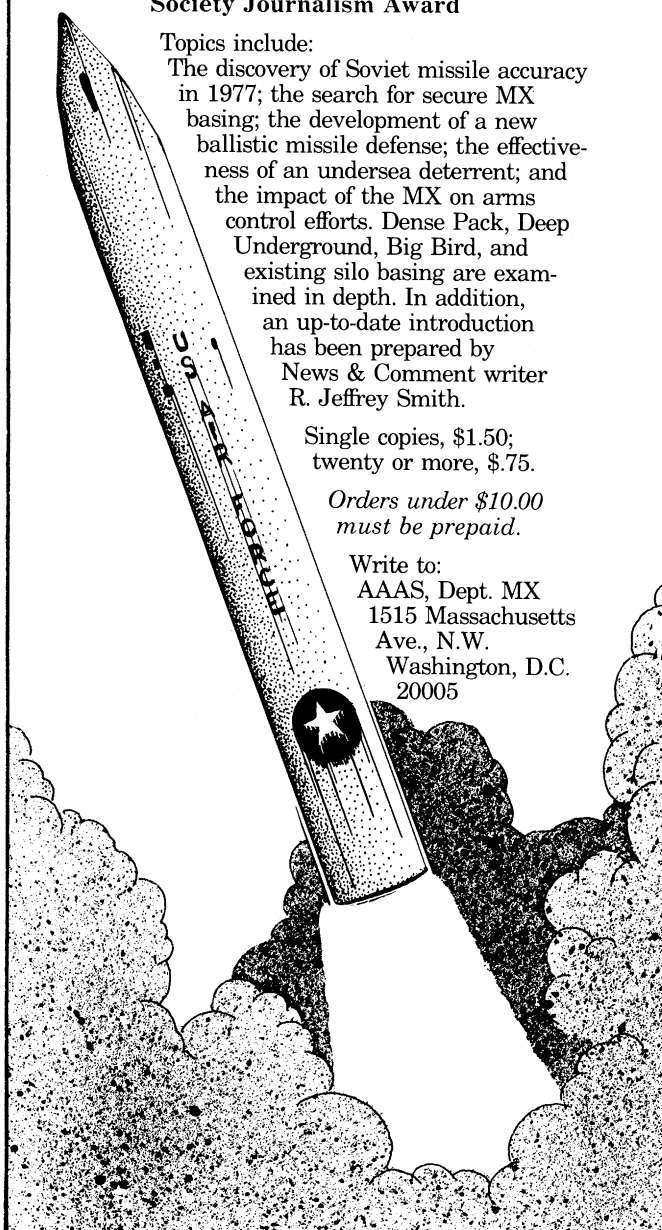
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## Senior Scientist IMMUNOLOGY

Hoffmann-La Roche, one of the world's leaders in pharmaceutical research and development, has a career opportunity in its Immunopharmacology Department.

Responsibilities will include the management of a fully equipped laboratory and a research program on the pharmacological control of T cell mediated immune responses both *in vitro* and *in vivo*.

Qualifications: Ph.D. and two to five years post-doctoral training in cellular immunology with emphasis in immune regulation. Knowledge of *in vitro* and *in vivo* assays of lymphocyte and macrophage function and a working knowledge of pharmacology are required. Experience with lymphocyte subpopulation preparation and cellular interactions in the control of antigen-specific T cell responses (cytotoxic T cell induction, delayed type hypersensitivity).

Roche offers an outstanding compensation package, including an attractive bonus, and an environment which encourages professional growth.

Only responses including present salary will be acknowledged. Please send resume to: Mrs. Eleanor M. Malone, Professional Employment & Staffing Specialist.



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## POSITIONS OPEN

The Department of Plant Biology, **UNIVERSITY OF GENEVA, SWITZERLAND**, has a tenured position at the

### FULL PROFESSOR

level.

Candidates should have a Ph.D. and demonstrated ability for teaching and carrying out a strong, independent research program in the field of higher plant biology (molecular biology or plant biochemistry or plant cytochemistry and ultrastructural microscopy).

Applications, including curriculum vitae, bibliography, and names and addresses of five referees, should be sent within 1 month of the date of this publication to: **Secrétariat de la Faculté des Sciences, 20, Quai Ernest Ansermet, CH-1211 Genève 4, Switzerland.**

**RESEARCH ASSOCIATE** in bio-inorganic chemistry. Position available immediately to work on the synthesis of copper complexes of polydentate imidazole and sulfur ligands as models for blue copper proteins. Requires Ph.D. with 2 years of experience in synthetic chemistry, electrochemistry, and spectroscopic techniques; familiarity with handling air sensitive materials. Salary: \$15,400 per year. Send résumé to: **Professor B. A. Averill, Department of Chemistry, University of Virginia, Charlottesville, Virginia 22901.**

**RESEARCH SCIENTIST** at **University of California, San Diego (UCSD) Cancer Center**. The Cancer Center at University of California, San Diego, is recruiting a research scientist with a Ph.D. and postdoctoral experience to join our active program studying cancer treatment and regulation of cell proliferation/function in xenografts and in cell culture. Assistant or associate level of appointment will depend upon qualifications. Scientist to divide time between supervising funded treatment trials on human xenografts in athymic mice and carrying out independent research. Will be provided full start-up funds until independent grants are obtained. Salary will be commensurate with experience. *UCSD is an Affirmative Action/Equal Opportunity Employer.* Please apply by 20 July 1983 to: **Dr. Richard Dutton, M-001, UCSD, La Jolla, Calif. 92093.** Include curriculum vitae and three references. All applications received by 20 July will receive thorough consideration.

### SENIOR MOLECULAR BIOLOGIST

Immunex Corporation, a Seattle-based biotechnology company specializing in immunoregulation by lymphokines, seeks a senior scientist to head its ongoing molecular biology research program. The successful candidate should have demonstrated an ability to conduct a competitive research program and to have acquired peer reviewed funding or its equivalent. Additionally, he or she should have experience in directing a sizable laboratory. The program to be administered is a broadly based one, involving all aspects of recombinant DNA research.

The position offers the chance to direct the molecular biology component of interdisciplinary projects and to be centrally involved in the recruitment of additional scientific staff. Immunex offers a salary in keeping with the seniority of the position, an equity participation program, and a generous fringe benefit package.

To apply, please send résumé and the names of three references to:

**Director of Research and Development  
Immunex Corporation  
51 University Street  
Seattle, Washington 98101**

## CONFERENCE

### THE SOCIETY FOR RISK ANALYSIS ANNUAL CONFERENCE

31 July to 3 August 1983  
Grand Hyatt Hotel, New York City

For information, contact:

**Society for Risk Analysis  
4720 Montgomery Lane, Suite 506  
Bethesda, Md. 20814  
Telephone: 301-654-3080**

## PUBLIC MEETING

### PUBLIC MEETINGS ON LABORATORY ANIMAL CARE AND USE

The National Research Council (NRC), Washington, D.C., will hold two open meetings to receive statements from the public relevant to revision of the *NIH Guide for the Care and Use of Laboratory Animals*. One will be held at the San Francisco Hilton Hotel, 333 O'Farrell Street, San Francisco, California (across the street from the Airporter Bus Terminal), on 11 July 1983, starting at 9 a.m. The other will be held at the Holiday Inn O'Hare/Kennedy, 5540 North River Road, Rosemont, Illinois (approximately 1 mile from Chicago's O'Hare Airport), on 12 July starting at 9 a.m. Oral presentations, to be accompanied by written statements, must be scheduled by writing to: **Dr. E. W. Grogan, ILAR, National Research Council, 2101 Constitution Avenue, N.W., Washington, D.C. 20418**, by 6 July. Other written statements may be submitted to the same address by 29 July 1983, to assure timely consideration. All statements will be made available to the authoring Committee.

## ASSISTANTSHIPS

### GRADUATE RESEARCH ASSISTANTSHIP AQUATIC TOXICOLOGY

B.A. or B.S. in biology or equivalent required. Two-year assistantship commencing 22 August 1983, \$4033 for 11 months, including tuition and incidental fees. The research is designed to describe the normal development of two species of percid fishes, as well as the effects of mercury and cadmium on developmental patterns. Participation in this research should lead to the successful completion of the thesis requirement for the master of natural science degree. Students interested in ichthyology, embryology, and/or aquatic toxicology are encouraged to apply by 5 August 1983. Requests for application forms and additional information should be directed to:

**Dr. John R. Sharp  
Department of Biology  
Southeast Missouri State University  
Cape Girardeau, Mo. 63701  
Telephone: 314-651-2546**

*Southeast Missouri State University is an Equal Opportunity/Affirmative Action Employer, M/F.*

## FELLOWSHIPS

The Department of Neurological Surgery, University of Washington, is seeking applicants for a **POSTDOCTORAL NEUROSCIENCE RESEARCH FELLOWSHIP**. A 1- to 2-year opportunity for basic research in the electrophysiology of nociception, deafferentation, or CNS plasticity is available. Salary: \$14,000 to \$20,000 per year, commensurate with postdoctoral experience. Please contact: **Kim J. Burchiel, M.D., Department of Neurological Surgery, University of Washington, RI-20, Seattle, Washington 98195; telephone: 206-543-3570.**

### POSTDOCTORAL FELLOWSHIPS AND STUDENTSHIPS CONNECTIVE TISSUE STRUCTURE AND DEGRADATION AND PROTEINASES OF MALIGNANT TUMOURS

**Joint Diseases Laboratory  
Shriners Hospital for Crippled Children  
1529 Cedar Avenue  
Montreal, Quebec, Canada H3G 1A6**

There will be vacancies in the immediate future for postdoctoral fellows and graduate students (registered at McGill University) working in the following areas:

- 1) Immunochimistry and autoimmunity of cartilage proteoglycans and collagen in health and arthritis (with Dr. A. R. Poole),
- 2) Synthesis and degradation of cartilage proteoglycans (with Dr. P. J. Roughley and Dr. J. S. Mort), and
- 3) Proteinases in tumour invasiveness and metastasis (with Dr. A. Recklies and Dr. J. S. Mort).

The laboratory is composed of a multidisciplinary group of about 25 people, working mainly on the structure and destruction of articular tissues, in particular cartilage. Applicants should write to: **Dr. A. R. Poole** in the first instance, enclosing curriculum vitae, the names of two referees, and copies of academic transcripts (graduate students only).

## FELLOWSHIPS

Applications are invited from Canadian citizens or permanent residents in Canada who wish to be nominated for an **NSERC UNIVERSITY RESEARCH FELLOWSHIP** in the 1984 competition. Research interests in the areas of molecular or developmental biology are preferable. The appointee will become a member of the **OTTAWA-CARLETON CENTRE FOR GRADUATE STUDIES AND RESEARCH IN BIOLOGY**, a cooperative program between the University of Ottawa and Carleton University which includes active collaboration with scientists from several government laboratories. This position is available in the Department of Biology, University of Ottawa, at a salary equivalent to the assistant professor level. The University of Ottawa is a bilingual institution: the ability to lecture in both French and English will be a definite asset.

Applicants should submit, by 15 August 1983, curriculum vitae and a brief description of research interests, and should arrange to have three letters of recommendation sent to: **Dr. David L. Brown, Department of Biology, University of Ottawa, Ottawa, Ontario, Canada K1N 6N5.**

## TRAINING PROGRAMS

### POSTDOCTORAL TRAINING PROGRAM

Postdoctoral positions will be available, commencing 1 July 1983, at Michigan State University (MSU) in an NIH-supported training program in the combined fields of pathology and environmental toxicology. Applicants should have a D.V.M., M.D., or D.O. degree and be willing to undertake training leading to a dual Ph.D. in pathology/environmental toxicology. Stipends will be based on NIH postdoctoral levels. A more complete description of the program is available upon inquiry. Please address letters of application with three letters of reference to: **Dr. R. W. Leader, Associate Dean, Program Director, College of Veterinary Medicine, A-136 East Fee Hall, Michigan State University, East Lansing, Michigan 48824-1316.**

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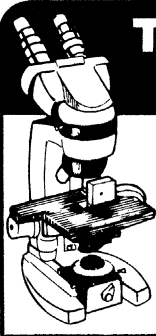
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# Information for Contributors

The Editors of *Science*

Papers published in *Science* often receive far more attention than papers published in specialty journals. As a consequence, the rate of submission of papers is high—about 5000 manuscripts are submitted each year. The rejection rate of about 80 percent contrasts with that of most specialty journals, which is usually about 30 percent. Most of the material submitted to *Science* is of good quality and worthy of publication, and virtually all the scientific papers are eventually published somewhere. In selecting papers for *Science*, the editors consider the needs of a broad audience. Preference is given to items that seem to be of general significance.

## General Information

Five types of signed papers are considered: Articles, Research Articles, Reports, Letters, and Technical Comments. The author's membership in the AAAS is not a factor in selection. Material that has been published before is ineligible for publication. Papers are considered with the understanding that they have not been published and are not under consideration elsewhere. Authors will usually be notified of acceptance, rejection, or need for revision in 6 to 8 weeks (Research Articles and Reports) or 8 to 10 weeks (Articles).

**Outside reviews.** Most articles and reports are sent to two or more outside referees for evaluation. Some papers are returned promptly to the authors without an external review if they are unlikely to be chosen for publication. Referees are selected from *Science* files as well as from lists provided by authors. Papers that depend on statistical inference for their conclusions may be sent to statisticians (in addition to other referees) for review.

**Length limits.** Papers that exceed the length limits cannot be handled expeditiously and will usually be returned without review.

1) Articles: Up to 5000 words (approximately five printed pages in *Science*), including the references and notes and the figure and table legends. The illustrations (figures and tables) when

printed in *Science* should together occupy no more than one page.

2) Research Articles: From 2000 to 4000 words (3 to 3½ printed pages in *Science*) including the references and notes and the figure and table legends. Illustrations (figures and tables) may together occupy up to one printed page.

3) Reports: Up to 2000 words (approximately 1½ printed pages in *Science*), including the references and notes and the figure and table legends. The illustrations (figures and tables) when printed in *Science* should occupy no more than half a page.

4) Letters: Up to 250 words.

5) Technical Comments: Up to 500 words, including references and notes.

## Selection of Manuscripts

1) Articles: About half the Articles published in *Science* are solicited by the editor. Both solicited and unsolicited Articles undergo outside and in-house review. Articles are expected to (i) provide a review of new developments in one field that will be of interest to readers in other fields, (ii) describe a current research problem or a technique of interdisciplinary significance, or (iii) present a study of some aspect of the history, logic, philosophy, or administration of science or a discussion of science and public affairs. Readers should be able to learn from a technical Article what has been firmly established and what are significant unresolved questions; speculation should be kept to a minimum. Preference is given to Articles that are well written, well organized, and within the length limit. Balance of subject matter in *Science* is an important consideration when a choice is made between acceptable Articles.

2) Research Articles: These articles, selected for publication on the basis of outside and in-house reviews, are expected to contain new data and to represent substantial contributions in their fields.

3) Reports: Reports are selected on the basis of reviewers' comments and an in-house review. Reports are expected to contain solid research results or reliable

theoretical calculations. Preference is given to those that describe departures or discoveries that will be of broad interdisciplinary interest or of unusual interest to the specialist. In making the final selection, the editors take into consideration (i) the reviewers' comments; reports most likely to be accepted are those that receive persuasive outside reviews favoring publication; (ii) clarity of presentation within the prescribed length limit; and (iii) subject matter in relation to that of other papers on hand. An attempt is made to balance the subjects of Reports so that one discipline is not overrepresented to the exclusion of others.

4) Letters: Letters are selected for their pertinence to material published in *Science* or because they discuss significant problems of interest to most scientists. Letters of a highly technical nature are usually transferred to the Technical Comments section. Letters pertaining to material published in *Science* may correct errors, provide support or agreement, offer different points of view, clarify, or add information. Outside reviewers may be consulted on questions of accuracy. Insinuations and conjecture about another author's motives, abilities, or intelligence are considered inappropriate for publication. The selection of letters is intended to reflect the range of opinions received.

5) Technical Comments: Technical Comments may be selected for publication if they express significant criticisms of papers published in *Science* or offer useful additional information. The authors of the original paper are usually asked for an opinion of the comments and are given an opportunity to reply if the comments are accepted for publication. Discussions of minor issues or priority claims are not deemed appropriate, nor are questions that can be resolved by correspondence between the critic and the original authors.

6) Book Reviews: The selection of books to be reviewed and of reviewers is made by the editors.

## Submission of Manuscripts

Submit an original and two duplicates of each manuscript, together with a letter of transmittal giving:

1) the name(s) and telephone number(s) of the author(s);

2) the title of the paper and a statement of its main point;

3) the names, addresses, telephone number, and fields of interest of four to six persons in North America but outside

your institution who are qualified to referee your paper;

4) the names of colleagues who have reviewed your paper;

5) the total number of words included in your manuscript; and

6) a statement that the material has not been published and is not under consideration for publication elsewhere.

## Manuscript Preparation

**Typing.** Use double-spacing throughout the text, tables, figure legends, and references and notes.

**Units of measure.** Use metric units. If measurements were made in English units, give metric equivalents.

**Symbols and abbreviations.** Define all symbols, abbreviations, and acronyms.

**References and notes.** Number references and notes in the order in which they are cited in the text. Place references cited only in tables or figure legends after the text references. Gather all acknowledgments into a single, brief statement at the end. Use *Bibliographic Guide for Editors & Authors* (American Chemical Society, Washington, D.C.) for abbreviations of journal titles. For journals not listed there provide the full title. Use the following forms:

For a journal paper: H. Smith, *Am. J. Physiol.* **98**, 279 (1931).

For a book: F. Dache and R. Roy, *Modern Very High Pressure Techniques* (Butterworth, London, 1961), pp. 163–180.

For a paper in a compilation: F. Dache and R. Roy, in *Reactivity of Solids*, J. H. de Boer, Ed. (Elsevier, Amsterdam, 1960), pp. 502–516.

For unpublished material: A. Giraud, paper presented at the American Nuclear Society Conference, Washington, D.C., November 1976.

**Illustrations.** For each illustration submit three copies of a quality suitable for reproduction. Label each on the back with the name of the author and the figure number. Plan figures for the smallest printed size consistent with clarity. Color may be used if necessary but authors are expected to pay the full cost of reprints. Cite all illustrations in the text and provide a brief legend for each.

**Tables.** Type each table on a separate sheet, give it a number and title, and cite it by number in the text. Give each column a heading. Indicate units of measure in parentheses in the heading for each column and do not change the unit of measure within a column.

**Equations and formulas.** Use quadruple spacing around equations and formulas that are to be set off from the text. Define all symbols.

## Special Requirements and Procedures

1) **Articles:** Provide a title of one or two lines of not more than 26 characters and spaces each; a brief author note giving your position and address; and a summary of 50 to 100 words. The summary should convey to the general reader the main point of the paper and outline the results or conclusions. The introduction should portray the broad significance of the work, and the whole text should be intelligible to scientists in different disciplines. Explain all technical terms likely to be known in only one field. Insert short subheadings at appropriate places in the text to mark your main ideas. Provide a reference list in accord with *Science* style. Reference lists should not be exhaustive; citation of a single review article can often replace many references. A maximum of 40 references is suggested.

2) **Research Articles:** Provide a title of one or two lines of not more than 54 characters and spaces each and an abstract of about 100 words. The abstract should portray for the general reader the results described and their significance. The whole text should be intelligible to readers in more than one discipline. Provide a brief outline of the main point of your paper in a short introductory section, then describe your experiments and the results, and conclude with a discussion. Subheadings may be used to indicate the different sections of the paper. Provide a reference list in accordance with *Science* style. A maximum of 30 references is suggested.

3) **Reports:** Provide a title of one or two lines of not more than 54 characters and spaces each and an abstract of 50 to 75 words. The abstract and the first portion of the report should portray for the general reader the results described and their significance. The body of the report should be intelligible to scientists in other fields of expertise. Complete documentation need not be presented but should be available in cited references.

4) **Letters:** Letters should be short (up to 250 words) and to the point; they should be carefully phrased, free of technical jargon, and nonrepetitive. When a Letter refers to an article published in *Science* the original author is usually giv-

ing an opportunity to reply. Letters are frequently shortened and edited. Letters are acknowledged by postcard; authors are notified if their letters are accepted for publication. Letters must be typed with double-spacing.

5) **Technical Comments:** Technical Comments on Reports or Articles are published at the end of the Reports section. When a Technical Comment is accepted for publication the authors of the original paper are usually given an opportunity to reply.

6) **Book Reviews:** Instructions accompany review copies when they are sent to reviewers.

## Printing and Publication

**Editing.** Before being sent to the printers, papers are edited to improve accuracy and effectiveness of communication. When changes are needed because the author's meaning is not clear, the editor may consult the author by telephone; when the editing is extensive, the manuscript may be returned to the author for approval or further adjustment before the type is set.

**Proofs.** One set of galley proofs is provided for each paper. Alterations should be kept to a minimum and marked only on the proofs. Extensive alterations may delay publication.

**Scheduling.** Papers are not scheduled for publication until *Science* has received corrected galley proofs from the authors. The median delay between acceptance of papers and mailing of galley proofs to authors is 4 to 8 weeks (allowing for editing and typesetting); the median delay between receipt of authors' galley proofs by *Science* and publication is 4 to 6 weeks (allowing for proofreading, layout, and paging). There may be additional delays in publication for papers with tables or figures that present problems in layout and for papers accompanied by cover pictures.

**Reprints.** An order blank for reprints accompanies proofs.

## Cover Photographs

Particularly good photographs that pertain to a paper being submitted will be considered for use on the cover. Submit prints (not slides, negatives, or transparencies) together with the manuscript, and indicate in the letter of transmittal that a possible cover picture is enclosed.

# STAFF FELLOW

The Division of Cancer Biology and Diagnosis, National Cancer Institute, National Institutes of Health, Public Health Service, is seeking applicants for a Staff Fellow position in the Cellular Immunity Section of the Laboratory of Immunobiology.

The Cellular Immunity Section conducts studies on the basis of tumor graft rejection, the nature of tumor antigens and on methods for augmenting host response to poorly immunogenic tumors.

As a Staff Fellow, the incumbent will establish a research program involving application of the techniques of molecular biology to the definition of the genetic basis of tumor antigens. Applicants must have experience in molecular biology and genetics.

The position of Staff Fellow has a duration of 2 years, with the possibility of being extended for an additional 3 years. The salary range will be \$17,000-34,269, depending on the skill and experience of the individual selected for the position.

The position is located at the Frederick Cancer Research Facility in Frederick, Maryland (41 miles from Bethesda, Maryland).

Interested persons should respond by submitting a curriculum vitae with names of three references to:

**Dr. Berton Zbar, Chief, Cellular Immunity Section  
Laboratory of Immunobiology, National Cancer Institute  
Frederick Cancer Research Facility, Frederick,  
Maryland 21701**

If you need additional information, please call Dr. Zbar at area code 301/695-1288.

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**Qualified candidates should forward their resumes in confidence to: Dr. Robert Kamen; Genetics Institute; 225 Longwood Avenue; Boston, Massachusetts 02115.**

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**Daniel Vapnek, Ph.D.  
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