

at which spontaneous nucleation events elsewhere are improbable. This of course pushes the question back one stage—what determines the organization of the baseplate?

An attempt to comprehend any stimulus-response system in its entirety might seem hopeless, but in one such system, bacterial chemotaxis (Adler and coauthors), such an attempt is being made—with considerable success so far. Control of a proton-driven motor between two states (counterclockwise and clockwise rotation) by environmental stimuli is achieved by receptor-mediated methylation of membrane-bound proteins.

There are too many chapters to permit discussion here of all of them individually, but the comments above should give some idea of the richness and flavor of this book.

ROBERT M. MACNAB

*Department of Molecular Biophysics  
and Biochemistry, Yale University,  
New Haven, Connecticut 06511*

## Books Received

**Analytical Archaeologist.** Collected Papers of David L. Clarke. Edited by his colleagues. Academic Press, New York, 1979. xiv, 556 pp., illus. \$28.25. Studies in Archeology.

**Animal Models for Research on Contraception and Fertility.** Proceedings of a symposium, Washington, D.C., May 1978. Nancy J. Alexander, Ed. Harper and Row Medical Department, Hagerstown, Md., 1979. xvi, 608 pp., illus. \$22.50.

**Animal Reproduction.** Papers from a symposium, Beltsville, Md., May 1978. Allanheld, Osmun, Montclair, N.J., and Halsted (Wiley), New York, 1979. xii, 434 pp., illus. \$27.50. Beltsville Symposia in Agricultural Research, 3.

**Annual Review of Anthropology.** Vol. 8. Bernard J. Siegel, Alan R. Beals, and Stephen A. Tyler, Eds. Annual Reviews, Palo Alto, Calif., 1979. x, 638 pp., illus. \$17.

**Annual Review of Energy.** Vol. 4. Jack M. Hollander, Melvin K. Simmons, and David O. Wood, Eds. Annual Reviews, Palo Alto, Calif., 1979. x, 560 pp. \$17.

**Annual Review of Phytopathology.** Vol. 17. Raymond G. Grogan, George A. Zentmyer, and Ellis B. Cowling, Eds., Annual Reviews, Palo Alto, Calif., 1979. xii, 552 pp. \$17.

**Color Atlas and Textbook of Macropathology.** Walter Sandritter and C. Thomas. Translated from the German edition (Stuttgart, 1977) and edited by W. H. Kirsten. Year Book Medical Publishers, Chicago, ed. 3, 1979. xvi, 380 pp. \$59.95.

**Combinatorial Optimization.** Papers from a school, Urbino, Italy. May 1977. Nicos Christofides, Aristide Mingozzi, Paolo Toth, and Claudio Sandi, Eds. Wiley-Interscience, New York, 1979. x, 426 pp., illus. \$47.

**Combinatorial Theory.** Martin Aigner. Springer-Verlag, New York, 1979. viii, 484 pp., illus. \$39. Grundlehren der mathematischen Wissenschaften 234.

**Common Bacterial Infections in Infancy and**

**Childhood.** Diagnosis and Treatment. M. I. Marks, Ed. University Park Press, Baltimore, 1979. xvi, 140 pp. Paper, \$9.95.

**Communication with Extraterrestrial Intelligence.** Papers from meetings, 1975-1977. John Billingham and Rudolf Pešek, Eds. Pergamon, New York, 1979. vi, 226 pp., illus. + appendix. \$35. Originally published as a special issue of *Acta Astronautica*, vol. 6, Nos. 1-2.

**Communications Research in Learning Disabilities and Mental Retardation.** Papers from a conference, Columbia, Md., 1978. James E. Button, Thomas C. Lovitt, and Thomas D. Rowland, Eds. University Park Press, Baltimore, 1979. xii, 356 pp., illus. Paper, \$19.50.

**Commutative Rings Whose Finitely Generated Modules Decompose.** Willy Brandal. Springer-Verlag, New York, 1979. ii, 116 pp. Paper, \$9. Lecture Notes in Mathematics, vol. 723.

**Electron and Positron Spectroscopies in Materials Science and Engineering.** Papers from a meeting. Chicago, 1977. Otto Buck, John K. Tien, and Harris L. Marcus, Eds. Academic Press, New York, 1979. xviii, 340 pp., illus. \$36. Materials Science and Technology.

**Electron Microscopy and Microanalysis of Crystalline Materials.** J. A. Belk, Ed. Applied Science Publishers, London, 1979. x, 240 pp., illus. \$29.40.

**Electron Microscopy of the Kidney.** In Renal Disease and Hypertension. A Clinicopathological Approach. Anil K. Mandal with the collaboration of James E. Wenzl. Plenum, New York, 1979. xx, 452 pp., illus. \$32.50.

**Electron-Molecule and Photon-Molecule Collisions.** Papers from a conference, Pacific Grove, Calif., Aug. 1978. Thomas Rescigno, Vincent McKoy, and Barry Schneider, Eds. Plenum, New York, 1979. x, 356 pp., illus. \$39.50.

**Electrons and Phonons in Layered Crystal Structures.** T. J. Wieting and M. Schlüter, Eds. Reidel, Boston, 1979. xii, 474 pp., illus. \$78.95. Physics and Chemistry of Materials with Layered Structures, vol. 3.

**Glucagon in Gastroenterology.** Proceedings of a workshop, Madrid, May 1978. J. Picazo, Ed. University Park Press, Baltimore, 1979. 146 pp. \$13.95.

**Glycoconjugate Research.** Vol. 1. Proceedings of a symposium, Woods Hole, Mass., Sept. 1977. John D. Gregory and Roger W. Jeanloz, Eds. Academic Press, New York, 1979. i, 572 pp., illus. \$32.

**Gradient Modeling.** Resource and Fire Management. Stephen R. Kessell. Springer-Verlag, New York, 1979. xvi, 432 pp., illus. \$39.80.

**The Handbook of Animal Welfare.** Biomedical, Psychological, and Ecological Aspects of Pet Problems and Control. Robert D. Allen and William H. Westbrook, Eds. Garland STPM Press, New York, 1979. xiv, 252 pp. \$22.50.

**Health Effects of Halogenated Aromatic Hydrocarbons.** Papers from a conference, New York, June 1978. William J. Nicholson and John A. Moore, Eds. New York Academy of Sciences, New York, 1979. x, 730 pp., illus. \$115. *Annals of the New York Academy of Sciences*, vol. 320.

**Introduction to Chemical Nomenclature.** R. S. Cahn and O. C. Dermer. Butterworths, Boston, ed. 5, 1979. viii, 200 pp., illus. \$27.50.

**An Introduction to Radiation Dosimetry.** S. Lovell. Cambridge University Press, New York, 1979. x, 116 pp., illus. Cloth, \$18.50; paper, \$5.50. Techniques of Measurement in Medicine, 4.

**An Introduction to Systems Analysis.** With Ecological Applications. John N. R. Jeffers. University Park Press, Baltimore, 1979. x, 198 pp., illus. \$24.50. A Series of Student Texts in Contemporary Biology.

**An Introduction to the Interpretation of Quantal Responses in Biology.** P. S. Hewlett and R. L. Plackett. University Park Press, Baltimore, 1979. vi, 82 pp., illus. Paper, \$11.95.

**An Introduction to the Theory of Seismology.** K. E. Bullen. Cambridge University Press, New York, ed. 3, 1979. viii, 380 pp., illus. Paper, \$12.95. Reprint of the 1963 edition.

**Ions and Ion Pairs and Their Role in Chemical Reactions.** Papers from a symposium, Syracuse, N.Y., May 1978. J. Smid, Ed. Pergamon, New York, 1979. Various pages, illus. \$30. Reprinted from *Pure and Applied Chemistry*, Vol. 51, Nos. 1 and 4.

**Mathematical Principles of Mechanics and Electromagnetism.** C.-C. Wang. Plenum, New York, 1979. Two volumes. Part A, Analytical and Continuum Mechanics. xiv + pp. 1-198 + index. \$27.50. Part B, Electromagnetism and Gravitation. xiv + pp. 199-386 + index. \$27.50. Mathematical Concepts and Methods in Science and Engineering, vols. 16 and 17.

**Mathematical Programming.** Structures and Algorithms. Jeremy F. Shapiro. Wiley-Interscience, New York, 1979. xviii, 388 pp. \$23.95.

**McGraw-Hill Encyclopedia of Ocean and Atmospheric Sciences.** Sybil P. Parker, Ed. McGraw-Hill, New York, 1980. x, 580 pp., illus. \$34.50.

**Medical Information Systems.** The Laboratory Module. Ralph R. Grams. Human Press, Clifton, N.J., 1979. xxiv, 430 pp., illus. \$39.50.

**Metal Pollution in the Aquatic Environment.** U. Förstner and G. T. W. Wittmann with contributions by F. Prosi and J. H. van Lierde. Springer-Verlag, New York, 1979. xvi, 486 pp., illus. \$54.

**The Natural History of the Mind.** Gordon Rattray Taylor. Dutton, New York, 1979. xiv, 370 pp. \$14.95.

**The New York Summer Aerosol Study, 1976.** Papers from a meeting, New York, Apr. 1977. Theo. J. Kneip and Morton Lippmann, Eds. New York Academy of Sciences, New York, 1979. vi, 166 pp., illus. \$30. *Annals of the New York Academy of Sciences*, vol. 322.

**Operator Algebras and Quantum Statistical Mechanics I.** C\*- and W\*-Algebras, Symmetry Groups, Decomposition of States. Ola Bratteli and Derek W. Robinson. Springer-Verlag, New York, 1979. xii, 500 pp. \$36. Texts and Monographs in Physics.

**Organic Reactions and Orbital Symmetry.** T. L. Gilchrist and R. C. Storr. Cambridge University Press, New York, ed. 2, 1979. viii, 312 pp., illus. Cloth, \$49.50; paper, \$16.95. Cambridge Texts in Chemistry and Biochemistry.

**Organic Stereochemistry.** Henri Kagan. Translated from the French edition (1975) by M. C. Whiting and U. H. Whiting. Halsted (Wiley), New York, 1979. viii, 166 pp., illus. Paper, \$14.95.

**Organics Analysis Using Gas Chromatography/Mass Spectrometry.** A Techniques and Procedures Manual. William L. Budde and James W. Eichelberger. Ann Arbor Science. Ann Arbor, Mich., 1979. xxviii, 242 pp. \$20.

**Plant Growth Substances.** Papers from a symposium, West Long Branch, N.J., Mar. 1979. N. Bhushan Mandava, Ed. American

(Continued on page 313)

# AAAS SCIENCE COMPENDIA SERIES

Series Editor: Philip H. Abelson

From the pages of SCIENCE comes a series of compendia designed to cover the principal issues that face science and society—now and for tomorrow. Each book presents the reader with an in-depth review of a given issue through authoritative articles written by the leading experts in the field. These compendia can serve not only as valuable reference sources for scientists and researchers, but also as supplementary reading material in courses devoted to these issues that concern all of us.

## **ENERGY: Use, Conservation, and Supply**

Gives a historical and general overview of our energy problem and examines ways to conserve energy and use it more efficiently, not only in industry but on an individual level. Examines the problems we face in the energy requirements for food production and reviews known energy sources in relation to current and future energy needs.

160 pp. 1974 Illus.  
0-87168-213-3 (cloth) \$10.00  
0-87168-223-0 (paper) \$3.50

## **ENERGY II: Use, Conservation, and Supply**

Contains articles about energy conservation and public policy; our remaining supply of fossil fuels; and the transition to fission, fusion, and solar energy. Includes an extensive analysis of the domestic and international perspective on present energy-use patterns.

208 pp. 1978 Illus.  
0-87168-300-8 (cloth) \$12.00  
0-87168-237-0 (paper) \$5.00

Special Combination Price for  
both Energy volumes:  
\$20.00 (cloth), \$7.00 (paper)

## **Additional titles in the AAAS Science Compendia Series are**

HEALTH CARE: Regulation, Economics,  
Ethics, and Practice

\$12.00 (cloth) \$5.00 (paper)  
\$10.00 (cloth) \$3.50 (paper)

ELECTRONICS: The Continuing Revolution

MATERIALS: Renewable and Nonrenewable  
Resources

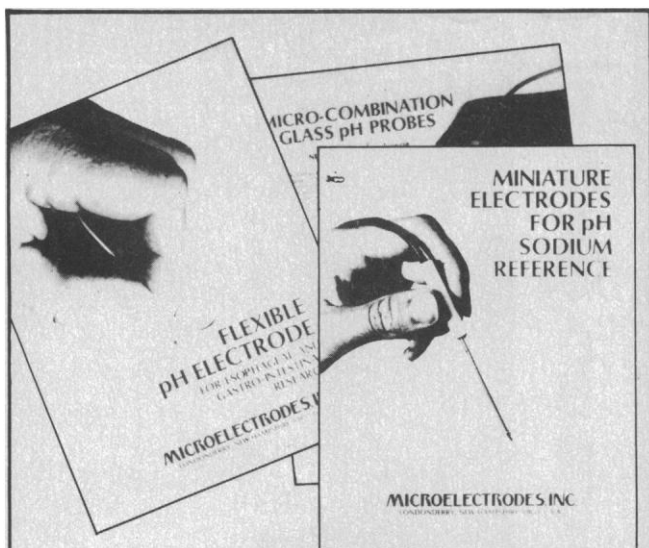
POPULATION: Dynamics, Ethics, and Policy

FOOD: Politics, Economics, Nutrition, and  
Research

\*Retail price for any of the above four titles:  
\$12.00 each, casebound  
\$4.50 each, paperbound

To order individual copies of the AAAS Science Compendia Series please send your name, address and list of book titles (indicating casebound or paperbound) to AAAS, Dept. S -1, 1515 Massachusetts Ave., NW, Washington, D.C. 20005. Remittance must accompany all orders under \$10.00. Please allow 6-8 weeks for delivery.

\*AAAS Members allowed 10% discount on prepaid orders.



### NEW FREE LITERATURE!

Send for catalogue describing flat membrane electrodes for pH, miniature glass electrodes for pH and sodium and pH electrodes in stainless steel needles; also available are combination and flexible electrodes.

**MICROELECTRODES, INC.**  
Oak Hill Park, Londonderry, N.H. 03053  
(603) 668-0692

Circle No. 120 on Readers' Service Card

Nguyen X. Vinh,  
Adolf Busemann, and  
Robert D. Culp

## Hypersonic and Planetary Entry Flight Mechanics

"An excellent book coming exactly at the right time... a valuable reference research tool and textbook for the Space Shuttle era."  
—J. P. Marec  
ONERA, France

**\$29.95**

**The University of Michigan Press**  
Dept. ED P.O. Box 1104 Ann Arbor, Michigan 48106

Circle No. 41 on Readers' Service Card

## Mini-Size LSC vials call for a scintillation solution of extra-high sample holding capacity.

We developed one:  
**ATOMLIGHT®**

ATOMLIGHT High Sample Capacity Scintillation Solution is a breakthrough in LSC technology, because only 5ml of cocktail will hold up to 1.5ml of water, or up to 3ml of common buffer systems, in a stable transparent microemulsion of high counting efficiency.

The result is economy: Less cocktail, less storage, and less handling of radioactive wastes. ATOMLIGHT is the perfect solution for the laboratory using mini-size LSC vials.

### 1000 Mini-LSC-Vials FREE!

Order a case of ATOMLIGHT (NEF-968, 4x4 liters, \$250.00) and we'll include a case of 1000 Mini-LSC-Vials (NEF-943) at no extra charge. They were made for each other!

Name \_\_\_\_\_

Affiliation \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

(Attach this coupon to your purchase order) S

**NEN** New England Nuclear  
®

549 Albany Street, Boston, Mass. 02118

Call toll-free: 800-225-1572

(In Massachusetts and International: 617-482-9595)

**NEN Canada Ltd.**, 2453 46th Avenue, Lachine, Que. H8T 3C9.  
Telephone: 514-636-4971, Telex: 05-821808

Circle No. 113 on Readers' Service Card

# The Drummond Pipet-Aid.®

Fastest draw in the lab.



Take a comfortable grip on the specially designed Pipet-Aid handle. Press one button for intake. Press the other for delivery. That's all there is to it. Fast. Accurate. Effortless. Ideal for repetitive sampling.

The Drummond Pipet-Aid accepts most pipettes from 1 to 75 ml. Pipet-Aid is ideal in confined spaces, such as under laminar flow hoods. And is also available with filtration unit for use with hazardous materials. Pipet-Aid is available from CMS, Fisher, VWR, A. H. Thomas and others.

**FOR MORE INFORMATION CIRCLE THE NUMBER FOR THE NEW DRUMMOND PIPETTING EQUIPMENT CATALOG. TWELVE ILLUSTRATED PAGES THAT TELL ABOUT THE COMPLETE LINE OF DRUMMOND PIPETTING AIDS.**

**DRUMMOND SCIENTIFIC  
COMPANY**

500 Parkway  
Broomall, Pennsylvania 19008

Call toll-free: (800) 523-7480  
In Pa.: (215) 353-0200

For pipetting, Drummond took  
the work right out  
of your mouth.

Circle No. 160 on Readers' Service Card



Hellma—the largest assortment of highest precision glass and quartz cells.  
Standard • Flow-through • Constant-temperature  
Anaerobic • Special Designs  
Also available—ULTRAVIOLET LIGHT SOURCES  
Deuterium Lamps • Mercury Vapor Lamps  
Hollow Cathode Lamps • Power Supplies

**HELLMA  
CELLS, INC.**

Write for literature  
Box 544  
Borough Hall Station  
Jamaica, New York 11424  
Phone (212) 544-9534

Circle No. 89 on Readers' Service Card

## ANTISERA AGAINST TERMINAL TRANSFERASE

Cross-reacts with human, rat and mouse TdT. Suitable for Rocket immunoelectrophoresis and Immuno inhibition studies. Source of IgG for immunofluorescence.

### New 0102 GOAT ANTI-CALF TdT SERUM

**Prep:** LIQUID serum with 0.1% sodium azide.

**Price:** 1ml \$65.00 5ml \$275.00

### New 0106 RABBIT ANTI-CALF TdT SERUM

**Prep:** LIQUID serum with 0.1% sodium azide.

**Price:** 0.4ml \$60.00 2ml \$245.00

excellence in biochemistry



**P.L. biochemicals, inc.**

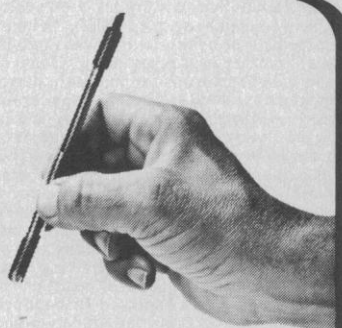
1037 WEST MCKINLEY AVENUE, MILWAUKEE, WIS. 53205

® Call 414/347-7442 TWX 910-262-1111

Circle No. 178 on Readers' Service Card



# Semi-Micro Combination pH Electrode



SEMI-MICRO  
SIZE  
MODEL  
S900C **\$70**

Capable of measuring in narrow tubes with samples as small as 0.2ml, the S900C has a 6 mm diameter and is 150 mm long. In common with all Sensorex Combination pH Electrodes, the S900C can be used with tris buffers and has these features:

- Epoxy Bodies with Recessed Bulb/Safeguard Tips to minimize breakage.
- Sealed, gel-filled references that never need refilling.
- Fast response over the full pH range.

Standard, flask, flat surface, other models available. Send for Bulletin 200A.



9713 Bolsa Ave.  
Westminster, CA  
USA 92683  
Phone: 714/554-7090

## BOOKS RECEIVED

(Continued from page 270)

Chemical Society, Washington, D.C., 1979. x, 310 pp., illus. \$29. ACS Symposium Series, 111.

**Polarography of Molecules of Biological Significance.** W. Franklin Smyth, Ed. Academic Press, New York, 1979. xx, 326 pp., illus. \$47.50.

**The Politics of Cancer.** Samuel S. Epstein. Anchor/Doubleday, Garden City, N.Y., ed. 2, 1979, xviii, 628 pp. paper, \$6.95.

**Pollution, Politics, and International Law.** Tankers at Sea. R. Michael M'Gonigle and Mark W. Zacher. University of California Press, Berkeley, 1979. xviii, 394 pp., illus. \$15.95. Science, Technology, and the Changing World Order.

**Polynomial and Spline Approximation.** Theory and Applications. Proceedings of a NATO Advanced Study Institute, Calgary, Canada, Aug. 1978. Badri N. Sahney, Ed. Reidel, Boston, 1979, viii, 322 pp., illus. \$37. NATO Advanced Study Institutes Series C, vol. 49.

**Quality Control in the Pharmaceutical Industry.** Vol. 3. Murray S. Cooper, Ed. Academic Press, New York, 1979. xii, 292 pp., illus. \$29.50.

**Quantum Chemistry.** Student Edition. John P. Lowe. Academic Press, New York, 1979. xviii, 600 pp., illus. Paper, \$19.50. Reprint of the 1978 edition.

**Recent Advances in Acarology.** Vol. 1. Proceedings of a congress, East Lansing, Mich., Aug. 1978. J. G. Rodriguez, Ed. Academic Press, New York, 1979. xxii, 632 pp., illus. \$35.

**Recent Advances in Environmental Analysis.** Papers from a symposium, Geneva, Apr. 1978. F. W. Frei, Ed. Gordon and Breach, New York, 1979, viii, 354 pp., illus. \$49.50. Current Topics in Environmental and Toxicological Chemistry, vol. 2.

**Recent Developments in Mass Spectrometry in Biochemistry and Medicine.** Vol. 2. Proceedings of a symposium, Rimini, Italy, June 1978. Alberto Frigerio, Ed. Plenum, New York, 1979. x, 492 pp., illus. \$45.

**Recent Progress in Hormone Research.** Vol. 35. Proceedings of a conference, Mont Tremblant, Canada, Aug. 1978. Roy O. Greep, Ed. Academic Press, New York, 1979. x, 538 pp., illus. \$41.

**Topics in Paediatrics 1.** Haematology and Oncology. Papers from a conference, Oct. 1978. P. H. Morris Jones, Ed. Pitman, London, 1979 (U.S. distributor, University Park Press, Baltimore). iv, 156 pp., illus. \$24.50.

**The Tranquilizing of America.** Pill Popping and the American Way of Life. Richard Hughes and Robert Brewin. Harcourt Brace Jovanovich, New York, 1979. x, 326 pp. \$11.95.

**Victorian Social Medicine.** The Ideas and Methods of William Farr. John M. Eyler. Johns Hopkins University Press, Baltimore, 1979, xii, 262 pp., illus. \$19.50.

**The Violent Face of Nature.** Severe Phenomena and Natural Disasters. Kendrick Frazier. Morrow, New York, 1979. 386 pp., illus. \$12.95.

**Water.** A Comprehensive Treatise. Vol. 6, Recent Advances. Felix Franks, Ed. Plenum, New York, 1979. xiv, 456 pp., illus. \$45.

**Water Treatment Handbook.** Translated from the French edition (1978). Degrémont, Rueil-Malmaison, France, and Halsted (Wiley), New York, ed. 5, 1979. xxx, 1188 pp., illus. \$69.50.

## Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising closing for a particular Friday issue is Wednesday, 3 1/2 weeks before. Advertising is accepted only in writing; no abbreviations. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, or handicap.

**POSITIONS WANTED:** 40¢ per word, plus \$4 for use of box number, per insertion. \$10 minimum, per insertion. Prepayment required. This rate is available only to individuals seeking jobs.

**DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKET PLACE, and so forth):** \$7.20 per millimeter; \$180 minimum, per insertion (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing information required for all other advertising.

Send copy for all **Positions Wanted** ads and **Display** ads less than 1/6 page in size (125 millimeters) to:

SCIENCE, Room 207  
1515 Massachusetts Ave., NW  
Washington, D.C. 20005  
Telephone: 202-467-4456

Send copy for **Display** ads 1/6 page and larger to:

Scherago Associates, Inc.  
1515 Broadway  
New York, N.Y. 10036  
Telephone: 212-730-1050

Blind ad replies should be addressed as follows:

Box (give number)  
SCIENCE  
1515 Massachusetts Ave., NW  
Washington, D.C. 20005

## POSITIONS WANTED

**Biochemist.** Ph.D. 1973. Glycoprotein and enzyme purifications, carbohydrate metabolism, identification of metabolites, and cell biology. Seeks research position. Box 173, SCIENCE. X

**Biochemist,** Ph.D. 1971. Experience in lipids, proteins, lipoproteins, tissue culture. Postdoctoral research fellow, 4 years; research associate, 5 years. Publications. Available August 1980. Seeks position as biochemist in pharmaceutical or industrial research or as clinical chemist. Salary negotiable. M. Ritter, 1700 East 56 Street, Apartment 3007, Chicago, Illinois 60637. X

**Biochemist/Cell Biologist/Ph.D.** Extensive background in molecular biology, microbiology, cell physiology. Well versed in microbial/eukaryotic cell, tissue cultures (animal, human, higher plant). Gene regulation, growth control, proteins, nucleic acids, enzymology. Several publications. Currently: cellular immunology, thymic hormones, developmental biochemistry. Vigorous and innovative. Seeks challenging position. Box 174, SCIENCE. X

**Environmental Planner,** Ph.D. in resource development with industrial consulting and research experience. Strong scientific/technical background including environmental statements, evaluation of land and water resources. Desires challenging career position with firm emphasizing strong professional growth. Will relocate. Box 175, SCIENCE. 7/11, 18

**Literature search and bioinformation projects on contract basis.** Thorough and imaginative. Ph.D., microbiology; postdoctorate, mammalian-cell biology. Five years of laboratory experience. Excellent writing, editing, and abstracting skills. Box 176, SCIENCE. X

**Marine Biology/Fisheries Research.** B.A. (marine biology), M.S. (oceanography with biological emphasis). Extensive fisheries background (N.M.F.S. and basic and applied research). Some teaching experience in chemistry. Seeks position in marine sciences or related fields. References. Box 177, SCIENCE. X

## POSITIONS WANTED

**Medical Writer/Drug Information Specialist.** Diversified experience—researching, developing, writing/editing scientific reports. Medical/pharmaceutical background. Pharmacy degree. Desires position with pharmaceutical/health care firm. Box 164, SCIENCE. X

**Microbial Physiologist/Environmental Microbiologist.** Ph.D. 1966. Fifteen years of experience in water and soil microbiology; isolation of significant microorganisms; degradation of toxic and hazardous substances; pesticide toxicity and metabolism. Laboratory, supervisory, and managerial experience. Desires industrial research/development position in microbial isolation, characterization, strain development, waste conversion, or biodegradation. Publications. Box 146, SCIENCE. 7/11, 18

**Neuropharmacologist.** Ph.D. 1971, Fogarty (NIH) and EMBO fellow; 25 publications. Seeks international research/teaching position. Experience in biochemistry of neuropeptides. Speaks Spanish, English, and Italian. Box 178, SCIENCE. X

**Pesticide Registration Specialist.** Ph.D. 1966. Provides claim support and labeling data for pesticide registration. Plans and evaluates support experiments. Experience in environmental fate, metabolism, and toxicity of pesticides, including disinfectant chemicals. Laboratory, supervisory, and managerial experience. Publications. Industrial position desired. Box 145, SCIENCE. X

**Research Associate/Cell or Neurobiology.** M.S. 1980. Seeking position in academia, industry, or government. Experience in designing cell culture systems; neuromuscular research; and immunocytology. J. R. Knerr, 123 West Chandler Street, Carrollton, Georgia 30117. X

**Science Writer.** M.S. natural resources, 1980; B.S. biology and English, 1975; 2½ years of public information writer experience with newsletter writing and layout. One year as graduate student coordinator, environmental studies center. Reading knowledge of French and German. S. C. West, 2091 Summit Street, Columbus, Ohio 43201. 7/11, 18

## POSITIONS OPEN

Applications now being accepted for half-time position as **ACADEMIC DEAN** at progressive naturopathic medical college. **JOB DESCRIPTION:** Responsible for development, evaluation, supervision of curriculum, faculty, college clinic. (Up to 50 percent teaching time also available, depending on qualifications.) **REQUIREMENTS:** Doctorate in healing art or biological science (N.D. preferred); eligibility for licensure in Washington state (if health professional); administrative and teaching experience; commitment to natural healing. **TO APPLY:** Send curriculum vitae to: **The John Bastyr College of Naturopathic Medicine, 518 First Avenue North, Seattle, Wash. 98109.**

### ACADEMIC POSITION AVAILABLE

Assistant professor, tenure-track. Ph.D. in microbiology plus 3 years of postdoctoral experience. Research interests in immunology and mechanisms of pathogenicity, specifically streptococcal, and staphylococcal exotoxins. Preference given to candidates with ongoing funded research program. Teaching responsibilities in graduate and undergraduate courses in medical microbiology and/or immunology. Must qualify for microbiology graduate program. Send curriculum vitae and three letters of recommendation to: **Dr. Peter Plagemann, Department of Microbiology, Box 196 Mayo, University of Minnesota, Minneapolis, Minn. 55455. Affirmative Action/Equal Opportunity Employer.**

The Department of Surgery at the University of Michigan is seeking an experienced **ACADEMIC SURGEON** for the position of **CHIEF OF SURGERY** at the Ann Arbor Veterans Administration Hospital (AAVAH). The AAVAH is a Dean's Committee Hospital and the staff and programs are integrated with those of the Department of Surgery of the University.

Candidates should have substantial experience and training in clinical surgery, teaching and investigation, and experience or promise of being able to direct a multidisciplinary Department of Surgery. A general surgeon with a special interest in gastrointestinal surgery is preferred but candidates with other clinical expertise will be considered.

A nondiscriminatory, Affirmative Action Employer. Code 300DO. Box 181, SCIENCE.

## POSITIONS OPEN

### ANALYTICAL CHEMIST

Equine Drug Testing and Research Program, University of Kentucky, has an opening for a Ph.D. chemist. Principal responsibility for detection, identification, and confirmation of drugs in horses. Participation in R & D methods development. Training and experience in chromatographic and spectrophotometric methods of analysis required. Curriculum vitae and application letter to: **John T. Bryans, Chairman, Department of Veterinary Science, University of Kentucky, Lexington, Ky. 40546.**

Equal Opportunity/Affirmative Action Employer

### ASSISTANT PROFESSOR

A 1-year appointment in biology at University of La Verne, starting September 1980. Ph.D. preferred. To teach introductory biology (nonmajors) and scheduled upper division courses appropriate to training and experience of applicant. Send curriculum vitae, transcripts, and three letters of reference by 1 August 1980 to: **Biology Search Committee, Personnel Department, University of La Verne, La Verne, Calif. 91750. Affirmative Action/Equal Opportunity Employer.**

The Section of Cell Biology, Yale University School of Medicine, invites applications for a position of **ASSISTANT PROFESSOR** available on 1 September 1980, and a position of **ASSOCIATE PROFESSOR** available on 1 January 1981.

Candidates with research interest in the organization, biochemistry, and function of cellular membrane systems, or in membrane interactions in endocytosis, exocytosis, and recycling, or in membrane biogenesis, or in cell surface chemistry and function will be favored, although outstanding candidates with interests in other areas of cell biology will also be considered.

The assistant professor will be expected to participate in the instruction of medical students primarily in the laboratory teaching (histology, cell biology) of small groups of students. Previous experience of this type is not required but would be welcome.

The associate professor will be expected to participate mostly (but not exclusively) in the teaching of graduate students.

Those interested should send applications to: **Dr. G. E. Palade, Section of Cell Biology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510, before 15 August 1980.** Curriculum vitae, a list of publications, a summary of current research interest, and the name of three referees should accompany the application. Letters of recommendation should not be included. They will be requested directly from the referees by the faculty of the section, when needed.

Yale University is an Equal Opportunity/Affirmative Action Employer.

**BIOLOGICAL OCEANOGRAPHERS**—Three faculty members sought for 12-month, tenure-track positions to conduct research and teach at the graduate level in biological oceanography, preferably in the areas of marine ecosystem dynamics, phytoplankton ecology and/or physiology, and marine benthic ecology and/or invertebrate physiology. Appointments will be at the rank of associate professor, although qualified applicants with less experience than is normally required for associate professor rank will be considered for appointment as assistant professor. A Ph.D. in oceanography or biology, exceptional competence in research, and strong potential for obtaining research funding are required. Opportunities for cooperative research are excellent. Major expansions in facilities at Newport provide opportunities for significant, major new programs. Salary: \$23,000 to \$32,000. Send résumé and names of three referees by 1 September 1980 to: **G. Ross Heath, Dean, School of Oceanography, Oregon State University, Corvallis, Oregon 97331.**

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

### CELLULAR NEUROPHYSIOLOGIST

The Department of Psychobiology, University of California, Irvine, possibly will have a position as assistant professor or perhaps associate professor for a cellular neurophysiologist. Specific research area less important than demonstrated scholarly promise and ability to interact in a broadly based neurobiology department. Applicants should send curriculum vitae and the names of three referees to: **G. S. Lynch, Chair, Department of Psychobiology, University of California, Irvine, Calif. 92717. Affirmative Action Employer.**

## POSITIONS OPEN

### ASSISTANT PROFESSOR, IMMUNOGENETICS

The Department of Medical Genetics of the University of British Columbia invites applications for a tenure-track faculty appointment from individuals with a background in immunogenetics. Experience in the genetics of cellular response is desirable. Applicants should send up-to-date curriculum vitae and the names of three referees, before 1 November 1980 to:

**Dr. P. A. Baird, Head  
Department of Medical Genetics  
235-5804 Fairview Crescent  
The University of British Columbia  
Vancouver, British Columbia, Canada V6T 1W5**

The University of British Columbia offers Equal Opportunity for Employment to qualified male and female candidates.

**ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSIOLOGY AND BIOPHYSICS.** The Department of Physiology and Biophysics, University of Louisville Health Sciences Center, Louisville, Kentucky, has two faculty openings (Ph.D.) at the assistant or associate professor level. Teaching responsibilities will include participation in graduate courses and team-taught courses for medical, dental, and nursing students. **POSITION 1 (assistant or associate professor):** evidence of research ability and productivity is necessary. The field of training and of research should be in the area of microcirculation with particular interest in the central nervous system or the GI tract. Successful applicant is expected to conduct independent research programs and guide graduate students. **POSITION 2 (assistant or associate professor):** evidence of research ability and productivity is necessary. The field of training and of research should be in the area of neurophysiology. Successful applicant is expected to conduct independent research programs and guide graduate students. The Department of Physiology and Biophysics occupies relatively new facilities and has extremely well-equipped laboratory and office space. The University of Louisville is an Equal Opportunity/Affirmative Action Employer. Individuals interested in these positions should send curriculum vitae and three letters of recommendation to: **John C. Passmore, Ph.D., Acting Chairman, Department of Physiology and Biophysics, University of Louisville, School of Medicine, Health Sciences Center, Louisville, Kentucky 40292.**

**ASSISTANT RESEARCH POSITION** available immediately in neurophysiology of aging in the Department of Psychobiology, University of California, Irvine. Candidate must have a Ph.D. Teaching will be required in neuroanatomy at the undergraduate and graduate level; experience desired. A letter of application, curriculum vitae, and three letters of recommendation should be sent to: **G. S. Lynch, Chair, Department of Psychobiology, University of California, Irvine, Calif. 92717. Affirmative Action Employer.**

**BIOMEDICAL ENGINEER FOR CEREBRAL CIRCULATORY RESEARCH.** Position available at University of Pennsylvania for person with research experience in cerebral blood flow measurement with radioisotopes. Engineering background is required, including master of science in bioengineering or radiation physics. Advanced computer programming skills are essential. Send résumé with three references to: **Dr. Walter Obrist, Division of Neurosurgery, 3400 Spruce Street, Philadelphia, Pa. 19104. An Equal Opportunity/Affirmative Action Employer.**

**CHAIRMAN,** Department of Obstetrics and Gynecology, West Virginia University School of Medicine. Deadline for applications is 1 September 1980, but please send curriculum vitae immediately. Contact: **Dr. R. H. Waldman, Search Committee for Chairman, Department of Obstetrics and Gynecology, West Virginia University School of Medicine, Morgantown, West Virginia 26506. West Virginia University is an Equal Opportunity Employer.**

**CHEMICAL OCEANOGRAPHER**—Tenure-track position available beginning September 1980. Candidates must have Ph.D. with emphasis in quantitative, environmental, or geochemistry. First-year duties include teaching introductory courses in marine science, advanced courses in the area of expertise, and actively involving undergraduate students in a developing research program. Send résumé with names of three references to: **Dr. Richard H. Moore, Dean of the School of Science, Coastal Carolina College, Conway, S.C. 29526. Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### BLOOD BANK DIRECTOR

For major New York City teaching hospital complex. Requirements: formal training in blood banking, New York City license, and Board-certification in medicine (ABIM) necessary. Also desirable: subspecialty certification or qualification in hematology. Research opportunities dependent on interests and background. Position open immediately. We offer a good salary and benefits program. Interested applicants send résumés to:

**Box 165, SCIENCE**  
Equal Opportunity Employer, M/F

**CHAIRMAN OF BIOCHEMISTRY**—The Medical College of Ohio (MCO) invites applications and nominations for the chairman of biochemistry. The new chairman must have a distinguished record of research accomplishment, proven leadership ability, and be able to develop new and existing teaching and research activities. The well-established department has nine full-time faculty and excellent research facilities and equipment for funded research programs. The department teaches medical students (class size: 150), baccalaureate nursing students (class size: 150), and Ph.D. students in modern, well-equipped facilities located on a new and growing campus in northwestern Ohio. Send curriculum vitae to: **Dr. Keith K. Schlender, Department of Pharmacology, Medical College of Ohio, C.S. 10008, Toledo, Ohio 43699.** MCO is an Equal Opportunity/Affirmative Action Employer.

**CHAIRMAN FOR DEPARTMENT OF NEUROLOGY.** Nominees of and qualified individuals themselves are invited to submit curriculum vitae to: **Bruce W. Steinhauer, M.D., Chairman, Neurology Search Committee, Henry Ford Hospital, 19401 Hubbard Drive, Dearborn, Michigan 48126.** This 1000-bed major medical center seeks a chairman of neurology to head a program involving major responsibilities for clinical services—both inpatient and ambulatory, an educational program involving both neurology and internal medical residents along with University of Michigan medical students and research. Henry Ford Hospital has a strong multi-center ambulatory care program in addition to a longstanding referral practice.

Appointment as **CHIEF OF STAFF** and **ASSISTANT/ASSOCIATE DEAN** for Veterans Hospital Affairs at the Veterans Administration Hospital in Martinez, California. An academic appointment commensurate with qualifications at the School of Medicine, University of California, Davis, to provide professional leadership and coordination in areas of medical care, teaching research, and programmatic development of various ongoing medical programs. Strong academic background preferred. Must be Board-certified and licensed to practice medicine in California. Applications will be accepted through 31 July 1980. Send curriculum vitae and names of three references to:

**R. J. Bolt, M.D.**  
Chair, Search Committee  
Department of Internal Medicine  
204 Professional Building  
Sacramento, California 95825

Equal Opportunity/Affirmative Action Employer

### DEAN OF SCIENCE AND ENGINEERING

Seattle University is seeking a dean of the School of Science and Engineering, to begin 1 January 1981, if possible. If interested, contact: **Mary Jo Schaaf, Office of the Vice President for Academic Affairs, Seattle University, Seattle, Wash. 98122; telephone: 206-626-6860.** Application deadline is 30 September 1980. An Equal Opportunity/Affirmative Action Employer.

### DIRECTOR, FLOW CYTOMETRY FACILITY

Established Flow Cytometry Facility at University of Iowa requires a director of a program employing the FACS IV fluorescence-activated cell sorter. Ph.D. or equivalent with 1 to 3 years of flow cytometry experience. Salary and rank negotiable. The University of Iowa is an Equal Opportunity/Affirmative Action Employer. Send résumé to:

**John C. Hoak, M.D.**  
Department of Medicine  
University Hospital  
Iowa City, Iowa 52242

## POSITIONS OPEN

**DEPARTMENT OF COMMUNITY HEALTH SCIENCE**—Assistant or associate professor (full-time, tenure-stream appointment). Responsibilities include: teaching biostatistics-epidemiology (CHS 512); teaching epidemiology in systems biology sequences of COM interdisciplinary curriculum; participating in developing and implementing combined clerkship course in phase III of CHM curriculum in specialty area of the candidate; teaching in geriatrics courses of both medical schools; developing interdisciplinary program of epidemiologic research and obtaining external funding; and providing clinical services in specialty area of the candidate. A doctor of osteopathy degree with an additional graduate degree, or equivalent experience, representing special training in epidemiology. Position available immediately. Salary commensurate with professional preparation and experience. Send applications with curriculum vitae, list of publications, statement of research interests, and names of three references who have been requested to send supporting letters to: **Sidney Katz, M.D., Professor and Chairman, Department of Community Health Science, Michigan State University, East Lansing, Michigan 48824.** An Affirmative Action/Equal Opportunity Institution.

The Directorate for Biological, Behavioral and Social Sciences of the National Science Foundation is seeking qualified applicants for the positions of **DIRECTOR**, Division of Physiology, Cellular and Molecular Biology, **SECTION HEAD**, Molecular and Genetic Biosciences (MGB), and **SECTION HEAD**, Cellular and Physiological Biosciences (CPB). The MGB section includes programs in biophysics, biochemistry, genetics, and metabolic biology. The CPB section includes programs in cellular, developmental, and regulatory biology and anticipates initiating a new program in the cellular area in the future. In addition to these programs, there is also a divisional program for biological instrumentation.

Applicants must have a Ph.D. or equivalent in the biological sciences or a closely related field, have established a national and international reputation for high-quality research in one of the appropriate program areas, and demonstrated successful leadership in administration. These positions are part of the Senior Executive Service with salaries limited by law to \$50,112 per annum. Entrance on duty date for these positions is late summer or early fall 1981. Interested applicants should contact: **Teddy Haessig-Dyer, telephone: 202-357-7857**, for information regarding application procedures. Send applications to: **The National Science Foundation, DPM, 1800 G Street, NW, Washington, D.C. 20550.** All applications must be received by 30 September 1980.

**ENVIRONMENTAL HEALTH DIRECTOR**—New York State Department of Health is seeking a director for an integrated environmental health (toxicology/ecology/radiation) laboratory program. Opportunity to form and direct new approaches in expanding area of public health. New physical plant; well-equipped laboratories; staff of 200 (35 doctoral level). Balanced service and research. Position requires New York State M.D. with experience in management and expertise in at least one of the above areas. Salary negotiable. Send curriculum vitae to: **Felix H. Hellpern, Administrative Officer, New York State Department of Health, Division of Laboratories and Research, Empire State Plaza, Albany, N.Y. 12201.**

### FACULTY POSITION—PHARMACOLOGY

University of Pennsylvania School of Medicine announces position of assistant professor of pharmacology, for research and teaching related to pharmacology of respiratory gases. Salary commensurate with experience. Send complete curriculum vitae and names of references by 30 July 1980 to: **Dr. G. B. Koelle, Department of Pharmacology, University of Pennsylvania Medical School, Philadelphia, Pennsylvania 19104.** An Equal Opportunity Employer.

**MILLERSVILLE STATE COLLEGE—FACULTY VACANCY**, Biology Department, assistant professor. Earned Ph.D. in botany. Ability to teach a course in plant physiology. One-year leave replacement position for assistant professor to teach a one-semester biology course for nonmajors and a two-semester biology course for majors. Applicant should be prepared to teach a course in plant physiology. Applications to be sent by 25 July 1980 to: **Chairperson, Search Committee, Department of Biology, Millersville State College, Millersville, Pa. 17551.** Millersville State College earnestly seeks and is eager to receive applications from women and minority candidates.

## POSITIONS OPEN

The position of

### DIRECTOR of the International Laboratory for Research on Animal Diseases (ILRAD)

will become vacant in April 1981. The director is the chief officer of the institution and must have experience and background in disease research and in the administration of a research institution.

ILRAD's mandate is to develop effective control methods for trypanosomiasis and theileriosis, two important animal diseases that constrain livestock production in a number of developing countries. It is one of the international research centers supported by the Consultative Group on International Agricultural Research. ILRAD has a staff of approximately 30 senior scientists recruited internationally and is engaged in multidisciplinary research activities (immunology, parasitology, molecular biology, biochemistry, pathology) with a view to the development of immunologic or related control procedures. The ILRAD headquarters is in Nairobi, Kenya, and is a modern research complex.

Interested candidates are requested to submit six copies of their application, comprising current curriculum vitae as well as a synopsis of their research and administrative experience. Included should be the names and addresses of three referees who can be contacted in support of their candidacy. Particulars of potential candidates submitted by third parties are also welcomed. Applications should be submitted to: **Professor Dr. D. Zwart, Secretary of the Search Committee, Biltstraat 172, 3572 BP Utrecht, The Netherlands**, not later than 30 September 1980. Further information can be obtained from the same address.

### ENVIRONMENTAL MICROBIOLOGY

The Department of Biological Sciences, Drexel University, is seeking candidates for the position of **instructor-postdoctoral research fellow** to be filled before September 1980. The research duties include participation in research projects on the microbiology of drinking water and water treatment processes. The teaching duties will include a course in basic microbiology and an advanced microbiology course. Candidates with postdoctoral research experience could be considered for an appointment as visiting assistant professor.

Applicants should send a résumé and the names of three references to: **Dr. W. O. Pipes, Department of Biological Sciences, Drexel University, Philadelphia, Pa. 19104.** An Equal Opportunity/Affirmative Action Employer.

### FACULTY POSITION—CELLULAR TOXICOLOGY

Institute for Toxicology  
School of Pharmacy  
University of Southern California

Applications are invited for a position as assistant professor (tenure-track) from individuals with a strong commitment to excellence in both research and teaching. Applicants should possess a Ph.D. degree in toxicology or related discipline and research interests in the toxicological aspects of free-radical reactions, peroxides, and/or membrane biochemistry. Postdoctoral experience is required. Please submit curriculum vitae and three letters of reference by 11 August 1980 to:

**Dr. Paul Hochstein, Director**  
Institute for Toxicology  
School of Pharmacy  
University of Southern California  
1985 Zonal Avenue  
Los Angeles, California 90033

Equal Opportunity/Affirmative Action Employer

**FRESHWATER ICHTHYOLOGIST-ECOLOGIST.** One tenure-track position beginning August 1980. Rank: assistant professor. Requirements: must have completed Ph.D.; publications and postdoctoral experience preferred. The successful candidate should expect to carry on an active research program, to secure funding from outside agencies, to direct graduate students specializing in ichthyology and ecology, and to teach introductory zoology courses and introductory and advanced courses in ichthyology and ecology. Applicants should submit complete curriculum vitae, three letters of recommendation from persons qualified to judge applicant's abilities, and statement of research interest to: **Dr. Luther A. Knight, Jr., Chairman, Ichthyology-Ecology Search Committee, Department of Biology, The University of Mississippi, University, Miss. 38677.** Closing date: July 1980, to insure consideration. Equal Opportunity Employer.

## POSITIONS OPEN

### UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

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

**ANATOMICAL SCIENCES**—(number 238) **assistant professor**: teaching, lectures, counseling, or advising students in the traditional courses in anatomical sciences but primarily in gross anatomy. Ph.D. in anatomy or M.D. in medicine with training in anatomy is mandatory. Teaching experience with students in the various medical and health related fields. **MEDICINE**—(number 248) **assistant/associate professor**: teaching, patient care, and research programs in infectious diseases in the teaching, patient care, and research programs in infectious diseases in the Department of Medicine, M.D., Board-eligibility or certification in infectious diseases. **PHYSIOLOGY**—(number 239) **assistant or associate professor**: strong research in membrane physiology renal transport, epithelial transport and regulation of excitable membranes. Ph.D. or M.D. with 2 years of experience at the postdoctoral level. **PSYCHIATRY**—(number 244) **assistant/associate professor**: psychological evaluation, group and individual therapy on an inpatient psychiatric service. Supervision and instruction of trainees of all mental health, especially interns on the clinical psychology program. Ph.D., eligible for licensure, clinical psychologist; (number 246) **assistant/associate professor**: clinical child psychologist, duties include psychological evaluations, group and individual therapy. Ph.D. degree.

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

### UNIVERSITY OF COLORADO SCHOOL OF MEDICINE FACULTY POSITION IN ENDOCRINOLOGY/METABOLISM

Assistant or associate professor, tenure-track position sought to assume research teaching and patient care responsibilities. Candidate can be already at the junior faculty level or be in transition to faculty status. There is no particular preference as to a candidate's field of research interest within the general area of endocrinology and metabolism. Submit letter of application and curriculum vitae to: Dr. Jerrold M. Olefsky, Professor of Medicine, Head, Division of Endocrinology, B151, University of Colorado Health Sciences Center, 4200 East Ninth Avenue, Denver, Colo. 80262. Affirmative Action/Equal Opportunity Employer.

### FISH POPULATION BIOLOGIST

Texas Instruments Incorporated in Buchanan, New York, is currently seeking a **FISH POPULATION BIOLOGIST** to participate in a study being conducted to assess the effects of power plant operations on fishes in the Hudson River estuary. Ph.D. degree (or M.S. degree and several years of experience) and strong statistical background are required. Experience in fisheries management is desirable. The incumbent will be a member of a research team whose responsibilities include analysis and interpretation of data and the writing of reports for submission to client. Salary is competitive and commensurate with training and experience. Applicants should direct résumés to:

Personnel Administrator  
Texas Instruments Incorporated  
P.O. Box 237  
Buchanan, New York 10511  
Equal Opportunity Employer, M/F

**GASTROINTESTINAL RESEARCH.** A suitably qualified scientist to join active research program investigating neural and hormonal control of gastric acid and pepsin secretion. The research will involve study of the vagal, cholinergic, and peptidergic system and will require expertise in immunochemistry, radioimmunoassay, radioautography, histological techniques, as well as proficiency in production of antibodies to the various peptides under study. The position will provide the opportunity for teaching of physiology and pathophysiology within the division to pre- and postdoctoral trainees. Rank and salary will be commensurate with experience. Interested applicants please send curriculum vitae, along with the names of three referees, to: Dr. Basil Hirschowitz, Division of Gastroenterology, University of Alabama Medical Center, Birmingham, Alabama 35294. An Equal Opportunity Employer.

## POSITIONS OPEN

**FACULTY POSITION AVAILABLE.** An individual is sought to direct the Medical Interviewing Program for first-year medical students at the Southern Illinois University at Carbondale, School of Medicine. Primary responsibilities include researching, developing, updating, and delivering curricular material for the Medical Interviewing Program, selecting and training programmed patients for participation in the program, and assisting in the coordination of all aspects of the Medical Interviewing Program in cooperation with the coordinator of the behavioral and social science curriculum. The individual should expect to deliver behavioral science-related material on other facets of the curriculum. Ample opportunity for research and scholarly activity will be provided. A cross-appointment to an appropriate academic department within the university, which could provide teaching opportunities with graduate students in one's area of academic specialty, is open for discussion. Applicants must hold an earned Ph.D. in one of the behavioral or social sciences with a strong theoretical and experiential background in interpersonal communications. Previous employment experience working with medical students or in a medical school environment is desirable. This is a 12-month, assistant to associate professor-level position, leading to tenure. The salary is negotiable, contingent on rank and experience. Applications, with three letters of reference, should be submitted no later than 1 September 1980 to:

Chairperson, Behavioral and Social  
Science Search Committee  
Office of the Associate Dean for Carbondale  
Room 323, Lindegren Hall  
Southern Illinois University at Carbondale  
School of Medicine  
Carbondale, Ill. 62901

*Southern Illinois University at Carbondale is an Affirmative Action/Equal Opportunity Employer.*

### GENERAL BIOLOGY/RADIATION BIOLOGY

Applications will be accepted until 31 August 1980 for a tenure-track position as **ASSISTANT PROFESSOR** in the General Science Department of Oregon State University to begin no later than 2 January 1981. Qualifications include a Ph.D. in radiation biology with teaching experience in general biology. The successful candidate will teach a general education course in introductory general biology and graduate courses in radiation biology, direct graduate theses, and develop a strong research program. Salary range: \$16,000 to \$17,000 (9 months). For further information and application procedures, contact: **Chairman, General Science Department, Oregon State University, Corvallis, Oregon 97331.** Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.

### GENETIC ENGINEERING

We are seeking applications for a position in our biological research group located in our recently constructed laboratories in Richmond, Calif. The principal responsibility will be to apply the techniques of recombinant DNA technology to develop new biological systems/processes and to broaden our existing programs. Applicants should have a Ph.D. or equivalent experience in molecular biology, genetics, or related fields and must have research experience with cloning techniques.

We offer a competitive salary and fringe benefits package in addition to an attractive San Francisco Bay Area location. Applicants should send a résumé, statement of research interests and experience, and the names of three references to:

James P. Baker  
Personnel Manager  
Stauffer Chemical Company  
de Guigne Technical Center  
1200 South 47 Street  
Richmond, Calif. 94804

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

**GENERAL ENDOCRINOLOGIST.** One-year, temporary for 1980-1981; instructor, assistant, or associate professor; salary and rank dependent on qualifications and experience. Duties must be assumed 16 August 1980 and include: teaching general comparative endocrinology, general zoology and, possibly, comparative vertebrate anatomy; advising undergraduate zoology majors; and participating in department affairs. Submit résumé to: Dr. R. A. Brandon, Department of Zoology, Southern Illinois University, Carbondale, Ill. 62901. An Equal Opportunity/Affirmative Action Employer. Deadline for applications: 25 July 1980.

## POSITIONS OPEN

**GEOPHYSICIST.** Dalhousie University, Department of Oceanography, invites applications for a tenure-track assistant professorship. The person appointed will be expected to develop a strong research programme (for which funding opportunities exist through the NSERC Strategic Grants in Oceanography) and to teach and supervise graduate students in topics including marine geophysics. No particular preference for field of research exists except to avoid duplication of current programmes in paleomagnetism and geochronology. The Oceanography Department actively cooperates with the Geology Department of Dalhousie University and the Bedford Institute of Oceanography of the federal government. Applications with curriculum vitae and names of three referees should be sent before 1 October to: Dr. C. Beaumont, Chairman, Search Committee, Department of Oceanography, Dalhousie University, Halifax, Nova Scotia, Canada B3H 4J1. Persons considering application are urged to contact the department by telephone: 902-424-3557/3779, or Telex: 019-21863, attention: Oceanography.

**IMMUNOHISTOCHEMIST.** Harvard Medical School, Department of Anatomy, invites applications for an appointment at the assistant professor level. Ph.D. in biology and 3 to 6 years of postdoctoral experience using immunohistochemistry and histochemistry at the light and electron microscope levels to localize actin, myosin, tubulin, and other macromolecules involved in cell division required. Must also have successful experience identifying appropriate funding sources. Teaching duties: human anatomy and cell biology. Salary (12 months): \$22,000 to \$26,000. Send curriculum vitae to: Dr. E. D. Hay, Harvard Medical School, 25 Shattuck Street, Boston, Mass. 02115. An Equal Opportunity/Affirmative Action Employer.

### IMMUNOLOGIST-IMMUNOCYTOCHEMIST

The Center for Brain Research of the University of Rochester expects to fill a position at the assistant or associate professor level in immunology-immunocytochemistry. The individual selected will be a member of a team involved in research related to myelin and multiple sclerosis. A knowledge of neuroimmunology is essential. Teaching experience in biochemistry is highly desirable. Letters of application, including curriculum vitae and a statement of research interests, should be sent to: Robert M. Herndon, M.D., Chairman, Center for Brain Research, University of Rochester Medical Center, Box 605, Rochester, New York 14642.

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

**MARINE SEISMOLOGIST**—Faculty position for 12-month, tenure-track appointment. A seagoing marine seismologist with interests in seismic reflection, refraction, and microseismicity is sought. Experience with ocean-bottom recording instruments desirable. Duties include maintaining active research programs and obtaining outside funding, teaching graduate courses, and supervising graduate students. Rank is associate professor. Applicants who meet all requirements, but have less experience than is normally required for associate professor rank, will be considered for appointment at the rank of assistant professor. Salary: \$23,000 to \$32,000, commensurate with experience. Send résumé and names of three references by 15 August 1980 to: G. Ross Heath, Dean, School of Oceanography, Oregon State University, Corvallis, Oregon 97331.

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

**MEMBRANE BIOLOGIST/BIOCHEMIST** to participate in monoclonal antibody studies of macrophages. Independent research in this and other areas will be encouraged. Immunology experience desired. Nontenure-track rank and salary negotiable, depending on experience. Respond with curriculum vitae and names of three references, and statement of research interests to: Dr. Stephen W. Russell, Department of Pathology, University of North Carolina, Chapel Hill, N.C. 27514. An Equal Opportunity/Affirmative Action Employer.

**MOLECULAR BIOLOGY OF RECEPTORS OF TASTE AND SMELL SYSTEMS.** Postdoctoral position beginning July to September 1980, to study interactions of sensory receptors with sensory stimuli and salivary and olfactory mucous proteins. Experience in areas of membrane biochemistry, metallo- and glycoproteins, or cAMP preferred. Stipend: \$12,000 to \$15,000.

Box 172, SCIENCE





## AQUATIC TOXICOLOGIST

Scientist with Ph.D. or M.S. and a minimum of 3 years of experience in aquatic toxicity testing. Familiarity with acute testing methods and algal assays required. Experience with consulting firms, technical writing, marketing, and project management preferred. Salary commensurate with education and experience.

Please submit résumé with salary history/requirements to:

**ESE**  
ENVIRONMENTAL SCIENCE  
AND ENGINEERING, INC.

Department S-711  
P.O. Box ESE  
Gainesville, Florida 32602

An Equal Opportunity  
Employer,  
M/F



# BIOMEDICAL SCIENTIST

The Corporate Office of Science and Technology is seeking a seasoned Biomedical Scientist for its senior staff.

We require a Biochemist or Molecular Biologist with a Ph.D. or M.D./Ph.D. and 15–25 years experience in human life processes. The position entails investigating and reporting on new developments in the biomedical sciences which may lead to new or improved drugs and medical devices.

The successful candidate must be broadly current in the latest developments in biomedical science and able to interact well with leaders in basic science, industrial scientists and nonscientific management.

No direct laboratory work or supervision is involved. Some travel.

Curriculum Vitae and representative reprints should be sent in confidence, to: Mr. C. P. Reeves, Johnson & Johnson, 501 George Street, New Brunswick, N.J. 08903. We are an equal opportunity employer, M/F.

*Johnson & Johnson*

Leadership Beyond Compliance

## ACADEMIC CHEMISTS (GOVERNMENT INTERFACE POSSIBILITIES)

Chemical Systems Laboratory has numerous openings for six month to one year research appointments for chemistry, physics, and toxicology faculty members on leave from US Academic Institutions. Starting date is negotiable. Specialties of interest vary considerably but relate to new concepts in analytical chemistry and toxicology methodology, surface chemistry, chemical detection, reaction mechanisms, air filtration, aerosol and cloud physics, catalysis, organic synthesis, chemical and physical decontamination, and spectroscopy. Appointees may participate in basic and applied research projects, largely experimentally oriented. All appointments are under the conditions of the Intergovernmental Personnel Act of 1970 which enables the Army to contract with the educational institution and the academic employee. Extensions to a second year are permissible. Interested applicants, who must be US citizens, may obtain details on specific research opportunities from Dr. E. J. Poziomek, Chief Scientist, Research Division, Chemical Systems Laboratory, Aberdeen Proving Ground, MD 21010. (301) 671-4144.  
AN EQUAL OPPORTUNITY EMPLOYER

In association with its Institut für Molekulare Genetik in Berlin-Dahlem the

## MAX-PLANCK-GESSELLSCHAFT

maintains a **Research Laboratory for Biochemistry and Molecular Biology**. This laboratory provides opportunities for

## YOUNG SCIENTISTS

to be responsible for a research group of their own and to carry out an independent research program.

Applicants should already have done some internationally recognized research in the field of **biochemistry, molecular biology or cell biology**.

Appointments will be limited to 5 years starting in 1981. Salaries will fall within the range C 3 of the Bundes-Besoldungsgesetz (about 50–55.000 DM p.a.).

Each research group will have available approximately 130 square meters of floor space, plus adequate funds for scientific coworkers and technical supporting staff, basic equipment and operating expenses.

An application should contain a curriculum vitae, a list of publications and a short description of scientific work both achieved and intended. It should be submitted before **September 30, 1980**

to the Max-Planck-Gesellschaft  
zur Förderung der Wissenschaften e.V.  
—Generalverwaltung—  
Postfach 647  
D-8000 München 1.



## POSITIONS OPEN

**INSECT ANTIHORMONE METABOLISM.** Postdoctoral research position available on or after 1 July 1980 for studies on the metabolism of anti-juvenile hormones in insects. Background in insecticide toxicology or a related field and experience in xenobiotic metabolism studies with insects essential. Starting salary: \$12,000. Send detailed curriculum vitae, names of three references, and relevant publications to: **D. M. Soderlund, Department of Entomology, New York State Agricultural Experiment Station, Cornell University, Geneva, N.Y. 14456.**

The University of California, Davis, announces a position for an **ESTABLISHED INVESTIGATOR** to develop and head a basic science research unit in cutaneous biochemistry in the Department of Dermatology. Teaching experience and established research program in the field of cutaneous biochemistry desirable. Rank and salary commensurate with credentials. Please send curriculum vitae and list of three references to:

**Chair, Search Committee  
c/o University of California  
Department of Dermatology  
205 Professional Building  
Sacramento, Calif. 95825**

Applications accepted through 29 August 1980.  
*Equal Opportunity/Affirmative Action Employer*

## LIBRARIAN POSITION AT UNIVERSITY OF CALIFORNIA, IRVINE

**SCIENCES CATALOGER**—University of California, Irvine, reopens search for sciences cataloger at associate librarian rank. Catalog and classify materials in sciences and technology and review the work of paraprofessionals cataloging in these areas. Establish and update authority records. Participate fully in the development of departmental policies and procedures. Qualifications: M.L.S. degree with an undergraduate degree in the physical or biological sciences. Comprehensive knowledge of all facets of cataloging and classification of collections usually found in large academic libraries, and skill in using and teaching others to use an on-line cataloging support system. Should be able to demonstrate facility in applying AACR, ability to write clearly and succinctly, competence to train paraprofessional staff, and knowledge of current developments in bibliographic control. Active participation in professional associations relevant to bibliographic control and an interest in public service and its relation to cataloging. Subject specialization as evidenced by graduate work in the physical or biological sciences and facility in foreign languages, particularly German, are highly desirable. Salary range: \$18,312 to \$26,340. Salary increase of 10 percent possible, effective 1 July 1980. Deadline for applications is 1 October 1980. Date of appointment is negotiable. In their first letter, candidates should supply: (i) a complete statement of their qualifications, (ii) a full résumé of their education and relevant experience, and (iii) the names and addresses of three persons who can supply frank and objective references on their qualifications for the position. Letters and documents should be addressed to: **Michael J. MacInnes, Library Personnel Director, University Library, University of California, Irvine, P.O. Box 19557, Irvine, Calif. 92713. An Affirmative Action Employer.**

## MOLECULAR BIOLOGIST

A postdoctoral position is open 1 December 1980 for research in the molecular mechanism of the regulation of ribosome synthesis in *E. coli*. Currently, the work is mainly focused on the autogenous regulation of ribosomal protein synthesis [Lindahl and Zengel, *Proc. Natl. Acad. Sci. U.S.A.* 76, 6542 (1979)]. The work combines biochemical and genetic approaches, including recombinant DNA techniques. Send résumé to: **Lasse Lindahl, Department of Biology, University of Rochester, Rochester, N.Y. 14627.**

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

**Nutritional Biochemist/Fish Nutritionist.** Ph.D. Project associateship to conduct research on amino acid requirements of rainbow trout. Strong biochemistry background. Experience with fish desirable but not mandatory; \$15,000 to \$18,000 per year, depending on qualifications. Send letter of application, statement of professional interests, résumé, transcripts, publications, and names, addresses, and telephone numbers of three references by 30 July 1980 to: **Dr. Terrence Kayes, University of Wisconsin, Aquaculture Research Laboratory, 6080 McKee Road, Madison, Wis. 53711. Telephone: 608-274-2029. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**MORGUE DIRECTOR.** The Department of Pathology is seeking qualified applicants to manage its morgue operation. A master's degree or above in anatomy, physical anthropology, or an appropriate related science required; supervisory and management experiences are essential. Faculty appointment possible, depending upon academic credentials. Duties includes managing a staff of approximately ten, and assisting in performing autopsies. Position available immediately. Salary range: \$20,000 to \$22,000 annually, depending upon qualifications. Send résumé and references to: **Robert Taylor, Ph.D., Department of Pathology, The University of Tennessee, 858 Madison Avenue, Memphis, Tenn. 38163. Equal Opportunity/Affirmative Action Employer, M/F.**

**NEUROBIOLOGY POSTDOCTORAL POSITION.** To participate in cellular studies of the formation of synaptic connections using primarily tissue culture, EM, and electrophysiological techniques. Base salary: \$13,380. Contact: **Dr. William Betz, Department of Physiology, University of Colorado Medical School, Denver, Colo. 80262, or Dr. John Caldwell, National Jewish Hospital and Research Center and Department of Physiology, University of Colorado Medical School, Denver, Colo. 80262. The University of Colorado Health Sciences Center is an Equal Opportunity Employer.**

**NEUROPHYSIOLOGIST/BIOENGINEER.** The University of Wisconsin, Madison, Speech Motor Control Laboratories, is interested in hiring a Ph.D. with training and experience in analysis of neuromotor control and biomechanics from a systems physiology perspective to join an established research group studying the neural mechanisms of speech production. Salary is competitive. **J. H. Abbs, Director, Speech Motor Control Laboratories, 1500 Highland Avenue, Madison, Wis. 53706. An Equal Opportunity Employer.**

## Massachusetts Institute of Technology (MIT) NEUROSCIENCES

The Whitaker College of Health Sciences, Technology, and Management, MIT, announces openings for junior and/or senior faculty positions in neurosciences. It is anticipated that successful candidates will also receive joint appointments in academic departments at MIT. Applicants should be engaged in basic research in fields related to the neurosciences (for example, membrane biophysics; synaptic neurochemistry and neuropharmacology; receptors; neural cell biology; neuroendocrinology and brain peptides; and brain mechanisms underlying behavior), and may also have interest in clinical aspects. Applicants should provide curriculum vitae, a short statement of proposed research, and the names of at least three scientists as references. Send applications to: **Dr. Richard Wurtman, Co-Chairman of the Search Committee on Neurosciences, Building 56, Room 245, Massachusetts Institute of Technology, 77 Massachusetts Avenue, Cambridge, Mass. 02139. MIT is an Equal Opportunity Employer.**

Faculty position in **PLANT PATHOLOGY**, assistant or associate professor (25 percent teaching, 75 percent research). The position will involve research on fungal and bacterial diseases of fruit and nut crops with emphasis on plant-pathogen-environment interactions and on the development of alternatives to chemicals for disease control. Applicants should have a Ph.D. degree in plant pathology with a strong background in areas pertinent to the above research. Teaching responsibilities will include a graduate course on principles of plant disease control and participation in team-taught undergraduate instruction in general plant pathology. Supervision of graduate student research is expected. Applicants should submit résumé, transcripts, copies of publications, and the names and addresses of at least three references to: **Professor J. M. Ogawa, Chairperson of the Search Committee, Department of Plant Pathology, University of California, Davis, Calif. 95616, prior to 15 September 1980 to ensure consideration for the position.**

*The University of California is an Equal Opportunity/Affirmative Action Employer and invites applications from all qualified individuals.*

## POSTDOCTORAL ASSOCIATE

Available beginning summer/fall 1980 to study bioorganic photochemistry of bilirubin in connection with the light therapy for jaundiced newborns. Send résumé and three references within 30 days of this notice to: **Dr. D. A. Lightner, Department of Chemistry, University of Nevada, Reno, Nevada 89557. The University of Nevada, Reno, is an Affirmative Action/Equal Opportunity Employer.**

## POSITIONS OPEN

**DEPARTMENT OF PATHOLOGY, UNIVERSITY OF ARIZONA, COLLEGE OF MEDICINE**—Applications are solicited for a faculty position in the following area: **chief of pathology** at the Veterans Administration Medical Center, Tucson, Arizona, with major commitment to laboratory management and research/teaching program development. Minimum requirements are certification in anatomic pathology (AP) or clinical pathology (CP) (APCP desirable) with 3 years of teaching experience. Research and special professional interests in AP or CP areas are desirable and encouraged. The position will carry appropriate academic status at the university requiring daily medical student and house officer contact. Applicants should send curriculum vitae to: **Jack M. Layton, M.D., Head, Department of Pathology, University of Arizona College of Medicine, Tucson, Arizona 85724. An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.**

## PATHOLOGY FACULTY

The Department of Pathology, University of Illinois College of Medicine, Peoria School of Medicine, is seeking qualified faculty for full-time, academic, tenure-track positions. Qualifications include M.D. degree (or equivalent) or Ph.D. degree in pathology, with postgraduate training in pathology and/or related discipline. Rank and salary commensurate with qualifications and negotiable. Send curriculum vitae and the names of three references to: **Joshua A. Fleurer, M.D., Professor and Chairman, Department of Pathology, Peoria School of Medicine, 123 Southwest Glendale Avenue, P.O. Box 1649, Peoria, Illinois 61656.** In order to receive full consideration, applications should be received by 15 September 1980. *The University is an Affirmative Action/Equal Opportunity Employer and encourages applications from members of minority groups and women.*

**PHYSICIAN** with completed training in general and child psychiatry and demonstrated competence in neuropharmacological research to join research group, starting September 1980. Send curriculum vitae and names of three references no later than 31 July to: **Dr. Donald Cohen, Yale Child Study Center, 333 Cedar Street, New Haven, Conn. 06510. Equal Opportunity/Affirmative Action Employer.**

## PHYSICS DEPARTMENT UNIVERSITY OF PETROLEUM AND MINERALS DHAHRAN, SAUDI ARABIA

The University of Petroleum and Minerals Physics Department is currently recruiting for faculty positions at all levels (instructor, assistant and associate professor, professor). Minimum regular contract for 2 years, renewable. Competitive salaries and allowances. Air conditioned and furnished housing provided. Free air transportation to and from Dhahran each 2-year tour. Attractive educational assistance grants for school-age dependent children. All earned income without Saudi taxes. Ten months of duty each year with 2 months of vacation and possibility of participation in university's ongoing Summer Program with good additional compensation.

Research is actively encouraged. The department currently has a fully operational surface science facility (ESCA, Leed, Auger), a low-temperature facility (LN<sub>2</sub>, CT1 1400 Helium Liquefier). Other active or planned areas are solar energy, NMR, and nuclear physics. High-grade computer facilities are also available.

Send letter of interest and curriculum vitae to:

**Dean of Faculty and Personnel Affairs  
P.O. Box 144  
University of Petroleum and Minerals  
Dhahran, Saudi Arabia**

## POSTDOCTORAL FELLOW

We are seeking a Ph.D. (microbiology or cell biology) with experience and interest in mechanisms of pathogenesis and host-parasite interactions. Major goal will be to examine the role of receptor sites in the attachment of *Mycoplasma pneumoniae* to cells of respiratory tract origin. Training in biochemical methods for glycoprotein isolation and polyacrylamide gel electrophoresis is necessary. Knowledge of cell culture and pathogenic microbiology would be an asset.

Send résumé and three letters of reference to:

**Personnel Office  
W. Alton Jones Cell Science Center  
Old Barn Road  
Lake Placid, N.Y. 12946**

*An Affirmative Action/Equal Opportunity Employer*

## EXPERIENCED SCIENTISTS AND ENGINEERS

Outstanding career opportunities in the pharmaceutical/health care industries...

### Pharmacology

- Ph.D. Group Leader—Cardiovascular
- Ph.D. Experimental Scientists—Cardiovascular
- Ph.D. Scientist—GI, CV, Broncho-Pulmonary
- Ph.D. Senior Scientific Adviser—broad experience in drug development.
- Ph.D. Clinical Pharmacologist

### Drug Metabolism

- Ph.D. Scientists—Anticancer, Antibiotics
- M.Sc. Scientists—Anticancer, Antibiotics
- B. Sc. Scientist—Drug analysis in body fluids

### Immunology

- Ph.D. Director of Medical Development
- Ph.D. Manager of Clinical Development—Therapeutics
- Ph.D. Manager of Clinical & Regulatory Development—Diagnostics
- Ph.D. Group Leader Immunobiology

### Engineering

- M.Sc. or B.Sc. Senior Project Engineer—Pharmaceuticals
- B.Sc. Process Engineer—Pharmaceuticals

Our corporate clients pay all fees. Please send your resume, geographic preferences/restrictions and salary requirement in confidence to: Robert J. Hodges, Ph.D., *Vice President*.



**SAMPSON, NEILL  
& WILKINS INC.**

*First In Executive Search For The Health Industries*

543 Valley Rd., Upper Montclair, N.J. 07043 (201) 783-9600

## UNIVERSITY COLLEGE OF NORTH WALES, BANGOR

### LECTURER IN BIOCHEMISTRY

Applications are invited for the above post in the College's Department of Biochemistry and Soil Science, to commence on a date to be agreed.

Applicants should:

- 1) Have a strong background in molecular biology and biochemical genetics, with postdoctoral experience,
- 2) Be able to show potential for developing an independent research programme, and
- 3) Be experienced in recombinant DNA techniques for cloning and expression of cloned genes, and in nucleic acid sequence analyses.

The successful candidate for this appointment (which will be to the university's lecturer scale: £5,052 to £10,484 per annum, and will be for 3 years in the first instance) will also be expected to collaborate with groups within the department, particularly those studying the biochemistry and genetics of aerobic and anaerobic biodegradative pathways in bacteria.

Applications (two copies), giving details of qualifications, teaching and research experience and interests, publications and research goals, together with the names and addresses of three referees, should be sent to: **The Assistant Registrar (Personnel), University College of North Wales, Bangor, Gwynedd LL57 2DG, United Kingdom**, from whom further particulars may be obtained.

Interested persons currently residing in North America may obtain further information from the college's newly appointed head of department, **Dr. Douglas W. Ribbons, Department of Biochemistry, University of Miami, School of Medicine, P.O. Box 016129, Miami, Fla. 33101. Telephone: 305-547-6213.**

Closing date for applications: 31 July 1980.

### RESOURCES MANAGEMENT SPECIALIST/ECONOMIST

The Office of Marine Pollution Assessment, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce, in Stony Brook, New York, is seeking a resource management specialist/economist with experience in the application of management science, physical science, economics, and/or social science to urban environmental problems to serve on a 2-year IPA assignment. The assignee will study, analyze, synthesize, interpret, and project the complex interrelationships of and between physical, economic, and other social phenomena that affect the existing and potential uses of the Hudson-Raritan Estuary and the adjacent coastal waters. Candidates should have an advanced degree in economics, resource management, or related fields. In addition, applicants should have expertise in oceanography, biology, ecology, or general physical science as it applies to marine pollution studies and marine ecosystem research.

### CHEMICAL OCEANOGRAPHER/CHEMIST

The Office of Marine Pollution Assessment in Stony Brook, New York, is also seeking a chemical oceanographer or chemist with expertise in marine pollution studies and marine ecosystem research. Assignee defines integrated sound and effective multidisciplinary research projects by developing long-range chemical and geochemical plans for the interdependent activities of the project. Advises management of the implications and effects of ongoing, new, or proposed programs to aid in resource allocation decisions and to guard against duplication. Applicants should have an advanced degree in chemical oceanography/chemistry. Recent experience in the field of organic geochemistry is highly desirable.

### MANAGEMENT INFORMATION COORDINATOR

In addition, the Stony Brook, New York, Project Office is seeking a marine information coordinator with either an advanced degree in oceanography or marine sciences with experience in computer data base and information system activities or an advanced degree in computer or information science and experience in oceanography or marine science. The assignee will plan and direct the information management program of the office. Coordinates the development of a data base of marine environmental information collected by the project. Coordinates the definition and continual refinement of an effective computer-based management information system. Participates in establishing the direction of the program's environmental assessment and synthesis activities.

For the above noted positions only employees of state or local governments or institutions of higher education, who can obtain a 2-year leave of absence, are eligible to apply. Salary is based upon current salary earned at the lending institution. Reimbursement for salary, travel, benefits, moving expenses, and so forth is negotiable between employee's organization and NOAA. To apply, submit an SF-171 "Personal Qualifications Statement" (which may be obtained from any federal office or by telephoning: 303-499-1000, extension 6586) to: NOAA/ERL, Personnel Services Division, R562, Boulder, Colo. 80303, attention: L. Stoll. Applications must be postmarked no later than 8 August 1980 to receive consideration.

## SR. TOXICOLOGIST

Travenol Laboratories, an international leader in the medical care field, is seeking a Research Scientist to direct laboratory activities and a variety of acute, subacute and chronic studies. Responsibilities will also include developing new methods for safety assessment, assuring compliance with GLP regulations, preparation of study protocol and final reports.

Ideally, the individual we seek will have a Ph.D. in Toxicology or Pharmacology or equivalent background. At least 3-5 years toxicology experience within an industrial environment will be essential. A strong background in drug safety evaluation is essential.

We offer an excellent salary and outstanding benefits as well as career opportunity within our extremely professional environment. For immediate consideration, send your resume in complete confidence to:

Bill Bartnick



6301 Lincoln Ave.  
Morton Grove, Ill. 60053

*Equal Opportunity Employer*

## POSITIONS OPEN

### Center for Demographic and Population Genetics University of Texas Health Science Center POSTDOCTORAL POSITION

Two-year position in genetic epidemiology and demography with emphasis on cancer genetics. Ph.D. in statistical or epidemiological genetics. Ability to innovate in statistical theory and analysis, in computer-oriented setting. Send curriculum vitae and three letters to: Dr. Kenneth M. Weiss, Center for Demographic and Population Genetics, P.O. Box 20334, Houston, Texas 77025. Telephone: 713-792-4680. An Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available 1 September 1980 to study the replication of adenovirus DNA. Experience in electron microscopy of nucleic acids, nucleic acid enzymology, or DNA tumor viruses is essential. Salary: \$14,000 to \$17,000 per year, depending on experience. Deadline for applications: 15 August 1980. Send curriculum vitae and three letters of reference to: Dr. George D. Pearson, Department of Biochemistry and Biophysics, Oregon State University, Corvallis, Oregon 97331. Oregon State University is an Equal Opportunity/Affirmative Action Employer and complies with Section 504 of the Rehabilitation Act of 1973.

**POSTDOCTORAL POSITION** available immediately for a recent Ph.D. biochemist with interests in protease-protease inhibitor interactions. Candidate should be familiar with chromatographic, electrophoretic, and radioisotope techniques. Salary: \$13,000 per annum. Send curriculum vitae and names of references to: Dr. John S. Baumstark, Department of Obstetrics and Gynecology, Creighton University, School of Medicine, 601 North 30 Street, Omaha, Neb. 68131.

**POSTDOCTORAL POSITION** available October 1980 for qualified candidate with Ph.D. in neuroscience. Research involves study of membrane actions of antiepileptic drugs on single cells and synapses. Applicants must be familiar with intracellular electrophysiological recording techniques. Experience with anatomical tracing techniques and the use of computers is desirable. Send résumé and names of three individuals whom we may contact for reference to: Dr. Anna L. Kleinhaus or Dr. James W. Prichard, Department of Neurology, Yale University School of Medicine, 333 Cedar Street, New Haven, Conn. 06510. Equal Opportunity Employer, M/F.

**POSTDOCTORAL POSITION** available for research on the structure and control of expression of normal and abnormal human hemoglobin genes. Background in nucleic acid technology desirable. Send curriculum vitae to: Dr. R. F. Rieder, State University of New York—Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** to study purified murine ecotropic RNA TUMOR VIRUS RECEPTORS. Applicants should have strong research experience in one or more of the following: protein biochemistry, tumor virology, or immunology. Send inquiries and résumés to: C. Fred Fox, Molecular Biology Institute, University of California, Los Angeles, Los Angeles, Calif. 90024. An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION IN RENEWABLE RESOURCES** available immediately to study the enzymology and fungal metabolism of lignin and lignin model compounds. Strong background in biochemistry or bioorganic chemistry necessary. Salary range: \$12,000 to \$14,000 per year depending upon experience. Submit curriculum vitae including names of references to:

Dr. M. H. Gold  
Department of Chemistry and Biochemical Sciences  
Oregon Graduate Center  
19600 Northwest Walker Road  
Beaverton, Ore. 97006

An Equal Opportunity/Affirmative Action Employer

**POSTDOCTORAL POSITION** will become available fall 1980 for studies on adenylate cyclase. Studies include regulation by redox and phosphorylation/dephosphorylation mechanisms and mechanisms involved in the coupling of adenosine and catecholamine receptors. Individuals would be preferred who have backgrounds in biochemistry, with emphasis on mechanisms of hormone action, hormone binding, enzymology or membrane biochemistry. Send inquiries and curriculum vitae to: Dr. Roger A. Johnson, Department of Physiology, Vanderbilt University, Nashville, Tenn. 37232.

## POSITIONS OPEN

**POSTDOCTORAL POSITION** at the Mayo Clinic for M.D. or Ph.D. to study relationship between control of cell growth and cell differentiation. Projects include studies on: (i) cell cycle, (ii) role of plasma factors on differentiation, and (iii) the effects of malignant transformation. Competitive salary. Send curriculum vitae and the names of three references to: Dr. Robert E. Scott, Head, Section of Experimental Pathology, Mayo Clinic, Rochester, Minnesota 55901. An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITIONS.** Available immediately for research and training in the following areas: biochemistry of nitrogen fixation and hydrogen metabolism, bacillus plasmid characterization and cloning, and microbial genetics. Strong background in biochemistry, microbiology and/or genetics desirable. Send curriculum vitae and names of three references to: Dr. L. Mortenson or A. Aronson, Department of Biological Sciences, Purdue University, West Lafayette, Ind. 47907. An Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL POSITION** available for research related to binding of fluoride by bacteria for the period of 1 July 1980 to 31 March 1981. Position subject to renewal, pending research grant award. Background in handling radioisotopes, bacteria, and permeability kinetics desirable. Salary: \$14,000 per year. Send curriculum vitae and two letters of recommendation to: Dr. William W. Yotis, Professor of Microbiology, Loyola University Medical Center, 2160 South First Avenue, Maywood, Illinois 60153. Equal Opportunity Employer and Educator.

**POSTDOCTORAL POSITION** available immediately for a research program involving oxygen and anion transport by red blood cells and/or the biophysics of ligand binding to heme proteins. Techniques include stopped flow rapid mixing, flash photolysis, and dual wavelength spectrophotometry. Send résumé and names of three references to: Dr. John S. Olson, Department of Biochemistry, Rice University, Houston, Texas 77001. Equal Opportunity/Affirmative Action Employer.

### POSTDOCTORAL POSITION

Available immediately in Boston area to study enzyme regulation in neoplastic tissues. Experience in biochemistry and cell biology/immunology is desirable. Citizenship or immigrant visa is required. Send curriculum vitae and names of references to:

Box 179, SCIENCE

**POSTDOCTORAL POSITION** available 1 August 1980, for research in the area of the structure, function, and regulation of eukaryotic transport systems. An ongoing project deals with the mechanism of insulin stimulation of glucose transport. Please send curriculum vitae and names of references to: Dr. Gustav Lienhard, Department of Biochemistry, Dartmouth Medical School, Hanover, N.H. 03755. An Equal Opportunity Employer.

**POSTDOCTORAL POSITIONS** available for Ph.D.'s with strong backgrounds in molecular biology, biochemistry, and genetics. Projects to be investigated include studies on cellular and viral replication, molecular cloning of eukaryotic cellular and viral genes, and transformation by RNA tumor viruses. Send curriculum vitae, statement of research interests, and names of three references to: Dr. D. T. Denhardt, Director, Cancer Research Laboratory, University of Western Ontario, London, Ontario, Canada N6A 5B7.

## Postdoctoral Program

Applications are invited for a postdoctoral position to investigate the role of fixed tissue phagocytes in local immune responses and/or regulation of cell-mediated reactions. Candidate must have a Ph.D. or M.D. degree, with experience in immunology and experimental pathology. The salary stipend is \$13,380 to \$17,040 per year, depending on the level of prior training. The position is available as of 1 September 1980. Inquiries should be addressed to:

Pierluigi Bigazzi, M.D., Professor of Pathology  
University of Connecticut  
Health Center  
Farmington, Connecticut 06032  
An Equal Opportunity/Affirmative Action Employer

## POSITIONS OPEN

**POSTDOCTORAL POSITION/CONNECTIVE TISSUE.** One-year appointment, renewable. Challenging opportunity to study the role of enzymes in the synthesis of collagen and to study genetic defects in collagen biosynthesis. Position requires doctoral degree in biochemistry or biological sciences and 2 years of experience in enzymology or related area. Excellent benefits and working conditions. Please send curriculum vitae to, or apply at: Personnel Department (Hoes Lane, 9 to 11:30 a.m. or 1 to 4 p.m., Monday through Friday), COLLEGE OF MEDICINE AND DENTISTRY OF NEW JERSEY—Rutgers Medical School, P.O. Box 101, Piscataway, N.J. 08854. An Equal Opportunity/Affirmative Action Employer, M/F.

**POSTDOCTORAL POSITION** immediately available for 2 to 3 years for study of tobacco RuBPCase chloroplast DNA and cytoplasmic male sterility. Experience preferred. Send résumé to: Dr. S. D. Kung, Department of Biological Sciences, University of Maryland Baltimore County, Catonsville, Md. 21228. University of Maryland Baltimore County is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available in Metabolic Research Laboratory, July 1980. Experience in biochemical assays, enzyme kinetics, and gas chromatography. Salary up to \$20,000 per year, depending on qualifications. Respond to: I. Kreiger, M.D., Director, Nutrition and Metabolic Service, Wayne State University, Department of Pediatrics, Children's Hospital of Michigan, 3901 Beaubien Boulevard, Detroit, Mich. 48201; telephone: 313-494-5548. An Affirmative Action Employer.

Two **POSTDOCTORAL POSITIONS** available for ongoing studies in: (i) enzyme regulation of *E. coli* amino acid metabolism, and (ii) role of cell surface components in mammalian cell proliferation. Research experience in one or more of the following areas desired: for (i) genetic techniques, recombinant DNA, nucleic acid sequencing, and in vitro transcription-translation system. For (ii) cell culture, membrane biochemistry, nucleic acid enzymology, and biochemistry of glycoproteins. Competitive stipend plus benefits. Submit curriculum vitae, reprints of papers or thesis abstract, and have three letters of recommendation sent to: Dr. Prasanta Datta, Department of Biological Chemistry, Box 034, The University of Michigan Medical School, Ann Arbor, Mich. 48109. A nondiscriminatory, Affirmative Action Employer.

**Postdoctoral Position: Neuroanatomy.** Starting mid-to late 1980, for study of double-label retrograde axonal transport techniques. Experience with axonal transport methods, autoradiography, biochemical techniques, and/or immunocytochemistry; publications desirable. Write, with curriculum vitae, research synopsis, reprints, and names of referees, to: Dr. John Hedreen, Department of Cell Biology and Anatomy, The Johns Hopkins University School of Medicine, Baltimore, Maryland 21205.

### POSTDOCTORAL RESEARCH ASSOCIATE

Research on mechanisms of enzymatic reactions. Ph.D. in chemistry or biochemistry required. Available any time before 1 December 1980. Send résumé and two letters of recommendation to: Dr. R. M. Pollack, Department of Chemistry, University of Maryland Baltimore County, 5401 Wilkens Avenue, Catonsville, Md. 21228. University of Maryland Baltimore County is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE** position is available for the study of biochemical aspects of variation in natural populations. Experience in structural biochemistry of macromolecules and the ability to conduct independent research is required. This can be available as a long-term appointment. Initial salary range: \$13,000 to \$16,000. Curriculum vitae and names of references to be sent to: R. C. Lewontin, Museum of Comparative Zoology, Harvard University, Cambridge, Mass. 02138. Harvard University is an Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATES** (M.D., Ph.D.). Position available for studies of: (i) plasmid isolation and characterization requiring background in microbiology, and (ii) study of sequencing of proteins and nucleic acid, requiring background in biochemistry. Position available in September 1980. Send résumé and three references to: Dr. S. S. Koide, Population Council, Rockefeller University, 1230 York Avenue, New York, N.Y. 10021. Affirmative Action/Equal Opportunity Employer.

**UNIVERSITY OF HULL  
DEPARTMENT OF  
ZOOLOGY  
RESEARCH  
FELLOWS—  
NEUROPHYSIOLOGY**

Applications are invited for two post-doctoral research posts, to investigate the central effects of extraocular muscle afferents and their relation to visual and labyrinthine signals, under the direction of Professor I. M. L. Donaldson and funded by MRC and Wellcome Trust grants.

For one post, candidates with a first degree either in a physical or biological science will be considered. Experience in electrophysiology and the use of small computers is desirable.

For the other post, experience in recording techniques in the central nervous system and some knowledge of modern neuroanatomical techniques are desirable.

The appointments will be for 3 years with starting salary up to £5725 (under review) on scale 1A: £5052 to £8769 per annum.

Applications, including curriculum vitae and the names of two referees, should be sent to: **Professor I. M. L. Donaldson, Department of Zoology, The University, Hull HU6 7RX, United Kingdom** by 2 August 1980.

## Research Assistant

An opportunity to do fundamental research and cell biology and biochemistry. Specific background required in both animal cell culture and enzymatic assays. Expertise in microinjection into amphibian oocytes helpful but not essential.

Applicant must have a BS or MS degree in biology or biochemistry and be able to work independently. If interested, please send resume, including salary history in strict confidence to:

Director of Administration

**MERRELL RESEARCH CENTER**

**MERRELL-NATIONAL LABORATORIES**

A Division of Richardson-Merrell Inc.

2110 East Galbraith Road

Cincinnati, Ohio 45215

An Equal Opportunity Employer M/F

# Merrell

## SENIOR SUPERVISORY OCEANOGRAPHER

National Oceanic and Atmospheric Administration (NOAA), Pacific Marine Environmental Laboratory (PMEL), Seattle, Wash., is looking for a **group leader** for its Deep Sea Physics Group. Applicants for this position must have management or supervisory experience and a strong research background in the field studies of open-ocean physical processes and a good grasp of the theoretical basis for large-scale ocean/climate dynamical interactions. The group is engaged in process-oriented studies of equatorial and southern Pacific waters, with a view toward understanding the role of the tropical and subpolar ocean in establishing climate variability. A doctoral degree in physical oceanography is desired, with at least 3 years of appropriate research experience.

U.S. citizenship is required for appointment, which will be in the federal Civil Service at the GS-15 grade level (\$40,832 to \$50,112, depending on the present earnings and qualifications of the candidate selected for the position).

Applicants with federal status must submit a Personal Qualifications Statement (SF-171), curriculum vitae with references, and a list of publications. Nonstatus applicants should secure a copy of the Office of Personnel Management (OPM) Physical Sciences registration forms from their local OPM, Job Information Center, and forward the completed package to the personnel office noted below. Those applicants on the register need to submit a copy of their registration forms or SF-171, and transfer their eligibility to the Seattle Area Office if it was not noted as their primary area of consideration. Applications and/or inquiries should be directed to: **NOAA/PMEL, Area Personnel Officer, 7600 Sand Point Way, NE, Seattle, Wash. 98115, attention: Ron Theriot (telephone: 206-442-5585)**. To be considered, applications must be received by 25 July 1980. Date of entry on duty is open, but not later than January 1981. *An Equal Opportunity/Affirmative Action Employer.*

## Research Programs in Cystic Fibrosis and Related Diseases

The Cystic Fibrosis Foundation announces competitive awards for research in cystic fibrosis and related pulmonary and gastrointestinal diseases. Studies may be carried out at the cellular, subcellular, animal, or patient level in relevant disciplines including biochemistry, genetics and developmental biology, microbiology and immunology, pathophysiology, and pharmacology. Support may be requested in five major categories:

### New Investigator Research Grants (Application Deadlines: February 1, September 1)

This program is intended to provide a mechanism of support to relatively young investigators. Recipients of this award must be able to commit a significant portion of their time to the proposed project and must have two years of postdoctoral experience. Applicants may not have been the recipient of an NIH Research Career Development Award (RCDA) and may not have been the principal investigator on any previous CFF or NIH research grant. Support of up to \$40,000 per year for up to two years may be requested.

### Research Scholar Awards (Application Deadline: September 1)

The Research Scholar Awards correspond to the NIH Research Career Development Awards in terms of the qualifications of the applicant, and the award is intended to encourage a sustained commitment to CF research on the part of an individual already engaged in an independent, creative research career. Support of up to \$75,000 per year for up to three years may be requested, with a maximum of \$30,000 per year devoted to stipend.

### Research Grants (Application Deadlines: February 1, September 1)

Research Grants are available for support of meritorious research projects spanning the range from basic laboratory investigations to the clinical management of CF. Research Grants are considered as "seed" funds for pursuing worthwhile new projects or novel ideas, and are intended to enable the investigator to obtain preliminary data in order to be more competitive in applying to other agencies for support. Support of up to \$50,000 per year for up to two years may be requested.

### Research Fellowships (Application Deadline: September 1)

Research Fellowships are offered for postdoctoral training in basic or clinical research and preference is shown to recent graduates, or those just beginning their investigative careers. Fellowship stipends in the amount of \$15,000 per year with a \$500 supplement for each year of postdoctoral experience up to four years, and a \$500 supplement for each dependent up to four may be provided. In addition, \$500 in travel funds for the Fellow to attend a national scientific meeting, as well as \$3,000 for institutional expenses (equipment, supplies, tuition, fees, etc.) may be provided. The maximum level of support available under this program is \$22,500, and applicants may request support for either one or two years.

### Student Traineeships (Application Deadlines: February 1, October 1)

Student Traineeships are offered to students at the undergraduate or graduate levels in biomedical sciences to introduce them to CF research at a time when they may still be uncommitted to a career goal. Support of \$1,500 may be requested for a minimum 10-week period.

For further information and application forms, contact:



**Cystic Fibrosis Foundation  
Medical Department**  
6000 Executive Boulevard, Suite 309, Rockville, Maryland 20852





## POSITIONS OPEN

Massachusetts Institute of Technology (MIT), Department of Meteorology, **POSTDOCTORAL RESEARCHER** in climate and trace substance studies. Ph.D. in meteorology or atmospheric physics required; some experience with radiative transfer problems advantageous. Send curriculum vitae and the addresses of three references to: **Professor R. E. Newell, MIT, Room 54-1520, Cambridge, Mass. 02139.**

**Massachusetts Institute of Technology (MIT)—POSTDOCTORAL RESEARCH ASSOCIATE.** A postdoctoral position is now available for a qualified biochemist, molecular biologist, or cell biologist to conduct biochemical investigations in conjunction with an interdisciplinary research program on cataract disease. Salary will depend on experience and qualifications. Applicants should send curriculum vitae to: **Professor George J. Benedek, Department of Physics, c/o MIT Personnel Office, 77 Massachusetts Avenue, Cambridge, Mass. 02139. Attention: Job Number R80-169. MIT is an Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL RESEARCH ASSOCIATE

Position available 1 September 1980 to study effects of hormones on neural development, with particular emphasis on glial and myelin differentiation. A background in immunocytochemistry, immunology, or biochemistry is preferred. Three-year appointment available with salary range of \$13,000 to \$16,000 in the initial year. Send curriculum vitae and references to: **Dr. Robert P. Skoff, Department of Anatomy, Wayne State University School of Medicine, 540 East Canfield Avenue, Detroit, Mich. 48201. An Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL RESEARCH ASSOCIATE

Participate in a unique interdisciplinary investigation of the development of the biochemical and electrophysiological responses of cultured embryonic heart cells to peptide hormone receptor occupancy. Background and training in membrane biochemistry, biophysics, or equivalent. Salary commensurate with experience. Submit curriculum vitae and names of three references to: **Dr. L. J. Elsas, Box AM, Woodruff Memorial Research Building, Emory University, Atlanta, Ga. 30322. Deadline for application is 1 August 1980. Emory University is an Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE.** Two positions available for immediate appointment. Areas of research: (i) changes in the membrane lipid profile in heart and liver in endotoxic shock and diabetes; (ii) changes in the kinetics of membrane-associated enzyme systems in heart and liver in shock and diabetes; and (iii) glycolytic and gluconeogenic regulation in the liver during endotoxic shock. Ph.D. in biochemistry required. Salary: \$14,000 to \$17,000 per year, depending upon experience. Send curriculum vitae and references to: **Dr. Maw-Shung Liu, Associate Professor of Physiology, Department of Physiology and Pharmacology, Bowman Gray School of Medicine, Winston-Salem, N.C. 27103. An Equal Opportunity/Affirmative Action Employer.**

### POSTDOCTORAL RESEARCH ASSOCIATE

Seek recent Ph.D. to join physical chemistry program around January 1981, to study the properties of active oxygen species (superoxide radical, hydroxyl radical, and singlet molecular oxygen). Interested candidates should send résumé to: **Dr. B. Bielski, Chemistry Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, N.Y. 11973. An Equal Opportunity Employer.**

**TRANSPORT FLUCTUATIONS IN SUBMICRON ELECTRONICS** and exotic conducting materials. Postdoctoral position available for experimental research on fundamental conduction processes in the restricted geometries and disordered, quasimetallic, ionic, and semiconducting structures made possible by technological advances in submicron thin film electronics. Measurement and analysis of low frequency fluctuation phenomena as a probe of the fundamentals of dissipative processes comprise the strategic theme of this research. Contact: **Professor Watt W. Webb or Professor Mark Nelkin, Applied Physics, Clark Hall, Cornell University, Ithaca, New York 14853. An Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

### UNIVERSITY OF VICTORIA Victoria, British Columbia, Canada POSTDOCTORAL RESEARCH ASSOCIATE in ENVIRONMENTAL TOXICOLOGY

Two positions available immediately to work as part of an Environmental Toxicology Group involved in a study of the biochemical events associated with the adaptation of salmon to copper and zinc. For the first position applicants should have some background in fish physiology and membrane function or metal ion metabolism while for the second position a background in protein fractionation and, if possible, metal ion metabolism is required. Appointment is for an initial period of 1 year. Initial salary up to \$15,000.

Applications with names of two referees should be sent as soon as possible to: **Professor A. T. Matheson, Department of Biochemistry and Microbiology, University of Victoria, P.O. Box 1700, Victoria, British Columbia, Canada V8W 2Y2.**

An NIH-funded **POSTDOCTORAL RESEARCH ASSOCIATE** position is available 1 August 1980, to study the biochemistry and function of the spectrin cytoskeletal network in normal and abnormal human erythrocytes. A strong background in biochemistry or cell biology is required. Applicants should send curriculum vitae, recent reprints, and arrange to have three letters of reference sent to: **Dr. Steven R. Goodman, Department of Physiology, The Milton S. Hershey Medical Center, The Pennsylvania State University, Hershey, Pa. 17033.**

**POSTDOCTORAL RESEARCH ASSOCIATES.** Control of smooth muscle development and function in small diameter pulmonary blood vessels. Membrane properties (intracellular recording), excitation-contraction coupling. Positions available immediately. Qualifications determine salary. Please send curriculum vitae and three references to: **B. M. Twarog, Ph.D., Department of Anatomical Sciences, Health Sciences Center, State University of New York at Stony Brook, Long Island, N.Y. 11794. An Equal Opportunity/Affirmative Action Employer.**

**POSTDOCTORAL RESEARCH ASSOCIATE** position available for EM study of mammalian muscle spindles. Experience desired in skeletal muscle ultrastructure. Salary dependent upon qualifications. Send résumé and names of three references to: **Dr. Jan Kucera, Neurology Department, Boston University School of Medicine, 750 Harrison Avenue, Boston, Mass. 02118.**

Harvard University. The Department of Psychology and Social Relations is searching for candidates for a **TENURED PROFESSORSHIP IN COGNITION.** Specialization could be in any aspect of human information, learning, or perception. Address inquiries, including curriculum vitae and the names of at least five referees familiar with your work, to: **Professor David M. Green, Chairman, Department of Psychology and Social Relations, Harvard University, Cambridge, Mass. 02138. Deadline for application is 1 October 1980. Harvard University is an Equal Opportunity/Affirmative Action Employer.**

Harvard University. The Department of Psychology and Social Relations is opening a search for a **FULL PROFESSOR IN SOCIAL PSYCHOLOGY** to begin 1 July 1981. The program is broad in scope, including the sociological as well as the psychological side of the discipline, with a strong emphasis on methods, and upon application as well as theory. Address inquiries, including curriculum vitae, and the names of at least five referees familiar with your work, to: **Professor David M. Green, Chairman, Department of Psychology and Social Relations, Harvard University, Cambridge, Mass. 02138. Deadline for application is 1 October 1980. Harvard University is an Equal Opportunity/Affirmative Action Employer.**

The Departments of Surgery and Biochemistry are reopening the search for a **RESEARCH ASSISTANT PROFESSOR** with research interests in carcinogenesis, steroids, and nutritional biochemistry. Competitive salary, excellent benefits, and well-equipped research facilities. Applicants with postdoctoral experience in biochemistry or a related area should send their curriculum vitae and references to: **Dr. Alvin L. Watne, Chairman, Department of Surgery, or Dr. Fred Butcher, Acting Chairman, Department of Biochemistry, West Virginia University Medical Center, Morgantown, West Virginia 26506. Deadline for receipt of applications is 1 August 1980. West Virginia University is an Equal Opportunity/Affirmative Action Employer.**

## POSITIONS OPEN

**Position: PROFESSOR OF OCCUPATIONAL MEDICINE AND DIRECTOR OF OCCUPATIONAL HEALTH PROGRAM.**

**Education:** M.D. plus training and/or experience in occupational health.

**Specialty board:** Certification by the American Board of Preventive Medicine (occupational medicine) is desirable.

**Research experience:** Research experience on occupational health problems desirable.

**Teaching:** Experience in the development and teaching of graduate level courses in occupational health, working knowledge of federal programs in occupational health, and familiarity, understanding, and experience with both company and union occupational health activities desirable.

**Administration:** Applicant must have leadership skills to encourage and develop educational and research activities at a high level. Successful applicant will be responsible for the coordination of occupational safety and health activities within the Harvard School of Public Health.

**Contact:** Send curriculum vitae, a list of publications, a statement of current and future interests in occupational health, and the names of two individuals who would be willing to respond to a request for evaluation to:

**Chairman, Search Committee  
Dean's Office  
Harvard School of Public Health  
677 Huntington Avenue  
Boston, Mass. 02115**

*Harvard University is an Equal Opportunity Employer with an Affirmative Action Program.*

Harvard University. The **Department of Psychology and Social Relations** is searching for nontenure appointees (initially for a 5-year term beginning 1 July 1981) in the areas of **SOCIAL, PERSONALITY, AND COGNITIVE PSYCHOLOGY.** In each case a secondary competence in developmental psychology 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: **David M. Green, Chairman, Department of Psychology and Social Relations, Harvard University, 33 Kirkland Street, Cambridge, Mass. 02138. Applications received after 1 November 1980 may not be considered. Harvard University is an Equal Opportunity/Affirmative Action Employer.**

### RECOMBINANT DNA STUDIES ON PLANT GENES

The Department of Bacteriology, University of California at Davis, invites applications for a position at the assistant or associate professor level with teaching responsibilities in the Bacteriology Department (33 percent) and with research responsibilities assigned to the Plant Growth Laboratory (67 percent). (This is the same position recently advertised at the assistant professor level.) The teaching would involve a course in molecular cloning and associated techniques plus other teaching in bacteriology. Candidates who are committed to developing a research program on the application of recombinant DNA technology to the structure, modification, or expression of plant genes will be considered. The research should include, but is not limited to, problems of direct agricultural importance. Previous experience with plant systems is preferred but is not essential.

Send curriculum vitae, including a brief description of research experience, a brief statement of proposed research, and names of three references, by 15 August 1980 to: **Chairman, Search Committee, Department of Bacteriology, University of California, Davis, Calif. 95616.**

*In compliance with federal and state laws and University policy, the University of California does not discriminate on the basis of race, color, national origin, religion, sex, handicap, age, or against disabled veterans or veterans of the Vietnam war. The University of California is an Affirmative Action/Equal Opportunity Employer.*

### RESEARCH ASSISTANT/ASSOCIATE

To collaborate in studies of lipid metabolism by isolated heart and mitochondria. Prefer Ph.D. in biochemistry or physiology with previous experience in lipid biochemistry. GC/mass spectrometry experience helpful. Send résumé to: **Department of Internal Medicine, Wayne State University, 540 East Canfield, Detroit, Michigan 48201. An Equal Opportunity Employer.**



## UNIVERSITY OF EDINBURGH Department of Chemistry POSTDOCTORAL RESEARCH FELLOWS

Applications are invited for the following posts in a multidisciplinary team studying  $^{13}\text{C}$ -NMR of Metabolism in Biological Systems and supported by the SRC.

**A. Research Fellow Grade II** (salary range: £8,083-10,484)

Senior NMR specialist to operate and design whole-cell and cryobiochemical experiments with a 300 MHz wide-bore NMR instrument. Programming hardware and software modification, flow-cell design and time-course, decoupling experiments in 20 mm tubes together with day-to-day supervision of the operation of this research instrument are the main responsibilities.

**Qualifications:** Ph.D. in Chemical Physics, Physical Chemistry or equivalent plus several years experience in high-field NMR.

**B. Research Fellow Grade Ia** (salary range: £5,725-8,769)

Postdoctoral enzymologist with experience in enzyme purification and kinetics to develop a programme of cryoenzymological experiments in collaboration with the NMR specialist. Responsibilities include supervision of a microbiologist (TG 3), purification of enzymes, and the coordination of biological and NMR measurements.

**Qualifications:** Ph.D. in Biochemistry with two years postdoctoral experience.

Applications for the above posts together with a curriculum vitae and the names of two referees should be sent as soon as possible to: Professor A. I. Scott, Department of Chemistry, University of Edinburgh, West Mains Road, Edinburgh EH9 3JJ, Scotland, from whom further particulars can be obtained. Please quote Reference 5031.

## VICE PRESIDENT FOR ACADEMIC AFFAIRS AND RESEARCH

The Oregon Graduate Center (OGC), a private education and research center at the graduate level, is seeking an established scientist with proven administrative abilities to serve as vice president for academic affairs and research.

This position reports to the president of OGC and is the chief academic officer of the Center. Responsibilities include:

- Development and implementation of the Center's academic policies and programs,
- Coordination and marketing of part-time and continuing education programs,
- Coordination of research marketing,
- Interaction with education policy committee and department chairmen relative to academic planning and curriculum review and development programs,
- Student recruitment and admissions,
- Administration of education office,
- Faculty appointments and evaluation,
- Budget preparation and coordination for academic departments and library,
- Administration and coordination of equipment funds and space allocations, and
- Acts as an ex-officio member of all faculty committees.

In addition, the vice president for academic affairs and research may have an academic appointment with corresponding participation in ongoing research programs.

**Qualifications:** applicant must have an earned doctorate and proven administrative experience in higher education, provide evidence of scholarly research, organizational ability and communication skills, have knowledge of grant acquisition and other funding opportunities.

**Application:** submit résumé and three academic references postmarked no later than 1 October 1980 to:

Office of the President  
Oregon Graduate Center  
19600 Northwest Walker Road  
Beaverton, Oregon 97006

*An Equal Opportunity/Affirmative Action Employer*

## POSTDOCTORAL RESEARCH AWARDS

The National Research Council will make awards in October 1980 on a competitive basis at the U.S. Army Armament Research and Development Command's Chemical Systems Laboratory. Stipends will be \$20,500 and up plus fringe benefits. These awards provide opportunities to conduct research as visiting scientists in the fields of

**PHYSICAL AND ORGANIC CHEMISTRY  
OF SULFUR AND PHOSPHORUS  
COMPOUNDS; CHEMICAL KINETICS,  
AEROSOLS, MOLECULAR STRUCTURE,  
POLYMERS, SMOKES**

The program is open to citizens of the United States, Canada and the United Kingdom and to Immigrant Visa holders of other countries. Recent recipients of the doctorate as well as senior applicants will be considered.

For application materials and details write to

Associateship Office (JH-610-CS3)  
**National Research Council**  
2101 Constitution Avenue, N.W.  
Washington, D.C. 20418

**Postmark deadline for applications  
is August 15.**

*National  
Research Council*

National Academy of Sciences  
National Academy of Engineering Institute of Medicine

## U.S. PUBLIC HEALTH SERVICE EPIDEMIOLOGY TRAINING PROGRAM—1981

The U.S. Public Health Service (USPHS) invites applications for a proposed extension of a training program in medical epidemiology. Up to fifteen (15) persons per year, who already have an M.D., a doctorate in an allied health profession, or Ph.D. in a biomedical or behavioral science, may be accepted as Commissioned Officers in the USPHS for a three-year period of duty. Applications received by *September 30, 1980* may be considered for service to begin *July 1, 1981*. During the first year, each successful applicant will attend a university, at government expense, as a candidate for the M.P.H. or equivalent degree. During the subsequent two years, individuals will work in association with senior epidemiologists in the participating USPHS agencies (Alcohol, Drug Abuse, and Mental Health Administration, ADAMHA; Center for Disease Control, CDC; Food and Drug Administration, FDA; and the National Institutes of Health, NIH) primarily in research studies. A matching procedure akin to the national internship matching will be employed to assure that each individual is assigned to a preceptor whose area of expertise is of interest to the trainee, and consistent with his/her further career plans.

Pay and allowances will be those established for USPHS Officers. The normal starting rank will be Senior Assistant (O3). In the case of the medical officer with dependents, this would correspond to an

annual salary of \$23,000. During the second and third years, salary increments may be expected. Qualified officers may become eligible for special incentive pay if provided for by law.

Basic requirements for admission to the program are:

1. M.D., doctorate in an allied health profession, biomedical or behavioral science, and preferably at least one year of post-doctorate training or experience.
2. U.S. Citizenship, and ability to satisfy physical and other ancillary requirements for a USPHS commission. The PHS Act requires that a candidate without prior service not be over 43 years of age.
3. Acceptability to an accredited university offering an M.P.H. or equivalent degree.

For further details of the program, and for application forms, send inquiries to:

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

*An Equal Opportunity Employer*

## POSITIONS OPEN

**RESEARCH ASSOCIATE**—A position is available immediately for a Ph.D. to join group studying cellular gene expression and DNA sequence rearrangements in virally induced tumors. Studies will involve extensive use of recombinant DNA technology. Research will be conducted in the laboratory of Dr. Susan M. Astrin at the Institute for Cancer Research, in collaboration with other groups and institutions. Experience in molecular cloning techniques highly desirable. Salary range is \$14,000 to \$18,000. Send curriculum vitae and the names of three references to: Dr. Susan M. Astrin, c/o Mary T. Dixon, Personnel Manager, The Institute for Cancer Research, 7701 Burholme Avenue, Philadelphia, Pa. 19111. An Equal Opportunity/Affirmative Action Employer.

**RESEARCH ASSOCIATE.** Division of Renal Medicine seeks Ph.D. Areas of research include hemodynamics of renal blood flow, isolated perfused kidneys, and hormone metabolism by the kidney. Experience in renal physiology, radioimmunoassays, and HPLC desirable. Send résumé and names of three references to: Peter Pletka, M.D., University of Massachusetts Medical Center, 55 Lake Avenue North, Worcester, Mass. 01605. An Affirmative Action/Equal Opportunity Employer.

### RESEARCH CHEMIST—ISOTOPE RATIO MASS SPECTROMETRIST

Faculty-level position within the Conservation and Survey Division, University of Nebraska, responsible for supervising and directing RMS facility dedicated to the measurement of naturally occurring stable isotope ratios of hydrogen, oxygen, and nitrogen. RMS experience necessary. Ph.D. preferred but not mandatory. Send résumé and three letters of reference by 1 August 1980 to: R. F. Spalding, University of Nebraska, 113 Nebraska Hall, Lincoln, Nebraska 68588. An Equal Opportunity Employer.

### SCIENTIST HEAD OF COMPUTER UNIT Imperial Cancer Research Fund Laboratories London

We require a scientist with substantial computing experience in a field relevant to the work of the Fund and with a broad knowledge of computer techniques. The person appointed will in addition to developing his/her own research, be responsible for the computing services of our laboratories, scientific liaison with computer users, and user instruction.

The main computer is a recently installed DEC 2050 supervised by a computer manager with a staff of five programmer/analysts and an operator. Relevant research areas include, in particular, statistical and epidemiological analysis, as well as applications for artificial intelligence, image analysis, and data base management in the biomedical field.

After an initial probationary period, this appointment will be of unlimited tenure. Salary range is expected to be £10,142 to £12,564 plus £740 London Weighting, but may be extended depending on age, qualification, and experience.

Enquiries and applications should be sent to: Dr. W. F. Bodmer, Director of Research, Imperial Cancer Research Fund, Lincoln's Inn Fields, London WC2, England by 31 August 1980.

**TOXICOLOGIST**—Tenure-track position at the assistant or associate professor level, depending on credentials. Applicant must be interested in pursuing research activities with extramural funding as well as undergraduate teaching. Research "seed money" is available. A major interest in industrial toxicology is desirable, but not necessary. Contact: Dr. William M. Bourn, Division of Pharmacology and Toxicology, School of Pharmacy, Northeast Louisiana University, Monroe, La. 71209.

### TOXIC WASTE REDUCTION

The Governor's Office of Appropriate Technology, State of California, is seeking qualified professional staff to conduct an assessment of policies and technologies which can safely be used to reduce the volume of toxic wastes disposed of in the land. Particular attention will be given to the feasibility of various combustion technologies (stationary and portable), and to the development of policies which lead to reduction and recycling of toxic materials. We wish to hire a resource economist/project manager, two chemical/industrial engineers, and a waste management specialist. Advanced degrees and related experience mandatory. Salary commensurate with qualifications. Project begins mid-summer for approximately 1 year. For details, write: Phyllis Tichinin, Office of Appropriate Technology, 1530 Tenth Street, Sacramento, Calif. 95814.

## POSITIONS OPEN

**RESEARCH ASSOCIATE**—To study the effects of chemical carcinogenesis and tumor promoters on gene expression. Background in molecular biology and chemical carcinogenesis desired. Salary: \$18,000 to \$22,000. Please send résumé and letters of reference to: Dr. Thomas Slaga, Oak Ridge-University of Tennessee Graduate School of Biomedical Sciences, P.O. Box Y, Oak Ridge, Tenn. 37830. An Equal Opportunity/Affirmative Action Employer.

### SENIOR GEOSCIENTIST

Study solidified nuclear waste reactions with rock media under hydrothermal conditions as part of a large safety study of geologic waste disposal.

Knowledge of thermodynamic/kinetic principles controlling waste-rock-groundwater reactions and experimental techniques to investigate geochemical behavior is required.

Experience in reaction/alterations of minerals and glasses in natural geohydrologic systems is desired. Ability to interface with and/or supervise scientists and technicians and present results of research at conferences and through the technical literature is important.

Please submit résumés, academic record, and salary requirements to: E. P. Galbraith, BATTELLE-NORTHWEST, P. O. Box 999, Richland, Wash. 99352.


An Equal Opportunity Employer, M/F

Clinical Assays, a leading manufacturer of Radioimmunoassay Kits and a division of an international Fortune 500 company, has an opening for:

### SR. RESEARCH SCIENTIST

To be involved with development and initial manufacturing of in/vitro diagnostic kits for markers of infectious diseases. PhD in relevant discipline plus 2 years post-doctoral or industrial experience in handling of infectious agents. Strong virology experience preferred. Position will also include supervisory responsibility.

We offer good salary, benefits and a convenient location. Please send resume to:

 **CLINICAL ASSAYS**  
DIVISION OF TRAVENOL LABORATORIES, INC.  
Personnel Department  
620 Memorial Drive  
Cambridge, MA 02139  
Equal Opportunity/Affirmative Action Employer M/F

### VICE PRESIDENT FOR ACADEMIC AFFAIRS GEORGIA INSTITUTE OF TECHNOLOGY ATLANTA, GEORGIA

Nominations and applications are invited for the newly vacant position of vice president for academic affairs at the Georgia Institute of Technology, an institution of the University System of Georgia.

The Institute enrolls over 11,000 students, and offers academic programs at the undergraduate and graduate levels in engineering, science, management, and architecture.

The vice president for academic affairs is the Institute's chief academic officer, responsible for planning, monitoring, and implementing all academic programs with full authority over academic appointments and budgets. Cooperates with vice president for research in furthering the development of both teaching and research.

Qualifications include: proven leadership skills and experience in academic administration at an accredited higher educational institution; an earned doctorate; evidence of scholarly research and writings; knowledge of contract and research administration; knowledge of institutional financial procedures; and successful classroom teaching.

Nominations and applications (with résumés) should be sent to:

Chairperson, Search Committee for  
Vice President for Academic Affairs  
c/o President's Office  
Georgia Institute of Technology  
Atlanta, Georgia 30332

Georgia Institute of Technology is an Equal Employment/Education Opportunity Institution.

## POSITIONS OPEN

**RESEARCH ASSOCIATE** position available for study of membrane structure using x-ray diffraction and electron microscopy. Experience with biochemical and crystallographic analysis of membrane proteins is required. Applicants should write to:

Dr. Lee Makowski  
Department of Biochemistry  
College of Physicians and Surgeons  
630 West 168 Street  
New York, N.Y. 10032

Columbia University is an Equal Opportunity/Affirmative Action Employer.

### RESEARCH SCIENTISTS— BIOLOGICAL SCIENCES

The Life Sciences Division of IIT Research Institute, a not-for-profit, Chicago-based research organization, has several staff positions for biologists. Requisite are Ph.D. in physiology, toxicology, or experimental pathology. Preference will be given to candidates with postdoctoral research experience in chemical carcinogenesis, pharmacology, or an interest in long-term in vivo toxicity and carcinogen bioassay studies. Opportunity is available to develop independent research projects in own field of expertise. Salary commensurate with experience and qualifications.

Please submit résumés, including salary history, to:

L. Amft  
Professional Staffing  
IIT RESEARCH INSTITUTE  
10 West 35 Street  
Chicago, Ill. 60616

IITRI is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and members of minority groups.

The University of California, Davis, announces a position for a **SENIOR ACADEMIC PHYSICIAN** to direct the Davis component of the state of California-funded Northern California Occupational Health Center, a program involving faculty from the Schools of Medicine and Veterinary Medicine and the College of Agriculture and Environmental Sciences.

The program will focus upon clinical service, teaching, and research in occupational medicine as related to the agricultural and rural workplace. Academic rank and salary commensurate with credentials with academic appointment in appropriate department of the School of Medicine. Research background in occupational health and medicine required. Past research background in occupational health and medicine required. Past administrative experience or strong administrative potential necessary. Ability to work across multidisciplinary lines involving faculty from all three schools is necessary.

Unique responsibility and potential. Position open until filled. Send résumé with list of three references to:

Chair, Search Committee for Occupational Medicine  
c/o Office of the Dean  
School of Medicine  
University of California  
Davis, California 95616

In compliance with federal and state laws and University policy, the University of California does not discriminate on the basis of race, color, national origin, religion, sex, handicap, age, or against disabled veterans of the Vietnam era. The University of California is an Affirmative Action/Equal Opportunity Employer.

### TOXICOLOGIST/PHARMACOLOGIST Principal Research Scientist (Columbus, Ohio location)

Battelle, one of the foremost research and development organizations in the world, has an immediate opening for an individual with a Ph.D. in toxicology or pharmacology. Desire minimum of 3 years of animal laboratory postdoctoral experience. Proven ability to organize, conduct, and prepare written results of research studies, with emphasis on in vivo research projects. Working knowledge of metabolism helpful. Excellent opportunity to develop personal research interests; excellent fringe benefits and salary, commensurate with qualifications. Send curriculum vitae in confidence to: Dick Shaw, Senior Personnel Advisor, Box 180, SCIENCE.

 **Battelle**  
Columbus Laboratories  
An Equal Opportunity Employer

## POST DOCTORAL FELLOW

Opportunity to do fundamental research in the biochemical and molecular aspects of chromosome condensation and cell cycle regulation of animal cells in culture. Specific project involves the purification and characterization of proteins involved in the condensation of chromosomes mammalian cells. Some expertise in protein purification and characterization is a must. Knowledge of raising monoclonal antibodies would also be helpful.

Applicant would probably have a PhD in biochemistry or cell biology and be able to work in corroboration with a group. If interested please send resume in strict confidence to:

**Director of Administration  
MERRELL RESEARCH CENTER  
MERRELL-NATIONAL  
LABORATORIES**

*A Division of Richardson-Merrell Inc.*

2110 East Galbraith Road  
Cincinnati, Ohio 45215

An Equal Opportunity Employer M/F

# Merrell

## Pharmacologist/ Clinical Research

Pfizer Inc. . . . a FORTUNE 150 leader in the health care industry . . . is seeking a scientist with expertise in cardiovascular or autonomic pharmacology to join its multidisciplinary cardiovascular clinical research team in our New York Headquarters.

The successful candidate must be highly motivated and interested in clinical research. A Ph.D. is required with 1-3 years postdoctoral experience in cardiovascular research. Candidate must also be skilled in oral and written communications.

Pfizer offers a fully commensurate salary, excellent benefits and the potential for further professional development and growth. For immediate confidential consideration, send resume, including salary history, to:

**Ms. Peg Toomey, Associate Personnel Manager,  
Pfizer Pharmaceuticals, 235 East 42nd Street, New  
York, New York 10017.**



An Equal Opportunity Employer

## Sr. Medical Microbiologist/ Immunologist

Norwich-Eaton Pharmaceuticals, Division of MortonNorwich, is presently searching for a flexible and creative scientist to work in our antimicrobial program that includes immunological aspects. The applicant we are seeking will have recently completed a doctorate and should be broadly trained in both microbiology and immunology. An interest in doing IN VIVO work is essential.

The potential candidate's work should reflect the ability to perform independently, as the position involves searching for new approaches for the treatment of bacterial infections.

We are a medium sized pharmaceutical manufacturer with an active research program. Our research and development facilities are located in rural upstate New York. Benefits include company paid relocation, health/dental/retirement benefits and flexible working hours.

Send C.V. to Jane Belansky

**NORWICH-EATON PHARMACEUTICALS  
Division MortonNorwich  
P.O. Box 191                      Norwich, New York 13815**

An equal opportunity employer, M/F

## Chairperson Medicine

### THE NEW YORK HOSPITAL- CORNELL MEDICAL CENTER

Seeks a distinguished physician for appointment as PROFESSOR AND CHAIRPERSON, DEPARTMENT OF MEDICINE, Cornell University Medical College, and as PHYSICIAN-IN-CHIEF, THE NEW YORK HOSPITAL.

Candidates must present evidence of experience and accomplishment in teaching, research, clinical service and administration.

Send credentials to:

Medicine Search Committee, Room F739

**Cornell University  
Medical College**

1300 York Ave.

New York, N.Y. 10021

Equal Opportunity Employer under State and Federal LAWS  
including TITLE IX, EDUCATION AMENDMENTS of 1972.

## POSITIONS OPEN

### Supervisor of Technical Services

#### Cornell University

The Histology Laboratory in the Department of Veterinary Pathology has an opening for a supervisor of technical services. In this capacity, you will be responsible for planning and directing all technical aspects of the laboratory as well as overseeing six employees. To qualify, you must have a B.S. degree, formal training, and at least 3 years of technical and administrative experience in histology.

ASCP registered medical technology certification is also required. For consideration, please forward your résumé to: **Personnel Staffing Services, Cornell University, 440 Day Hall, Ithaca, N.Y. 14853.** An Affirmative Action/Equal Opportunity Employer.

**SENIOR SCIENTIST**—Experience in one of the following areas: limnology, microbiology, phytoplankton, zoology. Will do basic research on environmental issues, problem-solving, interpretation of data in fresh, brackish, and marine environments of southern Florida. Ph.D. required. Position available 1 September 1980. Salary negotiable. Send résumé and names of three references to:

**Director  
Environmental Quality Laboratory, Inc.  
590-D Northwest Olean Boulevard  
Port Charlotte, Fla. 33952**

**SENIOR SCIENTIST** with small manufacturer of electronic medical instruments to work in new product development and marketing. Requires professional qualifications and experience. Preference will be given candidates with: Ph.D. in biochemistry or equivalent; demonstrated creativity; demonstrated technical writing capability; research and applied laboratory experience in clinical chemistry; experience in clinical osmometry; and experience in cystic fibrosis screening, including methods of error-free sweat collection. Salary: \$25,000 to \$35,000, negotiable. Telephone: 801-752-6011.

**VETERINARY TOXICOLOGIST**, Department of Veterinary Physiological Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada, has a tenurable position available for a veterinary toxicologist. Responsibilities include: (i) supervision of a toxicology service laboratory, (ii) lecture and laboratory teaching in toxicology and pharmacology, and (iii) development of an active research program in toxicology. Candidates should have a D.V.M. and be eligible for licensure in Saskatchewan. A Ph.D. in toxicology is required. Rank and salary commensurate with qualifications and experience. Date of appointment: 1 September 1980 or as soon as possible thereafter. Apply with curriculum vitae and names of three referees to: **Dr. J. G. Manns, Department of Veterinary Physiological Sciences, Western College of Veterinary Medicine, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.**

**VISION PSYCHOLOGIST**—The Joint Institute for Aeronautics and Acoustics, Department of Aeronautics and Astronautics at Stanford University, has a research associate position for an experimental psychologist in visual perception to participate in a research program on visual cues in flight simulation. Experience in psychophysics with computer displays preferred. Rank and salary negotiable, depending on qualifications and experience. Contact: **A. Ahumada, Department of Aeronautics and Astronautics, Stanford University, Stanford, Calif. 94305.** Stanford University is an Equal Opportunity/Affirmative Action Employer.

## POSITIONS OPEN

### HARVARD UNIVERSITY VERTEBRATE BEHAVIORIST

Harvard University seeks to appoint a tenured professor in the area of vertebrate behavior, with emphasis on behavioral ecology and sociobiology. Acceptable specializations subsumed under these disciplines can include ethology, behavioral physiology, or even relevant aspects of population biology, so long as the candidate is able and willing to supervise training in both field and experimental research on whole patterns of vertebrate behavior. Teaching duties will be at both the undergraduate and graduate levels.

Applicants should send curriculum vitae and statement of research interests by 15 September to: **Edward O. Wilson, Museum of Comparative Zoology, Harvard University, Cambridge, Mass. 02138.**

Harvard is an Equal Opportunity/Affirmative Action Employer.

**VISITING LECTURER IN ECOLOGY.** Qualifications: Ph.D. in ecology, and the ability to teach effectively at the undergraduate level. Responsibilities: coordinating and developing field laboratories, teaching one-half of two large general ecology courses and coordinating a seminar series. Temporary 9-month appointment (salary: approximately \$14,000) with possibility of a second year. Please submit curriculum vitae by 25 July 1980 to: **Dr. Philip W. Rundel, Department of Ecology and Evolutionary Biology, University of California, Irvine, California 92717.** The University of California is an Affirmative Action Employer.

## SYMPOSIUM

### INTERNATIONAL SYMPOSIUM ON FUNDAMENTAL MECHANISMS IN HUMAN CANCER IMMUNOLOGY

27 TO 29 OCTOBER 1980  
GALVESTON, TEXAS

**Dr. J. Palmer Saunders,  
University of Texas Graduate School  
of Biomedical Sciences at Galveston  
Dr. Jerry C. Daniels, University of Texas  
School of Medicine at Galveston**

This symposium will provide a forum for a focused interdisciplinary exchange between leading basic and clinical investigators studying mechanisms in cancer immunology. Topics to be discussed include: cell membranes, modulation of immune reactions, surface antigens, and human tumor surveillance. The symposium will be supported in part by a grant from the National Cancer Institute and sponsored by The University of Texas Medical Branch at Galveston and The University of Montpellier, France.

Further information and registration materials may be obtained by contacting: **Margie Taylor, The University of Texas Medical Branch Cancer Center, 111A Basic Science Building, Galveston, Texas 77550.**

## FELLOWSHIPS

### GRADUATE TRAINING IN ANATOMY FELLOWSHIPS AVAILABLE

The Department of Anatomy at George Washington University Medical Center is seeking outstanding candidates for Ph.D. training in anatomy. Substantial fellowship aid and partial tuition waivers are available for highly qualified applicants. Only applicants who are interested in pursuing a career in anatomy or a related field need apply. Inquiries should be directed to: **Dr. Frank J. Slaby, Supervisor of Graduate Students, Department of Anatomy, The George Washington University Medical Center, 2300 I Street, NW, Washington, D.C. 20037.** Telephone: 202-676-3511.

**PREDOCTORAL FELLOWSHIPS IN RESPIRATORY AND CARDIOVASCULAR PHYSIOLOGY.** The Physiology Division of the Johns Hopkins University, Department of Environmental Health Sciences, has predoctoral traineeship positions available starting in the 1980-1981 academic year. Candidates with interest in obtaining the Ph.D. degree in these fields should send curriculum vitae and the names of three references to: **Dr. Wayne A. Mitzner, Department of Environmental Health Sciences, Division of Environmental Physiology, Johns Hopkins University, School of Hygiene and Public Health, 615 North Wolfe Street, Baltimore, Md. 21205.**

## FELLOWSHIPS

### POSTDOCTORAL RESEARCH FELLOWSHIP IN VISUAL SCIENCES

A position is available for postdoctoral research training in cell biology (including transmission, scanning, and freeze-etch EM), biochemistry and physiology of the eye, with emphasis on ultrastructure, function, growth and differentiation, wound healing, and degenerative diseases of ocular tissues. Recent Ph.D.'s or M.D.'s who are U.S. citizens or permanent residents are invited to apply. Initial appointment is for 1 year, renewable for 2 years. Stipends under currently funded National Research Service Awards range from \$13,380 to \$17,040 per year, depending on previous relevant experience. Send curriculum vitae with a statement of research interests, career goals, and names and addresses of two or three references to: **Dr. Clifford Harding, Director of Research, Kresge Eye Institute, Wayne State University, School of Medicine, 540 East Canfield Avenue, Detroit, Michigan 48201.** An Equal Opportunity Employer.

**POSTDOCTORAL FELLOWSHIP POSITIONS IN CANCER ETIOLOGY AND TREATMENT.** Available at the Medical College of Virginia, Virginia Commonwealth University. Training will include cellular pharmacokinetics, carcinogenesis, tumor immunotherapy, tumor virology, and molecular biology. Only U.S. citizens or foreign nationals with permanent residence or immigrant visas will be considered. Contact: **Dr. Page Morahan, Box 678—MCV Station, Richmond, Va. 23298.** Affirmative Action/Equal Opportunity Employer.

## MARKETPLACE

**FOR SALE:** Technicon SMA1260 Micro System, used 1000 hours. Selling due to contract requirements for centrifugal analyses. Original cost \$115,000; will sell \$8750. Can be converted from micro for approximately \$3000. Responsibility for removal of equipment from Southern Research Institute (SRI) premises, including providing packing materials, labor, and so forth and transportation to destination will be that of buyer. Certified check required on day of removal from SRI premises. Contact: **Sylvia Puckett, Southern Research Institute, 2000 Ninth Avenue South, Birmingham, Alabama 35255.** Telephone: 205-323-6592.



**Medwire Corp.**  
stocks a wide variety  
of  
**TEFLON\***  
**COATED**

Platinum alloys,  
stainless steel,  
silver, multistrand  
and single strand  
available for prompt  
shipment. Write for  
descriptive brochure  
and price lists.

### Medwire Corp.

Affiliate of Sigmund Cohn Corp.  
122 So. Columbus Ave.  
Mt. Vernon, N.Y. 10553  
914-664-5300

\*Reg. T.M. E. I. Dupont

Circle No. 127 on Readers' Service Card

## Thermocouple THERMOMETERS

We make 14 thermometers, with digital or meter readout. All read in 2 secs, are extremely easy to use. Simply apply probe — read temperature.

Unbreakable probes are steel sheathed including World's Smallest Microprobe, 0.01" dia.

Models

BAT-4 BIOLOGICAL

BAT-5 CRYOGENIC

BAT-9 DIGITAL

BAT-8 DIGITAL °C or °F

TH CLINICAL

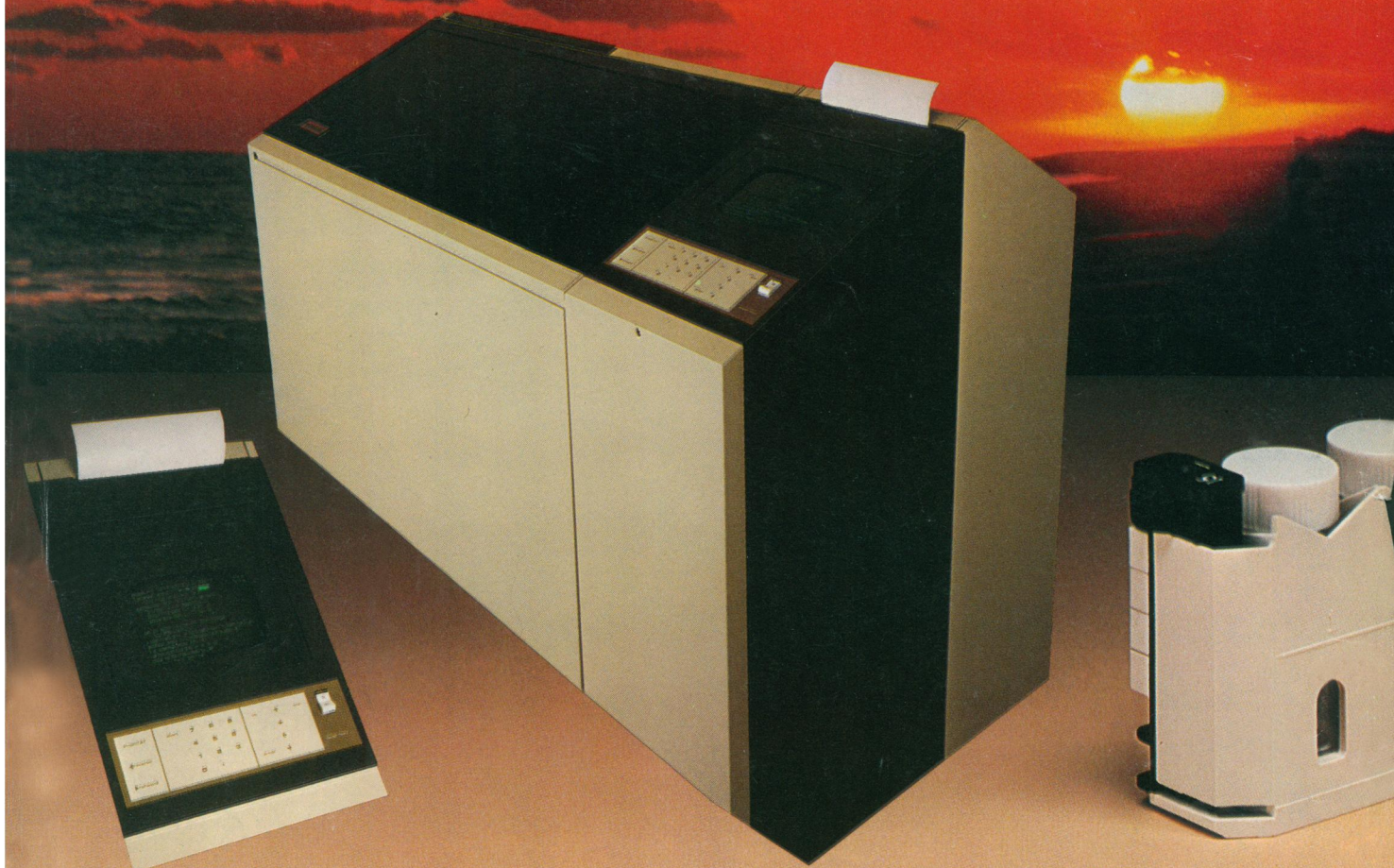
The Modern Way to Measure

**BAILEY INSTRUMENTS INC.**  
Saddle Brook, N.J. 07662 • (201) 845-7252

Circle No. 3 on Readers' Service Card



# Don't just count your samples. SPECTRALYZE them!



## There is more in your sample than just counts.

The analysis of liquid scintillation spectra is recognized as the way of the future. The SPECTRALYZER™ in the TRI-CARB® 460C does it today.

## Spectralyzing samples provides—

■ **Speed:** Reduced counting times. External Standard information in just 15 seconds.

■ **Accuracy:** New quench correction methods. Automatic correction for luminescence events.

■ **Precision:** Storage of the spectrum yields higher count rates, therefore better statistical precision.

## In addition you'll get—

■ **Simplicity:** Simple system interaction by video.

■ **Versatility:** Selection of three quench correction techniques and 15 measurement programs.

■ **Economy:** The SPECTRALYZER comes free with the TRI-CARB 460C. And that's not all...

## It's a TRI-CARB.

Space technology also brings multi-microprocessor control, 50% higher capacity than ordinary liquid scintillation counters, batch handling and PrioSTAT—your second sample changer.

The TRI-CARB 460C is the result of 25 years of leadership and innovation in liquid scintillation counting technology.

Call or write Packard today for complete information.



# Packard

Packard Instrument Company, Inc.  
2200 Warrenville Road, Downers Grove, IL 60515  
Packard Instrument International S.A.  
Renggerstrasse 3, CH-8038 Zurich, Switzerland

The World Leader in Liquid Scintillation Counting

Circle No. 304 on Readers' Service Card



# Enter the easy phase.

AO One-Ten  
PHASESTAR microscope

Phase contrast is easier than ever with the AO PHASESTAR® microscope. There are many ways AO has taken the fumbling out of phase work.

Most important, PHASESTAR microscopes are equipped with a phase aperture viewing unit in which you can view binocularly to quickly focus on the phase plate of the objective and the image of the annular diaphragm. Finally, centration of the annulus to the phase plate is fast and simple. The lever to operate this unit can be made accessible from either side of the microscope.

Another beauty of AO phase is the one-time centering of annuli. All you do is align each of the four annuli to its corresponding objective, and you're ready to rotate the turret from one position to another without centering the annuli again.

You'll also like the way you can easily change working distance by changing one annulus, or change to brightfield by sliding an annulus out of the optical path. Other convenience features are adjustable illumination intensity; exclusive AO nosepiece focusing; planachromatic objectives for superior image quality and edge-to-edge flatness of field.

Phase out complicated phase contrast. Ask your AO dealer representative for a demonstration of the PHASESTAR microscope. Or write for a brochure to American Optical, Scientific Instrument Division, Box 123, Buffalo, NY 14240.

**AO**  
American Optical®

Circle No. 106 on Readers' Service Card