

slow the earth's rotation and increase the moon's orbital rate, causing the moon to move further away from the earth. Thus, environmental effects reflected in coral skeletons provided a new understanding of the history and evolution of the earth-moon system.

The possibilities raised by this combination of astronomy, biology, and geology kindled new interest in skeletal growth patterns and were responsible for focusing of efforts to understand how growth rhythms are recorded in skeletal materials. Scattered earlier work was looked at from a new vantage point and there was an intensification of efforts to determine the chronometric reliability of banding patterns in modern organisms in order to justify measurements on their fossil relatives. Over the last two decades, understanding of environmental records in skeletal materials has considerably deepened and broadened. A variety of environmental information can now be recognized in skeletal materials, and the uses to which such information can be put are rapidly increasing. The introductory chapter to the book, written by the editors, reviews the uses of skeletal records dealt with in later chapters. This excellent essay will undoubtedly form the basis of many student reviews. I only wish that the editors had permitted themselves a few extra pages for speculation about further uses for skeletal records. The introduction states that the book has been prepared for the nonspecialist, but the student who goes to subsequent chapters for material to pad out his or her essay may well find it hard going. Some of the chapters are indeed nonspecialist reviews. Some include ex-

cellent but all too brief introductions and then plunge into discussion directed toward other specialists. Other chapters are highly specialized. The editors have overlooked the considerable reliance that many chapters place on the reader's familiarity with mollusc classification at the family level.

Three quarters of the volume is devoted to molluscs. This simply reflects the greater body of work that has been done with growth banding and growth patterns in molluscs, especially bivalves. Corals, probably the next most studied group, receive a chapter. Fish sagittae (otoliths), long favored in age-class analyses because of annual banding, are shown to display daily, subdaily, lunar, and perturbation-related banding. Recent work with growth banding in barnacles is described, and a chapter is devoted to growth bands in polychaete jaws. There are extensive appendixes detailing techniques for preparation of skeletal materials for analysis of growth patterns, the complexities of bivalve shell mineralogy and microstructure, and quantitative techniques for analyzing skeletal growth in relation to environmental effects.

Besides material on growth banding, the chapters on molluscs include discussions of environmental effects on the morphology of larval and adult shells and the chemical composition and mineralogy of shell. There can be little doubt, however, that it is the presence of daily, tidal, lunar, seasonal, and annual bands that has vastly increased the usefulness of skeletal materials for environmental and paleoenvironmental studies. Where previously skeletal materials offered largely circumstantial evidence about

past environments, they are now seen as virtual transcripts of what happened in their environment during their deposition. Of course, the transcripts are in code, and the deciphering of the codes has only just begun. In time, skeletal materials may well become handy tools for measuring almost anything that alters, or has altered, the physical, chemical, and biological nature of their environment. The lighthearted message could be, delay your environmental baseline studies because the instruments are already in position and recording—and some of them have been doing it since the Cambrian.

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Townsville, Queensland 4810, Australia*

## Books Received

**Advances in Developmental Psychology.** Vol. 1. Michael E. Lamb and Ann L. Brown, Eds. Erlbaum, Hillsdale, N.J., 1981. viii, 248 pp. \$19.95.

**Annual Review of Biophysics and Bioengineering.** Vol. 10. L. J. Mullins, William A. Hagins, Carol Newton, and Gregorio Weber, Eds. Annual Reviews, Palo Alto, Calif., 1981. x, 632 pp., illus. \$20.

**Annual Review of Plant Physiology.** Vol. 32. Winslow R. Briggs, Paul B. Green, and Russell L. Jones, Eds. Annual Reviews, Palo Alto, Calif., 1981. xii, 642 pp., illus. \$20.

**The Application of Ion-Selective Microelectrodes.** Thomas Zeuthen, Ed. Elsevier/North-Holland, New York, 1981. xiv, 284 pp., illus., \$99.50. Research Monographs in Cell and Tissue Physiology, vol. 4.

**Approximation Theory and Applications.** Proceedings of a workshop, Haifa, Israel, May 1980. Zvi Ziegler, Ed. Academic Press, New York, 1981. xii, 358 pp. \$26.

**Aquatic Chemistry.** An Introduction Emphasizing Chemical Equilibria in Natural Waters. Werner Stumm and James J. Morgan. Wiley-Interscience, New York, ed. 2, 1981. xvi, 780 pp., illus. \$45.

**Are Pesticides Really Necessary?** Keith C. Barrons. Regnery Gateway, Chicago, 1981. xvi, 246 pp. Paper, \$6.95.

**Ascomycete Systematics.** The Luttrellian Concept. Don R. Reynolds, Ed. Springer-Verlag, New York, 1981. x, 242 pp., illus. \$42.80. Springer Series in Microbiology.

**Attention and Self-Regulation.** A Control-Theory Approach to Human Behavior. Charles S. Carver and Michael F. Scheier. Springer-Verlag, New York, 1981. xviii, 404 pp. \$29.90. Springer Series in Social Psychology.

**Auditory Regions of Primates and Eutherian Insectivores.** Morphology, Ontogeny, and Character Analysis. R. D. E. MacPhee. Karger, Basel, 1981. xvi, 282 pp., illus. Paper, \$39.75. Contributions to Primatology, vol. 18.

**Automatic Vehicle Locating Systems.** Edward N. Skomal. Van Nostrand Reinhold, New York, 1981. x, 324 pp. \$28.50.

**Babesiosis.** Miodrag Ristic and Julius P. Kreier, Eds. Academic Press, New York, 1981. xvi, 590 pp., illus. \$45.

**Basic Lubrication Theory.** A. Cameron and C. M. Mc. Ettles. Horwood, Chichester, England, and Halsted (Wiley), New York, ed. 3, 1981. 256 pp., illus. \$34.95. Ellis Horwood Series in Engineering Science.

**Basic Methods for Mental Health Practitioners.** Marvin W. Kahn. Winthrop (Prentice-Hall), Cambridge, Mass., 1981. xiv, 246 pp. \$15.95.

**Basic Population Genetics.** Bruce Wallace. Columbia University Press, New York, 1981. xiv, 688 pp., illus. \$25.

**The Billings Method.** Controlling Fertility without Drugs or Devices. Evelyn Billings and Ann Westmore. Random, New York, 1981. 256 pp., illus., + plates. \$12.95.

**Biochemical Regulation of Blood Pressure.** Richard L. Soffer, Ed. Wiley-Interscience, New York, 1981. viii, 456 pp., illus. \$49.50.

**Biochemistry of Normal and Abnormal Epidermal**  
(Continued on page 216)



"The geoduck, *Panope generosa* (Gould). Distinct growth patterns are visible on the external surface of the shell." [From Lutz and Rhoads's chapter in *Skeletal Growth of Aquatic Organisms*; source of photograph is unknown]



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### Digital Waveform Analyzer

The Data 6000 combines the features of a digital storage oscilloscope, waveform analyzer, transient signal analyzer, spectrum analyzer, and data acquisition system in a single portable instrument. The Data 6000 comprises a set of plug-in preamplifier digitizers; a central memory and plotting system; a 9-inch display for graphics, waveforms, and alphanumeric; input-output interconnects; and optional accessories that include a dual floppy disk drive and control unit. Specifications and complete details of this device's signal analyzing capabilities are available. Data Precision Division, Analogic. Circle 755.

### Tissue Culture Decontaminant

Incyte kills bacteria, viruses, and yeasts in tissue cultures. Chlamydia and mycoplasmas are eliminated without harm to cultured cells. Although not considered an antibiotic, Incyte may be added to the culture medium. Its speed of action and nontoxicity to the culture render it useful in research programs. Heat Systems-Ultrasonics. Circle 750.

### Literature

*Prostaglandins* offers four new naturally occurring organic acids for medicinal and pharmaceutical research. Chemical Dynamics. Circle 764.

*HPLC Columns* describes apparatus with a variety of uniform stationary phases for this separatory technique. IBM Instruments. Circle 765.

*Pipet Precision* describes a procedure whereby various brands may be compared in laboratory conditions. Bio-Rad Laboratories. Circle 766.

*Chemistry Kits and Reagents* are featured in an extensive catalog with sections devoted to methods, clinical significance, instruction, and more. Lancer Division, Sherwood Medical. Circle 767.

*Fiber Optic Products* includes electronic controls, full descriptions, and design specifications. Dolan-Jenner Industries. Circle 768.

*Trace Element X-ray Analysis* describes the CSI 740 system for measuring air particulates, wastewater, and other substances for microgram concentrations of specific elements. Columbia Scientific Industries. Circle 769.

*Energy Dispersive Analyzer* characterizes the PV9100 system for determining and quantifying all elements simultaneously. EDAX. Circle 770.

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (on pages 142A and 198A) and placing it in the mailbox. Postage is free.

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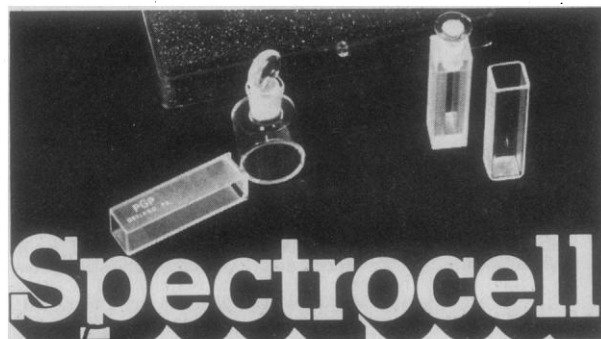


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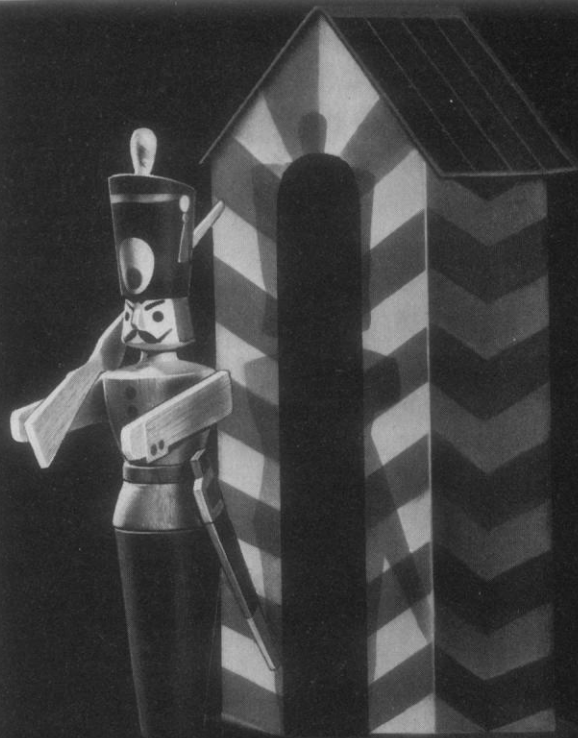
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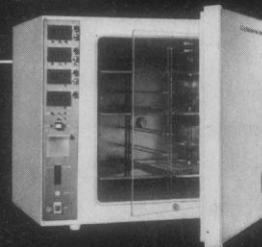
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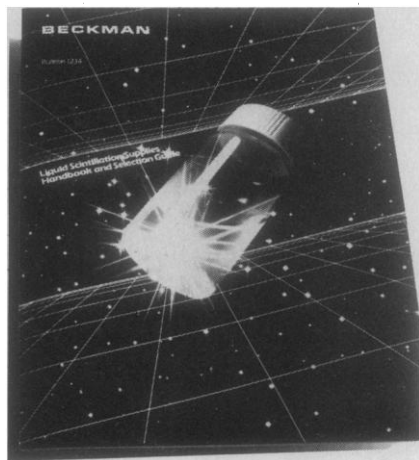
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## BOOKS RECEIVED

(Continued from page 176)

**Differentiation.** Proceedings of a seminar, Boyne Falls, Mich., July 1979. I. A. Bernstein and Makoto Seiji, Eds. Karger, Basel, 1980. x, 440 pp., illus. Paper, \$81.50. Current Problems in Dermatology, vol. 10.

**The Biochemistry of Plants.** A Comprehensive Treatise, Vol. 6, Proteins and Nucleic Acids. Abraham Marcus, Ed. Academic Press, New York, 1981. xiv, 658 pp., illus. \$67.50.

**Biology of the Ovary.** P. M. Motta and E. S. E. Hafez, Eds. Nijhoff, The Hague, 1980 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xii, 344 pp., illus. \$86.85. Developments in Obstetrics and Gynecology, vol. 2.

**Carcinogens in Industry and the Environment.** James M. Sontag, Ed. Dekker, New York, 1981. xii, 762 pp., illus. \$79.50. Pollution Engineering and Technology, 16.

**Catalytic Activation of Carbon Monoxide.** Papers from a symposium, Las Vegas, Aug. 180. Peter C. Ford, Ed. American Chemical Society, Washington, D.C., 1981. x, 358 pp., illus. \$36.50. ACS Symposium Series, 152.

**Cerebral Hemodynamics in Man and Monkey.** Some Considerations in Cerebrovascular Disease Subarachnoid Hemorrhage and Intracranial Pressure. Byron M. Bloor. Thomas, Springfield, Ill., 1981. xii, 144 pp., illus. \$19.75. American Lecture Series, Publication No. 1039.

**Chemotherapeutic Agents for Bacterial Infections.** Melvyn Lynn and Morris Solotorovsky, Eds. Hutchinson Ross, Stroudsburg, Pa., 1981 (distributor, Academic Press, New York). xviii, 412 pp., illus. \$45. Benchmark Papers in Microbiology, vol. 14.

**The Chromosomes in Human Cancer and Leukemia.** Avery A. Sandberg. Elsevier, New York, 1980. xxii, 750 pp., illus. \$119.50.

**Clinical Aspects of Blood Viscosity and Cell Deformability.** Papers from a symposium. G. D. O. Lowe, J. C. Barbenel, and C. D. Forbes, Eds. Springer-Verlag, New York, 1981. xvi, 264 pp., illus. \$41.30.

**The Clinical Interview of the Child.** Stanley I. Greenspan with the collaboration of Nancy Thorndike Greenspan. McGraw-Hill, New York, 1981. x, 206 pp. \$17.95.

**Closed Functional Treatment of Fractures.** A. Sarmiento and L. L. Latta. Springer-Verlag, New York, 1981. xiv, 610 pp., illus. \$148.

**Color Vision.** Leo M. Hurvich. Sinauer, Sunderland, Mass., 1981. viii, 328 pp., illus., + plates. Cloth, \$37.50; paper, \$25.

**Computer Acronyms, Abbreviations, Etc.** Claude P. Wrathall. Petroselli, Princeton, N.J., 1981 (trade distributor, Van Nostrand Reinhold, New York). x, 484 pp. Cloth, \$17.50; paper, \$14.

**Computer-Assisted Analysis and Model Simplification.** Proceedings of a symposium, Boulder, Colo., Mar. 1980. Harvey J. Greenberg and John S. Maybee, Eds. Academic Press, New York, 1981. xii, 522 pp., illus. \$29.50.

**Computer-Based Instruction.** A State-of-the-Art Assessment. Harold F. O'Neil, Jr., Ed. Academic Press, New York, 1981. xii, 260 pp., \$23.50. The Educational Technology Series.

**A Dictionary of Named Effects and Laws in Chemistry, Physics, and Mathematics.** D. W. G. Ballentyne and D. R. Lovett. Chapman and Hall, London, ed. 4, 1980 (U.S. distributor, Methuen, New York). viii, 346 pp., illus. \$20.

**A Dictionary of Scientific Units.** Including Dimensionless Numbers and Scales. H. G. Jerrard and D. B. McNeill. Chapman and Hall, London, ed. 4, 1980 (U.S. distributor, Methuen, New York). x, 212 pp. \$16.95.

**Differential Lymphocyte Functions.** Alain L. de Weck, Ed. Karger, Basel, 1981. x, 284 pp., illus. \$87. Progress in Allergy, vol. 28.

**"A Dirty, Filthy Book."** The Writings of Charles Knowlton and Annie Besant on Reproductive Physiology and Birth Control and an Account of the Bradlaugh-Besant Trial. S. Chandrasekhar. University of California Press, Berkeley, 1981. xii, 218 pp., \$16.95.

**"Disappearances."** A Workbook. Amnesty International USA, New York, 1981. vi, 170 pp. Paper, \$4.95.

**The Double-Edged Helix.** Science in the Real World. Liebe F. Cavalieri. Columbia University Press, New York, 1981. viii, 196 pp., \$14.95. Convergence.

**Dynamics of Third Party Intervention.** Kissinger in the Middle East. Jeffrey Z. Rubin, Ed. Praeger, New York, 1981. xxiv, 304 pp. \$26.50.

**The Earth Generated and Anatomized.** William Hobbs. Edited with an introduction by Roy Porter. British Museum (Natural History), London, and

Cornell University Press, Ithaca, N.Y., 1981, 158 pp., illus. \$35.

**Economic Geology and Geotectonics.** D. H. Tarling, Ed. Halsted (Wiley), New York, 1981. x, 214 pp., illus. \$54.95.

**Electron Microscopy in Biology.** Vol. 1. Jack D. Griffith, Ed. Wiley-Interscience, New York, 1981. xiv, 296 pp., illus. \$43.50.

**Electronic Devices and Components.** J. Seymour Halsted (Wiley), New York, 1981. viii, 504 pp., illus. Paper, \$29.95.

**Emerging Cosmology.** Bernard Lovell. Columbia University Press, New York, 1981. viii, 208 pp. \$14.95. Convergence.

**Endangered Birds of the World.** The ICBP Bird Red Data Book. Compiled by Warren B. King. Published in cooperation with the International Council for Bird Preservation by Smithsonian Institution Press, Washington, D.C., 1981. Unpaged. Cloth, \$19.95; paper, \$8.95. Reprint of the 1979 edition.

**Energy from Biological Processes.** Technical and Environmental Analyses. Office of Technology Assessment. Ballinger (Harper and Row), Cambridge, Mass., 1981. viii, 234 pp., illus. \$26.50. Ballinger Energy Series.

**Energy from Peatlands.** Options and Impacts. A Report of the CURA Peat Policy Project. University of Minnesota Center for Urban and Regional Affairs, Minneapolis, 1981. x, 184 pp., illus. Paper, \$5.

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**Evolution and Speciation.** Essays in Honor of M. J. D. White. William R. Atchley and David S. Woodruff, Eds. Cambridge University Press, New York, 1981. x, 436 pp., illus. \$49.50.

**Facies Interpretation and the Stratigraphic Record.** A. Hallam. Freeman, San Francisco, 1981. xii, 292 pp., illus. \$27.95.

**Fieser and Fieser's Reagents for Organic Synthesis.** Vol. 9. Mary Fieser, Rick L. Danheiser, and William Roush. Wiley-Interscience, New York, 1981. x, 596 pp., illus. \$39.50.

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**Food Chemicals Codex.** National Academy Press, Washington, D.C., ed. 3, 1981. xxxii, 736 pp., illus. \$45.

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**Forms of Explanation.** Rethinking the Questions in Social Theory. Alan Garfinkel. Yale University Press, New Haven, Conn., 1981. xii, 186 pp. \$16.

**Foundations of Decision Support Systems.** Robert H. Bonczek, Clyde W. Holsapple, and Andrew B. Winston. Academic Press, New York, 1981. xviii, 394 pp., illus. \$29.50. Operations Research and Industrial Engineering.

**Free Oscillations of the Earth.** E. R. Lapwood and T. Usami. Cambridge University Press, New York, 1981. xii, 244 pp., illus. \$49.95. Cambridge Monographs on Mechanics and Applied Mathematics.

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**A History of Anthropological Thought.** Edward Evans-Pritchard. André Singer, Ed. Basic Books, New York, 1981. xxxvi, 218 pp. \$15.

**Hoko River.** A 2500 Year Old Fishing Camp in the Northwest Coast of North America. Dale R. Croes and Eric Blinman, Eds. Washington State University Laboratory of Anthropology, Pullman, 1980. xx,

334 pp., illus. Paper, \$9.50. Reports of Investigations No. 58. Hoko River Archaeological Project Contribution No. 1.

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**Interbehavioral Philosophy.** J. R. Kantor. Principia Press, Chicago, 1981. xvi, 356 pp. \$27.50.

**Interfacing Microcomputers to the Real World.** Murray Sargent III and Richard L. Shoemaker. Addison-Wesley Advanced Book Program, Reading, Mass., 1981. xvi, 288 pp., illus. Paper, \$14.50.

**International Symposium on Tropical Forests: Utilization and Conservation.** Ecological, Sociopolitical and Economic Problems and Potentials. New Haven, Conn., Apr. 1980. François Mergen, Ed. Yale University School of Forestry and Environmental Studies, New Haven, Conn., 1981. x, 200 pp. Paper, \$6.95.

**Introduction to Algebraic System Theory.** Michael K. Sain. Academic Press, New York, 1981. xiv, 348 pp., illus. \$32. Mathematics in Science and Engineering, vol. 151.

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**Introduction to Integrated Pest Management.** Mary Louise Flint and Robert van den Bosch. Plenum, New York, 1981. xvi, 240 pp., illus. \$18.95.

**Manual of Pharmacologic Calculations with Computer Programs.** Ronald J. Tallarida and Rodney B. Murray. Springer-Verlag, New York, 1981. x, 150 pp., illus. \$17.50.

**Marine Natural Products.** Chemical and Biological Perspectives. Vol. 4. Paul J. Scheuer, Ed. Academic Press, New York, 1981. xvi, 200 pp., illus. \$32.

**Marx et Darwin.** Le Grand Affrontement. Yves Christen. Albin Michel, Paris, 1981. 270 pp. Paper. Sciences d'aujourd'hui.

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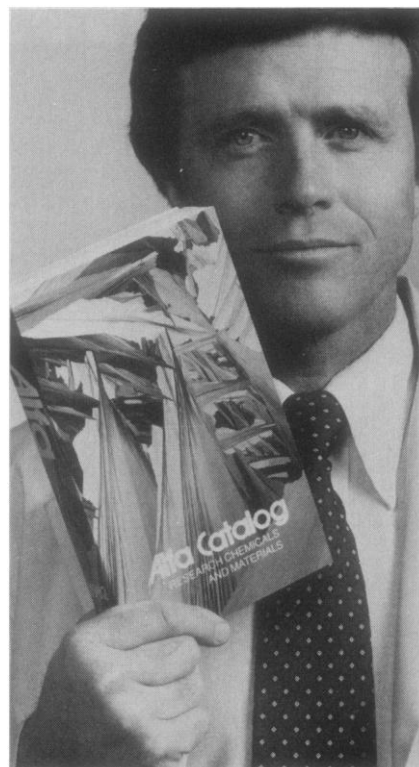
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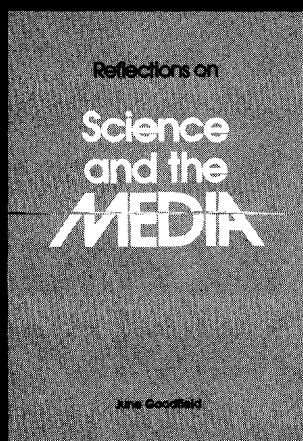
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Two tenure-track positions at the **ASSISTANT PROFESSOR** level—one with emphasis on **cellular immunology** and one in **virology/cell biology, developmental biology, or medical microbiology**—are available beginning 1 September 1982. Appointment at higher rank for an unusually qualified individual may be possible. Interested applicants please send résumé, a description of research and teaching interests, and the names of three references to: **Dr. E. E. Snell, Chairman Search Committee, Department of Microbiology, The University of Texas, Austin, Texas 78712-1095.** The University of Texas is an Equal Opportunity/Affirmative Action Employer.



## POSITIONS OPEN

**VISITING ASSISTANT PROFESSOR—MICROBIOLOGY.** Position is available for the semester 11 January to 14 May 1982. Teaching responsibilities are bacterial genetics, advanced bacterial genetics seminar, and overall supervision of an advanced bacteriology laboratory. Salary: approximately \$9000. To apply, send curriculum vitae and three letters of recommendation by 30 October 1981 to: **Dr. E. A. Birge, Department of Botany and Microbiology, Arizona State University, Tempe, Ariz. 85287.**

**ASSISTANT PROFESSOR OF PHYSIOLOGY: CELLULAR/MEMBRANE.** The Physiology Department of Emory University School of Medicine, Atlanta, Ga., is seeking a qualified Ph.D. or M.D. graduate for a tenure-track assistant professorship. At least 2 years of postdoctoral research experience is required. The individual is expected to initiate and sustain a strong, creative, and independent research program in an area of cellular physiology or membrane physiology. Ability to teach in mammalian physiology courses is expected. Send curriculum vitae, a brief statement of research interests, and the names of three references to: **Dr. Robert B. Gunn, Chairman, Department of Physiology, Emory University School of Medicine, Atlanta, Ga. 30322. Emory University is an Equal Opportunity/Affirmative Action Employer.**

**ASSISTANT PROFESSOR OF PHYSIOLOGY: NEUROPHYSIOLOGY.** The Physiology Department of Emory University School of Medicine, Atlanta, Ga., is seeking a qualified Ph.D. or M.D. graduate with at least 2 years of postdoctoral research experience for a tenure-track assistant professorship. This individual is expected to initiate and maintain a strong and independent research program and to participate in the teaching of mammalian physiology. Researchers in the areas of synaptogenesis, developmental neurobiology, or sensorimotor systems are in particular invited to apply. Send curriculum vitae, a brief statement of research interests, and the names of three references to: **Dr. Robert B. Gunn, Chairman, Department of Physiology, Emory University School of Medicine, Atlanta, Ga. 30322. Emory University is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**ASSISTANT PROFESSOR—BIOCHEMISTRY.** Queens College, City University of New York (CUNY). Applications are invited for a tenure-track appointment at the assistant professor rank, starting in September 1982. The successful candidate will be expected to establish a vigorous research program in biochemistry. Teaching responsibilities will involve doctoral and undergraduate courses. Applications, including curriculum vitae, a concise statement of future research goals, and three letters of recommendation, should be mailed by 1 December 1981 to: **Dr. George Axelrad, Chairman, Department of Chemistry, Queens College, CUNY, Flushing, N.Y. 11367. Queens College is an Affirmative Action/Equal Opportunity Employer.**

### ASSOCIATE SECRETARY FOR RESEARCH

Search reopened. The associate secretary for research is responsible for conducting quantitative research studies of a wide range of problems facing the American Association of University Professors (AAUP) and higher education generally, as well as consulting with both professional economists and statisticians who are active on AAUP committees and articulate humanists in the AAUP and on its professional staff. Desired qualifications: a background in quantitative social science (for example, economics, research methods, management) or applied mathematics (for example, statistics, computer science) and experience in sharing quantitative knowledge with diverse audiences.

We are willing to consider someone who wishes to take leave from his/her university for 1 or 2 years.

Initial review of applications and nominations will begin 15 October. The position will be filled not later than 2 July 1982. Salary will be competitive with entry-level management positions in Washington. *The AAUP is an Affirmative Action Employer and actively solicits applications from minorities and women.*

All applications and nominations should be received not later than 23 October and should be addressed to: **Irving J. Spitzberg, Jr., General Secretary, American Association of University Professors, Suite 500, One Dupont Circle, Washington, D.C. 20036-1179.**

## POSITIONS OPEN

**ASSISTANT PROFESSOR—ENVIRONMENTAL/OCCUPATIONAL MEDICINE.** Position open in an expanding department with a commitment to develop programs in environmental and community medicine. Assistant professor: M.D. to participate in program in occupational medicine. At least 2 years of experience or training in this area with a strong interest in developing an academic program, including critical care, research into understanding the mechanisms for the occurrence of work-related disease, and the teaching of health professionals. Leadership capabilities and effective communication are necessary. Board qualification in occupational medicine and background in epidemiology desirable. Send résumé detailing experience and qualifications to: **Bernard D. Goldstein, M.D., Chairperson, Department of Environmental and Community Medicine, College of Medicine and Dentistry of New Jersey-Rutgers Medical School, P.O. Box 101, Piscataway, New Jersey 08854. An Equal Opportunity/Affirmative Action Employer.**

**ASSISTANT PROFESSOR, tenure-track position in NEUROBIOLOGY,** Marine Biomedical Institute, University of Texas Medical Branch, Galveston. Investigator with postdoctoral experience to establish independent and collaborative research program in any area of neurobiology. Send curriculum vitae and three letters of recommendation to: **Dr. David McAdoo, Chairman, Search Committee, Marine Biomedical Institute, 200 University Boulevard, Galveston, Texas 77550. The University of Texas Medical Branch is an Equal Opportunity/Affirmative Action Employer.**

**ASSOCIATE EDITOR, SCIENCES.** Major academic publisher seeks person with good science background, preferably in physical sciences, to work with science and economics editors. Job will involve seeing books through press, liaison with marketing, assisting with selection and assessment of new proposals. This is an above entry-level position. Publishing experience is preferred but not essential. Successful candidate will have good prospects for promotion. Contact: **Beverly Smith, Cambridge University Press, 32 East 57 Street, New York, New York 10022. Telephone: 212-688-8885.**

## AN ACADEMIC REVIEW:

# Possible Mechanisms of Thresholds for Carcinogens and Other Toxic Substances

NOVEMBER 2, 3 & 4, 1981

• NEW YORK CITY •

WALDORF-ASTORIA HOTEL

This major, international symposium will address the basic medical sciences and clinical aspects of threshold limits with an overriding goal of developing the foundation for a national carcinogen public health policy on thresholds. The conference will feature 30 leading university scientists and academic physicians from this country and abroad, and is funded in part by a grant from the U.S. Environmental Protection Agency.

The symposium objective is to accelerate understanding and communications within an academic forum of threshold limits among members of the scientific, industrial, labor and regulatory sectors. To serve this objective, speakers will utilize as much non-technical language as possible and sufficient discussion time has been allotted to answer audience questions fully.

This "Cancer and the Environment Symposium" is the fourth conference in the Study Center's continuing series held during the past two years. We urge early registration as audience size will be limited. Ticket prices are \$375. For more information, call or write the International Study Center.

**International Study Center for Environmental Health Sciences**  
503 Grasslands Road, Valhalla, New York 10595  
Phone: (914) 592-4150



## POSITIONS OPEN

### ASSISTANT PROFESSORSHIPS

Tenure-track positions at the assistant professor level are open for September 1982, primarily in the general area of **GENETICS**, including, but not restricted to **MICROBIAL**, **VIRAL**, **EUKARYOTIC**, **BIOCHEMICAL**, or **POPULATIONAL** genetics or **RECOMBINANT DNA** research. We also will expand our program in the general area of **MICROBIOLOGY**. Candidates in any specialized area within microbiology are invited to apply. We wish to emphasize that outstanding candidates in other areas of **SUBCELLULAR** research who apply will be given every consideration. Applicants should have the desire to teach undergraduate and graduate students. They should also expect to develop or continue a vigorous research program in their area of expertise.

Solicit three or more letters of recommendation to be sent and send curriculum vitae (including both home and business telephone numbers), a summary of current and/or anticipated research, reprints, and a brief statement of teaching interests to: **Search Committee, Department of Biological Sciences, State University of New York at Binghamton, Binghamton, New York 13901**, prior to 31 December 1981. *We are an Equal Opportunity/Affirmative Action Employer.*

The Department of Chemistry, University of Notre Dame, invites applications for a tenure-track position, starting September 1982, in the area of **BIO-CHEMISTRY**. The appointment is expected to be made at the assistant professor level, but exceptional applicants at other levels will be considered. A strong interest and potential of excellence in both teaching and research are expected. Areas of research are not specified, but preference will be given to candidates whose research interests are best suited to existing programs and to expanding physical facilities, including a new research building, of the department. Teaching responsibilities will be at both the undergraduate and graduate levels. Send résumé, three letters of recommendation, and summary of research plans to: **Dr. R. K. Bretthauer, Department of Chemistry, University of Notre Dame, Notre Dame, Ind. 46556**. *The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.*

### DEPARTMENT OF BIOLOGY CASE WESTERN RESERVE UNIVERSITY

Two faculty positions at the junior or senior level are available starting September 1982. Areas to be considered: (i) **GENETICS** and (ii) **CELL BIOLOGY**. Applicants should have a strong commitment to research and undergraduate and graduate education. Interested persons should submit curriculum vitae plus a brief statement of current research interests and have three letters of recommendation sent to: **Dr. Norman B. Rushforth, Chairman, Department of Biology, Case Western Reserve University, Cleveland, Ohio 44106**. *Case Western Reserve University is an Equal Opportunity Employer.*

### FACULTY POSITIONS IN PATHOLOGY

The Uniformed Services University School of Medicine invites applications for tenured or tenure-track faculty appointments in the Department of Pathology at the levels of **professor**, **associate professor**, or **assistant professor**. Levels of appointment and salaries will be commensurate with training and experience. Candidates should have M.D., Ph.D., or related professional degrees, appropriate postdoctoral training or experience, teaching abilities, and demonstrated excellence in research. Interested candidates should submit curriculum vitae, bibliography, and names of three professional references by 1 November 1981 to: **Dr. Robert Friedman, Chairman, Department of Pathology, c/o Personnel/Manpower Division, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20014**. *The Uniformed Services University is an Equal Opportunity/Affirmative Action Employer.*

**INORGANIC CHEMISTRY.** A tenure-track position is available for September 1982. The appointment is expected to be made at the assistant professor level, but exceptional candidates at other levels will be considered. Preference will be given to candidates in the fields of organometallic and analytical chemistry. Strong interests and potential of excellence in both teaching and research are expected. Applications will be accepted up to 1 December 1981. Send résumé, three letters of recommendation, and summary of research plans to: **Dr. R. K. Bretthauer, Department of Chemistry, University of Notre Dame, Notre Dame, Ind. 46556**. *The University of Notre Dame is an Equal Opportunity/Affirmative Action Employer.*

## POSITIONS OPEN

**BIOMEDICAL RESEARCH.** A new staff scientist position is available in the Biology and Medicine Division of the Lawrence Berkeley Laboratory, beginning 1 November 1981. The appointee will be expected to perform research on magnetic field interactions with biological systems. The research program includes automated recording and computer analysis of physiological variables and circadian rhythms in laboratory animals, using biotelemetry and specialized transducer techniques. A Ph.D. in bioengineering or biophysics and postdoctoral experience are preferred. Extensive laboratory experience with electrophysiological recording techniques and a thorough knowledge of computers (including FORTRAN and Basic languages) are required. Prior experience with biotelemetry techniques is desirable. Salary commensurate with experience. Submit curriculum vitae, accompanied by a statement of research experience, reprints of published papers, and the names of three references, to: **Dr. Tom Tenforde, Biology and Medicine Division, c/o Ronald Lowder, Personnel Department, Lawrence Berkeley Laboratory, One Cyclotron Road, Berkeley, Calif. 94720**. *An Affirmative Action/Equal Opportunity Employer, M/F/H.*

### DIVISION CHAIRPERSON

Applications and nominations are invited for the position of chairperson of the Division of Marine and Atmospheric Chemistry for the Rosenstiel School of Marine and Atmospheric Science. Applicants should have achieved significant research accomplishments in environmentally oriented chemistry. Previous administrative experience will be considered but is not required. Applications and three letters of recommendation should be sent to: **Dr. Frank Millero, Chairman of Search Committee, Division of Marine and Atmospheric Chemistry, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, Florida 33149-1098**.

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

## CHAIRPERSON DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS

State University of New York (SUNY), Stony Brook, invites applications (and nominations) for the position of professor and chairman of the Department of Physiology and Biophysics. The candidate should have a vital commitment to academic excellence and national recognition for scholarly accomplishments. Interested persons should send curriculum vitae and other pertinent information to: **Dr. Arthur Grollman, Professor and Chairman, Department of Pharmacological Sciences, Health Sciences Center, SUNY, Stony Brook, Stony Brook, N.Y. 11794**. *SUNY, Stony Brook, is an Equal Opportunity/Affirmative Action Employer. AK Number 139C.*

Wanted immediately: **CHEMIST** with experience in environmental trace organic analysis, GC, HPLC, and separation techniques. Salary commensurate with experience. Send résumé and three letters of reference by 1 November 1981 to: **Dr. C. S. Giam, Dean, College of Science, University of Texas at El Paso, El Paso, Texas 79968**. *The University of Texas at El Paso is an Equal Opportunity/Affirmative Action Employer.*

### DEAN, SCHOOL OF MEDICINE LOUISIANA STATE UNIVERSITY (LSU) SHREVEPORT, LOUISIANA

The LSU School of Medicine in Shreveport invites nominations and applications for the position of **DEAN** of the School of Medicine. Candidates must have sufficient academic, investigative, and administrative experience to lead a large medical school responsible for 1280 beds distributed among a university hospital, a Dean's Committee Veterans Administration Hospital, and an outlying hospital. Curriculum vitae must accompany all nominations and applications. Submit nominations and applications to:

**Dr. Michael S. Rohr, Chairman  
Search Committee for Dean  
LSU School of Medicine in Shreveport  
P.O. Box 33932  
Shreveport, La. 71130  
Equal Opportunity Employer**

## POSITIONS OPEN

### UNIVERSITY OF ALBERTA KILLAM MEMORIAL CHAIR IN SCIENCE AND ENGINEERING

Bequest from the late Dorothy J. Killam has resulted in the endowment of two Killam Memorial Chairs in any area of basic science or engineering. These are senior appointments offered to distinguished individuals to permit them to carry on high-level research and graduate teaching.

One of the Killam Memorial Chairs will become available on 1 July 1982. We are seeking outstanding candidates to fill this position. We invite nominations and applications on behalf of or from distinguished individuals interested in this chair. Inquiries, nominations, and applications should be directed to:

**Dr. J. Gordin Kaplan  
Vice President, Research  
University of Alberta  
Edmonton, Alberta, Canada T6G 2J9**

Nominations should be received before 1 December 1981.

### DEAN, COLLEGE OF ARTS AND SCIENCES

East Tennessee State University invites nominations and applications for the position of **dean** in its largest college, consisting of 17 departments and employing approximately 200 faculty. Academic programs offered at the associate degree through the master's degree level. The dean administers all aspects of the college, provides leadership for the faculty, guides curriculum development, and provides incentive for furthering faculty responsibilities in instruction, research, and public service.

Candidates should possess an earned doctorate in an arts and sciences field and demonstrate outstanding ability in teaching, professional achievement, and research. Administrative experience highly desirable. The university is located in the southern Appalachian mountain area in an attractive, growing region with access to numerous recreational facilities. Applicants should submit complete curriculum vitae and three letters of reference to: **Personnel Office, P.O. Box 24,070A, East Tennessee State University, Johnson City, Tenn. 37614**. Review of applications begins 15 October 1981 and continues until the position is filled. *An Affirmative Action/Equal Opportunity Employer.*

### DIRECTOR OF GERIATRIC RESEARCH

The Geriatrics Section of the Department of Medicine at University Hospital is seeking an **associate chief**, to establish and supervise a major basic research program. Candidates, either Ph.D. or M.D., should be active investigators in any area related to the biology of aging and be able to recruit staff and lead a research group. The individual selected will have senior faculty rank in medicine and if appropriate, in a basic science department. Send curriculum vitae to: **Norman G. Levinsky, M.D., Chairman, Department of Medicine, Boston University Medical Center, 80 East Concord Street, Boston, Mass. 02118**. *Boston University Medical Center is an Equal Opportunity/Affirmative Action Employer.*

### ECOLOGICAL TOXICOLOGIST

Tenure-track position as assistant professor in the Zoology Department to start January or August 1982. We seek an individual with formal training in ecological toxicology who will teach an ecological toxicology course. He/she will develop an active research program, direct M.S. and Ph.D. students in toxicology, and interact with faculty who have active research programs in behavioral and ecological toxicology. Ph.D. required. Send curriculum vitae, a statement of research interest, and names of four references to: **R. G. Sherman, Chair, Zoology Department, Miami University, Oxford, Ohio 45046**. Application review will begin 2 November 1981. *Equal Opportunity/Affirmative Action Employer.*

### IMMUNOLOGIST/IMMUNOCHEMIST

Staff research position available for experienced researcher with Ph.D. or M.D. who is interested in applying new technologies to the study of human disease. Experience with monoclonal antibody production and isolation of cellular antigens is desirable. Send curriculum vitae and references to:

**Dr. Robert Colvin  
Immunopathology—Cox 5  
Massachusetts General Hospital  
Boston, Mass. 02114**

## MOLECULAR BIOLOGISTS

Openings are available at New England Biolabs' new laboratory in Beverly, Massachusetts, USA.

**Ph.D. level:** Experience in cloning eukaryotic DNA, *in vitro* transition and other recombinant DNA techniques is essential.

**MS or BS level:** Minimum of two years experience in recombinant DNA methods, especially *in vitro* translation systems, electrophoretic analyses of proteins and DNA fragments, cloning of cDNA, and hybridization techniques.

New England Biolabs, Inc. is a small group of microbiologists and molecular biologists involved in the production of restriction endonucleases and other enzymes useful for DNA research. New programs are being initiated to use genetic engineering for the production of proteins applicable to world health problems.

Send curriculum vitae to N.E. Biolabs, Inc., 32 Tozer Road, Beverly, MA 01915, USA.



NEW ENGLAND

**Biolabs**

32 Tozer Road  
Beverly, MA 01915

## Cardiovascular Pharmacologist

An excellent opportunity is now available for a Ph.D. in physiology/pharmacology interested in cardiac disease. The individual will assume responsibility for a program designed to develop novel drugs for the treatment of various cardiac disorders. At least 2 years of postdoctoral experience and demonstrated ability to pursue independent creative research is required. Preference will be given to individuals with experience in electrophysiological techniques.

We offer a competitive salary and an attractive fringe benefit package. Qualified individuals are invited to apply by forwarding their resume to:

JOHN W. PINKERTON  
Personnel Department



**Wyeth Laboratories**  
P.O. Box 8299  
Phila., PA 19101

Equal Opportunity Employer, M/F/H

## NRC RESEARCH ASSOCIATESHIP AWARDS

Competitive awards to recent doctoral graduates and experienced senior investigators—free of interruptions and distractions of other duties—as visiting scientists in selected federal laboratories throughout the United States. Over 200 new awards offered by the National Research Council. Opportunity for specialized experience in experimental or theoretical research in fields of:

**ATMOSPHERIC & EARTH SCIENCES  
ENGINEERING • LIFE SCIENCES  
PHYSICS • CHEMISTRY  
ENVIRONMENTAL SCIENCES  
MATHEMATICS • SPACE SCIENCES**

Most of the 18 programs are open to non-U.S. nationals, and most are open to senior investigators as well as recent Ph.Ds.

Application materials with details on research opportunities and laboratory locations are available from:

Associateship Office (JH 610-S2)  
**NATIONAL RESEARCH COUNCIL**  
2101 Constitution Avenue, N.W.  
Washington, D.C. 20418  
Postmark deadline for applications:  
January 15.

**National Research Council**

National Academy of Sciences  
National Academy of Engineering Institute of Medicine

## DIRECTOR

### BROOKHAVEN NATIONAL LABORATORY

Associated Universities, Inc. (AUI) invites applications or nominations for the position of **director** of the Brookhaven National Laboratory (BNL) at Upton, Long Island, New York. AUI, a nonprofit corporation with headquarters in Washington, D.C., manages BNL for the U.S. Department of Energy (DOE), and the National Radio Astronomy Observatory for the National Science Foundation.

Brookhaven National Laboratory is a multidisciplinary laboratory whose scientific staff conducts basic and applied research in high energy, nuclear and condensed matter physics, chemistry, engineering, biology, and medicine. Frontier research programs emphasize the use by qualified scientists of specialized BNL research facilities, such as the 33 GeV proton accelerator (AGS), the High Flux Beam Reactor, the Tandem Van de Graaff, and the National Synchrotron Light Source. A 400 x 400 GeV proton-proton colliding beam accelerator (ISABELLE) is now under construction. Other research and development programs are designed to assist the sponsoring agency (DOE) and other agencies, such as the U.S. Nuclear Regulatory Commission, by addressing specific problems on their behalf.

Candidates should be either experienced scientists of natural stature or administrators with successful records of working with scientists, and should have demonstrated leadership in scientific affairs. Candidates should have an awareness of and concern for national needs in scientific research and a familiarity with federal agencies and national groups involved in the conduct and support of scientific research.

Applications or nominations are requested by 13 November 1981. Inquiries, nominations, or applications with résumés should be directed to the President:

**Dr. Robert E. Hughes**  
Associated Universities, Inc.  
Suite 603  
1717 Massachusetts Avenue, NW  
Washington, D.C. 20036

AUI is an Equal Opportunity/Affirmative Action Employer

### CSIRO CHEMICAL OCEANOGRAPHER A\$19,662 to A\$28,564 per annum CSIRO MARINE LABORATORIES DIVISION OF OCEANOGRAPHY SYDNEY, N.S.W., AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The organization has approximately 7400 employees, 2500 of whom are research and professional scientists, located in divisions and sections throughout Australia.

**GENERAL:** In March 1981, the CSIRO Division of Fisheries and Oceanography was formally separated into a Division of Fisheries Research and a Division of Oceanography. These divisions collectively form the CSIRO Marine Laboratories, and are Australia's principal marine laboratories, employing about 200 scientists and support staff. The main laboratory is in Sydney, and there are smaller laboratories in Brisbane and Perth.

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

The interests of the division in chemical oceanography include biological cycling and transfer of nutrients and organics, biogeochemical cycling of trace metals, dissolved organic matter and its interaction with trace metals surface activity and photolytic processes.

**DUTIES:** To initiate and conduct research within these fields in relation to existing and future programs. On occasions, the appointee may be expected to participate in or lead research vessel cruises.

**QUALIFICATIONS:** A Ph.D. or equivalent in chemical oceanography or chemistry, together with demonstrable research ability and an interest in multidisciplinary research. Previous experience in marine science is desirable and the ability to work at sea is essential.

**NOTE:** Appointment at a higher level may be considered for an outstanding applicant.

**TENURE:** A fixed term appointment of 3 to 5 years. Superannuation benefits available.

**APPLICATIONS:** In writing, quoting reference A2088, giving full personal particulars, including details of qualifications and experience, copy of academic transcript, and the names of at least two professional referees, should reach:

**The Chief  
Division of Oceanography  
CSIRO  
P.O. Box 21  
Cronulla, N.S.W. 2230, Australia**

by 12 November 1981.

## POSITIONS OPEN

### EXECUTIVE OFFICER American Association of Physics Teachers

The American Association of Physics Teachers (AAPT) seeks a physicist with teaching experience to serve as its executive officer. The executive office is currently located on the campus of the State University of New York at Stony Brook, New York. The initial appointment to this position may be for a term of up to 3 years. The person named to this position is expected to take office no later than September 1982. During the first year the executive officer will be expected to serve the Association full-time and at its offices at Stony Brook. While it is expected that these conditions of employment will continue beyond the first year, the Executive Board will consider modifications in these terms in subsequent years of the appointment if they appear to be mutually desirable.

Request application forms from the chairman of the Search Committee at the following address: **Dr. E. Leonard Jossem, AAPT Search Committee, Department of Physics, The Ohio State University, 174 West 17 Avenue, Columbus, Ohio 43210. AAPT is an Equal Opportunity/Affirmative Action Employer.**

### FACULTY POSITIONS IN CELL/DEVELOPMENTAL BIOLOGY

Applications are invited for two tenure-track faculty positions, one of which will be at a senior professional level and the other one at the rank of assistant professor. These positions will be available in summer 1982. We encourage applications from candidates with strong credentials in the areas of cell biology and cellular development. Faculty members are expected to develop strong, independent research programs in addition to instructing undergraduate and graduate students in the areas of cell and developmental biology. Applicants for the position of assistant professor must have a Ph.D. with postdoctoral training. Send curriculum vitae, a concise description of proposed research program, and arrange to have three letters of recommendation sent directly by the referees to: **Dr. Chien Ho, Department of Biological Sciences, Carnegie-Mellon University, 4400 Fifth Avenue, Pittsburgh, Pa. 15213.** Inquiries, applications, or nominations of candidates for the senior appointment should also be directed to the above address. Review of applications will begin on 1 November 1981. *Carnegie-Mellon University is an Equal Opportunity/Affirmative Action Employer and encourages women and members of minority groups to apply for these positions.*

**FACULTY POSITION.** The Department of Microbiology, College of Medicine, has an opening for an assistant or associate professor. Primary responsibilities include teaching medical students and serving as director for a course in medical microbiology. Preference will be given to individuals with a research program in the molecular biology of pathogenic agents, including animal viruses, bacteria, antibiotic resistance, or microbial toxins. Use of recombinant DNA techniques is desirable. Send curriculum vitae and three letters of reference to: **Chairman, Medical Microbiology Search Committee, Department of Microbiology, University of California, Irvine, Calif. 92717. An Affirmative Action/Equal Opportunity Employer.**

**FACULTY POSITION IN BIOCHEMISTRY. THE UNIVERSITY OF COLORADO,** Department of Chemistry, invites applications for a tenure-track position in biochemistry. The position is at the assistant professor level starting in September 1982. Applications will be accepted from candidates in all areas of biochemistry. Candidates must have a Ph.D. degree, and preferably postdoctoral experience, and will be expected to establish a research program of national prominence. Starting salary will be based on experience and qualifications; minimum academic year salary for this position will be \$19,500. Teaching duties will include graduate and undergraduate level biochemistry, occasional involvement in general chemistry, and an emphasis on the supervision of graduate research. Applicants should submit curriculum vitae, a summary of plans for research, and undergraduate and graduate transcripts, and should also ask three persons familiar with their qualifications to send letters of recommendation. First consideration will be given to applications received by 30 October 1981. The final application deadline is 15 November 1981. All materials should be sent to: **Professor Richard B. Hallick, Chairman, Biochemistry Recruiting Committee, Department of Chemistry, Campus Box 215, University of Colorado, Boulder, Colo. 80309. An Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

### FACULTY POSITION IN BIOCHEMISTRY/ MOLECULAR BIOLOGY

The College of Medicine invites applications for a tenure-track position in medical biochemistry to be filled at the assistant or associate professor level. Applicants must have an M.D. or Ph.D. and postdoctoral training with demonstrated productivity in research and should expect to develop or continue an independent externally funded research program and to participate in teaching medical students. Applications in any area of biochemistry or molecular biology will be considered. Sunbelt climate in College Station, Texas, located near Houston and Austin. Send curriculum vitae and names of references to: **Dr. Garret M. Ihler, M.D., Ph.D., Head, Department of Medical Biochemistry, College of Medicine, Texas A & M University, College Station, Texas 77843.**

**FACULTY RESEARCH POSITION IN BIOCHEMISTRY** available at level of assistant professor. Work involves biochemical studies of bone regulation. Experience desirable in protein purification, cell cycle analysis, cell differentiation, immunochromatography, RIA, membrane receptor studies, molecular genetics, or vitamin D metabolism. Competitive salary and exceptional opportunity in a well-equipped, multidisciplinary laboratory. Contact: **D. J. Baylink, M.D., Department of Medicine, Room 1501, Loma Linda University, Loma Linda, Calif. 92350. Telephone: 714-796-7311, extension 2171. An Equal Opportunity/Affirmative Action Employer.**

**THE DIVISION OF SURGICAL ONCOLOGY, UNIVERSITY OF VIRGINIA Medical Center,** is seeking an **EXPERIENCED IMMUNOLOGIST** with a good background in tumor immunology who is well versed in classic and contemporary serology. This person should be knowledgeable in the area of tumor antigen solubilization and preparation and experienced in serologic analysis of antigens. We prefer a person with experience in some of the various techniques of demonstrating cell-surface antigens and internal antigens (fluorescence, mixed hemadsorption, immune adherence, radionuclear antibody labeling) and in other techniques showing antigen-antibody interactions (enzyme-linked immune assays, use of immunosorbent columns, and so forth). Experience with monoclonal antibody techniques is desirable but not essential. We are primarily interested in persons who have completed postdoctoral training and who have had a special interest in human tumor immunology. Please forward curriculum vitae and the names of three references to: **Harold J. Wanebo, M.D., Division of Surgical Oncology, Department of Surgery, University of Virginia Medical Center, Charlottesville, Virginia 22908. Equal Opportunity/Affirmative Action Employer.**

### IMMUNOLOGIST/ BIOLOGIST, Ph.D.

Experience in hybridoma technology, immunochromatography. Tenure-track position with full benefits at Baylor College of Medicine, Houston, Texas. Please send curriculum vitae and bibliography to:

**Box 242, SCIENCE**

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

### PLANT ECOLOGIST University of California, Davis

Applications are invited for a tenure-track faculty position at the assistant professor and assistant botanist levels, available 1 July 1982. The individual selected will be expected to develop a vigorous research program in plant population and community ecology, to teach undergraduate and graduate courses in botany and plant ecology, and to develop a strong graduate training program. The appointment is split between the College of Letters and Science (.6) and the Agricultural Experiment Station (.4), and has a salary commensurate with the assistant professor range (11-month appointment) at the University of California. Send applications with curriculum vitae, statement of research and teaching interests and long-term goals, and transcripts and request that three letters of recommendation be sent to: **Dr. R. W. Pearcy, Chairperson of the Search Committee, Department of Botany, University of California, Davis, California 95616.** Applications must be postmarked by 1 January 1982. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

## POSITIONS OPEN

**INORGANIC CHEMISTRY.** Brandeis University seeks a talented, enthusiastic, and motivated chemist to join the faculty in a tenure-track, assistant professor position, and to pursue a strong research and teaching program in inorganic chemistry starting fall semester 1982. Preference in the areas of: (i) energy-related research, (ii) nonmolecular solids, (iii) heterogeneous catalysis, (iv) electrochemistry, and (v) modern coordination chemistry. Applicants should respond with résumé, transcripts, description of research plans, and three letters of recommendation by 1 December 1981 to: **Professor Bruce M. Foxman, Chairman, Inorganic Search Committee, Department of Chemistry, Brandeis University, Waltham, Massachusetts 02254. Brandeis University is an Affirmative Action/Equal Opportunity Employer.**

Harvard University, The Department of Psychology and Social Relations is searching for **JUNIOR AP-POINTEES** (initially for a 5-year term, beginning 1 July 1982) in the areas of social, personality/psychopathology, and social/developmental psychology. In each case a secondary competence in multivariate analysis of data is welcome but not essential. Applications should include current curriculum vitae and applicants should ask at least three individuals familiar with their work to write directly to: **R. Duncan Luce, Chairman, Department of Psychology and Social Relations, Harvard University, 33 Kirkland Street, Cambridge, Mass. 02138.** Applications received after 1 November 1981 may not be considered. *Harvard University is an Equal Opportunity/Affirmative Action Employer.*

**LABORATORY MANAGER—CHEMICAL INSTRUMENTATION.** A growing instrumentation facility seeks responsible director for position involving departmental instrument operations, training and supervision of operators, maintenance direction, and collaboration with faculty for research development and submission of major instrumentation proposals.

Applicants should have graduate training and experience in high-field FT-NMR or mass spectroscopy. An advanced degree in chemistry or physics is preferred, but candidates with equivalent experience will be considered. Experience in electronic and mechanical troubleshooting is very desirable. This is a permanent position with competitive salary and fringe benefits (\$25,000 to \$30,000).

Applicants should submit a résumé and have three letters of reference sent to: **Dr. Richard Lintvedt, Department of Chemistry, Wayne State University, Detroit, Mich. 48202. Telephone: 313-577-2591. Equal Opportunity/Affirmative Action Employer.**

**UNIVERSITY OF NEW MEXICO (UNM)—MOLECULAR BIOLOGIST.** Tenure-track assistant professor. Molecular biologist with interest in immunoglobulins preferred but not required. Three years of postdoctoral experience with demonstrated productivity and potential for independent granting required. Deadline for applications and starting dates extended. New dates: start 1 January through September 1982; applications by 15 November 1981. Send to: **Thomas Tomasi, M.D., Ph.D., Director, Cancer Research and Treatment Center, UNM Medical Center, Albuquerque, N.M. 87131. Affirmative Action/Equal Opportunity Employer.**

### MOLECULAR BIOLOGIST

Applications for an assistant professorship are invited from individuals with major commitment toward research and whose interests are in the structure, regulation, or expression of viral or mammalian genes. Expertise in genetic engineering or enzymology-protein chemistry is an asset. Knowledge of, or readiness to learn, French essential. Send applications to: **Dr. Pierre Bourgaux, Directeur, Département de Microbiologie, Faculté de Médecine, Centre Hospitalier Universitaire, Université de Sherbrooke, Sherbrooke, Québec, Canada J1H 5N4.**

**NEURONAL CELL BIOLOGIST.** The Department of Biology at Rice University invites applications for the position of assistant professor to begin in or before August 1982. Applicants must have Ph.D. and postdoctoral research experience is preferred. The candidate should be prepared to teach undergraduate and graduate courses and to initiate a strong research program. Preference will be given to applicants with background and training in neurodevelopment, neuroendocrinology, immunology, synaptology, or membrane biology. Applicants should submit curriculum vitae, including a list of publications and three letters of recommendation, to: **Ronald L. Sass, Chairman, Department of Biology, Rice University, Houston, Texas 77001. An Equal Opportunity/Affirmative Action Employer.**

## RESEARCH PHARMACOLOGIST

The Upjohn Company, a leading pharmaceutical company dedicated to the development of new therapeutic agents through basic research, is seeking a Ph.D. scientist to develop an independent research program (employing relevant *in vitro* and *in vivo* models) to study acute and chronic respiratory diseases, and to discover and develop novel drugs useful in the treatment of respiratory diseases. This independent research program will be integrated with established programs of a multi-disciplinary team concerned with the development of therapeutic agents for the treatment of these diseases.

Candidates must have a Ph.D. in pharmacology or physiology with at least two years of relevant experience in conducting research with whole animal models of pulmonary disease. An understanding of immunological processes and their relationships to respiratory diseases is highly desirable.

The Upjohn Company offers excellent salary, benefits, and work atmosphere in a city which provides an outstanding cultural, educational, and recreational environment. Please send your curriculum vitae and resume in confidence to:

Jerry Potratz

### THE UPJOHN COMPANY

Department 13558  
7000 Portage Road  
Kalamazoo, MI 49001

An Equal Opportunity Employer M/F

**Upjohn**

## CSIRO PHYSICAL OCEANOGRAPHERS (TWO POSITIONS) A\$19,662 to A\$28,564 per annum CSIRO MARINE LABORATORIES DIVISION OF OCEANOGRAPHY SYDNEY, N.S.W., AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The organization has approximately 7400 employees, 2500 of whom are research and professional scientists, located in divisions and sections throughout Australia.

**GENERAL:** In March 1981, the CSIRO Division of Fisheries and Oceanography was formally separated into a Division of Fisheries Research and a Division of Oceanography. These divisions collectively form the CSIRO Marine Laboratories, and are Australia's principal marine laboratories, employing about 200 scientists and support staff. The main laboratory is in Sydney, and there are smaller laboratories in Brisbane and Perth.

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

The interests of the division in physical oceanography include continental shelf dynamics, mixed layer and upwelling dynamics, air-sea interaction, ocean circulation and boundary currents, the interpretation and application of satellite data, numerical modelling, and geophysical fluid dynamics.

**DUTIES:** The appointees will initiate and conduct research within these fields and in relation to existing or future programs. On occasions, they may be expected to participate in or to lead research vessel cruises.

**QUALIFICATIONS:** Successful applicants would normally hold a Ph.D. in physical oceanography, geophysical fluid dynamics, or some other relevant discipline and should be able to demonstrate substantial research aptitude and achievement commensurate with their experience.

**TENURE:** Fixed term appointments of 3 to 5 years. Superannuation benefits available.

**APPLICATIONS:** In writing, quoting reference A1576/1644, giving full personal particulars, including details of qualifications and experience, copy of academic transcript, and the names of at least two professional referees, should reach:

The Chief  
Division of Oceanography  
CSIRO  
P.O. Box 21  
Cronulla, N.S.W. 2230, Australia

by 12 November 1981.

## International Genetic Sciences, Inc. is organizing an annual conference on INTRODUCTION OF GENETIC MATERIALS INTO EUCARYOTIC CELLS: PRESENT STATE AND FUTURE PROSPECTS

Keynote address by: Prof. Ephraim Katzir  
Weizmann Inst. of Science & The Biotechnology Center, Tel Aviv University, Israel  
on Biotechnology in Israel: Present and Future

### Speakers for the conference

**Dr. F. Ausubel:** Harvard University  
Molecular Biology Of Nitrogen Fixation  
**Dr. H. Goodman:** University of California, S.F.  
Structure and Evolution of Mammalian Human Genes  
**Dr. A. Graessmann:** Free University of Berlin  
Microinjection Turns A Cell To A Test Tube  
**Dr. S. Izhar:** Volcani Center, Israel  
Transfer of Cytoplasmic Genetic Elements in Plants  
Via Somatic Cell Fusion  
**Dr. A. Loyter:** Hebrew University  
Use of Sendai Virus Envelopes As A Vehicle To  
Introduce DNA Molecules To Living Cells.  
**Dr. D. Papahadjopoulos:** University of California, S.F.  
Liposomes As A System For Delivering DNA To Cells  
**Dr. R. Rott:** Institute of Virology, W. Germany  
Fusion Of Influenza Virus Envelopes With Cell  
Membranes

**Dr. F. A. Ruddle:** Yale University  
Gene Transfer In Mouse Embryos  
**Dr. W. Rutter:** University of California, S.F.  
Expression Of Eucaryotic Genes In Foreign Host  
**Dr. J. Schell:** Max Planck Institute, W. Germany  
Ti Plasmids As Experimental Gene Vectors For Plants  
**Dr. R. Shimke:** Stanford University  
Gene Amplification As A Means Of Obtaining DNA  
Synthesis  
**Dr. D. N. Stacy:** Roche Inst. of Molecular Biology  
Use Of Microinjection To Determine Structure-  
Function Relationship In Retroviral Oligonucleotides  
**Dr. T. Wagner:** Ohio University  
The Mammalian Male Pronucleus As A Vehicle For  
Embryo Transformation

Cost of \$450 includes room and meals. No registration fees. Number of participants limited to sixty. The conference to be held at the Harrison Conference Center, Glen Cove, L.I., N.Y. NOVEMBER 22-25, 1981

Interested scientists, please send as soon as possible information including name, address, phone, present position and areas of interest. Send to:



**International Genetic Sciences, Inc.**  
155-25 Styler Road • Jamaica, NY USA 11433  
or call (212) 526-0400



## POSITIONS OPEN

### MOLECULAR BIOLOGY MICHIGAN STATE UNIVERSITY (MSU)

The Department of Biochemistry invites applications for one or more tenure-track appointments at the assistant professor level. Applicants must have a Ph.D. or M.D. degree, postdoctoral training, and experience in areas of eukaryotic molecular biology such as regulation of gene expression, recombinant DNA technology, or nucleic acid chemistry. Responsibilities include development of a strong and creative research program and participation in teaching at the undergraduate, graduate, and professional levels. Please submit curriculum vitae, reprints, in-press manuscripts, a statement of professional goals and expected areas of future independent research, and written recommendations from three references by 1 December 1981 to: **Dr. Charles C. Sweeley, Department of Biochemistry, Michigan State University, East Lansing, Michigan 48824.**

MSU is an Affirmative Action/Equal Opportunity Institution.

### IMMUNEX CORPORATION SEATTLE, WASHINGTON

Seeks molecular biologists, immunologists, and biochemists for its new research facility which will open in Seattle early in 1982. Immunex Corporation is a new research and development company working in the area of immunoregulation by lymphokines. Both staff scientists (assistant professor equivalent) and senior staff scientist positions are available. Applicants with outstanding academic records are sought and, for senior positions, evidence of independence (for example, principal investigation of peer-reviewed grants) will be necessary. Excellent salaries and fringe benefit package. Send curriculum vitae and names of at least two references to:

**Dr. Steven Gillis or Dr. Christopher S. Henney**  
Immunex Corporation  
P.O. Box 70668  
Seattle, Washington 98107

Positions anticipated summer 1982, for **PARASITOLOGIST/IMMUNOLOGIST AND/OR PROTOZOOLOGIST/IMMUNOLOGIST** with background and research experience in areas of filariasis, leishmaniasis, or trypanosomiasis, to carry on independent research effort for 2 years in Colombia, South America. Good research environment. Send complete curriculum vitae and statement of research interests by 1 November 1981 to: **Dr. Thomas C. Orihel, Department of Tropical Medicine, Tulane University Medical Center, 1430 Tulane Avenue, New Orleans, Louisiana 70112. An Affirmative Action/Equal Opportunity Employer.**

**PHYSICIST**—Research group engaging in advanced radiation biophysics seeks a physicist to be responsible for operation, maintenance, and development of its 4-MeV Van de Graaff accelerator and to participate in radiological physics research. Applicants should have a Ph.D. and experience with Van de Graaff accelerators. Experience in dosimetry and interest in radiobiology are desirable. The new location of the Radiological Research Accelerator Facility is at the Nevis Estate in Westchester County, 1/2 hour from New York City. Send curriculum vitae to: **Dr. Harald H. Rossi, Columbia University, Radiological Research Laboratory, 630 West 168 Street, New York, N.Y. 10032. An Equal Opportunity/Affirmative Action Employer.**

**PHYSIOLOGISTS.** Cardiovascular, respiratory, central and autonomic nervous system, and cellular physiologists are urgently needed. This latter with wide experience in cell culture of transformed cells. Teaching and research expertise emphasized. Please apply to: **Chairman, Physiology Department, Ponce School of Medicine, P.O. Box 7004, Ponce, P.R. 00732.**

### PLANT PATHOLOGY SPECIALIST LOCATION: DAVIS CAMPUS

A career position, 100 percent Extension, to plan, initiate, coordinate, and conduct off-campus education and adaptive research programs in deciduous fruit, grape, and small-fruit crops. Advanced professional training and demonstrated competence in plant pathology are required; Ph.D. preferred. Contact: **Cooperative Extension Personnel, 331 University Hall, University of California, Berkeley, Calif. 94720. Refer to Number 8118. Closes 6 November 1981.**

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

## POSITIONS OPEN

### PHYSIOLOGY FACULTY POSITION

Assistant professor, tenure-track position, for January 1982. Ph.D., teaching and postdoctoral experience required. Candidate will be expected to participate in teaching undergraduate and graduate courses, develop an independent research program, and direct graduate students.

Applicants may expect to teach courses in comparative anatomy, human anatomy and physiology, as well as other undergraduate and graduate courses in physiology. Research expertise in systems physiology and/or invertebrate biology preferred.

To apply, applicants must submit curriculum vitae, reprints, and statement of research interests and teaching experience, and have three letters of recommendation sent to: **Dr. Helen Oujesky, Acting Director, Division of Allied Health and Life Sciences, The University of Texas at San Antonio, San Antonio, Texas 78285. Application deadline: 13 November 1981.**

The University of Texas at San Antonio is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL ASSOCIATE**, Ph.D. in biochemistry or related subject, for program on isolation, characterization, and reconstitution of membrane proteins. Experience in enzymology or protein chemistry preferred. Résumés to:

**Dr. D. R. Sanadi**  
Boston Biomedical Research Institute  
20 Staniford Street  
Boston, Mass. 02114

**POSTDOCTORAL ASSOCIATE POSITION** for geneticist to study audiogenic seizures in mice. Experience in biochemistry or neurology is desirable. Send curriculum vitae, reprints, and the names and addresses of three references to: **Dr. Thomas N. Seyfried, Department of Neurology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510.**

The Department of Neurology, University of California, Irvine, seeks a **POSTDOCTORAL FELLOW** to train in human-evoked potentials related to motor functions in a newly established laboratory of motor control. Prior experience in neurophysiology, evoked potentials, and motor systems theory would be advantageous for the successful candidate. Position available immediately. Send curriculum vitae to and request three letters of reference be sent to: **Arnold Starr, M.D., and Gideon Ariel, Ph.D., Department of Neurology, Room 144/Med Surge I/California College of Medicine/University of California, Irvine, Irvine, Calif. 92717. An Equal Opportunity Affirmative Action Employer.**

**POSTDOCTORAL FELLOW** on a research project investigating the mechanisms underlying the co-carcinogenic and teratogenic effects of chronic alcohol consumption. Will be available immediately. Interested U.S. citizens or permanent residents should send curriculum vitae to: **Dr. Anthony J. Garro, Biomedical Education Program, THE CITY COLLEGE, Room J913, 138th Street and Convent Avenue, New York, N.Y. 10031. An Equal Opportunity Employer.**

The Department of Anatomy at the School of Medicine, University of California, Los Angeles, invites applications from qualified candidates for appointment as **POSTDOCTORAL FELLOWS** in the following areas: cell biology, neuroanatomy, neurophysiology, and neuroendocrinology. Support for these positions may be obtained by the candidate with the help of a faculty member by applying to government or private sources or by applying to faculty member(s) for positions on their research grants. Inquiries may be made to: **Dr. Roger A. Gorski, Chairman, Department of Anatomy, University of California School of Medicine, Los Angeles, California 90024. The University of California is an Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** (research associate) available immediately for research on sympathetic nerve terminal and vascular smooth muscle functions in hypertension. Experience in in vitro preparations and tyrosine hydroxylase assay preferred. Salary commensurate with qualifications. Send curriculum vitae, letter of interests, and three letters of recommendation before 10 October 1981 to: **L. T. Lais, Ph.D., School of Pharmacy, Oregon State University, Corvallis, Oregon 97331. An Equal Opportunity/Affirmative Action Employer in Compliance with Section 504 of the Rehabilitation Act of 1973.**

## POSITIONS OPEN

**POSTDOCTORAL POSITIONS.** Ph.D. in biochemistry or microbiology. Experience with protein purification and/or cell biology (immunobiology would be very helpful). To study factors which regulate hemopoiesis in a virus-induced leukemia. *Affirmative Action/Equal Opportunity Employer.* Send résumé to:

Box 231, SCIENCE

**POSTDOCTORAL POSITION IN BIOCHEMISTRY/MOLECULAR GENETICS**, available December 1981, to study developmental regulation of rabbit globin genes. Projects include gene isolation, sequence determination, transcription mapping, and in vitro transcription. Send curriculum vitae and names of three references to: **Dr. Ross C. Hardison, Department of Microbiology, Cell Biology, Biochemistry and Biophysics, Althouse Laboratory, The Pennsylvania State University, University Park, Pa. 16802. An Affirmative Action/Equal Opportunity Employer.**

**Postdoctoral Positions in Biochemistry.** Two positions available to study metabolism of  $\alpha$ -tocopherol-quinol. (i) Research associate, grant-funded, requires only a Ph.D. (ii) Hard-money, nontenure-track position, requires at least 2 years of postdoctoral experience. Send résumé, publications list, description of research interests, and three letters of reference to: **Dr. S. B. Tove, Biochemistry Department, North Carolina State University, Raleigh, N.C. 27650. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION—PROTOPLAST CULTURE.** Research on the derivation of disease resistance through plant protoplast isolation, culture, and regeneration. Salary: \$16,000 per annum. Send curriculum vitae and three letters of reference by 1 November 1981 to: **James F. Shepard, Department of Plant Pathology, Kansas State University, Manhattan, Kans. 66506. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITIONS** available in recombinant DNA research. Projects include: (i) molecular cloning of viral neutralizing antigen and (ii) molecular cloning of tumor antigen. Send curriculum vitae and names of two references to:

**Dr. W. C. Leung**  
Department of Pathology  
McMaster University  
Hamilton, Ontario, Canada L8N 3Z5

**POSTDOCTORAL POSITION** in biochemistry and recombinant DNA. Position available for a Ph.D. in biochemistry, chemistry, or related field to participate in a study of membrane biogenesis and expression of membrane protein genes. Send curriculum vitae and names of three references to: **Dr. Masayori Inouye, Department of Biochemistry, State University of New York at Stony Brook, Stony Brook, N.Y. 11794. State University of New York at Stony Brook is an Equal Opportunity/Affirmative Action Employer. AK Number 156.**

**POSTDOCTORAL POSITION—HORMONE ACTION.** A position is available immediately to study proteins involved in the actions of hormones that work via cyclic AMP. Applicants should have interest/past experience in one or more of the following areas: somatic genetics, hormone receptors, cyclic nucleotide metabolism, membrane protein biochemistry, and immunology. Salary range: \$14,000 to \$20,000, depending on qualifications. Send curriculum vitae, letter describing research experience and interests, and names, addresses, and telephone numbers of three references to: **Henry R. Bourne, M.D., Division of Clinical Pharmacology, 1239-HSE, University of California, San Francisco, Calif. 94143. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL POSITION** available to study Adenovirus gene expression using a molecular genetic approach. The method of approach will be to clone adenoviral DNA fragments into plasmid vectors and introduce mutations into the viral genes using a site directed mutagenesis procedure. The mutated viral DNA fragments will be reintroduced into the virus to study the physiological consequence of the mutations. The candidate will have an opportunity to learn most of the molecular biology techniques such as recombinant DNA technology, sequencing of DNA and RNA, and also handling of various tissue culture cell lines and viruses. Previous experience in molecular biology helpful but not essential. Interested persons may write to or call: **Dr. Bayar Thimmappaya, Department of Microbiology and Immunology, Northwestern University Medical School, 303 East Chicago Avenue, Chicago, Illinois 60611. Telephone: 312-266-5224.**

# Quality Assurance GLP-Toxicology

We are an ethical pharmaceutical company offering a challenging opportunity for a person with a BS or MS degree in Toxicology, Biochemistry, or Pharmacology, preferably with experience in laboratory studies, analyses, and animal experimentation. Exposure to G.L.P.'s is desirable.

The candidate should have good communication (oral and written) skills, and be able to interact effectively with other professionals. The position will have responsibility for the inspection of all phases of drug animal safety studies (acute toxicity, subchronic, chronic, reproduction and teratology studies), auditing the study data, and final study reports. The position will also monitor the toxicology department for compliance with G.L.P.'s. Some travel will be required.

The salary offered will be commensurate with experience and background and include an excellent benefit program.

*Please submit resume including salary history and requirements in confidence to:*

Personnel Department

**Endo Laboratories, Inc.**

Subsidiary of E. I. du Pont de Nemours & Co. (Inc.)

1000 Stewart Avenue  
Garden City, New York 11530

An Equal Opportunity Employer M/F



# VETERINARY PATHOLOGIST

...for staff position. Prefer broad based experience and/or training in laboratory animal pathology, especially Toxicologic Pathology. Duties include designing, conducting and reporting of preclinical drug safety evaluation studies, with emphasis on the gross, histopathologic and clinicopathologic evaluation of animals used in such studies. Requirements include D.V.M. and advanced training in pathology.

Interested applicants should send resume and salary requirements to:

**Wyeth Wyeth  
Laboratories Inc.**  
P.O. Box 861  
Paoli, Pa. 19301

An Equal Opportunity Employer, M/F/H



**Assistant  
To Director**

## **UCLA Symposia On Molecular And Cellular Biology**

Serve as manager of annual series of international biomedical meetings. Assist series Director with development of programs, coordinate program implementation, solicit public and private sector funding, direct conference logistics, serve as managing editor of annual proceedings' publications and manage financial aspects of entity. Requires a background in molecular biology and related administrative management experience. Advanced degree in molecular biology highly desirable.

Please send resume, with cover letter specifying qualifications for the position, by November 16, 1981, to:

**Fran Stusser  
UCLA Symposia  
Molecular Biology Institute  
University of California  
Los Angeles, CA 90024**

An Affirmative Action Employer

# Development Scientists

The Fermentation Development Department, Medical Research Division of the American Cyanamid Company is seeking two qualified Scientists interested in developing commercial processes for products of recombinant DNA technology.

**PROTEIN BIOCHEMIST**—Ph.D. in biochemistry or related area with experience in process development applied to protein isolation and purification or the equivalent.

**MICROBIOLOGIST**—M.S. in molecular biology with experience in nucleic acid biochemistry and a solid understanding of molecular genetics as well as metabolic pathways or the equivalent.

Successful candidates for these positions will have familiarity with all relevant modern technology associated with these areas.

Please send resume and salary history, in confidence to:  
Ms. S. L. Johnson, Professional Employment Coordinator.



**American Cyanamid Company**

Medical Research Division  
Lederle Laboratories  
Pearl River, New York 10965

An Equal Opportunity Employer m/f

## POSITIONS OPEN

### POSTDOCTORAL POSITION

The Division of Reproductive Biology, Department of Obstetrics and Gynecology, University of Pennsylvania, invites applications for a postdoctoral position(s) in the following fields:

- 1) **Reproductive Biology**, encompassing sperm metabolism and fertilization, and
- 2) **Endocrinology**, molecular and cellular aspects of hormone action and neuroendocrinology.

This position is intended to provide 1 or 2 years of postdoctoral experience for persons who plan to pursue a research career in the reproductive sciences. Applicants should submit curriculum vitae, a description of research interests, and the names of two referees before 1 November 1981 to: **Dr. C. Richard Lytle, University of Pennsylvania School of Medicine, Medical Laboratories/G3, Philadelphia, Pa. 19104.**

*Applications from women and minority persons are especially welcome. An Equal Opportunity Employer.*

**POSTDOCTORAL RESEARCH ASSOCIATE**—This position in **NEUROTOXICOLOGY** is to study effects of organophosphates on central neurotransmitters. Experience in biochemical studies of neurophysiology/pharmacology/toxicology desired. Salary commensurate with education and experience. Available immediately. Send letter with curriculum vitae and names and addresses of three references to: **Dr. B. Hoskins, Department of Pharmacology and Toxicology, University of Mississippi Medical Center, 2500 North State Street, Jackson, Miss. 39216. Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE.** Position is available immediately to study the molecular basis of surface glycoprotein gene expression in African trypanosomes and to initiate studies on leishmania gene expression. Only candidates who have training in some molecular biology discipline (that is, DNA sequencing, gene cloning, and electron microscopy of nucleic acids) will be considered. Position for up to 2½ years with a negotiable salary range of \$13,000 to \$15,000. Please send all inquiries and/or curriculum vitae and names of two references to: **Dr. Kenneth B. Marcu, Biochemistry Department, State University of New York at Stony Brook, Stony Brook, N.Y. 11794. State University of New York at Stony Brook is an Equal Opportunity/Affirmative Action Employer, M/F. AK Number 161.**

**POSTDOCTORAL RESEARCH IN HUMAN MOLECULAR GENETICS.** Positions available to study organization and control of human genome. Research involves mapping cloned genes and DNA segments using cell hybrids; gene cloning, sequencing, and transfer; recombinant library construction; and mechanisms of metabolic disease. Experience required in recombinant DNA methods, biochemistry, molecular biology, and genetics. Salary depends on experience. Send curriculum vitae, reprints, and names of three references to: **Thomas Shows, Ph.D., Department of Human Genetics, Roswell Park Memorial Institute, New York State Department of Health, Buffalo, New York 14263. An Equal Opportunity Employer, M/F.**

**POSTDOCTORAL RESEARCH POSITION** available to study the role of folyl polyglutamates in tumor cell proliferation. Experience in enzymology and protein chemistry helpful. Send curriculum vitae and names of three references to: **Dr. D. G. Priest, Department of Biochemistry, Medical University of South Carolina, 171 Ashley Avenue, Charleston, S.C. 29425.**

### POSTGRADUATE RESEARCH DEPARTMENT OF BIOLOGY PRINCETON UNIVERSITY

NIH postdoctoral training grant positions for recent Ph.D.'s in the area of biochemical and genetic aspects of cell differentiation (Drs. T. Cline, E. Cox, A. Newton, P. Schedl, and E. Wieschaus), cell biology and development (Drs. J. Bonner, E. Luna, and M. Steinberg), and behavioral and population genetics (Drs. J. Gould, J. Hoogland, R. May, W. Quinn, and D. Ready) are available. Applications should include curriculum vitae, references, and summary of research interest. Closing date: 31 October 1981. Inquiries or applications should be sent to: **Dr. E. C. Cox, Chairman, Department of Biology, Princeton University, Princeton, New Jersey 08544.**

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

## POSITIONS OPEN

### UNIVERSITY OF DELAWARE PROFESSOR AND DIRECTOR, SCHOOL OF LIFE AND HEALTH SCIENCES

Candidates should be established investigators in the life sciences with administrative and/or program leadership experience. Responsibilities include instruction and research programs in the basic life sciences and the allied health sciences; administration of academic affairs, personnel, financial matters, and physical facilities; and leadership and coordination of intramural and extramural relations of the school. This position is open after 1 July 1982. Applications and nominations should be submitted by 20 November 1981. Qualified persons are invited to provide a complete résumé documenting relevant experience. Names of four references should be submitted. Applications and nominations should be sent to: **Dr. D. Wetlauffer, Chair, Search Committee, 111 Brown Laboratories, University of Delaware, Newark, Del. 19711. The University of Delaware is an Equal Opportunity Employer which encourages applications from qualified minority groups and women.**

The Australian National University invites applications for appointment to the post of **PROFESSOR AND HEAD, DEPARTMENT OF PHYSIOLOGY, JOHN CURTIN SCHOOL OF MEDICAL RESEARCH**, which becomes vacant on the retirement of Professor P. O. Bishop, FAA, FRS, in December 1982. Applicants in any field of physiology will be considered. The School has excellent facilities for research, graduate, and postdoctoral training. Salary: not less than A\$41,509 per annum, plus pre-clinical loading of A\$2500 per annum, for medical qualifications. Current exchange rates: A\$1 = U.S.\$1.13 = UK 63NP. A professor is appointed immediately to age 65 years. Appointment as head of department will be for a period to be determined. Reasonable appointment expenses are paid and assistance is given with finding accommodation. Superannuation benefits are available for those eligible to contribute. Programs of studies away from the University may be approved. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. For further information, write to: **Professor Robert Porter, Director, The John Curtin School of Medical Research, P.O. Box 334, Canberra City, A.C.T. 2601, Australia. Applications to: The Registrar, Australian National University, P.O. Box 4, Canberra, A.C.T. 2600, Australia, by 16 November 1981.**

**RESEARCH ASSISTANT PROFESSOR**—A non-tenure-track faculty position is available for a Ph.D. with postdoctoral experience and expertise in recombinant DNA technology to participate in research in the collagen/elastin area. Appointment is for a 3-year period. Salary commensurate with experience. Send curriculum vitae and references to: **Dr. Joel Rosenbloom, Center for Oral Health Research, School of Dental Medicine, University of Pennsylvania, Philadelphia, Pa. 19104. An Equal Opportunity/Affirmative Action Employer.**

**RESEARCH ASSOCIATE**—Ph.D. with postdoctoral experience and expertise in recombinant DNA technology for position in collagen/elastin research laboratory. Position is immediately available. Salary commensurate with experience. Send curriculum vitae and references to: **Dr. Joel Rosenbloom, Center for Oral Health Research, School of Dental Medicine, University of Pennsylvania, Philadelphia, Pa. 19104. An Equal Opportunity/Affirmative Action Employer.**

### DEPARTMENT OF HUMAN GENETICS ROSWELL PARK MEMORIAL INSTITUTE (RPMI) NEW YORK STATE DEPARTMENT OF HEALTH

**STAFF POSITIONS** at the assistant and associate professor level in human molecular genetics, molecular cytogenetics, and cell genetics. Conducting productive research in organization of the human genome; control of gene expression; or mechanisms of disease is required. Experience necessary in molecular genetics such as gene isolation, cloning, sequencing, regulation, and transfer; chromosome isolation, flow sorting, and in situ hybridization; or dissection of molecular disease. Teaching possible through RPMI graduate division, State University of New York at Buffalo. Send résumé, reprints, and names of three references to: **Thomas B. Shows, Ph.D., Roswell Park Memorial Institute, 666 Elm Street, Buffalo, New York 14263. An Equal Opportunity Employer, M/F.**

## POSITIONS OPEN

**RESEARCH ASSISTANT.** Required: Ph.D. or equivalent (preferably in physics, biophysics, physiology, or biology) plus some postdoctoral experience and knowledge of biology, computer science, electronics, and optics. Starting salary: \$18,000 plus, depending on experience. Write to: **Membrane Biology Laboratory, Department of Ophthalmology, Columbia University, 630 West 168 Street, New York, N.Y. 10032. An Equal Opportunity/Affirmative Action Employer.**

**RESEARCH ASSOCIATE POSITION** available immediately to study species differences in carcinogen metabolism. Ph.D. in organic chemistry, biochemistry, toxicology, or pharmacology and previous research experience in drug metabolism desirable. Appointment initially for 1 year, renewable. Send curriculum vitae and names of three references to: **Dr. Thomas J. Curphey, Department of Pathology, Dartmouth Medical School, Hanover, New Hampshire 03755.**

**RESEARCH ASSOCIATE.** Ph.D. in a biological science or equivalent, with training in nucleic acid biochemistry, to work on research related to experimental liver carcinogenesis. Experience required in handling chemical carcinogens, treatment of experimental animals, isolation and purification of nucleic acids, and base analysis by high-performance liquid chromatography, and in the assay of carcinogens mediated bacterial mutagenesis. The position will involve work in a research laboratory using the skills and experience indicated above. Salary negotiable, based on experience and qualifications. Send résumé to: **A. David Gibson, Research Administrator, 777A Scaife Hall, Department of Pathology, School of Medicine, University of Pittsburgh, Pittsburgh, Pa. 15261. An Equal Opportunity/Affirmative Action Employer.**

### RESEARCH POSITIONS/REMOTE SENSING

Applications are invited for two research positions in the Department of Geological Sciences, University of Washington.

**RESEARCH ASSISTANT PROFESSOR** to do research and teaching in geological remote sensing. Candidate is expected to have at least 2 years of experience beyond the Ph.D. and a demonstrated research record in the application of reflectance spectroscopy to the geology of planetary surfaces. Experience with instrument design, computer programming, and digital image processing is also necessary.

**RESEARCH ASSOCIATE** to conduct research in remote sensing of vegetation and rock vegetation mixes. Candidate must have a Ph.D. in forestry or related science and a strong background in computer programming and operation of digital image-processing systems.

Submit curriculum vitae and names of three references to: **John B. Adams, Chairman, Department of Geological Sciences, AJ-20, University of Washington, Seattle, Washington 98195. Closing date is 31 October 1981.**

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### RESEARCH POSITION

Glycopeptide-glycolipid research position at a university hospital for benchwork-oriented individual with quantitative working habits for structural characterization of carbohydrate moieties of glycoconjugates from human cell membranes. Doctorate required. Considerable freedom for this section leader within the overall goals of the department. Technical help can be hired. Starting salary range: \$28,000 to \$38,000, depending upon experience; excellent benefits; significant annual salary increases; paid attendance of meetings, including overseas. This position is not dependent on grant money and is intended to be a permanent one. Please send résumé to: **Dr. Georg F. Springer, Director, Immunochemistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, Illinois 60201.**

### TOXICOLOGY

Full-time position currently available for a toxicologist with special interests in reproductive toxicology and/or biochemical toxicology. Salary negotiable.

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Mr. David C. Jones  
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The U.S. Department of Agriculture, Agricultural Research Service, is recruiting for a **RESEARCH CHEMIST**, GS-11, \$22,486 per year, for a temporary 1-year appointment at the Insect Attractants, Behavior, and Basic Biology Research Laboratory, Gainesville, Florida. This position is part of a pioneering research project on the endocytotic mechanism(s) of protein transport by insect cells and tissues. The incumbent's research assignment is to investigate the chemical structure of carbohydrates from storage proteins isolated from the greater wax moth *Galleria mellonella*. This work will focus on determining if protein uptake is a receptor-mediated process based on recognition of attached carbohydrates and will be coordinated with other studies on protein uptake. The incumbent will be required to have previous experience in the technology of carbohydrate and protein chemistry. For information about the position, telephone **Dr. Don Silhacek at 904-373-6701**, or send an SF-171 to him at: P.O. Box 14565, Gainesville, Fla. 32604. Available now; closes 31 October 1981.

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Qualifications: A record of quality research, demonstrated ability to develop financial resources, an interest in developing interdisciplinary research programs of a pure and applied nature, and the ability to work effectively as a member of a management team. An earned doctorate is required.

Application, including résumé, should be sent to:

**Dr. Dale F. Stein, President**  
Michigan Technological University  
Houghton, Michigan 49931

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## CALL FOR PAPERS

**CALL FOR PAPERS** for the First Annual Spina Bifida Association of America Research Symposium. Papers should describe basic, clinical, or applied research projects dealing with causes, treatments, methods of detection or prevention of spina bifida hydrocephalus and related conditions. Deadline for abstracts is 15 December 1981. The meeting will be held in Dallas, Texas, on 23 April 1981. Contact: **Dr. C. J. Sherry**, Biology Department, Texas A & M University, College Station, Texas 77801.

## TRAINEESHIPS

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

## SYMPOSIUM

### SYMPOSIUM 1981

#### SYMPOSIUM ON THE AQUATIC RESOURCE MANAGEMENT OF THE COLORADO RIVER ECOSYSTEM

16 to 19 NOVEMBER 1981  
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The Utah Water Research Laboratory and the Office of Water Research and Technology is sponsoring a symposium, 16 to 19 November 1981, to examine current and projected effects of water and land management practices within the Colorado River Basin on the river ecosystem.

The symposium is intended to transfer information between the federal, state, and local agencies, consulting firms, universities, and the major water users in the upper and lower basin. For information contact:

**Dr. V. Dean Adams**  
**Dr. Vincent A. Lamara**  
Utah Water Research Laboratory  
Utah State University, UMC 82  
Logan, Utah 84322  
Telephone: 801-750-3198

## FELLOWSHIPS

### FELLOWSHIPS

**Postdoctoral fellowship in neural control of the cardiovascular system.** A limited number of fellowship positions are available, funded by an NIH training grant. Clinical and basic scientists participate in the program with major emphasis on neural pathways, hypertension, cardiovascular pharmacology, exercise, electrophysiology, cardiac biochemistry, and biofeedback. The positions are open to U.S. citizens and permanent residents who have Ph.D., M.D., or equivalent degrees in a basic biomedical discipline.

Applicants should send curriculum vitae with three references and specific area of interest to: **Dr. H. Lowell Stone, Department of Physiology and Biophysics, University of Oklahoma Health Sciences Center, P.O. Box 26901, Oklahoma City, Oklahoma 73190.** We are an Equal Opportunity Employer.

### POSTDOCTORAL FELLOWSHIPS IN HUMAN GENETICS

Two positions are immediately available in a large multidisciplinary Division of Medical Genetics for M.D. or Ph.D. postdoctorates to participate in studies of: (i) the molecular mechanism of X chromosome inactivation or (ii) expression of differentiated functions in cultured epithelial cells. Previous experience in somatic cell genetics and/or cellular biochemistry is desirable. Salary is at NIH stipend level. For further information, contact either: **Dr. L. J. Shapiro** or **T. Mohandas, Division of Medical Genetics, Harbor-UCLA Medical Center, 1000 West Carson Street, Torrance, Calif. 90509.**

**POSTDOCTORAL FELLOWSHIP** available immediately in the Johnson Foundation and the Department of Biochemistry and Biophysics of the University of Pennsylvania for research in areas of membrane ion transport, membrane reconstitution, and electron transfer in photosynthetic and respiratory systems. Salary follows NIH guidelines. Send curriculum vitae and three references to: **P. L. Dutton** or **P. Mueller, Department of Biochemistry and Biophysics, University of Pennsylvania, School of Medicine, Philadelphia, Pa. 19104.** The University is an Equal Opportunity Employer.

**E. B. EASTBURN FELLOWSHIP IN THE NATURAL SCIENCES.** Applications are invited for one E. B. Eastburn Fellowship from persons who have recently or in the past received Ph.D. degrees (or the equivalent), or who anticipate receiving such a degree in 1982, in the natural or physical sciences, including medicine. The purpose of a fellowship is to permit the candidate to pursue full-time, postdoctoral study and research in his or her chosen field at any recognized university in Canada. It is intended to confine the awards to Canadian citizens and Landed Immigrants. The period is for 1 year, commencing about 1 September 1982 and the stipend is approximately C\$32,000. Applications should be filed by 31 December 1981. For particulars of the full conditions of awards and application procedure, please apply in writing to: **The Hamilton Foundation, C. K. MacGillivray, F.C.A., Executive Director, 314 Wilson Street East, Ancaster, Ontario, Canada L9G 2B9.**

## FELLOWSHIPS

**POSTDOCTORAL FELLOWSHIP**—Fellowships for research are available in physiologic and pathophysiologic aspects of endocrinology, metabolism, and clinical nutrition. Applications are being considered for 1982 and subsequent years. For information, contact:

**Eric Orwoll, M.D.**  
Oregon Health Sciences University  
Portland, Oregon 97201

**POSTDOCTORAL FELLOWSHIP IN IMMUNOBIOLOGY.** Postdoctoral fellowships in cancer immunobiology are available at Sloan-Kettering Institute for Cancer Research. Fellows will be trained in cellular immunology, development and interaction of lymphoid cells, molecular immunology, clinical immunology and cancer, human and mouse immunogenetics, tumor immunology, cell surface immunochimistry, and immunogenetics. Training methods include individualized research with qualified mentor training in clinical laboratory analysis, lectures, courses, seminars, discussions, rounds, clinics, and conferences. Individual research program will be offered either in New York City or at Walker Laboratory, Rye, N.Y. Only U.S. citizens or foreign nationals with permanent resident or immigrant visas will be considered. Send inquiry with brief résumé to: **Dr. Y. S. Choi, Immunobiology Training Program Director, Sloan-Kettering Institute for Cancer Research, 145 Boston Post Road, Rye, N.Y. 10580.** An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL FELLOWSHIPS IN IMMUNOLOGY** are available 1 July 1982 through the Division of Immunology, Department of Microbiology and Immunology, Duke University Medical Center. Training is offered in cellular immunology, human immunogenetics, tumor immunology, cell surface immunochimistry, and clinical immunology. Fellowships are open to American citizens and foreign nationals with permanent U.S. resident visas who hold the Ph.D., M.D., or equivalent degree and who have had less than 3 years of postdoctoral experience. Send letter of inquiry to: **Dr. E. G. Reisner, Box 3010, Duke University Medical Center, Durham, North Carolina 27710.**

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Woods Hole Oceanographic Institution invites applications for 1-year postdoctoral scholar awards from new and recent doctorates in fields of biology, chemistry, engineering, geology, geophysics, mathematics, meteorology, and physics, as well as oceanography. Recipients of awards are selected on a competitive basis, with primary emphasis placed on research promise.

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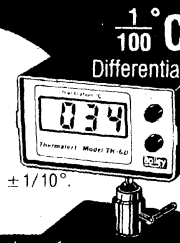
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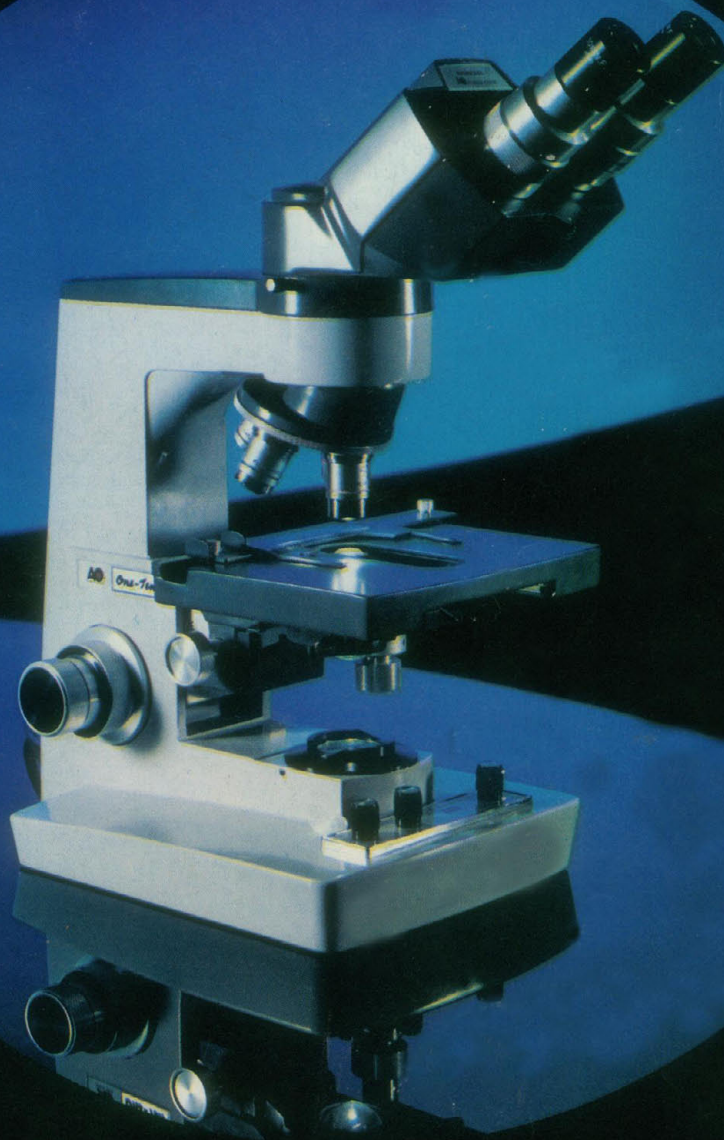
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