

chester, England, and Halsted (Wiley), New York, 1974. 178 pp., illus. \$16.50. Ellis Horwood Series in Analytical Chemistry.

**Power Lines and the Environment.** Proceedings of a meeting, Amherst, Mass., June 1973. Robert Goodland, Ed. Cary Arboretum of the New York Botanical Gardens, Millbrook, N.Y., 1973. xii, 172 pp., illus. Paper, \$5.

**Practical Genetics.** P. M. Sheppard, Ed. Halsted (Wiley), New York, 1974. xii, 328 pp., illus. \$27.50.

**The Problem of Excitability.** Electrical Excitability and Ionic Permeability of the Nerve Membrane. B. I. Khodorov. Translated from the Russian edition (Leningrad, 1969) by Basil Haigh. F. A. Dodge, Jr., Transl. Ed. Plenum, New York, 1974. xviii, 330 pp., illus. \$29.50.

**Reproductive Biology of the Primates.** W. Patrick Luckett, Ed. Karger, Basel, 1974. xii, 288 pp., illus. \$47. Contributions to Primatology, vol. 3.

**Research Grants Index.** Fiscal Year 1973. Division of Research Grants, U.S. Department of Health, Education, and Welfare, Bethesda, Md., 1974 (available from the Superintendent of Documents, Washington, D.C.). Two volumes. Vol. 1, Index Section. xii + pp. 1-1804. Vol. 2, viii + pp. 1805-2914. Paper, \$32.95.

**Resource Sharing in Libraries.** Papers from a conference, Pittsburgh, Pa., Apr. 1973. Allen Kent, Ed. Dekker, New York, 1974. xiv, 394 pp. \$24.50.

**Separating Parents and Adolescents.** A Perspective on Running Away, Schizophrenia, and Waywardness. Helm Stierlin. Quadrangle, New York, 1974. xiv, 204 pp. \$8.95.

**Serotonin in Down's Syndrome.** Mary Coleman, Ed. North-Holland, Amsterdam, and Elsevier, New York, 1973. xii, 224 pp., illus. \$15.50.

**The Solid State of Polymers.** Report of the U.S.-Japan Joint Seminar. Papers from a meeting, Cleveland, Ohio, Oct. 1972. P. H. Geil, E. Baer, and Y. Wada, Eds. Dekker, New York, 1974. xvi, 708 pp., illus. \$47.50.

**Structural Mechanics Computer Programs.** Surveys, Assessments, and Availability. Papers from a symposium, College Park, Md., June 1974. W. Pilkey, K. Saczalski, and H. Schaeffer, Eds. University Press of Virginia, Charlottesville, 1974. xiv, 1106 pp., illus. \$20.

**Suburban Growth.** Geographical Processes at the Edge of the Western City. James H. Johnson, Ed. Wiley, New York, 1974. xvi, 258 pp., illus. \$15.95.

**Swine Production in Temperate and Tropical Environments.** W. G. Pond and J. H. Maner. Freeman, San Francisco, 1974. x, 646 pp., illus. \$17.50. A Series of Books in Agricultural Science.

**Systematic Materials Analysis.** Vol. 2. J. H. Richardson and R. V. Peterson, Eds. Academic Press, New York, 1974. xx, 264 pp., illus. \$23. Materials Science and Technology Series.

**Systems Analysis for Business Data Processing.** H. D. Clifton. Petrocelli Books, New York, ed. 2, 1974. x, 304 pp., illus. \$11.95.

**Systems Planning and Design.** Case Studies in Modeling, Optimization, and Evaluation. Richard De Neufville and David Marks, Eds. Prentice-Hall, Engle-

wood Cliffs, N.J., 1974. x, 438 pp., illus. \$18.95. Civil Engineering and Engineering Mechanics Series.

**Trance, Healing and Hallucination.** Three Field Studies in Religious Experience. Felicitas D. Goodman, Jeannette H. Henney, and Esther Pressel. Wiley-Interscience, New York, 1974. xxvi, 388 pp. \$12.50. Contemporary Religious Movements Series.

**Transport of Nutrients in Plants.** A. J. Peel. Halsted (Wiley), New York, 1974. viii, 258 pp., illus. \$15.

**Water and Its Impurities.** Thomas R. Camp and Robert L. Meserve. Dowden, Hutchinson and Ross, Stroudsburg, Pa., ed. 2, 1974. xii, 384 pp., illus. \$22.

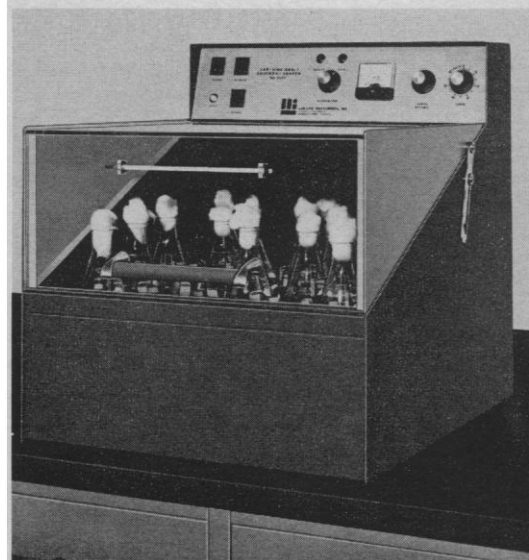
**Water Quality Abstracts.** Vol. 2. Joseph L. Pavoni, Ed. Pollution Abstracts, La Jolla, Calif., 1974. 482 pp. Paper, \$39.

**Whitney's Star Finder.** A Field Guide to the Heavens. Charles A. Whitney. Knopf, New York, 1974. xx, 108 pp., illus. Paper, \$4.95.

**Wissenschaftsinformation als Ausdruck der Wissenschaftsentwicklung in Biologie und Medizin.** Heinz David. Volk und Gesundheit, Berlin, 1974. 242 pp., illus. Paper, DM 23.60.

**World Directory of Schools for Animal Health Assistants, 1971.** World Health Organization, Geneva, 1974 (U.S. distributor, Q Corp., Albany, N.Y.). 196 pp. Paper, Sw.fr. 24.

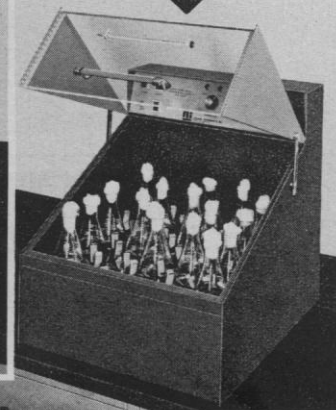
## NOW! Greater Capacity at No Extra Cost with the New Lab-Line Orbit Environ-Shaker 18...



New! LAB-LINE ORBIT ENVIRON-SHAKER 18



E-Z-OPEN "Clear-View" hood allows for unobstructed observation of the chamber contents and thermometer.



### Provides up to Twice the Capacity of Competitive Shakers at No Extra Cost...

The Lab-Line Orbit Environ-Shaker 18 combines greater capacity with accurate temperature control from ambient to 65°C,  $\pm 0.5^\circ\text{C}$ , and as low as 5°C above coolant temperature with optional cooling coil. High temperature safety thermostat is automatically set when temperature is selected, for over-temperature protection. Unit operates at variable speeds from 10 to 500 orbits per minute, with solid state speed control. Requires only 20 inches of bench space and features 29 interchangeable platforms available for holding all sizes of flasks, beakers, test tubes, etc. Specially designed 15°, 30°, or 45° angle flask platforms increases aeration without changing the agitation. Optional gassing manifold and optional light bank also available.

Ideal for general incubations, tissue cultures, assays, fermentation studies, enzyme reactions, controlled purification tests, aging tests, and growth studies at both static and agitated conditions.

Get more facts about this Shaker and our complete line of quality engineered Orbit Shakers. Write for Cat. No. 274 or circle number below on readers service card.



**LAB-LINE INSTRUMENTS, Inc.**  
Designers and Manufacturers  
Lab-Line Plaza  
Melrose Park, Illinois 60160

S-11

FIRST IN INSTRUMENTS SERVING SCIENCE, INDUSTRY, AND EDUCATION SINCE 1908

## Radiotracers

### Liquid Scintillation Counting Sample Preparation

Service is an intangible commodity. But we have based the operation of our analytical laboratory service on the premise that there is no substitute for integrity.

We will process almost all sample materials—from sample preparation to counting to data reduction—utilizing the most advanced equipment available.

If your needs are directed towards agricultural, industrial, biochemical, clinical or environmental uses—we are sure you will find continual satisfaction with our service.

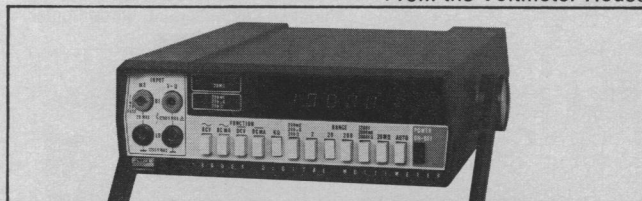


**pemlab co.**

6936 WINDSOR AVE • BERWYN, ILLINOIS 60402

Circle No. 124 on Readers' Service Card

From the Voltmeter House



## The new 20,000 count Fluke 8600A Automatic Multimeter

- Twenty six ranges, five functions, \$649. Measure from  $\pm 200$  mV through  $\pm 1200$  volts ac and dc,  $200 \mu\text{A}$  through  $2000$  mA ac and dc and  $200$  ohms through  $20$  megohms resistance. Basic dc accuracy,  $0.02\%$ . Up to  $1,000$  megohms input resistance.
- Design uses advanced Fluke LSI technology. Almost everything most people want is built-in. They are small, tough and reliable, ready to go to work just as they come from the box.
- Fully protected, fully guarded, autozero and autorange.
- Rated for minimum  $10,000$  hour MTBF.
- Low cost options include built-in rechargeable battery pack for up to  $8$  hours off-line operation and isolated DOU for printer drive.
- Abundant low cost accessories include HV probe, two RF probes,  $600$  A. current probe, deluxe test leads, rack kits, dust covers and carrying cases.



For data out today,  
dial our toll-free hotline,  
800-426-0361

John Fluke Mfg. Co., Inc., P. O.  
Box 7428, Seattle, WA 98133

Circle No. 117 on Readers' Service Card for Information  
Circle No. 118 on Readers' Service Card for Demonstration

## $-76^{\circ}\text{C}$ Ultra-Cold. $-96^{\circ}\text{C}$ Ultra-Colder.

Both from Kelvinator Commercial. Upright drops to  $-76^{\circ}\text{C}$ . Ultra-cold. Chest model dips to  $-96^{\circ}\text{C}$ . Ultra-colder. Upright's six French doors open individually. And you can label each door to know what's inside. Easy labeling for what's under the chest's stainless steel sliding lids, too. Want more? Automatic alarm systems?  $2''$  portholes for recorders? The Kelvinator Commercial name? You got them. Don't be caught in the cold without ultra-cold.

Contact J. E. Hirssig at Kelvinator Commercial, the company that knows how to give you  $12$  cubic feet of the best cold you ever had.

Upright UC-105 ( $-76^{\circ}\text{C}/-105^{\circ}\text{F}$ ) Chest UC-520 ( $-85^{\circ}\text{C}/-120^{\circ}\text{F}$ )  
Chest UC-540 ( $-96^{\circ}\text{C}/-140^{\circ}\text{F}$ )



**Kelvinator**

621 Quay Street • Manitowoc, Wisc. 54220 • (414) 682-0156

One of the White Consolidated Industries



Circle No. 4 on Readers' Service Card

## TERMINAL DEOXYNUCLEOTIDYL TRANSFERASE

Catalog No. 0730

100 units \$45.00      500 units \$195.00  
Available from stock  
Shipped in dry ice

This is the latest addition to P-L Biochemicals, on-going program of enzymes for molecular biology. A condensed list of specifications is given below. Write or call for a comprehensive Product Data Sheet.

IUB Name: deoxyribonucleosidetriphosphate:  
oligodeoxynucleotidyl transferase  
(terminal) (2.7.7.x)  
Calf Thymus Gland

Prep: Purified by Column Chromatography

Activity: Minimum  $5,000$ - $10,000$  units/mg. protein.  
One unit catalyzes the incorporation of  
 $1$  nanomole deoxyadenylate into acid  
insoluble product per hour.

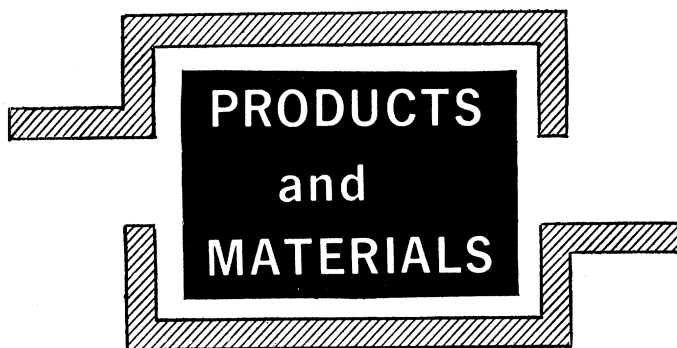
Synonyms: terminal addition enzyme, addase,  
Bollum's enzyme.

(414) 271-0667, Telex 26881

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

1037 WEST MCKINLEY AVENUE, MILWAUKEE, WIS. 53205

Circle No. 6 on Readers' Service Card



### Digital Photometer

The Photon Counter enables a fluorometer to measure low light intensities accurately. It measures only signals caused by photons impinging on the photocathode and distinguishes true signals from noise. Photon counting raises the signal-to-noise ratio which increases resolution and improves sensitivity when fluorescence signals are obscured by scatter interference. The device is adaptable to any instrument that uses a photomultiplier tube. American Instrument Company. Circle No. 708 on Readers' Service Card.

### Large-Capacity Blood Freezer

The 33-LS stores up to 1000 units of red cells in a 33-cubic-foot volume. The refrigeration unit is separate and it will maintain temperatures down to  $-85^{\circ}\text{C}$ . The system is water-cooled, which reduces heat dissipation and noise. All openings are constructed with nonelectrically heated breaker strips to prevent frost buildup and cold leakage. Temperature recorders are standard and options include a backup carbon dioxide cooling system. Harris Manufacturing Company. Circle No. 714 on Readers' Service Card.

### Infrared Detector

The model 7500 is a Golay-type detector with a wavelength range from 0.5 micrometer to 1 millimeter. The sensitivity is 1.5 million volts per watt and noise is only  $7 \times 10^{-11}$  watt. The

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (see pages 486A and 550C) and placing it in the mailbox. Postage is free.—RICHARD G. SOMMER

detector head houses the gas chamber, the optical readout system, and the amplifier. The detector is buffered against changes in ambient temperature. An external chopper driven by a synchronous motor provides an external interrupter. A power supply completes the system. Oriel Corporation of America. Circle No. 715 on Readers' Service Card.

### Structure Display System

The SID system permits the operator of an FX60 nuclear magnetic resonance spectrometer to display molecular structure on a cathode-ray tube screen. The device utilizes proton or carbon-13 or mass spectrographic data or any combination. The system incorporates the light pen control system and its use is quickly mastered by relatively inexperienced personnel. JEOL Analytical Instruments. Circle No. 705 on Readers' Service Card.

### Water Quality Analyzer

The Mark V monitors and records temperature, conductivity, dissolved oxygen, and pH. The power supply is optional from rechargeable internal batteries, standard current, or external 12-volt d-c sources. Readings including battery life are by light-emitting diode display through a selection switch. Accuracy of all measurements is to  $\pm 1.0$  percent. The probe may be used to depths of 30 meters. Output signals are available for telemetry or on-site recording. Martek Instruments Incorporated. Circle No. 711 on Readers' Service Card.

### Data Acquisition System

The PD 2064 uses 8 to 248 channels and it has an 11-function keyboard and a microprocessor. Functions include

signal conditioning, clocking, measurement intervals up to 25 channels per second, and optional high or low alarms. Output devices may be printer, paper or magnetic tape, teletype, or interface to other data processors. Inputs may be mixed multiple thermocouples, millivolts, volts, nonlinear functions, process signals, and others. Resolution is to 1 microvolt and the entire system is protected from noise by isolation relay three-wire switching and other features. Esterline Angus. Circle No. 709 on Readers' Service Card.

### Pens

The MARS-700 technical pen features a shouldered point tube for use with templates or lettering guides and a metal cylinder that will not flex or bend with hand pressure. The point tubes are permanently centered. Ink flow is regulated and a single capillary valve assures airflow through vent and breather in the cartridge. The pens are fully adaptable to scientific and technical illustrating. J. S. Staedtler, Incorporated. Circle No. 706 on Readers' Service Card.

### Flocculation Testing

The Floc Tester consists of a plastic base with mixing motor, test beakers, and a set of dasher/mixers for addition of flocculant and other chemicals. The dasher/mixer simulates flash mixing; the action of the mixer motor and magnetic pellet simulates settling basin activity. Flocculation may be observed against the black instrument base or against white glass disks under the test jars. Controls include on-off switch and a 60-minute timer. Hach Chemical Company. Circle No. 712 on Readers' Service Card.

### Vane Pumps

The Trivac model S60A (single-stage) and D60A (two-stage) vane pumps have three vanes on an eccentric rotor. The motor and pump are directly coupled. The single-stage pumps are available in five sizes with displacements of 4.5 to 35.8 cubic feet per minute and the two-stage pumps are available in six sizes with displacements of 2.2 to 35.8 cubic feet per minute. They are quiet and lightweight.



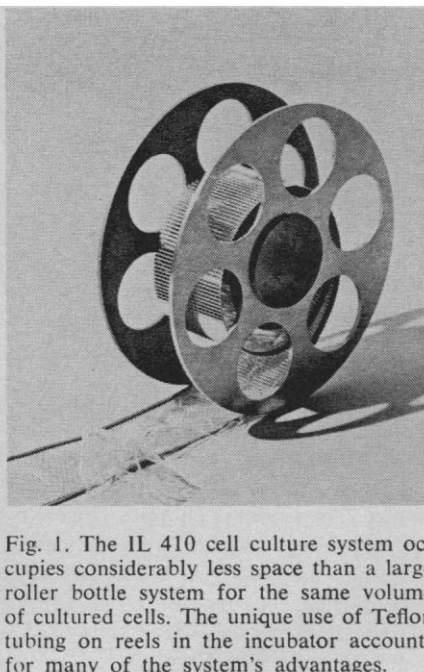
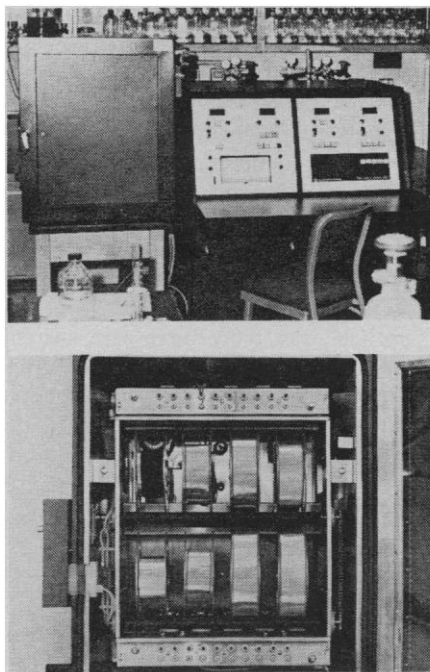


Fig. 1. The IL 410 cell culture system occupies considerably less space than a large roller bottle system for the same volume of cultured cells. The unique use of Teflon tubing on reels in the incubator accounts for many of the system's advantages.

Features include adjustable gas ballast valve, integral safety valve and exhaust filter, and modular construction. Leybold-Heraeus, Incorporated. Circle No. 707 on Readers' Service Card.

### Cell Culture System

The IL 410 (Fig. 1) features controlled  $pH$ ,  $pCO_2$ , and  $pO_2$  with a gas-permeable membrane, automatic control of other aspects of the cells' environment including refeeding, continuous readout of cell-support parameters, and sterile mechanical harvesting. The system includes an incubator assembly and a control console. The incubator contains 20 rack-mounted reels of 30 feet of Teflon tubing each. The tubes are gas permeable. The incubator is 26 by 32 by 26 inches or 12.5 cubic feet. Access is through double doors. The entire assembly of rack, reels, and tubing may be autoclaved. The control console maintains programmed environmental conditions and monitors them. The system offers many advantages over the large roller bottle systems often used. Instrumentation Laboratory, Incorporated. Circle No. 710 on Readers' Service Card.

### Clinical Data Processing

Uni-Lab II is an automated system for the clinical laboratory. Included in the software are FORTRAN compatibility and SYSGEN with report gener-

ator, open-ended file structure, factory training and the system is nonproprietary. The system automates records for admissions, requests for labwork, specimen collection, results of tests, interfacing with analytical instruments, generation of reports, inquiries about tests in progress, communications, blood bank records, patient archives, and other hospital-laboratory functions. Hardware includes data terminals, remote inquiring stations and report printers, label printers, nursing station terminals, system operator's console, and disk drive unit. Diversified Numeric Applications. Circle No. 704 on Readers' Service Card.

### Rotary Microtome

This microtome has a rotary fly-wheel drive coupled with positive mechanical linkages to ensure precise specimen thickness. The specimen retracts during each return stroke to prevent damage to the cut section. Other features include rapid knife-advance, a speed selector for 1 to 24 micrometers in 1-micrometer steps, calibrated knife adjustment up to 20 degrees, several specimen holders, and a safety locking lever to protect the user while the specimens are changed. The unit is not excessively heavy because the unique knife support system eliminates vibration without adding weight. Shandon Southern Instruments, Incorporated. Circle No. 713 on Readers' Service Card.

### Literature

*Stainless Steel Liquid Helium Dewars for Superconducting Magnets* is the subject of bulletin 109. Specifications and costs are listed. Andonian Cryogenics, Incorporated. Circle No. 716 on Readers' Service Card.

*ADB/ASO Test System for Streptococcus* is a 20-page instruction booklet that summarizes principles of measuring AntiDNase B and Antistreptolysin O in serum. Beckman Instruments, Diagnostics Operations. Circle No. 717 on Readers' Service Card.

*Flow Measurements* is a monograph that treats fluorometry in fluid flow measurement. A bibliography is included. Turner Designs. Circle No. 718 on Readers' Service Card.

*Infrared Accessories* is a catalog that features products for reflectance, transmission, sampling, chromatography, and pyrolysis and crystals. Wilks Scientific Corporation. Circle No. 719 on Readers' Service Card.

*Accumet pH Meters* are described and illustrated in this brochure that also includes accessories. Fisher Scientific Company. Circle No. 720 on Readers' Service Card.

*Bio-Fiber Dialyzing and Concentrating* features devices for sample concentration and also lists their applications. Bio-Rad Laboratories. Circle No. 721 on Readers' Service Card.

*Ward's Bulletin*, volume 14, No. 96, describes the development of a *Drosophila* medium and catalogs a variety of products for classes in biology, chemistry, and earth sciences. Ward's Natural Science Establishment. Circle No. 722 on Readers' Service Card.

*Challenges* is devoted to applications of high-speed hybrid computers to the solution of scientific and engineering problems. Electronic Associates. Circle No. 723 on Readers' Service Card.

*Automatic Particle Counting and Sizing Instruments for Liquid Analysis* is devoted to a liquid particle analyzer. Royco Instruments Incorporated. Circle No. 724 on Readers' Service Card.


*A User's Manual* is a textbook-catalog of techniques, apparatus, and materials for microanalysts. It costs \$18 plus \$1.45 for postage and handling. Walter C. McCrone Associates. Circle No. 725 on Readers' Service Card.

*Gas Chromatograph Model 421* is an illustrated description of capability, specifications, and applications of this analytical instrument. Packard Instrument Company, Incorporated. Circle No. 726 on Readers' Service Card.

NEW!
Concanavalin A
[acetyl-<sup>3</sup>H]
Current Lot: 85 curies/millimole

- Cancer chemotherapy
- Viral transformation
- Cell-cell interaction
- Cell differentiation

**Concanavalin A [acetyl-<sup>3</sup>H] NET-452**  
75-125 Ci/mmole \$75/50μCi \$250/250μCi  
Lyophilized solid with sodium chloride in screw cap bottle.


**New England Nuclear**  
575 Albany Street, Boston, Mass. 02118  
Customer service 617-482-9595

NEN Canada Ltd., Dorval, Quebec; NEN Chemicals GmbH, Dreieichenhain, W. Germany.

Circle No. 77 on Readers' Service Card


... tomorrow's designs today!



OS® QH® QS® OF® QU® QI®

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



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

Circle No. 3 on Readers' Service Card

## AAAS Audiotapes

# Inventory Sale

To make room for new stock, we are offering the following audiotapes at greatly reduced rates—\$10 for the first session and \$5 for each additional session. You may wish to check the list to see if any of the tapes pertain to your field of interest.

- 17-69 Manned Lunar Space Program (I)
- 22-69 The International Study of Eskimos (I-II)
- 23-69 Physiological Effects of Audible Sound (I-IV)
- 25-69 Technology Assessment and Human Possibilities (I-III)
- 31-69 Academic Research and the Military (I-III)
- 34-69 The Behavioral and Social Sciences: Outlook and Needs (I)
- 45-69 Innovation (I)
- 58-70 Are We Winning the War Against Urban Fires? (I)

- 62-70 University Open Admissions (I-II)
- 75-70 Is There a Generation Gap in Science? (I)
- 94-71 Value and Knowledge Requirements for Peace (II-V)
- 105-71 How Valuable is Human Health? (I-II)
- 124-72 Crime Prevention: Heredity and Environment Revisited (I-II)

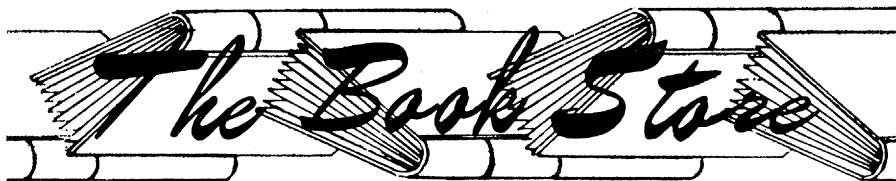
[The hyphenated numbers preceding the symposium titles identify each title by tape number (preceding the dash) and by year of taping (after the dash). Roman numerals following the titles designate the number of sessions in each symposium.]

Money order or check payable to AAAS—No cash. Credit sales subject to \$1.50 handling charge. Allow 3 to 4 weeks for delivery. Please check: \_\_\_\_\_ Reel \_\_\_\_\_ Cassette

Tape No. \_\_\_\_\_ Session No. \_\_\_\_\_  
Tape No. \_\_\_\_\_ Session No. \_\_\_\_\_

Tape No. \_\_\_\_\_ Session No. \_\_\_\_\_  
Tape No. \_\_\_\_\_ Session No. \_\_\_\_\_

Name \_\_\_\_\_  
Street \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_



This section is designed to provide SCIENCE readers with a rapid means of ordering the books advertised below. In order to obtain a 10-day free trial copy of any book listed, circle the number appearing below it on the Readers' Service Card (pages 486A and 550C). All publishers represented reserve the right to bill for books not returned within 10 days after receipt.

**BEHAVIOR AS AN ECOLOGICAL FACTOR** (Benchmark Papers in Ecology) Edited by DAVID E. DAVIS, North Carolina State University. A compendium of landmark papers which have influenced significantly the direction of the study of animal behavior as it relates to the environment. Traces the study of behavior from complete separation from environment to the ultimate state of behavior study of an entire population. A Dowden, Hutchinson & Ross Publication. Distributed by **HALSTED PRESS/WILEY**. 1974 400 pp. \$24.00

To order this book  
Circle No. 113 on Readers' Service Card

**ENERGY—FROM SURPLUS TO SCARCITY?** Edited by K. A. D. INGLIS, British Petroleum Co., Ltd. Recognized international experts deal in depth with the changed and changing energy scene. Discusses prospects for coal, natural gas, solar and nuclear energy, and future petroleum supplies. Emphasizes long-term prospects. Published by **HALSTED PRESS/WILEY**. 1974 242 pp. \$21.95

To order this book  
Circle No. 114 on Readers' Service Card

**MORTALITY AND MORBIDITY IN THE UNITED STATES**

Carl L. Erhardt and Joyce E. Berlin

This volume documents the broad patterns of mortality and morbidity in the United States, emphasizing the decade of the 1960s in a review of major trends during the twentieth century. Mortality and morbidity are analyzed by cause, geographic region, age, marital status, race, and other variables. **Vital and Health Statistics Monographs**. American Public Health Association. \$10.00

To order this book  
Circle No. 161 on Readers' Service Card

**THE PHYSIOLOGY OF PHYSICAL STRESS**  
A Selective Bibliography, 1500-1964

Carl B. Chapman, M.D., and Elinor C. Reinmiller

More than 2800 citations indexed by author and by subject comprise this bibliography of studies on the physiology of exercise, including references not available through the computerized retrieval system (MEDLARS) of the National Library of Medicine. \$15.00

To order this book  
Circle No. 163 on Readers' Service Card

**FLOWERING PLANTS**  
Evolution Above the Species Level

G. Ledyard Stebbins

One of the world's leading evolutionary biologists here reexamines the evolutionary history of flowering plants. This important book is the first to interpret the phylogeny of flowering plants in the light of modern knowledge about genetics, developmental biology, and ecology. **Belknap**. \$18.50

To order this book  
Circle No. 164 on Readers' Service Card

**PATHOLOGY OF THE EAR**  
Harold F. Schuknecht, M.D.

Based on one of the world's largest and most complete collections of temporal bone pathology, this book presents a comprehensive account of disease processes that affect the ear, stressing pathophysiology. The text is accompanied by 700 illustrations, photomicrographs, and audiometric data.

**Commonwealth Fund**. \$35.00

To order this book  
Circle No. 165 on Readers' Service Card

**Harvard University Press**  
Cambridge, Massachusetts 02138

**WALTER SULLIVAN**  
reports on discoveries  
that will profoundly  
change your conception  
of the earth we live on!

**CONTINENTS  
IN MOTION**  
The New Earth Debate

Over 100 illustrations, 20 pages  
in full color. \$17.95

**McGRAW-HILL  
BOOK COMPANY**

To order this book  
Circle No. 68 on Readers' Service Card

**The Geology of Continental Margins** edited by C. A. Burk and C. L. Drake

The continental margins of the world constitute the largest and most impressive physiographic feature of the earth's surface. Because of their fundamental geological significance, continental margins have been the subject of intensive research in recent years. A summary of these findings, related to both recent and ancient continental margins, is the subject of this book. Published by Springer-Verlag New York Heidelberg Berlin. 1974, xii, 1009 p. 730 illus. cloth \$34.80.

To order this book  
Circle No. 1 on Readers' Service Card

**THE ALLOCATIVE CONFLICTS IN  
WATER-RESOURCE MANAGEMENT**

A definitive work on the present state  
of water-resource management research.

In this stimulating, controversial book twenty-eight authors representing a variety of disciplines recommend new directions for future environmental management research not available in any other source.

560 pages, illustrated, paper, \$8.50.  
From

Agassiz Center for Water Studies  
Room 230, Engineering Building  
The University of Manitoba  
Winnipeg, Manitoba, Canada R3T 2N2

To order this book  
Circle No. 94 on Readers' Service Card

**NOW PUBLISHED**

**Man-Machine Systems:**

Information, Control, and Decision Models  
of Human Performance

by Thomas B. Sheridan and William  
R. Ferrell

\$25.00

The MIT Press

Cambridge, Massachusetts 02142

To order this book  
Circle No. 66 on Readers' Service Card

**A FREE SUBSCRIPTION TO SCIENCE BOOK JOURNAL:** You are invited to join thousands of other scientists who keep up with the changing face of science with a free subscription to the Science Book Journal included with membership in the Science Book Club. The Journal publishes extensive extracts—often entire chapters—from the most important scientific books now being published. And the Science Book Club makes them available to you at special discounts. This service enables you to dip into and sample the books themselves, selecting only those that are significant and important to you. Here's how it works: The Science Book Journal will be mailed to you once a month. The Main Selection will be sent to you automatically. If, however, you do not want this book, or wish to order other selections, merely return the reply card provided with the Journal. If there is a delay in the mail and you do not have 10 days to decide on the Main Selection, you may return it at our expense. Past selections of the club have included: *Lives of a Cell*; *The Coming Age of Solar Energy*; *Visceral Learning*; *The Conscious Brain*; *Oceanography*; *Life, the Unfinished Experiment*; *Beyond the Known Universe*; and recent bestsellers such as *The Life Game* and *Carrying the Fire*.

**JASON ARONSON, BOOK PUBLISHERS**

To order this book  
Circle No. 157 on Readers' Service Card

**The Philosophy of Karl Popper**, edited by Paul A. Schilpp. The Library of Living Philosophers, #14, two vols.

Following the Library of Living Philosophers' format, this work contains Popper's only autobiography (182 pp.), 33 critical essays by such scientists and philosophers as Peter Medawar, J. C. Eccles, J. Brownowski, A. J. Ayer, Edward Boyle, E. H. Gombrich. Popper replies in detail to each critic. Thorough bibliography. Index. Write for complete list of Library of Living Philosophers (includes Bertrand Russell, Einstein, Carnap). Open Court Publishing Co., 1974, 1323 pp. 2 vols. \$30.00.

To order this book  
Circle No. 147 on Readers' Service Card

**BLACK NEIGHBORHOODS: An Assessment of Community Power**, by DONALD I. WARREN.

This definitive analysis shows how and why the black ghetto is unique in terms of the functioning of local neighborhoods, community groups, and status processes. Published by **The University of Michigan Press**. 1974. 240 pp., \$9.00.

To order this book  
Circle No. 148 on Readers' Service Card

**PHYSICAL CHEMISTRY OF NUCLEIC ACIDS**, by Victor A. Bloomfield, Donald M. Crothers, & Ignacio Tinoco, Jr.

Emphasizing results of lasting validity and biological interest, this book discusses all major experimental methods, the structures of monomers, oligonucleotides, and polynucleotides. Comprehensive treatment of the statistical mechanical and kinetic theories of helix-coil transitions, of methods for studying conformational changes, and of binding of small molecules to DNA. **Harper & Row**. 1974. 517 pp.; \$25.00.

To order this book  
Circle No. 160 on Readers' Service Card

**ADAPTATION IN NATURAL AND ARTIFICIAL SYSTEMS: An Introductory Analysis with Applications to Biology, Control, and Artificial Intelligence**, by JOHN H. HOLLAND.

Holland's new book presents a valuable mathematical theory applicable to the full range of adaptive processes, providing both hypotheses for natural systems and algorithms for artificial systems. Published by **The University of Michigan Press**. 1974. 208 pp., \$14.95.

To order this book  
Circle No. 149 on Readers' Service Card

# THE STRUCTURE OF SCIENTIFIC THEORIES

edited with a critical introduction by Frederick Suppe

Suppe's book-length introduction surveys and critiques the mainstream of thought in the philosophy of science from the 1930's to the present, including a critical account of the development of the positivistic analysis, the attacks which led to its rejection, and the alternatives proposed by Hanson, Kuhn, Feyerabend, Toulmin, Popper, Bohm, Beth, and others. Part 2 presents papers and discussions of a major symposium whose participants included Carl G. Hempel, I. Bernard Cohen, Patrick Suppes, Bas C. van Fraassen, David Bohm, Hilary Putnam, Thomas S. Kuhn, and Dudley Shapere. Published by the University of Illinois Press, Urbana. 1974. 696 pp. \$22.50.

To order this book  
Circle No. 162 on Readers' Service Card

# BILAYER LIPID MEMBRANES (BLM): Theory and Practice, by H. Ti Tien

A noted scientist in the field of membrane phenomena examines current bilayer lipid membrane research in this comprehensive summary, including specific coverage of such areas as optics, permeability, and photoelectric phenomena; effects of modifiers on BLM; techniques of BLM formation; and a great deal more. 1974, 672 pages, \$39.50

To order this book  
Circle No. 136 on Readers' Service Card

# DNA REPLICATION (Methods in Molecular Biology Series, Volume 7), edited by Reed B. Wickner

Assay and purification procedures for T4 DNA polymerase and T4 unwinding protein; permeable and gently lysed cell preparations which carry out DNA replication; purification of components of *Escherichia coli* replication—these are just some of the in-depth discussions you will find in this expansive new work. 1974, 320 pages, \$22.75

To order this book  
Circle No. 137 on Readers' Service Card

# THE LIVER: Normal and Abnormal Functions, Part A (Biochemistry of Disease Series, Volume 5), edited by Frederick F. Becker

A new and thoroughly unique work that examines normal liver functions, alterations in these functions due to injurious challenges, and the host's response to such alterations. Focus throughout is on the liver's endocrine, exocrine, and regulatory functions, and on the organ's relationship to the host at large. 1974, 592 pages, \$39.50

(Part B in preparation, 1975)

To order this book  
Circle No. 138 on Readers' Service Card

# BIOCHEMISTRY OF THE DEVELOPING BRAIN, in 2 Volumes, edited by Williamina Himwich

An authoritative work, written by scientists who are expert in their specific areas of neurochemistry, this book offers you a systematic review of progress in the overall field as well as an inclusive discussion of pertinent literature from a variety of sources.

Volume 1: 1973, 498 pages, \$27.00  
Volume 2: 1974, 346 pages, \$24.50

To order this book  
Circle No. 139 on Readers' Service Card

# THE FATE OF DRUGS IN THE ORGANISM: A BIBLIOGRAPHIC SURVEY, VOLUME 1, compiled by the Société Française des Sciences et Techniques Pharmaceutiques Working Group under the chairmanship of Jean Lucien Hirtz. At last, you have at your disposal a fast and unique access to all pharmacologic, biochemical, and clinical papers that contain any data whatsoever pertinent to the fate of any drug in the organism. 1974, 600 pages, \$59.50

To order this book  
Circle No. 140 on Readers' Service Card

# IMMUNOLOGICAL COMMUNICATIONS, edited by Carel van Oss

Devoted to promoting worldwide, rapid dissemination of original work on every aspect of immunology, this journal reproduces quality articles directly from the author's manuscripts to ensure the timeliness required by researchers in immunology, biochemistry, microbiology, virology, and all related areas. 6 issues per volume

To order this book  
Circle No. 141 on Readers' Service Card



MARCEL DEKKER, INC.  
270 Madison Avenue  
New York, N.Y. 10016

8 NOVEMBER 1974

# Personnel Placement

It is requested that only those employers who will not discriminate on the basis of race, sex, religion, color, or national origin submit positions open advertising.

POSITION WANTED: 40¢ per word, minimum charge \$10. Use of Box Number counts as 10 additional words. Payment in advance is required. These rates apply to individuals only. Personnel agencies and companies take display rate for all advertising.

POSITIONS OPEN: \$110 per inch. No charge for Box Number. Rates net. No agency commission allowed for ads under 4 inches. No cash discount. Ads over 1 inch will be billed to the nearest quarter inch. Payment in advance is required except where satisfactory credit has been established.

COPY for ads must reach SCIENCE 4 weeks before issue date (Friday of every week). Send copy for Personnel Placement advertising to:

SCIENCE, Room 207  
1515 Massachusetts Ave., NW  
Washington, D.C. 20005

Replies to blind ads should be addressed as follows:

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

# POSITIONS WANTED

**Biochemist.** Ph.D. 1961. Publications. Lipids, metabolisms, enzymology, drug resistance, natural products, and atherosclerosis research. Clinical laboratory, lipids, atherosclerosis research preferred. 5071 Randall, Montreal, Quebec, Canada. X

**Biochemist.** Ph.D., graduating 1975. Research interest: metabolism of cells in tissue culture. Taught college level. Research experience: tissue culture, metabolism, protein isolation-purification, radioisotope methodology. Industrial or academic position. Available January 1975. T. Leonard Swanson, 4305 Poppleton, Omaha, Nebraska 68105. X

**Editor/Writer/Scientist.** Ph.D. Adjunct professor, chemistry, international research reputation, industrial experience. Seeking editorial/administrative or teaching post. Box 496, SCIENCE. X

**Environmental Assessment.** Ecologist/writer/administrator, Ph.D., seeks continuation of impact assessment work on established team. Broad experience in planning, resource management; strong coordinator-integrator. Specialties in park management/design, aquatic resources. Box 497, SCIENCE. 11/15

**Environmental Toxicologist/Biologist.** Ph.D. 1971. Three years of postdoctoral research experience in environmental toxicology and metabolism. Publications. Seeks research and/or teaching position. Available June 1975. Box 498, SCIENCE. X

Broadly trained **Geneticist**, Ph.D. (1965). Two year postdoctoral. Outstanding teacher, 16 years of professional experience (11 years of full-time university experience). Special interest in undergraduate programs. Seeks academic position for September. Box 499, SCIENCE. 12/6

**Husband.** D.D.S. (pedodontics), Ph.D. (immunology)—wife, Ph.D. (anatomy). Each with 2 years of postdoctoral experience. Publications. Seeks research/teaching positions September 1975. Box 500, SCIENCE. X

**Marine Biologist.** Ph.D., 1974. Female. Research and publications in microbial ecology, paleoecology, and pollution. Specialist in diatoms. Desires position with emphasis on research. Box 501, SCIENCE. X

**Microbiologist.** Ph.D. Ten years of experience in research and teaching in microbial physiology and genetics. Publications. Seeking position in teaching and/or research. Box 503, SCIENCE. X

# POSITIONS WANTED

**Interdisciplinary.** Biophysicist, Ph.D. 1963. Desires situation in an interdisciplinary science program. Publications in origin of life and cancer research. Many years of physics teaching and recently environmental courses. Can add wide experiences in biology and physics to program. Box 490, SCIENCE. 11/8

**Microbiologist, Immunologist** (B.A., M.P.H.). Nine years of experience in research and clinical work. Desires position in university, public health, hospital, or other health-oriented agency. Present address in Los Angeles area. Box 502, SCIENCE. X

**Neuroanatomist/Electron Microscopist.** Ph.D. Postdoctoral abroad. Presently on medical faculty. Desires teaching/research position. Research interest: developmental and pathological changes in neuroglia. Publications. Teaching experience: neuroanatomy and neurophysiology, histology, and gross anatomy. Box 504, SCIENCE. 11/22, 12/6

# POSITIONS OPEN

## ANIMAL PHYSIOLOGIST

Position at assistant or associate professor level available 13 January or 19 May 1975. Primary responsibility is in coordination of basic sciences instruction in PHYSICIAN ASSISTANT program. Secondary responsibility is undergraduate and/or graduate instruction in physiology. Ph.D. required, and teaching experience is desirable. Send applications to: Dr. William Davies, Chairman, Section of Biological Sciences, Purdue University at Fort Wayne, Fort Wayne, Indiana 46805. Purdue University is an affirmative action/equal opportunity employer.

**ASSOCIATE OR FULL PROFESSOR OF BIOLOGY.** Four-year college seeks a senior level person. Ph.D. required. Applicants must supply evidence of successful teaching and research experience. Excellent salary and fringe benefits. Position available 1975. Equal Opportunity/Affirmative Action Employer. Apply with résumé to: Dr. Jack Schlein, York College of the City University of New York, Department of Natural Sciences, 150-14 Jamaica Avenue, Jamaica, N.Y. 11432.

**ASSISTANT PROFESSORS, PHARMACOLOGY AND THERAPEUTICS.** Ph.D. or M.D.; clinical experience or orientation desirable; opportunities to collaborate in clinical research; teaching experience and interest in medical education essential; research in fields related to autonomic and cardiovascular systems, smooth muscle, neuropharmacology, endocrines, or drug metabolism. Start July to December 1975. Send curriculum vitae, publication list, detailed plan of research program, and names and addresses of references to Director, Department of Pharmacology and Therapeutics, Room 5006, University of Cincinnati College of Medicine, Cincinnati, Ohio 45267. Women and minorities are encouraged to apply.

## ASSISTANT PROFESSOR OF PATHOLOGY

D.D.S., M.D., and/or Ph.D. in Department of Pathology, University of Pennsylvania, School of Dental Medicine, beginning 1 July 1975. Department faculty presently consists of individuals carrying out research in various areas of immunopathology, conducting a diagnostic service in oral pathology, and teaching general and oral pathology to pre- and postdoctoral students. Applicants will be expected to initiate independent research and participate in teaching programs. If desired, applicant may also take part in diagnostic service. Send curriculum vitae to: N. S. Taichman, D.D.S., Ph.D., 4010 Locust Street, Philadelphia, Pennsylvania 19174. An equal opportunity employer.

## Biologists

## CELL BIOLOGY/BIOCHEMISTRY/ELECTRON MICROSCOPY TECHNICIANS

Research firm in Washington, D.C., area has positions available for persons with experience in mammalian cell culture, virology, lipoprotein isolation, and analysis and electron microscopy. Salary commensurate with degree of experience and educational background. Interested individuals should send curriculum vitae, references, and salary requirements in complete confidence to:

MELOY LABORATORIES, INC.  
6715 Electronic Drive  
Springfield, Virginia 22151  
Attention: Code R30

Equal Opportunity Employer, Male/Female

## POSITIONS OPEN

### ASSISTANT PROFESSOR

The Department of Environmental Health, University of Cincinnati Medical Center, is inviting applications for an assistant professorship in toxicology with specific commitment to the area of the carcinogenic, mutagenic, and/or teratogenic actions of foreign chemicals. The person would be expected to assume responsibility for developing a program of research in one or more of these areas. This person would also participate in the graduate teaching program of the department. Send curriculum vitae and three references to **Dr. Paul B. Hammond, Department of Environmental Health, University of Cincinnati Medical Center, 3223 Eden Avenue, Cincinnati, Ohio 45267. An Affirmative Action/Equal Opportunity Employer.**

### ASSISTANT PROFESSOR

Applications are invited from qualified persons holding Ph.D. and/or M.D. degrees to fill a new position, preferably at the Assistant Professor level, in **GROSS AND MICROSCOPIC ANATOMY**, in the School of Basic Medical Sciences Urbana-Champaign. Appropriate departmental predoctoral or postdoctoral training is essential.

The position will carry a joint appointment in one of the scientific departments on this campus. Teaching duties relate to curriculum development and supervision of medical student learning in an independent study program. Candidates must have demonstrated their capacity for original research as evidenced by publications of high quality.

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

Send applications, including curriculum vitae, publication list, important reprints, and at least three letters of recommendation to **Dr. Ray L. Watterson, Chairman, Search Committee, 515 Morrill Hall, University of Illinois, Urbana, Illinois 61801.**

### ASSISTANT PROFESSORSHIPS IN CELLULAR IMMUNOLOGY, MICROBIAL REGULATION, AND PHYSIOLOGICAL ECOLOGY

A rapidly growing, well-equipped modern department of biological sciences located in the hills outside Baltimore is seeking scientists with postdoctoral research experience who have demonstrated their ability to initiate a vigorous research program. Candidates must also have a commitment to quality graduate and undergraduate teaching. Submit curriculum vitae, bibliography, names of suggested referees, and a description of research interests to: **Dr. Thomas F. Roth, Chairman, Search Committee, Department of Biological Sciences, University of Maryland Baltimore County, Catonsville, Maryland 21228. An Equal Opportunity, Affirmative Action Employer**

### ASSISTANT PROFESSOR/BIOCHEMISTRY

Position available September 1975. Candidates should be capable of effective graduate or undergraduate teaching and should have demonstrated unusual promise in independent research. Postdoctoral experience and published work are required. Preference will be given to applicants whose research interests and experience are related to the broad mission in fundamental research of the Kansas Agricultural Experiment Station. Send résumé, list of publications, description of anticipated research, and three references to **David J. Cox, Head, Department of Biochemistry, Kansas State University, Manhattan, Kansas 66506. Kansas State University is an equal opportunity/affirmative action employer.**

## POSITIONS OPEN

**BIOCHEMIST**—Ph.D. or equivalent. Must have laboratory experience in vitamin D chemistry or action. To establish a vitamin D-focused laboratory program in conjunction with university calcium researchers. Position at Research Institute, The Hospital for Sick Children, Toronto, with faculty appointment in Department of Biochemistry, University of Toronto. Salary commensurate with experience and qualifications. Apply before 1 December, enclosing curriculum vitae and names of two referees, to **The Secretary, Research Institute, The Hospital for Sick Children, 555 University Avenue, Toronto, Ontario, M5G 1X8, Canada.**

The Department of Biology, New Mexico State University, invites applications for a faculty position preferably in the areas of **microbiology or animal physiology**. Ph.D. required. Duties include both undergraduate and graduate teaching and establishment of a vigorous research program. Rank is open.

*New Mexico State University is an equal opportunity, affirmative action employer and candidates from all races and ethnic backgrounds are encouraged to apply.* Send curriculum vitae and names of three references to **Dr. J. R. Zimmerman, Chairman, Department of Biology, Box 3AF, New Mexico State University, Las Cruces, New Mexico 88003.**

**BIostatistician for Medical School** to deliver curriculum for medical students and serve as consultant for biological scientists. Assistant Professor level, with at least 2 years of postdoctoral experience. Preferred that research interests are in biomedical or data base management areas.

Applicants should send curriculum vitae to **Dean, University of Illinois School of Basic Medical Sciences, 1205 West California Street, Urbana, Illinois 61801. An Equal Opportunity Employer.**

### CELL BIOLOGIST

Applications or nominations are invited for the position of Assistant Professor of Zoology. Duties include teaching in undergraduate and graduate courses and developing a strong research program in some area of eukaryote cell biology. Postdoctoral research experience helpful. Applicants should submit curriculum vitae, reprints, a short statement of research and teaching plans, and the names of three references to: **Chairman, Department of Zoology, University of Texas at Austin, Austin, Texas 78712. The University of Texas is an equal opportunity employer.**

### THE UNIVERSITY OF MARYLAND

#### at College Park

#### Invites Applications for the Position of

#### Chairman

#### of the Department of Physics and Astronomy

Applicants for the position should have administrative, research, and teaching experience. The Department of Physics and Astronomy currently has 150 faculty members, 105 technical staff, and 64 nontechnical staff. There are over 200 undergraduate students and approximately 300 graduate students enrolled in programs leading to the B.S., M.S., and Ph.D. degrees. Nominations, applications, and inquiries should be addressed to: **P. F. Cunniff, Chairman of the Search Committee, Office of the Division of Mathematical and Physical Sciences and Engineering, University of Maryland, College Park, Maryland 20742. The university is an equal opportunity/affirmative action employer.**

## POSITIONS OPEN

**UNIVERSITY OF WISCONSIN-MADISON.** The Department of Chemistry is seeking applications for an assistant professor position in **Inorganic Chemistry**. The primary requirement is promise of excellence in research and teaching. Preference will be given to persons with interests complementary to present staff activity. Transition element chemistry with biochemical leanings is of particular interest to us. The teaching duties associated with this position include participation in the first-year chemistry program and upper-level inorganic and graduate courses on a rotating basis. *The University of Wisconsin is an equal opportunity employer with an Affirmative Action Program and welcomes applications from women and minority candidates.* Applicants should send curriculum vitae and names of three references to **E. M. Larsen, Department of Chemistry, Room 7341, The University of Wisconsin-Madison, Madison, Wis. 53706.**

### CIRCULATORY SHOCK RESEARCH

Postdoctoral position available immediately. Research associate level or junior faculty rank, depending on credentials. Applications are requested from individuals trained in circulatory shock-reticuloendothelial system research. The candidate should be thoroughly familiar with small animal surgery, circulatory shock animal models, electronic instrumentation, and reticuloendothelial system function. A strong biochemical-immunological background with isotope training is essential. Responsibilities include teaching undergraduate and graduate courses in physiology. Salary \$9,000 to \$14,000. Send curriculum vitae and three letters of reference to: **Dr. B. M. Altura, Department of Physiology, Box 31, State University of New York, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, New York 11203.**

**THE HORMEL INSTITUTE OF THE UNIVERSITY OF MINNESOTA** invites applications from qualified individuals for the position of

### EXECUTIVE DIRECTOR

of the Hormel Institute which is located in Austin, Minnesota. The Executive Director is responsible for overall administration of an institute with 80 to 90 employees, including 20 of whom have academic rank. Candidates for this position should be recognized authorities in the lipid field, and should have at least 12 years of research experience in the field. The director is expected to maintain an active research program. Closing date for receipt of all materials is 1 February 1975. Send curriculum vitae, a list of publications, and names of three referees to **Dr. J. E. Gander, Chairman, Search Committee, Department of Biochemistry, University of Minnesota, St. Paul, Minn. 55108.**

### FACULTY POSITIONS—PATHOLOGY DEPARTMENT

#### UNIVERSITY OF CALIFORNIA, SAN DIEGO

1) **Immunohematologist** for Chief of Veterans Administration Hospital Blood Bank. Faculty appointment. M.D. Minimum of 2 years of blood banking and research experience.

2) **Assistant Professor, Pathologist, M.D.** Background in biochemistry-oncology.

Please send curriculum vitae and list of publications to **Averill A. Liebow, M.D., Chairman, Department of Pathology, University of California, San Diego, La Jolla, California 92037.**

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

### HEALTH PHYSICIST/RADIATION SAFETY OFFICER

To head Radiation Safety Department at Medical/Dental/Graduate School, Research Center, Hospital, and Clinics. Principally service work, some teaching responsibility with possible faculty appointment. Duties include administering and RSO function for human use and broad research licenses and safety work with x-ray machines. Ph.D. in health physics or related field and at least 4 years of relevant experience in health physics, preferably on a campus. *We welcome women and minority group applicants.* Reply attention of **Dr. Richard P. Spencer, c/o Mr. Daniel J. Strom, Radiation Safety Office, University of Connecticut Health Center, Farmington, Connecticut 06032, or call (203) 674-2250.**

### INSTRUCTOR

Position available in the Department of Pathology, University of Michigan Medical School, Medical Degree-Board Certified in Anatomic and Clinical Pathology. Experience in a Clinical Chemical Laboratory desired. Must be able to teach medical students and residents. Send résumé to **Box 506, SCIENCE.**

*A Nondiscriminatory Affirmative Action Employer*

## CLINICAL APPOINTMENTS



## UNIVERSITY OF HEALTH SCIENCES THE CHICAGO MEDICAL SCHOOL

Major expansion of this 62-year-old institution and the forthcoming move to a new campus have created openings for Clinical Faculty Chairmen and instructors in the Medical School.

**QUALIFICATIONS**—Candidates must possess the M.D. degree, be Board Certified in their specialty with experience in an academic medical center.

**ORGANIZATION**—UHS/CMS is a private, nonprofit, nonsectarian, coeducational university and an equal opportunity/affirmative action employer.

**APPLICATION**—Candidates should direct inquiries to:

Office of the Dean  
University of Health Sciences/The Chicago Medical School  
2020 West Ogden Avenue  
Chicago, Illinois 60612



## POSITIONS OPEN

### DEAN OF THE SCHOOL OF MEDICINE UNIFORMED SERVICES UNIVERSITY

The Uniformed Services University of the Health Sciences invites applications from and nominations of qualified individuals for the position of **DEAN OF THE SCHOOL OF MEDICINE**. Each candidate is required to submit a current curriculum vitae or résumé. Qualifications must include evidence of strong administrative academic ability, leadership in teaching, research, and experience in working with federal agencies, particularly the military services or the Department of Defense. *The Uniformed Services University of the Health Sciences is an equal opportunity/affirmative action employer.* Address all correspondence to **Chairman of Search Committee, c/o Office of the President, Uniformed Services University of the Health Sciences, 6917 Arlington Road, Bethesda, Maryland 20814. (Telephone: 301-227-1990).**

### DEAN SCHOOL OF ARTS AND SCIENCE

CLARKSON COLLEGE OF TECHNOLOGY invites applications and nominations for the position of Dean of the School of Arts and Science. This school includes departments or programs in biology, chemistry, physics, mathematics, humanities, and social sciences. Baccalaureate degrees are offered in all departments. Master's and doctoral degree programs are offered in chemistry, physics, and mathematics. The earned doctorate, administrative ability, and outstanding teaching and research experience are desired. Send résumés to **H. L. Shulman, Vice President and Dean of Engineering, Clarkson College of Technology, Potsdam, New York 13676.**

*An equal opportunity/affirmative action employer*

### DEAN UNIVERSITY OF PITTSBURGH SCHOOL OF MEDICINE

Applications are invited from qualified individuals for the position of Dean of the School of Medicine at the University of Pittsburgh. Applications must include a complete curriculum vitae and bibliography. *We are an equal opportunity employer and applications from women and members of minority groups are encouraged.* Please send applications, curriculum vitae, and bibliography to **Chairman, Search Committee, University of Pittsburgh School of Medicine, 1291 Scaife Hall, 3550 Terrace Street, Pittsburgh, Pennsylvania 15261.**

### ENVIRONMENTAL GEOLOGIST

The Department of Earth Sciences at Case Western Reserve University invites applications for a position at the Assistant or Associate Professor level in Environmental Geology. The position involves research and teaching at the undergraduate and graduate level. Competence in the areas of environmental geology, stratigraphy, sedimentation, and structural geology is desired. Qualified applicants should send résumé, references, and publications to **Professor Wilbert Lick, Department of Earth Sciences, Case Western Reserve University, Cleveland, Ohio 44106.**

*An equal opportunity employer*

### EXECUTIVE SECRETARY

The International Great Lakes Fishery Commission, concerned with sea lamprey control and general research and management of fish stocks, seeks a senior fishery administrator, university graduate, minimum of 10 years of fishery experience to administer the Commission Office and act as coordinating and liaison officer in dealing with operating agencies. Salary \$30,000 upward, negotiable depending on qualifications. Further details available from **Great Lakes Fishery Commission, 1451 Green Road, P.O. Box 640, Ann Arbor, Michigan 48107.**

### FISHERY BIOLOGIST

A faculty teaching and research position will be available 1 January 1975 in the area of fishery biology and population ecology. Duties include involvement in undergraduate and graduate programs. A Ph.D. is required. Send personal curriculum vitae, professional résumé, and three letters of reference to **Dr. M. M. Alexander, Department of Forest Zoology, State University of New York College of Environmental Science and Forestry, Syracuse, N.Y. 13210. An Equal Opportunity and Affirmative Action Employer.**

8 NOVEMBER 1974

## POSITIONS OPEN

### DIRECTOR, SCHOOL OF LIFE SCIENCES

Applications are invited for the position of Director of the School of Life Sciences, University of Nebraska-Lincoln. The school, to be housed in a modern research facility currently under construction, consists of 60 faculty members organized into the following sections: (i) Biochemistry and Physiology; (ii) Cellular Biology and Genetics; (iii) Microbiology, Immunology, and Plant Pathology; and (iv) Organismic Biology.

The successful applicant must demonstrate significant achievement as a research scientist, a broad tolerance for all areas of biology, and evidence of administrative potential.

*The University of Nebraska is an equal opportunity (affirmative action) employer.* Applications (accompanied by a curriculum vitae and the names of four references) or requests for further information should be addressed to **Professor R. H. Meints, Chairman, Search Committee, School of Life Sciences, University of Nebraska-Lincoln, Lincoln, Nebraska 68508.**

### ECOLOGIST TUFTS UNIVERSITY

Faculty position available September 1975. We seek applicants with graduate training in population dynamics, patterns in the distribution of species, and community interactions. Candidates should have demonstrated independence, originality, and excellence in teaching and research. Duties include: sharing teaching in a general ecology course and an introductory biology course, offering a course in one's specialty, conducting research in that specialty, and directing graduate students in field and laboratory work. The appointment will be at a level commensurate with experience and ability.

Send résumé, reprints, a brief statement of future research plans, and three letters of reference to:

**Dr. Benjamin Dane  
Chairman, Search Committee  
Department of Biology  
Tufts University  
Medford, Massachusetts 02155**

Application deadline: 10 January 1973.

*Tufts University is an Equal Opportunity, Affirmative Action Employer. We encourage applications from women and minority-group members.*

### IOWA STATE UNIVERSITY AND AMES LABORATORY (ATOMIC ENERGY COMMISSION)

The Physics Department of Iowa State University anticipates a faculty appointment for an **EXPERIMENTAL HIGH-ENERGY PHYSICIST** who would participate in the undergraduate and graduate teaching programs of the department. The position is expected to be at the assistant professor level, but for an applicant with outstanding qualifications, a more senior rank may be possible. Serious applicants should be prepared to assume their duties no later than 1 July 1975. An earlier assumption of these duties would be preferred.

Applicants should hold the Ph.D. degree with at least 1 year's postdoctoral experience in experimental high-energy physics. Experience in photographic techniques (bubble chamber and/or spark chamber experiments and the associated reconstruction and data analysis problems) and also in counter experiments would be highly desirable. *Iowa State University is an Equal Opportunity Employer with an Affirmative Action Program. Applications are especially welcomed from black Americans, American Indians, Spanish-surnamed Americans, and women.*

Applicants should send curriculum vitae, together with copies of published research, and the names and addresses of three references to:

**Dr. R. G. Barnes, Chairman  
Department of Physics  
Iowa State University  
Ames, Iowa 50010**

### FACULTY POSITION IN PUBLIC HEALTH EDUCATION

Seek Dr. P.H., Ph.D., Ed.D., or equivalent for Assistant Professor opening in School of Public Health. M.P.H. desirable. Prefer research and teaching experience in educational problems and procedures related to the delivery of health care and/or community mental health. Salary negotiable. *The School is committed to a strong affirmative action policy. Women and minorities are especially urged to apply.* Submit curriculum vitae, publications, and letters of reference by 1 January 1975 to **Dr. Carol N. D'Onofrio, Earl Warren Hall, University of California, Berkeley 94720.**

## FACULTY POSITION

The Department of Poultry Science invites applications for a position at the Assistant or Associate Professor level in the field of poultry management, involving both research and teaching responsibilities. Experience or training in the area of poultry nutrition is desirable. The position will be available 1 January 1975 or shortly thereafter. Completed applications are desired as soon as possible, but will be accepted for consideration until 30 November or until the position is filled, whichever is later. *Oregon State University is an Affirmative Action Employer and encourages applications from qualified women and minorities.* For information about the department and the position requirements, contact: **Dr. G. H. Arcott, Head, Department of Poultry Science, Oregon State University, Corvallis, Ore. 97331.**

### ANTICIPATED FACULTY POSITIONS UNIVERSITY OF SOUTH FLORIDA MEDICAL CENTER

During this academic year (1974-75) it is anticipated that there will be vacancies on the full-time faculty within the College of Medicine in the following departments:

Department	Chief
Anatomy	H. N. Schnitzlein, Ph.D.
Biochemistry	Joseph G. Cory, Ph.D.
Comprehensive Medicine	O'Neill Barrett, M.D.
Dean's Office	Donn L. Smith, M.D.
Family Medicine	Donn L. Smith, M.D.
Internal Medicine	Roy H. Behnke, M.D.
Medical Microbiology	Charles W. Fishel, Ph.D.
Ob/Gyn	James M. Ingram, M.D.
Pathology	Herschel Sidransky, M.D.
Pediatrics	Lewis A. Barnes, M.D.
Psychiatry	Lewis A. Barnes, M.D., Chairman, Search Committee
Radiology	Arthur Graham, M.D.
Surgery	Roger T. Sherman, M.D.

Applications, which should include a brief summary of training, specialty qualifications, teaching, and research activities, should be addressed to the **Departmental Chief at the University of South Florida Medical Center, Tampa, Florida 33620. The University of South Florida is an affirmative action employer.**

## IMMUNOLOGIST — Ph.D.

Merck Sharp & Dohme Research Laboratories is presently offering an exceptional career opportunity for a Ph.D. Immunologist to work in our Department of Virus and Cell Biology.

Challenging responsibilities involve basic and applied research in viral and microbial diseases, as well as autoimmune disease.

Selected candidate must bring to this position: Creativity, 3 to 5 years' postdoctoral experience, a good working knowledge of contemporary immunology, especially cell-mediated immunity, and the ability to work in a team effort.

Excellent starting salary and benefits accompany this position at our attractive suburban location (25 miles northwest of Philadelphia).

Interested candidates should send complete résumé of education and experience to **JACQUES P. KUENY**

## Merck Sharp & Dohme Research Laboratories

DIVISION OF MERCK & CO., INC.

West Point, Pa. 19486

*Equal Opportunity Employer*

### MEDICAL MICROBIOLOGIST/IMMUNOCHEMIST

Immediate position available for a Ph.D. with a minimum of 1 year of postdoctoral experience. Will participate in the studies of interactions of environmental stresses and infectious disease. Midwest-based research and development organization. Please send résumé and salary requirements to:

**Box 505, SCIENCE**

## POSITIONS OPEN

### HEAD DEPARTMENT OF BIOLOGICAL SCIENCES UNIVERSITY OF CINCINNATI

Applications and nominations are invited for the position of Head of the Department of Biological Sciences. The department is one of the largest in this university having 23 faculty with major interests in Cell Biology, Ecology, Evolution and Systematics, Genetics, and Physiology. Another program in Developmental Biology is offered jointly with faculty from the College of Medicine. Approximately 100 undergraduate majors are graduated per year and 50 to 60 graduate students are enrolled in the department. The facilities housing the department were dedicated in 1970.

**Qualifications:** A distinguished record of achievement in research and teaching, and evidence of administrative leadership.

Please respond to: **Professor Richard A. Day, Search Chairman, Department of Chemistry, University of Cincinnati, Cincinnati, Ohio 45221.** An equal opportunity, affirmative action employer.

### MENTAL RETARDATION EPIDEMIOLOGIST

The Child Development and Mental Retardation Center (CDMRC), in conjunction with the Department of Epidemiology and International Health, University of Washington, is seeking a research epidemiologist. Qualifications include an appropriate doctorate with training and experience in epidemiology, preferably in the field of mental retardation and related problems. CDMRC is a large interdisciplinary research and training center affiliated with 8 colleges and 29 departments and divisions within the University, and has cooperative arrangements with several local community and government agencies. This provides unique opportunities for a wide range of collaborative interdisciplinary studies. In conjunction with other research personnel, the epidemiologist will develop and implement studies in the prevention and care of mental retardation and related problems. Minor teaching duties will be expected. Members of minority groups and women are encouraged to apply. Send résumé to: **Gerald D. LaVeck, M.D., Chairman, Search Committee, Clinical Training Unit, Child Development and Mental Retardation Center, University of Washington WJ-10, Seattle, Washington 98195.**

### UNIVERSITY OF PAPUA NEW GUINEA

(Port Moresby)

Applications are invited for the posts of (a) SENIOR LECTURER/LECTURER IN MICROBIOLOGY and (b) SENIOR LECTURER/LECTURER IN PATHOLOGY. Candidates should hold an M.D. Applicants for the Microbiology lectureship should have at least three years of training in Microbiology and some teaching experience. A Senior Lecturer must have postgraduate qualifications with at least five years of work in Microbiology. Special knowledge of Parasitology will be an advantage. Applicants for the Pathology lectureship should have postgraduate qualifications and may have special interests and experience in Parasitology, Morbid Anatomy and Histopathology. Appointees will work under the direction of the Professor of Pathology, who is the Pathologist-in-Charge at the Port Moresby General Hospital.

Salary scales: Senior Lecturer \$10,441-\$12,089 p.a. Lecturer \$7,570-\$10,205 p.a. (£1 sterling = \$1.55). Housing, study leave, secondary education allowance, superannuation and leave fares are provided. In some instances it may be possible to make appointments on secondment. Further information about the University and the conditions of appointment can be obtained from the Secretary. Further information about courses and the Department may be obtained from the Departmental Chairman. Applications should be in duplicate and include particulars of age, nationality, marital status, academic record, qualifications and experience, names and addresses of three referees, a recent small photograph and indication of estimated starting date. Positions are available from January 1975, and appointees would be expected to take up their appointments no later than mid-February 1975. Applications should be sent to **K. R. Long, Secretary, P.O. Box 4820, University, Papua, New Guinea**, as soon as possible.

## POSITIONS OPEN

### HUMAN GENETICIST

The Department of Biological Sciences seeks a person with research competence and a program in the areas of mammalian cytogenetics and somatic cell hybridization. The person selected will work with other staff members in developing the area of human genetics. The responsibilities will include teaching and training undergraduate and graduate students. The position will be offered at the Assistant or Associate Professor level depending upon the applicant's qualifications. Send curriculum vitae, three letters of recommendation, and pertinent reprints to **A. M. Clark, Department of Biological Sciences, University of Delaware, Newark, Delaware 19711.** An Equal Opportunity/Affirmative Action Employer.

**IMMUNOLOGY AND MICROBIOLOGY DEPARTMENT** of Wayne State University School of Medicine invites applications for faculty positions from individuals who have done independent research. Rank and salary are open. Candidates with experience in the fields of immunology, virology, and medical microbiology will be considered. Curriculum vitae and names of three references may be sent to the **Personnel and Appointments Committee, Department of Immunology and Microbiology, Wayne State University School of Medicine, Detroit, Michigan 48201.** An equal opportunities employer.

### IMMUNOLOGIST

A Ph.D. and/or M.D. with postdoctoral training is sought for a university budgeted faculty position at the assistant professorship level to establish a research program in cellular or tumor immunology and to help in the instruction of medical and graduate students. The salary and benefits are competitive with the national scale. Applicants should submit curriculum vitae and three letters of recommendation to **Dr. Edward Bresnick, Chairman, Department of Cell and Molecular Biology, Medical College of Georgia, Augusta, Ga. 30902.**

### DEPARTMENT OF MICROBIOLOGY UNIVERSITY OF CONNECTICUT HEALTH CENTER

Applications are invited for two faculty appointments to be made during the 1975-76 academic year, one at the level of associate professor or professor and the other at the assistant professor level. Preference will be given to individuals with research training and experience in animal virology. *Applications from women and members of minority groups are welcomed.* Inquiries should include a complete curriculum vitae and the names of three persons from whom recommendations can be solicited, and should be sent to **Lawrence Rothfield, Chairman, Department of Microbiology, University of Connecticut School of Medicine, Farmington, Connecticut 06032.**

An Equal Opportunity Employer

### IOWA STATE UNIVERSITY AND AMES LABORATORY ATOMIC ENERGY COMMISSION

Applications are invited from qualified **NUCLEAR THEORISTS** with research interest and experience in shell model calculations for both light and medium heavy nuclei as well as in the application of group theoretic techniques to nuclear problems. Most importantly, an applicant must be capable of, and interested in, interacting strongly and regularly with the experimental nuclear spectroscopy group.

It is expected that the appointment will be at the assistant professor level with salary commensurate with experience and will involve normal departmental teaching duties.

Interested persons should submit a résumé, together with copies of published research and the names and addresses of three references, to: **Dr. R. G. Barnes, Chairman, Department of Physics, Iowa State University, Ames, Iowa 50010.**

*Iowa State University is an Equal Opportunity Employer with an Affirmative Action Program. Applications from qualified black Americans, American Indians, Spanish surnamed Americans, and women are especially welcomed.*

**PLANT PATHOLOGIST.** Needed is a group leader to conduct testing of a large number of compounds as potential fungicides and bactericides at the laboratory and greenhouse level. Person should have Ph.D. or equivalent experience and an interest in crop protection. Should be able to plan and execute an innovative research program for improved methodology on both foliage and soil diseases. Develops data and recommendations for program of separate field research group. Persons interested should send résumé to **R. K. Thompson, Chevron Chemical Co., 940 Hensley Street, Richmond, California 94804.**

## POSITIONS OPEN

### MOLECULAR BIOLOGIST

The National Institute of Environmental Health Sciences invites applications for a Molecular Biologist position under the Staff Fellow or Visiting Associate Program. As a member of a multidisciplinary group studying developmental toxicology, the selected applicant will plan and conduct independent and collaborative research in the area of the molecular basis for chemically induced alterations in developing systems.

A doctorate in Biochemistry or a related discipline is required.

The appointment will initially be for 1 or 2 years and may be extended. Salary will range from \$15,000 to \$20,000 per annum depending on qualifications.

Letters of application with curriculum vitae, bibliography, and name and address of two references should be addressed to:

**Mr. Charles E. Walker  
National Institute of  
Environmental Health Sciences  
P.O. Box 12233**

**Research Triangle Park, North Carolina 27709**

Letters must be received by 10 December 1974 to be considered.

An Equal Opportunity Employer

### UNIVERSITY OF PENNSYLVANIA SCHOOL OF MEDICINE DEPARTMENT OF PATHOLOGY

In accordance with University principles of fair practice employment, applications are invited for one or more positions of **Assistant Professor** with major research interest in Immunopathology. Applicants preferred who are certified or eligible for certification in Pathology and must be interested in having hospital service responsibilities.

Applications, including curriculum vitae and three references, should be sent to **Dr. David T. Rowlands, Jr., Chairman, Department of Pathology, University of Pennsylvania, School of Medicine/G3, Philadelphia, Pa. 19174.**

### PHARMACOLOGY-TOXICOLOGY

Applications invited for Assistant Professor position available July 1975. Applicants to hold Ph.D. or M.D. with teaching interest and potential to develop strong research program. Send résumé to: **Dr. A. Trevor, Department of Pharmacology, School of Medicine, University of California, San Francisco, Calif. 94143.** An affirmative action-equal opportunity employer.

**POSITIONS IN PHYSIOLOGY.** Applications are sought from individuals seeking teaching/research positions in Physiology. Investigators with background in endocrine, gastrointestinal, and pulmonary physiology are especially encouraged, however all applicants will be carefully considered. Please submit applications and credentials to: **Allen R. Freeman, Ph.D., Professor and Chairman, Temple University School of Medicine, Department of Physiology, 3420 North Broad Street, Philadelphia, Pa. 19140.** We are an equal opportunity, affirmative action employer.

### PHYSIOLOGY DEPARTMENT

Applications are invited for faculty positions at Assistant Professor level and research positions at the Associate and Assistant levels. Salaries based on qualifications and experience. Send résumé to **Chairman, Physiology Department, Wayne State University School of Medicine, 540 East Canfield, Detroit, Michigan 48201.** An equal opportunity/affirmative action employer.

**POSTDOCTORAL POSITION** is available immediately for either an experimental physicist, a physical chemist, or an optical engineer. Must be interested in hybrid work with **correlation optical systems** as applied to **biological specimens**. Salary \$9600 for 1 year. U.S. residents only. Send résumé to **Head, Department of Electronics and Instrumentation, University of Arkansas Graduate Institute of Technology, P.O. Box 3017, Little Rock, Arkansas 72203.** An equal opportunity/affirmative action employer.

### POSTDOCTORAL POSITION

Applications are invited for a postdoctoral position in neurochemical research with particular emphasis on the lipid and protein metabolism in drug-induced brain tumors. Please send curriculum vitae to **Dr. F. B. Jungalwala, Biochemistry Department, Eunice Kennedy Shriver Center, 200 Trapelo Road, Waltham, Mass. 02154.**

An equal opportunity employer M/F

## UNIVERSITY OF NEW SOUTH WALES SCHOOL OF PHYSIOLOGY AND PHARMACOLOGY

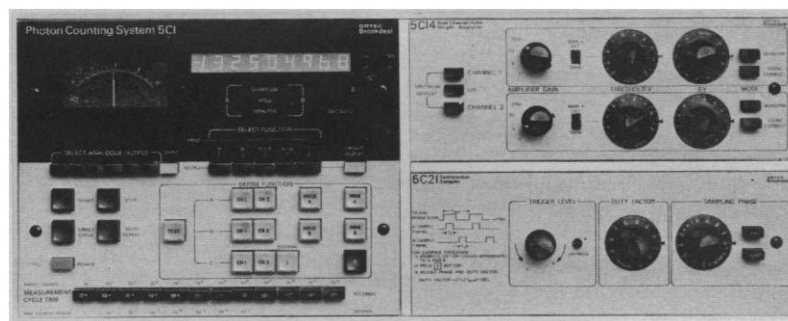
Because of increased teaching commitments resulting from the change to a new medical curriculum, a number of temporary appointments will be made in the School of Physiology and Pharmacology at the beginning of 1975 in the categories of LECTURER, SENIOR TUTOR, TUTOR.

Applications are invited from suitably qualified graduates and graduates in medicine or science. The School is responsible for undergraduate courses in physiology and pharmacology for medical students, teaches physiology to honours level to science students, and has an active graduate programme.

These appointments will be for one year. However there are prospects of vacancies occurring late in 1975 for which these temporary appointees will be eligible to apply. Salaries: \$A9,002 range \$A12,352 per annum (lecturer); between \$A7,545 and \$A9,002 per annum (senior tutor); between \$A5,985 and \$A7,285 per annum (tutor). Commencing salary according to qualifications and experience.

Further information may be obtained from the Secretary-General, Association of Commonwealth Universities (Appts), 36 Gordon Square, London WC1H 0PF.

Forward applications as soon as possible.



## ORTEC MAKES YOUR PHOTONS COUNT!

**In physics . . . optics . . . laser systems . . . ion experiments . . .  
astronomy . . . molecular studies . . . luminescence . . .  
fluorescence . . . Raman . . . mass spectroscopy . . . wherever  
critically accurate light measurement is required.**

The Ortec 5C1 is the most advanced photon-counting system money can buy. And the most practical.

It has a dual-channel pulse height analyzer, for example, that provides first-order pile-up correction at high counting rates and window-mode discrimination of high and low pulses. At counting rates where conventional systems "lose" 50% of the counts, the 5C1 linearizes to within 5%.

Another unique advantage is spectrum display. Connect the unit to any CRT, and you can visually opti-

mize high voltage, amplifier gain, and discriminator levels. Then disable the light source and check for rf pickup or spurious signals. You can't do this with any other photon-counting system.

For full technical data, contact your nearby Ortec representative or Ortec Incorporated, 110 Midland Road, Oak Ridge, Tenn. 37830. (615) 482-4411.

**ORTEC®**  
AN EG&G COMPANY

©ORTEC

Circle No. 109 on Readers' Service Card

5979

## DIRECTOR

**DONNER LABORATORY  
LAWRENCE BERKELEY LABORATORY  
UNIVERSITY OF CALIFORNIA**

Applications and nominations are invited for Director of the Division of Biology and Medicine (the Donner Laboratory) of the Lawrence Berkeley Laboratory. The activities of the Donner Laboratory are supported by the AEC and other federal agencies. The research program of this organization ranges from problems of fundamental biology to clinical applications of radiotherapy and nuclear medicine, and there is close relationship to the academic program of Medical Physics of the Berkeley campus. A candidate should have a record of distinguished achievement in biological or medical research and the ability to give scientific and administrative leadership to a large and diverse laboratory.

*Applications or nominations should be submitted by January 8, 1975 to:*

**Dean David H. Templeton  
Chairman of the Search Committee  
College of Chemistry  
University of California  
Berkeley, CA 94720**

*An Equal Opportunity/  
Affirmative Action Employer*

## MANAGERS

**Microbiology & Immunology**

**R&D  
Ph.D.**

Major division of Becton-Dickinson & Company (Fortune 500 listed NYSE) seeks an aggressive Ph.D. (Microbiology or Immunology) with 5 years plus experience in an industrial area to direct and personally participate in the R & D of new products, improvement of existing products and production methods. Will also be liaison between research group and management relating to development program progression. Excellent salary and company paid benefit plan. Please send curriculum vitae including salary history to:

**Ralph Cole**

**BIOQUEST**  
Division of  
Becton-Dickinson Co.

**P. O. Box 243  
Cockeysville, Maryland 21030**

*An Equal Opportunity Employer M/F*

## POSITIONS OPEN

**PATHOLOGIST NEEDED IN ALASKA.** Experimental program in decentralized medical education entering its fourth year needs experienced teacher part-time for the spring 1975 semester (Board certified pathologist preferred). Duties include teaching a three-unit pathology course and some lecturing in related courses. Opportunities for part-time employment exist in local medical community where a pathologist is urgently needed. Position requires a versatile, innovative person with genuine commitment to teaching. Salary is commensurate with experience. Applicants should supply curriculum vitae and references by 1 December 1974 to **Dr. Richard B. Lyons, WAMI Program, University of Alaska, Fairbanks, Alaska 99701.**

*An Equal Opportunity/Affirmative Action Employer*

## TEACHING POSITION AVAILABLE SEPTEMBER 1975

**PHYSIOLOGIST.** Assistant Professor, Ph.D. Undergraduate and graduate teaching in vertebrate physiology and zoology; preference for research at cell-organ level with background in special sensory organs or reticulo-endothelial system; postdoctoral experience desirable; direct graduate students and participate actively in research. Write **Dr. A. W. Pritchard, Chairman, Search Committee, Department of Zoology, Oregon State University, Corvallis, Oregon 97331. OSU is an affirmative action employer.**

## POPULATION GENETICIST

Assistant Professor/Associate Professor. Qualifications include demonstrated teaching ability, an active research program, and the Ph.D. Teaching duties include undergraduate courses in heredity and genetics and graduate courses in her or his specialty. Women and minority candidates are urged to apply. Send curriculum vitae, reprints, a full description of research interests, and four references to: **Dr. Victor H. Hutchison, Chairman, Department of Zoology, University of Oklahoma, 730 Van Vleet Oval, Norman, Oklahoma 73069.**

*An Equal Opportunity Employer*

## POSTDOCTORAL POSITION

Two-year position immediately available for person with training in Parasitology with emphasis on coccidia. Strong background in Cell Biology and electron microscopy is essential; training in invertebrate biology desirable. Send curriculum vitae and three letters of reference to: **Dr. N. N. Youssef, Department of Biology UMC 53, Utah State University, Logan, Utah 84322. An Equal Opportunity Employer.**

## PSYCHOLOGY FACULTY POSITIONS

Department of Psychology, University of British Columbia. Six faculty positions available for 1975-76: **Developmental** (professor and assistant professor), **Social** (professor), **Clinical/Community** (assistant professor), and two positions for outstanding candidates at the assistant and associate professor levels, preferably in biopsychology, clinical/community, personality, quantitative, or social. Evidence of demonstrated research competence required for all areas; experience in field as well as laboratory research in appropriate areas is desirable. *The University of British Columbia offers equal opportunity for employment to qualified male and female candidates.* Send curriculum vitae and names of three references to: **Chairman, Faculty Search Committee, Department of Psychology, University of British Columbia, Vancouver, B.C., V6T 1W5, Canada.**

## RESEARCH ASSOCIATESHIP IN MOLECULAR STRUCTURE

Ph.D. in Chemistry, Biochemistry, Physics interested in determining the molecular geometry of nucleic acids of special composition or sequence, or the structures of connective tissue and bacterial polysaccharides by x-ray diffraction analyses of fibers and computer model building. Send detailed curriculum vitae containing names of two referees to **Professor Struther Arnott, Department of Biological Sciences, Purdue University, West Lafayette, Indiana 47907.**

## SYSTEM PHYSIOLOGIST

Assistant or Associate Professor with a strong background in human cardiovascular physiology. Familiarity with renal and/or respiratory physiology will be helpful. Candidate is expected to develop and teach interdisciplinary undergraduate and graduate courses and to develop an independent research program. Opportunities for collaboration. Send curriculum vitae, three letters of recommendation, and pertinent reprints to **M. K. Jain, Division of Health Science, University of Delaware, Newark, Del. 19711. UD is an equal opportunity employer.**

## POSITIONS OPEN

### TWO FACULTY POSITIONS

The Biology Department, University of Colorado at Colorado Springs, invites applications for two faculty positions at the Assistant or Associate Professor level for fall 1975 to complement an environmentally oriented program. One opening is for a **Vertebrate Physiologist/Anatomist**, and the applicant should have the ability to teach quality undergraduate courses in two or more of the following areas: human physiology, comparative physiology, embryology, comparative anatomy. The second opening is for an **Evolutionary Ecologist**, and the applicant should have the ability to teach quality undergraduate courses in two or more of the following areas: evolution, genetics, biometry. Applicants may be expected to participate in the introductory biology program and are expected to develop an active research program in their area of interest. Prior teaching and research experience preferred.

Send curriculum vitae, a brief description of experience and current interests in teaching and research, and the names of at least three persons who could supply references to **Dr. J. H. Eley, Biology Department, University of Colorado, Colorado Springs, Colorado 80907.** Deadline for receipt of applications for initial screening is 4 weeks from date of appearance of this notice.

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

### UNIVERSITY OF TEXAS MARINE SCIENCE INSTITUTE

The University of Texas Marine Science Institute at Port Aransas is seeking applicants for an appointment, preferably at the Assistant Professor level, from marine biologists capable of teaching courses in invertebrate zoology of marine organisms and of doing research in the area of physiological ecology. Applicants must have a strong research interest and a commitment to graduate training. Send curriculum vitae and a brief statement of research interests to the **Director, The University of Texas Marine Science Institute, Port Aransas, Texas 78733. Affirmative Action/Equal Opportunity Employer.**

**POSTDOCTORAL POSITION** available immediately. Natural product chemistry. Isolation, identification, synthesis of aphid alarm pheromones. Send résumé and references to

**Professor W. S. Bowers  
New York State Agricultural Experiment Station  
Cornell University  
Geneva, N.Y. 14456**

*An Affirmative Action Employer*

### POSTDOCTORAL POSITION, BIOCHEMIST

Available now; research in lung proteases and inhibitors, \$10,000. *Equal opportunity/affirmative action employer.* Send résumé and three references to

**Dr. G. Kalnitsky  
Biochemistry Department  
University of Iowa  
Iowa City, Iowa 52242**

**UNIVERSITY OF CALIFORNIA, SAN DIEGO/POSTDOCTORAL/RESEARCH POSITION/BIOCHEMIST/BIOLOGIST/Ph.D.** Opening available immediately. Basic mechanism studies of the action of cancer chemotherapeutic agents on cell cycle events. Application of chromatographic and radioautographic techniques with cultured cells grown in synchrony. Two- to three-year appointment. Salary commensurate with qualifications and experience. Send résumé and three letters of recommendation to **Morris Friedkin, Department of Biology, 4080 Basic Science Building, M-001, University of California San Diego, La Jolla, California 92037. The University of California is an equal opportunity/affirmative action employer.**

## GRADUATE STUDY

### GRADUATE STUDY IN PHYSIOLOGY AND BIOPHYSICS AT THE UNIVERSITY OF MIAMI SCHOOL OF MEDICINE

The Department of Physiology and Biophysics provides graduate training leading to the Ph.D. degree. Training is offered in cell physiology, neurobiology, membrane biophysics, cellular aging, and developmental biology. Applicants should have a bachelor's degree in physical or biological science or engineering. Fellowships and assistantships are offered to successful applicants. For details write to: **Admissions Committee, Department of Physiology and Biophysics, University of Miami School of Medicine, P.O. Box 520875, Miami, Florida 33152.**

## ANNOUNCEMENT

### SYNTHESIS OF N-NITROSO COMPOUNDS

As one means of encouraging research with chemical carcinogens whose isotopically labeled forms are not now commercially available, the Carcinogenesis Program of the National Cancer Institute is considering commissioning the syntheses of a limited number of radioactive and mass-labeled N-nitroso compounds. The identities and quantities of materials to be prepared and distributed through this program will be determined largely on the basis of requests received in this office. Therefore, those wishing to receive materials under this program are urged to communicate their specific needs (names and quantities of compounds, identity and position(s) of label, and specific activity or isotopic purity) to: **Dr. Marcia Litwack, Manager, Information and Resources Segment, Carcinogenesis, DCCP, NCI, Landow Building, Room A-306, 7910 Woodmont Avenue, Bethesda, Maryland 20014, by 15 December 1974.** Additional information from requestors may be necessary at a later date prior to making the final decisions on preparation and distribution.

## FELLOWSHIPS

### DOCTOR OF ARTS IN BIOLOGY

Applications for predoctoral fellowships are being accepted now from qualified students dedicated to college-level teaching and interested in studying for the D.A. degree in Biology. Applicants must hold an M.S. degree in Biology or its equivalent prior to the fall 1975 term. Fellowships carry a stipend of \$2800 per academic year plus tuition waiver. For details of this new program and application materials write to: **Biology Chairman, Box 8007, Idaho State University, Pocatello, Idaho 83209.**

### POSTDOCTORAL FELLOWSHIP IN HUMAN BIOCHEMICAL GENETICS

Fellowships are available for postdoctoral training in a Human Biochemical Genetics group with special interest in the study and diagnosis of human genetic disorders. Training will include studies in cytogenetics, cell culture systems for biochemical studies of diseases of amino acid, purine, and lipid metabolism, cystic fibrosis, genetic screening, and prenatal diagnosis and participation in clinical genetics programs.

Interested persons should send inquiries and curriculum vitae to:

**Dr. J. E. Seegmiller  
Department of Medicine  
School of Medicine  
University of California, San Diego  
La Jolla, California 92037**

*An Equal Opportunity/Affirmative Action Employer*

## MARKET PLACE



**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-7 INDUSTRIAL  
BAT-8 DIGITAL °C or °F  
TH-2 CLINICAL

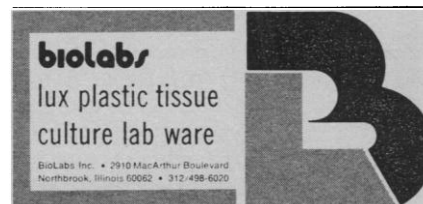
**The Modern Way to Measure**

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

Circle No. 54 on Readers' Service Card

## AUTHORS WANTED BY NEW YORK PUBLISHER

Your book can be published, promoted, distributed by a reliable company on a subsidized basis. Fiction, non-fiction, poetry, scholarly, scientific and even controversial manuscripts welcomed. For free booklet, write: **Vantage Press, Dept. SC, 516 W. 34 St., New York 10001.**



**biolabs**  
lux plastic tissue  
culture lab ware

Biolabs Inc. • 2910 MacArthur Boulevard  
Northbrook, Illinois 60062 • 312/498-6020



# Our 31 Programmable Calculator.

## Computer capabilities right at your desk.

The 31 rivals the mini for pure problem-solving power. But no mini can match the 31 for ease of use and low-cost operation. Its expandable memory (up to 8192 program steps or 1010 data registers) auxiliary plug-in mag tape, and optional flexible disc provide storage traditionally reserved for mini applications.

The 35 built-in functions and 24 user-definable keys let you tackle complex variables with natural math. No computer languages to learn. And no computer price either: just \$3550, including silent alphanumeric printer.

Circle No. 9 on Readers' Service Card

Use the 31 with other data tools. We have three new interfaces (like the 154 RS-232-C shown) that work with most instrumentation and I/O devices on the market. Then there's our Tektronix peripherals you can interface with. Like our digital plotter, graphic terminals. And software packages you add as you need.

But there's still more to the story on the 31. More interfaces, more peripherals, more power. And information on OEM and quantity discounts. Get it by calling your local Tektronix sales engineer. Or write us.

Tektronix, Inc.  
Information Display Division  
P.O. Box 500  
Beaverton, Oregon 97077

Our programmable calculators. Natural. Powerful. Significantly less expensive.






# SAVE 50% and get FREE ULTRA PURES

Schwarz/Mann is the only supplier of both radiochemicals and high quality Ultra Pure reagents. To dramatize this capability, we're making an unprecedented offer: **Buy \$300 worth of these radio-chemicals, at reduced prices, and we'll give you \$50 in Ultra Pure reagents.**

Your total cost? \$300. The Ultra Pures cost you nothing. They're free.

So get your order in today. Call collect 914-359-2700 or write Schwarz/ Mann, Division of Becton, Dickinson and Company , Mountain View Ave., Orangeburg, NY 10962.

## Select one free Ultra Pure from the following:

90-1946	Ammonium Sulfate, Ultra Pure	10 kg
90-5025	Cesium Chloride, Optical grade	100 g.
90-7801	Guanidine Hydrochloride, Ultra Pure	500 g.
90-9530	Sucrose, Density Gradient, Crystalline, Ultra Pure	7 kg
90-6593	Tris, Hydrochloride, Ultra Pure	1 kg
90-7438	Tris, Ultra Pure	2 kg
90-9200	Urea, Ultra Pure	5 lb.
90-2805	Adenosine 5'-Triphosphate, Disodium (ATP)	10 g.

**Special Offer and Special Prices end November 30, 1974**

Circle No. 116 on Readers' Service Card

  
**Schwarz/Mann**  
Science  
For Mankind

## SELECT FROM THESE FINE RADIOCHEMICALS

RADIOCHEMICALS			
CATALOG #	COMPOUND	SPEC. ACT. MC/MMOLE	PRICE
1433-07	Adenosine 5'-Triphosphate, Tetralithium [8- <sup>3</sup> H] (ethanol: water 1:1)	12,000-25,000	\$ 40./1 mc 165./5 mc
1433-09	Adenosine 5'-Triphosphate, Tetrasodium [8- <sup>3</sup> H] (ethanol: water 1:1)	12,000-25,000	40./1 mc 165./5 mc
3122-13	L-Alanine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	135-165	90./500 uc 170./1 mc
3122-15	L-Arginine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	270-320	75./250 uc 140./500 uc
1433-38	Cytidine 5'-Triphosphate, Tetralithium [5- <sup>3</sup> H]	5,000-15,000	40./1 mc 165./5 mc
1433-39	Cytidine 5'-Triphosphate, Tetrasodium [5- <sup>3</sup> H]	5,000-15,000	40./1 mc 165./5 mc
2433-06	Deoxyadenosine 5'-Triphosphate, Tetralithium [8- <sup>3</sup> H]	>10,000	40./1 mc 165./5 mc
2433-07	Deoxyadenosine 5'-Triphosphate, Tetrasodium [8- <sup>3</sup> H]	>10,000	40./1 mc 165./5 mc
2433-33	Deoxycytidine 5'-Triphosphate, Tetralithium [5- <sup>3</sup> H]	15,000-30,000	40./1 mc 165./5 mc
2433-34	Deoxycytidine 5'-Triphosphate, Tetrasodium [5- <sup>3</sup> H]	15,000-30,000	40./1 mc 165./5 mc
2433-58	Deoxyguanosine 5'-Triphosphate, Tetralithium [8- <sup>3</sup> H]	>10,000	40./1 mc 165./5 mc
2433-56	Deoxyguanosine 5'-Triphosphate, Tetrasodium [8- <sup>3</sup> H]	>10,000	40./1 mc 165./5 mc
3122-31	Glycine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	95-100	60./500 uc 110./1 mc
1433-59	Guanosine 5'-Triphosphate, Tetralithium [8- <sup>3</sup> H]	5,000-15,000	40./1 mc 165./5 mc
1433-60	Guanosine 5'-Triphosphate, Tetrasodium [8- <sup>3</sup> H]	5,000-15,000	40./1 mc 165./5 mc
3122-41	L-Leucine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	270-320	170./500 uc 320./1 mc
3122-45	L-Lysine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	270-300	170./500 uc 320./1 mc
3122-49	L-Phenylalanine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	405-495	170./500 uc 320./1 mc
3122-51	L-Proline [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	225-265	170./500 uc 320./1 mc
3122-53	L-Serine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	135-165	170./500 uc 320./1 mc
2533-83	Thymidine [methyl- <sup>3</sup> H] (st. aq. sol.)	360	60./5 mc 260./25 mc
2533-84	Thymidine [methyl- <sup>3</sup> H] (st. aq. sol.)	1900	60./5 mc 260./25 mc
2533-85	Thymidine [methyl- <sup>3</sup> H] (st. aq. sol.)	3000	60./5 mc 260./25 mc
2533-86	Thymidine [methyl- <sup>3</sup> H] (st. aq. sol.)	6000	60./5 mc 260./25 mc
2533-87	Thymidine [methyl- <sup>3</sup> H] (st. aq. sol.)	>10,000	60./5 mc 260./25 mc
2533-88	Thymidine [methyl- <sup>3</sup> H] (st. aq. sol.)	40,000-60,000	60./5 mc 260./25 mc
2433-94	Thymidine 5'-Triphosphate, Tetralithium [methyl- <sup>3</sup> H]	>40,000	40./1 mc 150./5 mc
2433-95	Thymidine 5'-Triphosphate, Tetrasodium [methyl- <sup>3</sup> H]	>40,000	40./1 mc 150./5 mc
1533-94	Uridine [5- <sup>3</sup> H] (st. aq. sol.)	2000	50./5 mc 220./25 mc
1533-95	Uridine [5- <sup>3</sup> H] (st. aq. sol.)	4000	50./5 mc 220./25 mc
1533-96	Uridine [5- <sup>3</sup> H] (st. aq. sol.)	8000	50./5 mc 220./25 mc
1533-97	Uridine [5- <sup>3</sup> H] (st. aq. sol.)	>20,000	50./5 mc 220./25 mc
1533-92	Uridine [5,6- <sup>3</sup> H] (st. aq. sol.)	40,000-60,000	50./5 mc 220./25 mc
1433-89	Uridine 5'-Triphosphate, Tetralithium [5- <sup>3</sup> H]	10,000-25,000	40./1 mc 165./5 mc
1433-90	Uridine 5'-Triphosphate, Tetrasodium [5- <sup>3</sup> H]	10,000-25,000	40./1 mc 165./5 mc
3122-61	L-Valine [ <sup>14</sup> C] (0.01 N HCl sol.) (U)	225-265	140./500 uc 260./1 mc

Also available: <sup>125</sup>I - Bovine Serum Albumin (specific activity ~43 C/mM). . . . please inquire