

ology of more classical transmitter receptors, the work on acetylcholine receptors in *Drosophila* tends most strongly in the direction of assignment of biological roles to the multiple classes of these receptors that are found in the insect central nervous system. Work from the laboratories of Linda Hall, Yadin Dudai, and Eberhard Rudloff documents biochemically and cytologically the presence of a nicotinic-like cholinergic receptor in the fruit fly brain. Dudai has further demonstrated a muscarinic-like receptor and has found suggestions, based on behavioral effects of various drugs, of additional cholinergic receptors. The important point here is that the first steps in the use of genetic techniques to study such receptors have been taken by Hall with the discovery and preliminary mapping of a genetic variant of the nicotinic receptor in *Drosophila*. The variant has an altered isoelectric point, which has permitted the location of the gene responsible for the alteration to be narrowed down to one chromosome and will eventually yield a more exact map position. An ability to manipulate this (or any other) receptor genetically will distinguish these studies, for it will allow investigators to ask what role a particular class of receptor, defined by its genetic constituents as well as its pharmacological characteristics, plays in the central nervous system.

The prospects for the study of structure and function relations do not appear to be any better for insect receptors than they are for many other organisms. Even the most preliminary obstacles, the difficulty of obtaining pure material or the lack of physiological correlates, are at least as stubborn in insects as they are in other organisms. Similarly, the appearance of receptors during development in insects is not very accessible to perturbation except as one of many parameters of differentiation. An exception to these reservations can be clearly provided by the trump card of genetics in *Drosophila*, with its potential for dealing with questions on many different levels. What is required, however, is less rhetoric and more concerted effort on the part of the interested *Drosophila* laboratories to develop this potential by laying genetic groundwork for identifying the important genes. Then perhaps we can look forward to a day when the insect will reach as exalted a position in neurobiology as *Escherichia coli* has occupied in molecular biology.

RALPH J. GREENSPAN

Department of Physiology,
University of California,
San Francisco 94143

Books Received

Advances in Environmental Psychology. Vol. 2, Applications of Personal Control. Andrew Baum and Jerome E. Singer, Eds. Erlbaum, Hillsdale, N.J., 1980. xii, 194 pp. \$19.95.

Advances in Geometric Programming. Mordecai Avriel, Ed. Plenum, New York, 1980. x, 460 pp. \$39.50. Mathematical Concepts and Methods in Science and Engineering, vol. 21.

Advances in Legume Science. Proceedings of a conference, Kew, July 1978. R. J. Summerfield and A. H. Bunting, Eds. Royal Botanic Gardens, Kew, Richmond, Surrey, England, 1980. xvi, 668 pp., illus. Paper, £15.

Algebra—Programmed. Part 3. Robert H. Alwin, Robert D. Hackworth, and Joseph W. Howland. Prentice-Hall, Englewood Cliffs, N.J., ed. 3, 1980. xii, 596 pp., illus. Paper, \$15.95.

Analog and Digital Electronics for Scientists. Basil H. Vassos and Galen W. Ewing. Wiley-Interscience, New York, ed. 2, 1980. x, 404 pp., illus. \$22.50.

Analog Signal Processing and Instrumentation. Arie F. Arbel. Cambridge University Press, New York, 1980. xiv, 440 pp., illus. \$64.50.

Analytical Techniques in Environmental Chemistry. Proceedings of a conference, Barcelona, Nov. 1978. J. Albaiges, Ed. Pergamon, New York, 1980. xii, 646 pp., illus. \$85. Pergamon Series on Environmental Science, vol. 3.

Animal Laparoscopy. Richard M. Harrison and David E. Wildt, Eds. Williams and Wilkins, Baltimore, 1980. xiv, 256 pp., illus. cloth.

Annual Review of Biophysics and Bioengineering. Vol. 9. L. J. Mullins, William A. Hagins, Carol Newton, and Gregorio Weber, Eds. Annual Reviews, Palo Alto, Calif., 1980. viii, 644 pp., illus. \$17.

Biological Aspects of Mental Disorder. Solomon H. Snyder. Oxford University Press, New York, 1980. xii, 260 pp., illus. \$13.95.

Biological Monitoring for Environmental Effects. Papers from a conference. Douglas L. Worf, Ed. Lexington (Heath), Lexington, Mass., 1980. xii, 226 pp., illus. \$22.95.

Biological Structures. W. Drommenhoek, J. Sebus, and G. J. van Esch. Translated from the Dutch edition (1979). University Park Press, Baltimore, 1980. 144 pp., illus. \$16.50.

Biomass. Applications, Technology, and Production. Nicholas P. Cheremisinoff, Paul N. Cheremisinoff, and Fred Ellerbusch. Dekker, New York, 1980. viii, 222 pp., illus. \$29.50. Energy, Power and Environment, 5.

Biometeorological Survey. Vol. 1, 1973-1978. S. W. Tromp and Janneke J. Bouma, Eds. Heyden, Philadelphia, 1980. Two volumes. Part A, Human Biometeorology. xiv, 258 pp., illus. Part B, Animal Biometeorology. xii, 180 pp. The two-volume set, \$80.

Cerebral Circulation and Neurotransmitters. Proceedings of a congress, Toulouse, Sept. 1979. André Bes, Gilles Géraud, Philippe Jauzac, and Antonio Guéll, Eds. Excerpta Medica, Amsterdam, 1980 (U.S. distributor, Elsevier/North-Holland, New York). viii, 286 pp., illus. \$48.75.

Charrs. Salmonid Fishes of the Genus *Salvelinus*. Eugene K. Balon, Ed. Junk. The Hague, 1980 (U.S. distributor, Kluwer Boston, Hingham, Mass.). x, 928 pp., illus. \$210.60. Perspectives in Vertebrate Science, vol. 1.

Chemical Deterioration of Proteins. Papers

from a symposium, Honolulu, Apr. 1979. John R. Whitaker and Masao Fujimaki, Eds. American Chemical Society, Washington, D.C., 1980. x, 268 pp., illus. \$28.50. ACS Symposium Series, 123.

Chemical Reaction Engineering. Papers from a symposium, Nice, France, Mar. 1980. Vol. 1, Contributed Papers. Jacques Villermaux and Pierre Trambouze, Eds. Pergamon, New York, 1980. x, 532 pp., illus. Paper, \$77. *Chemical Reaction Science*, vol. 35, Nos. 1 and 2.

Evaluation and Action in the Social Environment. Richard H. Price and Peter E. Politser, Eds. Academic Press, New York, 1980. xvi, 236 pp. \$18.50.

The Evolution of Human Consciousness. John Hurrell Crook. Clarendon (Oxford University Press), New York, 1980. xvi, 446 pp. \$39.

The Finite Element Method. A First Approach. Alan J. Davies. Clarendon (Oxford University Press), New York, 1980. xii, 288 pp., illus. Cloth, \$49.50; paper, \$27.50. Oxford Applied Mathematics and Computing Science Series.

Food Additives and Hyperactive Children. C. Keith Connors. Plenum, New York, 1980. xvi, 168 pp., illus. \$18.50.

Food Policies. John R. Tarrant. Wiley, New York, 1980. xxiv, 338 pp., illus. \$44.50. Wiley Series on Studies in Environmental Management and Resource Development.

Fool Hen. The Spruce Grouse on the Yellow Dog Plains. William L. Robinson. Illustrations by Deann De La Ronde Wilde. University of Wisconsin Press, Madison, 1980. xviii, 222 pp. \$18.50.

Gas Tables. Thermodynamic Properties of Air Products of Combustion and Component Gases Compressible Flow Functions. Joseph H. Keenan, Jing Chao, and Joseph Kaye. Wiley-Interscience, New York, ed. 2, 1980. xiv, 218 pp. \$22.50.

General Psychopathology. An Introduction. Christian Scharfetter. Translated from the German edition (Stuttgart, 1976) by Helen Marshall. Cambridge University Press, New York, 1980. xvi, 330 pp. Cloth, \$45; paper, \$13.95.

Genetic Engineering. Principles and Methods. Vol. 2. Jane K. Setlow and Alexander Hollaender, Eds. Plenum, New York, 1980. viii, 290 pp., illus. \$32.50.

Genetic Origins of Tumor Cells. Papers from a symposium, 1978. F. J. Cleton and J. W. I. M. Simons, Eds. Nijhoff, The Hague, 1980 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xvi, 128 pp., illus. \$26.30. Developments in Oncology, vol. 1.

International Review of Experimental Pathology. Vol. 21. G. W. Richter and M. A. Epstein, Eds. Academic Press, New York, 1980. viii, 304 pp., illus. \$34.50.

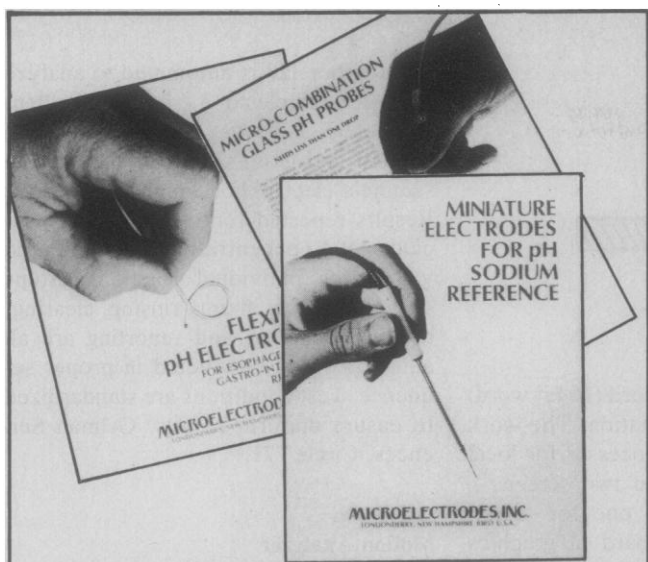
Interventional Diagnostic and Therapeutic Procedures. Barry T. Katzen. Springer-Verlag, New York, 1980. xviii, 156 pp., illus. \$22.50. Comprehensive Manuals in Radiology.

An Introduction to Human Genetics. H. Eldon Sutton. Saunders, Philadelphia, ed. 3, 1980 (distributor, Holt, Rinehart and Winston, New York). xvi, 592 pp., illus. \$17.50.

Introduction to Modern Genetics. Robert P. Wagner, Burke H. Judd, Bob G. Sanders, and Richard H. Richardson. Wiley, New York, 1980. x, 574 pp., illus. \$20.95.

Introductory Readings in the Philosophy of Science. E. D. Klemke, Robert Hollinger, and A. David Kline, Eds. Prometheus Books,

(Continued on page 740)



MICRO-COMBINATION GLASS pH PROBES
WITH ONE BODY TWO DEEP

FLEXI pH ELECTRODES
FOR ESOPHAGI GASTRO-INTESTINAL pH

MINIATURE ELECTRODES FOR pH SODIUM REFERENCE

MICROELECTRODES, INC.
SANDHURST, NEW YORK 10588 U.S.A.

NEW FREE LITERATURE!

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

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

Circle No. 187 on Readers' Service Card

New Unitron Stereo Microscopes combine optical excellence and realistic prices

Precision engineered for highest resolution and true value



Superior resolution at powers from 3.5x to 180x is the keynote of the Unitron ZST, ZSB & FSB stereo microscopes. Wide-field, 3-D images are razor sharp across the full field of view. Lens and prism surfaces are coated to eliminate glare, enhance contrast and increase light transmission. And... the price is right!

A modern modular concept of interchangeable components, illumination systems and accessories provides the durability and flexibility to meet tomorrow's needs. On ZST and ZSB zoom power models, images stay in focus throughout their entire range of variable powers. Our fixed-power model FSB, with either two pairs of objectives or one pair, gives magnifications to meet specific needs.

For industrial, clinical or teaching areas, whether for visual use, photography or TV hook-up, these new Unitron stereo microscopes will satisfy the most critical users.

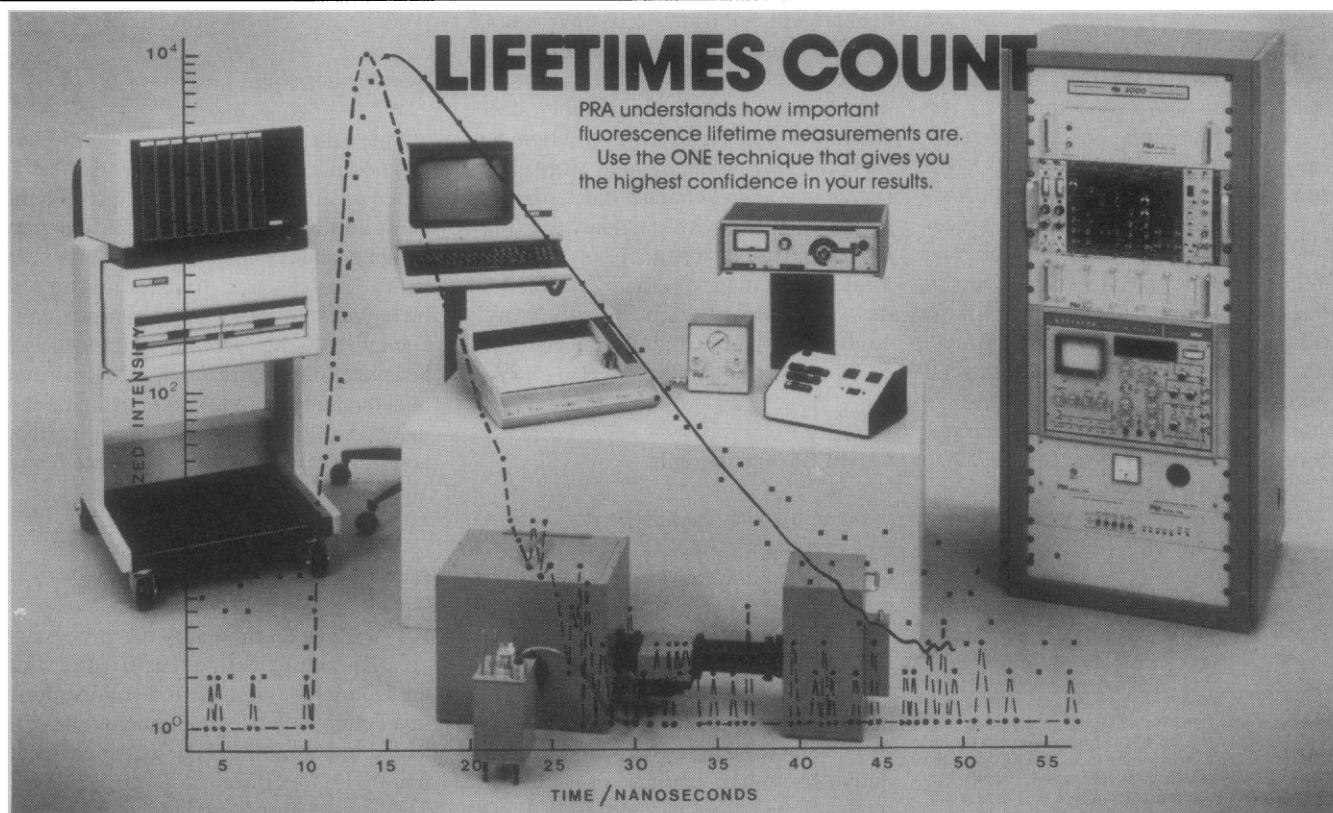
For a free comprehensive catalog, or a personal no-obligation demonstration, contact:

UNITRON **Unitron Instruments, Inc.**
175 Express St.
Plainview, N.Y. 11803, U.S.A.
(516) 822-4601

EXCELLENCE BY DESIGN

Circle No. 215 on Readers' Service Card

LIFETIMES COUNT



PRA understands how important fluorescence lifetime measurements are. Use the ONE technique that gives you the highest confidence in your results.

PRA

UNITED STATES:
Photochemical Research Assoc.
100 Tulsa Road,
Oak Ridge, Tennessee, 37830
(615) 483-3433

INTERNATIONAL:
Photochemical Research Assoc. Inc.
45 Meg Drive,
London, Ontario, CANADA N6E 2V2
(519) 686-2950 Telex 064-7597



PRODUCTS and MATERIALS

Data Plotter

Model 1453 SX is a desktop unit that offers speeds of 15 inches per second axially and 21 inches per second diagonally with 0.001-inch resolution. It is equipped with either RS-232 or IEEE-488 interface for use with electronic data processors. The character generator produces 214 different characters which may be plotted at any angle, slant, or width-to-height aspect. A dot-dash mode produces lines and curves and spaces in specified patterns. An arc generator draws these forms. The operator enters scale, rotation, and speed parameters through a terminal. Nicolet Zeta. Circle 784.

Nanoliter Pump

Model 1400EC is compact and light. Infusion or aspiration may be accomplished at constant rates from 5 to 100 nanoliters per minute. Fluid is delivered through a glass micropipette with tip diameters in the range of 1 to 10 micrometers. Motor speed is maintained by electronic feedback from a remote unit. The remote monitor-controller may be run by signals from other external sources. Picoliter amounts of electrolytes, drugs, dyes, and other fluids may be displaced at variable rates. The pump weighs 59 grams and may be mounted in a micropositioner. W-P Instruments. Circle 789.

Interactive Graphics

The IGS 400 is a stand-alone system. It features a 64K-word system processor, a 50-megabyte disk drive, floppy disk

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. Endorsements by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (on pages 642A and 738A) and placing it in the mailbox. Postage is free.

—RICHARD G. SOMMER

subsystem with 128K-word (16-bit word) capacity, and a work station. The work station has a picture processor for local dynamic processing and two screens—one alphanumeric and one for raster/scan graphics, a keyboard, a graphics tablet, and a joystick. It may be expanded to 256K words of memory. Other peripherals include additional disk storage and printer-plotters. It supports data bases that accommodate graphics and nongraphic information and an English-like command language. California Computer Products. Circle 769.

Spectrofluorometer

The SLM 8000 photon-counting spectrofluorometer features direct readout of polarization or anisotropy, automatic background subtract, real-time excitation and emission correction, difference spectra, and derivative spectra. On scanning models, nonvolatile memory stores excitation and emission correction factors; and read-write memory stores up to six spectra. Dual-channel electronic and optical systems are standard; a third data-acquisition channel is optional. Photon counting or analog techniques may be selected to deal with weakly emitting or highly fluorescent samples. SLM Instruments. Circle 792.

Liquid Chromatograph

Familic-100N requires no external equipment for sample concentration. It consists of a microsyringe pump, a flow rate section, a Teflon column packed with silica wool, and a readout section that starts with either an ultraviolet or a fluorescence detector and includes an optional recorder for output. Flowing or fixed-volume samples may be accommodated in either manual or automatic mode. Solvent use is minimized; recovery accounts for all but about 10 milliliters per day in flow testing. Standard detector wavelength is from 190 to 350 nanometers. Jasco. Circle 787.

Electrophoresis

Autophor 128 is automated to analyze up to 128 samples in 3.5 hours. The densitometer, ACD-18, computes relative percent and gram values as it plots the sample's electrophoretic characteristics. Results reported for serum proteins include total concentration and computed values for individual fractions. Steps such as staining, fixing, rinsing, clearing, drying, scanning, and reporting are all automated and conducted in proper sequence. Test conditions are standardized to ensure uniform results. Gelman Sciences. Circle 771.

Motion Analyzer

The SP2000 records from 60 to 2,000 full-frame images per second or up to 12,000 partial-frame images per second. These images are created by a video sensor that detects a parallel array of discrete pixel elements which is then transferred in a dense format to magnetic tape. The tapes are played at slow speeds and the stored information is transferred to a standard video format for analysis. The entire process is controlled by a microprocessor. Slow motion and stopped frames may be observed. Spin Physics. Circle 783.

Echocardiograph

The Ultra Imager is a noninvasive diagnostic instrument. The device is based on analysis of blood velocity in the heart and large vessels. High-frequency sound produces echoes that are analyzed with fast Fourier transform Doppler techniques to determine pumping efficiency, volume of blood pumped per heartbeat, and arterial flow. Real-time imaging and time-motion imaging of cardiac structure aid in diagnosing cardiac conditions. Electronics for Medicine/Honeywell. Circle 785.

DNA Synthesizer

This device automates the process of creating a nucleotide chain. The first nucleotide is attached to a solid support in a column. Subsequent nucleotides are added one at a time in a sequence specified by the operator via a program card. The synthesizer is a timer and valving system that greatly speeds up the production of nucleotide chains of known, specified content in the laboratory. Each nucleotide requires less than an hour to

Enzymes For Recombinant DNA Research

0870 New: Twice the quantity — same price
DNA LIGASE T_4 inf. *E. coli*)
New process yields quality product at reduced price.
50 Weiss units\$55.00*

0881 RNA LIGASE (T_4 inf. *E. coli*)
RNase and DNase FREE
DNA synthesis and modifications.
Minimum 1000 units/mg protein.
40 μ g\$90.00* 200 μ g\$390.00*

0880 RNA LIGASE (T_4 inf. *E. coli*)
For synthesis of oligonucleotide with specified 3' terminus
50 units\$60.00*

0928 DNA POLYMERASE (*E. coli*)
"KLENOW FRAGMENT" Minimal Nuclease
For *in vitro* synthesis of cDNA and for DNA sequencing with dideoxy NTP's.
100 units ..\$50.00* 500 units ..\$200.00*

0926 DNA POLYMERASE (*E. coli*)
Minimal Nuclease
75 units\$45.00*

*Insulated container and refrigerant charge \$10.00

Call or write for complete information.

excellence in biochemistry



P.L. biochemicals, inc.

1037 WEST MCKINLEY AVENUE, MILWAUKEE, WIS. 53205

® Call 414/347-7442 TWX 910-262-1111

Circle No. 254 on Readers' Service Card

Signed and Spoken Language: Biological Constraints on Linguistic Form

Editors: U. Bellugi, M. Studdert-Kennedy

Until recently, nearly all that was known about language had come from the study of spoken languages. But now new research into signed languages has revealed that there are primary linguistic systems, passed down from one generation of deaf people to the next, which have been forged into autonomous languages and are not derived from spoken languages. Thus, for the first time, we can examine the properties of communication systems that have developed in alternate transmission systems, i. e., in visual-gestural channels.

A group of psychologists, linguists, neurologists, and biologists met in Berlin in March, 1980 to review the progress of this new work, in particular with regard to the structure of language, its acquisition, related cognitive processes, and the complicated set of constraints that have been linked together to shape language.

Life Sciences Research Report 19
Dahlem Workshop Reports
1980. VII, 371 pages.
Paperback. Approx. \$ 35.60.
ISBN 3-527-12021-1

verlag
chemie
international

1020 N. W. 6th Street, Deerfield Beach, FL 33441

Circle No. 253 on Readers' Service Card

Recover samples from gels and sucrose gradients.

Concentrate small samples fast.



The ISCO Model 1750 Electrophoretic Sample Concentrator offers you a new way to concentrate macromolecules. It's fast, convenient, inexpensive, non-disruptive, and adaptable to a wide variety of samples.

You can easily concentrate proteins, nucleic acids, certain whole cells and fragments, or any other water soluble macromolecule larger than 3500 MW and having electrophoretic mobility. During concentration, samples may also be separated from non-ionic media such as polyacrylamide gels or density gradient sugar solutions.

The Model 1750 will handle up to four 10 ml samples, normally produces 50-fold concentrations in 90 minutes or less, and allows quick and easy recovery of concentrates. It uses no pumps or gases—samples are concentrated by a combination of electrophoresis and filtration.

Learn more about the versatile Model 1750 Electrophoretic Sample Concentrator and other ISCO instruments. Dial, toll free,

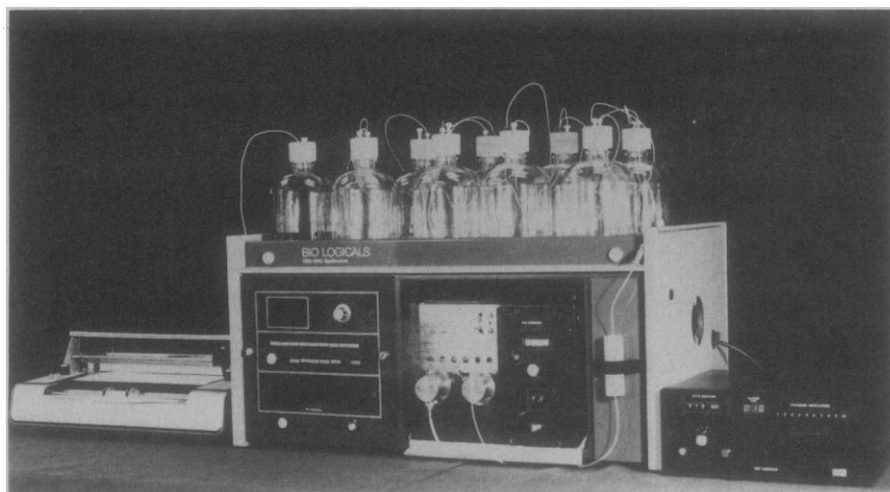
[800] 228-4250]

(continental U.S.A. except Nebraska). Or write ISCO, P.O. Box 5347, Lincoln, Nebraska 68505.



Instruments with a difference

Circle No. 244 on Readers' Service Card



DNA synthesizer [Bio Logicals]

be linked. The synthesizer is expected to find application in research, medicine, and industry. Bio Logicals. Circle 782.

Protein Analyzer

The P-100 is a pulsed nuclear magnetic resonance spectrometer. Used with three paramagnetic relaxation agents (alkaline copper, acid copper, and iron), the instrument measures relaxation rates of a sample within 20 seconds. Relaxation rates shift with protein content and these reagents offer sensitivity and linearity. Calibration is controlled by a microprocessor and data are reduced to display results directly as percent by weight. A printer provides hard copy of the measurements. Newport of North America. Circle 786.

Electrophoresis Cell

The Protean unit features interchangeable lower buffer chambers 16 and 32 centimeters high to accommodate gel slabs 5, 12, 16, or 32 centimeters long. Assembly is rapid and simple. Separate gel casting allows two gels to be cast while electrophoresis proceeds in two others. The temperature control protects heat-sensitive samples and eliminates edge effects so that the entire width of a slab may be used. Bio-Rad Laboratories. Circle 788.

Freezer

Model A21-120 is used for medical research, biological storage, and preservation of tissue, plasma, and blood cells. The cabinet is all steel construction with

a counter-balanced lid. An indicating control adjusts temperature from -18°C to -85°C . The cabinet's air-cooled condenser requires no liquid. Chamber dimensions are 35 by 25 by 41 inches high. Outer dimensions are 49 by 35½ by 75 inches high. A recording thermometer and buzzer alarm system are optional. So-Low Environmental Equipment. Circle 790.

Data Acquisition System

Model 460 links a Hewlett-Packard HP-85 computer and the model 760 analog-to-digital interface and software to analytical instruments such as chromatographs, spectrophotometers, electrochemical instruments, and others. Data are digitized and stored in random access memory. The operator may create programs in BASIC to reduce, re-format, and report the data. Dual-detector or x-y signals may be accepted. Eight external switches permit the system's use to control external apparatus. Nelson Analytical. Circle 791.

Ultraviolet-Visible Spectrophotometer

Model HM Holochrome quantitatively monitors column effluents. A stable deuterium light source and a holographic grating monochromator provide digitally adjustable wavelengths from 190 to 600 nanometers. The device also offers two flow cuvette assemblies (sample and reference), two air reference aperture blocks, recorder cable, event marker cable, and an accessory packet of assorted fittings for connection to plastic or stainless steel tubing. Gilson Medical Electronics. Circle 793.

Literature

Shaking Water Baths features reciprocal motion and constant temperature control models. Fisher Scientific. Circle 777.

Water Analysis includes kits, portable laboratories, and instruments with details of applications and techniques. Hach Chemical. Circle 778.

Sample Concentrator features the LSC-2 concentrator and ALS automatic sampler for analysis of volatile organic components in water. Tekmar. Circle 781.

Biochemicals lists hundreds of substances for research. Boehringer Mannheim Biochemicals. Circle 794.

Liquid Chromatography describes fundamentals of this separatory technique. Perkin-Elmer. Circle 795.

Primate Breeding Cages details the Ken-Kage line of enclosures. Suburban Surgical. Circle 796.

Epidermal Growth Factor is devoted to this receptor-grade, pure peptide. Collaborative Research. Circle 797.

Radioactive Waste Solidification Services features aspects of disposal. Delaware Custom Materiel. Circle 798.

Product and Application News describes surface barrier detectors, photon detectors, a gold analyzer, hybrid circuits, nuclear instrumentation modules, and more. EG & G Ortec. Circle 799.

Analysis Software describes a system for x-ray energy spectroscopy microanalysis. KeveX. Circle 800.

Spectroscopy is covered in each semi-annual issue of the Wilmad Reporter. Wilmad Glass. Circle 801.

Laboratory Recorders is devoted to a line of chart recorders for use with analytical instruments. Linear Instruments. Circle 802.

Cytocentrifuge features the Cytospin 2 designed for safety with pathogenic samples. Shandon Southern Instruments. Circle 803.

Hemoglobin Oxygen Equilibrium Curve Bibliography contains 112 references. Travenol Laboratories, Instrument Division. Circle 805.

Electrolytic Conductivity Detector describes this gas chromatography accessory. Tracor Instruments. Circle 804.

Stable Isotopes also contains a research bibliography. Kor Isotopes. Circle 806.

Liquid Analysis Instruments offers field and laboratory devices. L. G. Nester. Circle 807.

Calorimeter describes measurement of enthalpy or heat of combustion with the same instrument. Parr Instrument. Circle 808.

What's New in Lab Counts?



DENOMINATOR'S NEW TALLY COUNTERS . . .

Ideal for hematological work; animal, insect, pollen and plant studies; Chayes Point counts . . . or anything you wish to sort and count. **Single and Multiple-Tally Counters** . . . up to 24 counters across and 12 rows high. **Totalizers** available for quick percentage determination and line totals.

Easy-to-read Figures
Lightest Touch—Shortest Stroke
Color-coded Push Buttons

Write for further information,
brochure and price list.



Serving Those Who Count Since 1914

THE DENOMINATOR CO., INC.

Woodbury, Connecticut 06798—Tel. 203-263-3210

Circle No. 151 on Readers' Service Card

HELLMA
...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**

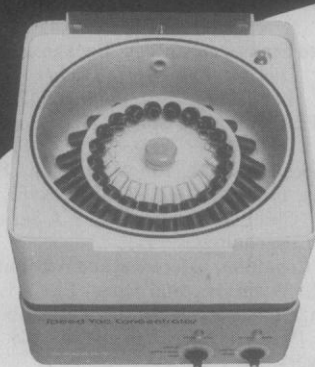
**Also available—ULTRAVIOLET LIGHT SOURCES
Deuterium Lamps · Mercury Vapor Lamps
Hollow Cathode Lamps · Power Supplies**

**HELLMA
CELLS, INC.**

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

Circle No. 213 on Readers' Service Card

"NO BUMP" EVAPORATION SYSTEM for the MAXIMUM CONCENTRATION OF SAMPLE



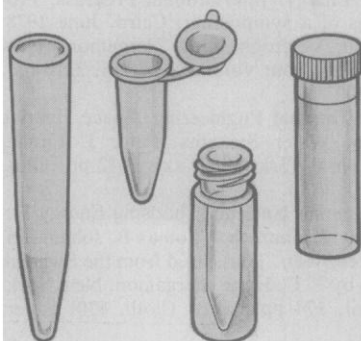
The Speed Vac Concentrator will yield virtually 100% sample recovery with Eluates, Hydrolysates, Extracts and Dialyzed solutions.

Ideal when preparing samples by Derivatization or volume reduction of solution prior to analysis by Gas Chromatography (GC), High Pressure Liquid Chromatography (HPLC), Electrophoresis, TLE or TLC.

A lab tested, work saving system now widely used in Drug Monitoring, RNA & DNA, Sequencing, Protein Structure Analyses, Isolation of a wide range of organic and biochemical species.

If you have a valuable sample, don't lose it by other isolation techniques. Recover 100% with the Speed Vac Evaporator/Concentrator from Savant.

Send for literature today. **SAVANT INSTRUMENTS, INC.**
221 Park Ave., Hicksville, NY 11801 (516) 935-8774.



Savant

**AAAS
Selected
Symposium Volumes**

SOCIAL SCIENCES

**Found: Long-Term Gains from
Early Intervention**

Bernard Brown (ed.), E. H. Grotberg, J. H. Meier, F. H. Palmer, B. D. Goodson, R. D. Hess, V. Seitz, N. H. Apfel, C. Efron, V. R. Hubbell, A. J. Mann, A. V. Harrell, and M. Hurt, Jr.

214 pp. 1978 0-89158-436-6 Vol. 8 \$20.00

**The Family in
Post-Industrial America:
Some Fundamental Perceptions for
Public Policy Development**

David P. Snyder (ed.), C. M. Allen, C. B. Stack, K. E. Boulding, W. I. Warnat, G. Edwards, J. F. Coates, and D. A. Goslin.

132 pp. 1979 0-89158-482-X Vol. 32 \$15.00

Frontiers of Folklore

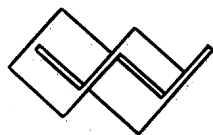
William R. Bascom (ed.), A. Dundes, D. Ben-Amos, H. Scheub, R. D. Abrahams, and R. Bauman.

146 pp. 1978 0-89158-423-3 Vol. 5 \$17.00

**Regulation of Scientific Inquiry:
Societal Concerns With Research**

Keith M. Wulff (ed.), A. E. Hellegers, B. M. Casper, H. Jonas, G. Piel, R. L. Sinsheimer, K. W. Back, A. Stevenson, H. P. Green, T. I. Emerson, D. J. Newburger, A. J. Reiss, Jr., L. N. Robins, E. Freidson, H. O. Mauksch, and D. Wolfe.

222 pp. 1979 0-89158-492-7 Vol. 37 \$19.50



Order directly from:

WESTVIEW PRESS

**5500 Central Avenue
Boulder, CO 80301
Frederick A. Praeger, Publisher**

BOOKS RECEIVED

(Continued from page 699)

Buffalo, N.Y., 1980. xiv, 376 pp. Paper, \$10.95.

The Invention of the Modern Hospital. Boston, 1870-1930. Morris J. Vogel. University of Chicago Press, Chicago, 1980. x, 172 pp. \$15.50.

Inventory of Rare and Endangered Vascular Plants of California. James Payne Smith, Jr., R. Jane Cole, and John O. Sawyer, Jr., in collaboration with W. Robert Powell. California Native Plant Society, Berkeley, ed. 2, 1980. viii, 116 pp. Paper, \$7.50.

The Life of the Green Plant. Arthur W. Galston, Peter J. Davies, and Ruth L. Satter. Prentice-Hall, Englewood Cliffs, N.J., ed. 3, 1980. xvi, 464 pp., illus. Cloth, \$15.95; paper, \$11.95.

Mathematics Applied to Electronics. James H. Harter and Wallace D. Beitzel. Reston (Prentice-Hall), Reston, Va., 1980. xii, 628 pp., illus. \$17.95.

Mathematics of Microcirculation Phenomena. Papers from a symposium, Tucson, 1979. Joseph F. Gross and Aleksander Popel, Eds. Raven, New York, 1980. xii, 174 pp., illus. \$22.

The Medical Casebook of Adolf Hitler. His Illnesses, Doctors and Drugs. Leonard L. Heston and Renate Heston. Stein and Day, New York, 1980. 184 pp. \$12.95.

El Medio Ambiente Paramo. Papers from a meeting, Merida, Venezuela, Nov. 1979. M. L. Salgado-Lobouriau, Ed. Centro de Estudios Avanzados, Caracas, Venezuela, 1979. 236 pp., illus. Paper.

Methods of Cell Separation. Vol. 3. Nicholas Catsimpoalas, Ed. Plenum, New York, 1980. xii, 204 pp., illus. \$27.50. Biological Separations.

Metric America. Math and Measures. Paul R. Frey. Bobbs-Merrill, Indianapolis, 1980. xii, 92 pp., illus. Paper.

Metric Theory of Diophantine Approximations. Vladimir G. Sprindžuk. Translated from the Russian edition and edited by Richard A. Silverman. Winston, Washington, D.C., and Halsted (Wiley), New York, 1979. xiv, 156 pp. \$19.95. Scripta Series in Mathematics.

Modern Mathematics and Its Applications. Larry J. Goldstein, David C. Lay, and David I. Schneider. Prentice-Hall, Englewood Cliffs, N.J., 1980. xx, 672 pp., illus. + appendix. \$19.95.

Molecular Beam Epitaxy. Brian R. Pamplin, Ed. Pergamon, New York, 1980. vi, 174 pp., illus. \$35. Also published in *Progress in Crystal Growth and Characterization*, vol. 2, No. 1/2.

Molecular Biology of Tumor Viruses. Part 2, DNA Tumor Viruses. John Tooze, Ed. Cold Spring Harbor Laboratory, Cold Spring Harbor, N.Y., ed. 2, 1980. xii, 958 pp., illus. \$55.

The Nature of Modern Mathematics. Karl J. Smith. Brooks/Cole, Monterey, Calif., ed. 3, 1980. xx, 620 pp., illus. \$16.95.

The Nature of Enzymology. R. L. Foster. Halsted (Wiley), New York, 1979. xii, 384 pp., illus. \$39.95.

Neoplastic Transformation in Differentiated Epithelial Cell Systems *in vitro*. Papers from a workshop, London, June 1978. L. M. Franks and C. B. Wigley, Eds. Academic Press, New York, 1979. xii, 314 pp., illus. \$33.50.

Neural Peptides and Neuronal Communication. Proceedings of a meeting, Gardone, Italy, Aug. 1979. Erminio Costa and Marco

Trabucchi, Eds. Raven, New York, 1980. xxvi, 652 pp., illus. \$57. *Advances in Biochemical Psychopharmacology*, vol. 22.

Neurobiological Basis of Learning and Memory. Papers from a symposium, Ohtsu-shi, Japan, Oct. 1978. Yasuzo Tsukada and Bernard W. Agranoff, Eds. Wiley, New York, 1980. xii, 260 pp., illus. \$21.50.

The New UCI LISP Manual. James R. Meehan, Ed. Erlbaum, Hillsdale, N.J., 1979. xx, 366 pp. Paper, \$14.95.

Nitrogen and Rice. Papers from a symposium. International Rice Research Institute, Manila, Philippines, 1980. vi, 500 pp., illus. Paper, \$11.25.

Noguchi and His Patrons. Isabel R. Plesset. Fairleigh Dickinson University Press, Rutherford, N.J., 1980. 314 pp. \$25.

Noncatecholic Phenylethylamines. Part 2, Phenylethanolamine, Tyramines, and Octopamine. Aron D. Mosnaim and Marion E. Wolf, Eds. Dekker, New York, 1980. xvi, 366 pp., illus. \$55. *Modern Pharmacology-Toxicology*, vol. 12.

On the Road with John James Audubon. Mary Durant and Michael Harwood. Dodd, Mead, New York, 1980. xiv, 638 pp., illus. \$19.95.

The Primary Health Worker. Working Guide, Guidelines for Training, Guidelines for Adaptation. World Health Organization, Geneva, ed. 2, 1980 (U.S. distributor, WHO Publications Centre USA, Albany, N.Y.). vi, 346 pp., illus. Paper, \$7.50.

Screening for Cancer. Theory, Analysis, and Design. David M. Eddy. Prentice-Hall, Englewood Cliffs, N.J., 1980. xii, 308 pp., illus. \$29.95.

Sea Ice Processes and Models. Proceedings of a symposium, Seattle, Sept. 1979. Robert S. Pritchard, Ed. University of Washington Press, Seattle, 1980. xiv, 474 pp., illus. \$30.

Search and Screening. General Principles with Historical Applications. Bernard Osgood Koopman. Pergamon, New York, 1980. xii, 370 pp., illus. Cloth, \$40; paper, \$17.50.

Seasonal Reproduction in Higher Vertebrates. Papers from a symposium, Richmond, Va., Dec. 1978. Russel J. Reiter and Brian K. Follett, Eds. Karger, Basel, 1980. vi, 222 pp., illus. \$101.25. *Progress in Reproductive Biology*, vol. 5.

Selected Studies on Energy. Background Papers for *Energy: The Next Twenty Years*. Hans H. Landsberg, Ed. Ballinger (Harper and Row), Cambridge, Mass., 1980. xviii, 440 pp. \$35.

The Social Animal. Elliot Aronson. Freeman, San Francisco, ed. 3, 1980. xviii, 378 pp., illus. Cloth, \$16; paper, \$7.95. *A Series of Books in Psychology*.

Social Cognition, Inference, and Attribution. Robert S. Wyer, Jr., and Donal E. Carlston. Erlbaum, Hillsdale, N.J., 1979 (distributor, Halsted [Wiley], New York). xii, 388 pp., illus. \$24.95.

Solar Energy. International Progress. Proceedings of a symposium, Cairo, June 1978. T. Nejat Veziroglu, Ed. Pergamon, New York, 1980. Four volumes. lxxxvi, 2310 pp., illus. \$300.

Solar Thermal Engineering. Space Heating and Hot Water Systems. Peter J. Lunde. Wiley, New York, 1980. xxiv, 612 pp., illus. \$25.95.

Solar versus Nuclear. Choosing Energy Futures. Man Lönnroth, Thomas B. Johansson, and Peter Steen. Translated from the Swedish Edition by P. C. Hogg. Pergamon, New York, 1980. xii, 174 pp., illus. Cloth, \$30; paper, \$15.

THE DNA TRANSILLUMINATOR

A COMPLETE DOCUMENTATION SYSTEM FROM FOTODYNE



Fotodyne's NEW Foto UV 440 DNA Transilluminator provides maximum intensity 300 nm transmission for ultimate viewing and photography. Six 15-watt bulbs with peak emission at 300 nm for optimum excitation of ethidium bromide dye. Extra-large filter area allows multiple gel or comparison viewing. Modular design permits addition of housing for 300 nm UV reflectance.

FOTODYNE OFFERS THE COMPLETE DNA RESEARCH DOCUMENTATION SYSTEM

- ★ THE 440 DNA Transilluminator
- ★ Compatible with Polaroid MP-4 Camera
- ★ Optional 35 mm and INSTANT COLOR 8x10 Formats
- ★ Optional White Light Transmission Kit
- ★ Control Box with Timer and Auxiliary Outlet
- ★ Optional Housings for Reflected 300 nm/254 nm/366 nm Illumination

SEE US AT
DNA RESEARCH CONGRESS
 February 25-27
MICROBIOLOGIST MEETING
 March 1-6/Booth 1133
PITTSBURGH CONFERENCE
 March 9-13/Booths 813, 815

Call or Write for 8 Page Brochure

FOTODYNE ||| 16229 W. Ryerson Road
 P.O. Box 183
 New Berlin, WI 53151
 Telephone: 414/786-9550

Circle No. 186 on Readers' Service Card

THINK SAFETY



ARE YOU READY FOR THE 80s?

Personal and environmental safety is the number one issue for any organization handling toxic and hazardous chemicals. We are ready with equipment and supplies that you need for a safer workplace and environment.

YOURS FREE!

Send for our 1981 catalog of hundreds of products designed for safe handling of toxic and hazardous chemicals. A valuable reference wherever chemicals are used.

**Call Toll Free
800-356-0783**



LAB SAFETY SUPPLY CO.
 P.O. BOX 1368 JANESVILLE, WI. 53547
 A DIVISION OF SCIENCE RELATED MATERIALS, INC.

Circle No. 2 on Readers' Service Card

CATECHOLAMINES AND METABOLITES?



WITHIN

Brain Tissue
 Adrenal Tissue
 Body Fluids
 Dosage Forms
 Plant Matter
 Insect Tissue

WITHOUT

Derivatives
 Radioisotopes
 Fluorescence
 Gas Chromatography
 Mass Spectrometry
 A Rich Uncle

Catecholamine analyzers based on liquid chromatography with electrochemical detection have replaced classical fluorescence procedures in all of the above areas and are now in routine use in many laboratories. Detailed procedures are available and can be adopted by your laboratory without modification. Not limited to catecholamines, these new reverse-phase systems are capable of monitoring many other phenolic natural products and drugs. All of the known catecholamine metabolites and many tryptophan metabolites can be determined. In addition, the activity of many neurologically important enzymes can be measured. Let us know your requirements!

DOPAMINE • NOREPINEPHRINE • EPINEPHRINE • VMA • HVA • DOPAC • MHPG • M • NM • 3-MT • 5-HT • 5-HIAA • TH • DBH • COMT • NMT



BIOANALYTICAL SYSTEMS INC.

P.O. Box 2206 • W. Lafayette, IN 47906 • (317) 463-2505 • telex 276141 BAS WLAF

Personnel Placement

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

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

DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth): \$8 per millimeter; \$200 minimum, per insertion (minimum charge covers 25 millimeters on a single column; 25 millimeters equals 10 lines of 50 spaces per line). No charge for use of box number. No agency commission for ads less than 103 millimeters (4 inches). No cash discount. Prepayment required for all foreign ads. Purchase orders and billing information required for all other advertising.

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

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

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

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

Blind ad replies should be addressed as follows:

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

POSITIONS WANTED

Biochemist. Ph.D. 1974. Active research for past 3 years in multiple sclerosis and myasthenia gravis. Experienced in isolation/culture of oligodendroglial cells; also in immunological procedures including PWM Ig synthesis systems, T suppressor cell functional assays, RIA's, and so forth. Seeks position with opportunity for independent and collaborative research. Publications. Box 24, SCIENCE. X

Biologist/Medical Technologist. B.A. 1977. M.T. 1979. Two years of experience in large clinical laboratory in toxicology and hematology. Research experience with publications and presentations. Seeking challenging research position in academia or industry. Box 30, SCIENCE. 2/13, 20, 27

Biophysicist. Ph.D. Three years of postdoctoral experience in muscle physiology and optical techniques. Undergraduate teaching and computer experience. Seeks research position in medical center, university, government, or industry. Available immediately. Box 31, SCIENCE. X

Botanist. B.S. in biology, M.S. in botany (Cornell University, 1981). Laboratory skills include transmission and scanning electron microscopy, photomicrography, and plant protoplast and tissue culture techniques. College teaching experience. Seeks research or teaching position. Box 32, SCIENCE. X

Cellular Immunologist. Ph.D. 1970. Research experience in soluble lymphocyte mediators; cellular immunity/immunosuppression in infectious diseases; lymphocyte/PMN mediated target cell destruction. Seeking research/teaching position in academia. Interested in project investigating stress and its effects on immunosuppression and/or lymphocyte cell surface DNA. Box 22, SCIENCE. X

Electron Microscopist/Physiologist. M.S. Seeking research position in industry or university in neurobiology or related field. Expertise in TEM, SEM, ultracytochemistry, and freeze fracture. Box 27, SCIENCE. X

Experienced, Board-certified Pathologist (AP) with the rank of tenured professor and international reputation in cancer research seeks responsible position. Transfer of personal grants might be possible. Box 36, SCIENCE. 2/13, 20

POSITIONS WANTED

Environmental Toxicologist. Ph.D. Multidisciplinary abilities. Marine biotoxicology/zoology doctorate (1969, Hawaii). Experience, publications in marine toxin pharmacology, clinical/epidemiologic/toxicologic aspects of pesticides. Ten years of research/field experience with EPA pesticides/toxics. S.O.T., A.C.O.T., Who's Who. Wants research-administrative position in pollution biology or marine toxics, West Coast. Box 33, SCIENCE. X

Immunologist/Cell Biologist. Ph.D., 1975. Presently assistant member, cancer research foundation. Record of peer reviewed, funded research and publications. Interested in and background in immunology, hematology, tumor-host interactions, in vitro cell culture. Seeking position in industry or research oriented academia. Box 34, SCIENCE. X

Microbiologist. M.S. Experienced in genetic improvement of microorganisms using methods of recombinant DNA and induced mutagenesis. Seeks research associateship in fermentation industry. Three years of research and industrial experience. Publications. Box 35, SCIENCE. X

Molecular Geneticist/Biologist. Ph.D. Professor Emeritus. Seeking either academic/research position at institution where understanding is, in fact, the primary goal of teaching and research; or funds to exploit this understanding commercially in the field of DNA technology. Box 28, SCIENCE. X

Physical Chemist. Ph.D. Extensive research experiences in peptide hormone, protein chemistry, RIA, monoclonal antibody using hybridoma technology. Seeks research/academic position in the eastern United States. Box 14, SCIENCE. X

Physical Chemist. Ph.D. 1977. Currently research associate, with interest and experience in photoprocesses, mass spectroscopy, laser spectroscopy, vacuum technology, particle detectors. Seeks academic or industrial position. Box 37, SCIENCE. X

Toxicology Manager. Ph.D. Expert in designing, planning, and evaluating programs to assess toxicity of pesticides, food additives, and industrial chemicals. Skilled in obtaining approvals involving FDA, FIFRA, and TSCA regulations. Proven management and communication ability. Desires to manage new or existing corporate toxicology program. Box 38, SCIENCE. X

POSITIONS OPEN

ANATOMY DEPARTMENT. One tenure-track position for person who will contribute to teaching and research programs of the department. Salary and rank commensurate with training, experience, and documented productivity. Send information to: **Dr. Dale E. Bockman, Department of Anatomy, Medical College of Georgia, Augusta, Georgia 30912.**

An Equal Opportunity/Affirmative Action Employer

UNIVERSITY OF LOUISVILLE AQUATIC BOTANIST

Tenure-track position to be filled during the 1981-1982 academic year at the assistant professor level in the Department of Biology, University of Louisville. Ph.D. required. Preference will be given candidates whose research includes studies of population dynamics, energy flow through aquatic ecosystems, or physiological mechanisms of metabolite processing. Teaching will be primarily in the field of specialty, with contributions also to the general curriculum and research capabilities of the Biology Department. Salary negotiable. Applications must be received by 15 March 1981. Submit curriculum vitae, list of publications, and the names, addresses, and telephone numbers of six persons from whom letters of reference may be obtained to: **Search Committee, Aquatic Botany, Dr. Varley E. Wiedeman, Chairperson, Department of Biology, University of Louisville, Louisville, Kentucky 40292.** *An Equal Opportunity/Affirmative Action Employer.*

ASSISTANT PROFESSOR OF BIOCHEMISTRY. The New England College of Osteopathic Medicine (NECOM) has a tenure-track position for a person with at least 2 years of postdoctoral experience. Duties include teaching and research, preferably in the area of osteopathic manipulation or neurochemistry, though other areas will be considered. Please send curriculum vitae and names of three references to: **Michael D. Roper, Ph.D., NECOM, 605 Pool Road, Biddeford, Maine 04005.**

POSITIONS OPEN

ANATOMIST. Prerequisites: Ph.D. in biological science, grantsmanship in ocular ultrastructural research, and teaching experience. Responsibilities: ocular ultrastructural research, lecture and laboratory in microanatomy, and limited participation in biological science laboratories. Requirements: curriculum vitae, statement of teaching and research interests with reprints, and names of three references. Deadline: 1 March 1981. Send to: **Charles Schweitzer, Pennsylvania College of Optometry, 1200 West Godfrey Avenue, Philadelphia, Pa. 19141.** *Affirmative Action/Equal Opportunity Employer.*

ANATOMIST. Position open at assistant professor level. Applicants should hold a Ph.D., D.O., or M.D. degree. Postdoctoral experience teaching gross anatomy and/or neuroanatomy is desirable. Applicants should send curriculum vitae, a summary of research experience and goals, and names of three references to: **Dr. P. L. Szabo, Chairman, Department of Anatomy, New York College of Osteopathic Medicine, P.O. Box 170, Old Westbury, Long Island, New York 11568.** *An Equal Opportunity/Affirmative Action Employer.*

ANATOMIST

Applications are invited for the histology/medical embryology position at the West Virginia School of Osteopathic Medicine to begin 1 July 1981. Applicants should have a doctorate degree with interest, ability, and experience in teaching medical histology/embryology/genetics, and an active research program with publications. Rank and salary open.

Interested individuals should send a letter of statement of teaching/research interests, curriculum vitae, and names of three references to: **Kirk H. Herrick, D.O., Dean for Academic Affairs, West Virginia School of Osteopathic Medicine, 400 North Lee Street, Lewisburg, West Virginia 24901,** no later than 31 March 1981.

An Affirmative Action/Equal Opportunity Employer

AQUATIC ECOLOGIST. Ph.D. Martin Marietta Corporation's Environmental Center has immediate openings for aquatic ecologists with strong quantitative backgrounds in estuarine marine or freshwater ecology, and specializing in the areas of fisheries, benthic or toxicology. Salary is negotiable, commensurate with experience.

The Center, located between Baltimore, Maryland, and Washington, D.C., is engaged in research and contract work related to environmental impact and resource management.

Candidates should submit résumés with references and/or publications to: **Monica C. Ballard, Martin Marietta Corporation, 1450 South Rolling Road, Baltimore, Maryland 21227.** *An Equal Opportunity Employer, M/F/H.*

AQUATIC SYSTEMS ECOLOGIST

Assistant professorship available in the Department of Biology, The University of Alabama, with residence at the Dauphin Island Sea Laboratory near Mobile, Alabama. Applicants must have a Ph.D. in biology or environmental engineering with demonstrated expertise in aquatic and estuarine plankton ecology, nutrient chemical dynamics, and the use of systems modeling to describe these relationships. The successful candidate will be expected to develop an extramurally funded research program. Teaching responsibility will include the development of new courses in areas such as systems ecology, environmental chemistry, and computer applications for ecological scientists in addition to team teaching in selected established courses.

Send curriculum vitae, including reprints, statement of research and teaching interests, graduate and undergraduate transcripts, and three letters of reference, by 16 March 1981 to:

**Search Committee, Marine Science Program
Dauphin Island Sea Laboratory
3940 Government Boulevard
Mobile, Alabama 36609**

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

New Division of Gerontology invites applications for tenure-track research position: **ASSISTANT PROFESSOR** in cell and molecular biology for studies on cellular aging. Ph.D. or M.D. with several years of postdoctoral experience is required. Preference may be given to those with background in membrane-molecular interactions and/or hybridoma techniques. Apply with curriculum vitae and names and addresses of three references to: **Dr. Sam Goldstein, Division of Gerontology, Department of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Ark. 72205.**

POSITIONS OPEN

ASSISTANT CURATOR Department of Vertebrate Paleontology The American Museum of Natural History

The Department of Vertebrate Paleontology is seeking to fill a position for assistant curator, beginning 1 July 1981. Requisites: primary research orientation in paleomammalogy, particularly collection-supported studies in phylogeny and systematics; strong commitment to conduct innovative and significant research, and to produce research papers. Interest in conducting interdisciplinary studies desired. Applicant should be active in field investigations and in collecting materials for research purposes. Additional duties include participation in collections management, museum exhibition, and departmental affairs, including interactions with the public. Candidates must have Ph.D. at time of appointment. Applications should include: (i) brief statement of research interests, (ii) curriculum vitae, (iii) complete bibliography, and (iv) three letters of recommendation. Applications must be submitted by 1 March 1981 to: Dr. Richard H. Tedford, Chairman, Department of Vertebrate Paleontology, American Museum of Natural History, Central Park West at 79th Street, New York, New York 10024.

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

THE TRUDEAU INSTITUTE, INC. ASSISTANT AND ASSOCIATE PROFESSORSHIPS

The Trudeau Institute wishes to appoint three new **RESEARCH IMMUNOBIOLOGISTS**, at the level of **assistant or associate professor**, to investigate basic immune functions and mechanisms of defense against infectious and neoplastic diseases. Candidates should have at least 3 years of productive postdoctoral experience to apply for an assistant professorship, and a minimum of 6 years of experience to apply for an associate professorship. The successful candidates will be provided the space and facilities to develop their own research programs. Although they will be expected to compete for outside funding, the Institute has the financial resources to support them for generous periods of time.

The Trudeau Institute is a not-for-profit institution dedicated to pure research. It is housed in a modern facility and situated in the lakes and high peaks region of the Adirondack Mountains, 8 miles from Lake Placid, N.Y.

Résumés should be sent to: Dr. Robert J. North, The Director, Trudeau Institute, Inc., P.O. Box 59, Saranac Lake, N.Y. 12983.

ASSISTANT PROFESSOR, PLANT PATHOLOGY. Applications are invited for a tenure-track research and teaching position in host-parasite genetics. The appointee will use molecular and traditional genetic methods to analyze the plant host-parasite interaction, with the objective of identifying and manipulating useful genetic elements. Teaching responsibility is for a biennial graduate-level course in pathogen variability and host resistance. Ability to work cooperatively with researchers in other disciplines and to supervise graduate students is essential. Ph.D. in plant pathology or a related field with strong background in microbial, plant, or molecular genetics and biochemistry is required, and experience in manipulating macromolecules is desirable. Minimum salary is \$22,000. Please submit curriculum vitae, a statement of research experience and goals, transcripts, and three letters of reference to: Dr. Steven G. Pueppke, Search Committee Chairman, Department of Plant Pathology, University of Florida, Gainesville, Fla. 32611. Closing date for receipt of applications is 1 March 1981. *Equal Opportunity/Affirmative Action Employer.*

AVIAN PHYSIOLOGIST. Applications are invited for a tenure-track faculty position, approximately 40 percent teaching and 60 percent research, in the Department of Animal Science. Teaching includes participation in undergraduate team-taught systemic physiology courses and one graduate course in specialty. The research should focus upon physiological regulation of those processes and conditions essential for reproduction and/or growth in avian species. Avian species include turkeys, chickens and/or geese, and cooperative research and interaction with the poultry industry are encouraged. A Ph.D. or its equivalent with emphasis on avian physiology is required. Send curriculum vitae, undergraduate and graduate transcripts, a summary of research goals, and three letters of recommendation to: Dr. Alan G. Hunter, 495 Animal Science/Veterinary Medicine, University of Minnesota, St. Paul, Minnesota 55108.

Immunologist

San Francisco Bay Area

The Lawrence Livermore National Laboratory is an applied science R & D facility, operated by the University of California for the U.S. Department of Energy, and located in a rural suburb of the San Francisco Bay area. We are seeking a biomedical scientist to lead group research in immunology and immunofluorescent labeling using monoclonal antibodies against antigens in mammalian cells. This person will create a lab facility for the formation, isolation and propagation of hybridoma cells for producing monoclonal antibodies, and maintain and use this capability for original research in the use of immunofluorescent probes for labeling mammalian cells. Research will include independent projects and collaborative, multidisciplinary projects with other scientists. Lead programs involving immunology as applied to analytical cytology which includes proposing new projects to funding agencies, directing research and reporting results to the scientific community—both in analytical cytology and in immunology.

We require a PhD or MD in immunology or immunochemistry. Persons with no graduate training in immunology would qualify by post-doctoral training in a hybridoma (immunology) research group.

We invite you to submit your resume in confidence to: Ted Wilson, Employment Division, LAWRENCE LIVERMORE NATIONAL LABORATORY, P.O. Box 808, Dept. KSC-021, Livermore, CA 94550. U.S. Citizenship is required. We are an equal opportunity employer.

University of California

 **Lawrence Livermore
National Laboratory**

Ph.D. CHEMISTS

Colgate-Palmolive, a leading consumer products company, offers the following career opportunities in our convenient Central New Jersey Research Center:

Ph.D. CHEMISTS (Physical/Surface/Inorganic)

Industrial experience desired, but not necessary; January and June 1981 graduates are encouraged to apply. Assignments are in the basic research area of well equipped laboratories dealing with a wide variety of challenging research problems. (Position #PSI)

Ph.D. PHYSICAL CHEMISTS (Product Development)

Openings for product development chemists for Household Products area of our research laboratory. Knowledge of surfactant chemistry and surface chemistry. Innovative ability required to work on challenging research problems. (Position #PD)

Our Research Center is ideally accessible to New York City, Philadelphia, Rutgers and Princeton University campuses. We offer competitive starting salaries coupled with comprehensive benefits.

Send résumé, including salary history, requirements and indicate position for which you are applying, to:

PERSONNEL DEPARTMENT

COLGATE-PALMOLIVE COMPANY

909 River Road, Piscataway, New Jersey 08854

an equal opportunity employer M/F



POSITIONS OPEN

ASSISTANT PROFESSOR OF PSYCHOLOGY with emphasis in development (fall 1981). The primary responsibility is for teaching within a well-established undergraduate program in psychology. The applicant is also expected to administer a departmental nursery school and supervise senior research projects. The department has excellent physical facilities, well-equipped for the research interests of students and staff. Send curriculum vitae and three letters of recommendation to: **D. J. Costanzo, Chairperson, Psychology Department, Muskingum College, New Concord, Ohio 43762.**

ASSOCIATE RESEARCHER position in population cytogenetic study of human fetal wastage available from April 1981. Ph.D. and a minimum of 3 years of postdoctoral experience in human cytogenetics required. Previous research experience in population surveys, including patient interviews, highly desirable. Send curriculum vitae and names of two references to: **Dr. Patricia A. Jacobs, University of Hawaii School of Medicine, Department of Anatomy, 1960 East-West Road, Honolulu, Hawaii 96822.**

BIOCHEMISTRY POSTDOCTORAL POSITION

Immediate opening for a recent Ph.D. interested in conducting research in the areas of protein phosphorylation, arachidonic acid metabolism, and enzyme purification. Submit curriculum vitae and names of three references to: **Dr. G. Graff, Department of Biological Chemistry, University of Illinois Medical Center, 1853 West Polk Street, Chicago, Illinois 60612.**

An Equal Opportunity/Affirmative Action Employer

BIOLOGICAL PSYCHOLOGY—Position Number 1

Applications are invited from behavioral neuroscientists for an anticipated position of the assistant professor level in the Department of Psychology, beginning in August 1981. Appointments will be made on the basis of strong research potential in the general area of behavioral and neuronal plasticity, emphasizing learning, memory, sensory processes, motivation, and/or development. For this position applicants are expected to use electrophysiological methods in their research and to be able to teach neurophysiology. Salary is \$16,000 or higher, commensurate with experience.

Applications, including a statement describing proposed research activities and objectives, curriculum vitae, and three to five letters of recommendation, should be sent to: **Dr. Herbert P. Alpern, Chairperson, Biological Psychology, Department of Psychology, University of Colorado, Boulder, Colorado 80309.**

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

Application deadline: 21 March 1981.

BOTANICAL ECOLOGIST, assistant professor, recent Ph.D., to start summer 1981. Initial appointment: 2 years with possibility of position becoming ongoing, at a small, quality, liberal arts college for women. Excellent teaching and a strong commitment to research are required. Send curriculum vitae with covering letter describing research interests to: **Dr. Sidney L. Beck, Chair, Department of Biology, Wheaton College, Norton, Mass. 02766.**

The Division of Medical Oncology of The Evanston Hospital, an affiliate of Northwestern University, has an opening for a **CELL BIOLOGIST**. The candidate should have a Ph.D., preferably in the cancer field, with extensive experience in cell culture cloning and other related techniques. Seed money will be available initially, but the candidate is expected to pursue independent research. Salary is negotiable.

Apply to: **Dr. Janardan D. Khandekar, Evanston Hospital, 2650 Ridge Avenue, Evanston, Ill. 60201.**

CHAIRPERSON, Department of Psychology, University of Hawaii, beginning 1 July 1981. Department has 25 faculty, 125 graduate students, and 285 undergraduate majors. Ph.D. awarded in clinical (APA-approved), comparative-physiological, developmental, human variability, learning, and social-personality. Require demonstrated competence in teaching, research, and administration. Eleven-month salary exceeds \$40,000. Possibility for instant tenure. Chairperson term is 3 years with possible extension. Round-trip air fare to be paid invited applicants plus per diem of \$40 per day. Send curriculum vitae and have three reference letters sent by 15 March 1981 to: **Chair, Search Committee, Department of Psychology, University of Hawaii, 2430 Campus Road, Honolulu, Hawaii 96822. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

The Department of Biological Sciences at Dartmouth College invites applications for a temporary opening in **CELLULAR AND DEVELOPMENTAL BIOLOGY**. We anticipate making a 1-year appointment with a possibility of a 1-year extension. Appointment will be at the level of assistant professor and will carry a limited teaching obligation with more than usual time for research. The department welcomes applications from all qualified persons. Address inquiries to: **Dr. Thomas B. Roos, Chairperson, Department of Biological Sciences, Dartmouth College, Hanover, N.H. 03755. Dartmouth College is an Equal Opportunity/Affirmative Action Employer.**

CHAIRPERSON Department of Biochemistry Uniformed Services University of the Health Sciences (USUHS)

The School of Medicine, USUHS, seeks an individual with superior credentials in teaching and research in biochemistry to chair the department. Candidates must have a demonstrated ability to develop medical and graduate training programs and conduct meritorious research. Internal resources are available (laboratory space, positions, research support) to develop a superior department. USUHS, a medical school established by act of Congress to train physicians for the uniformed services, is located on the campus of the National Naval Medical Center, Bethesda, Md. Salaries and benefits are competitive with academic institutions in the area.

Closing date for applications: 1 April 1981. Interested individuals should submit curriculum vitae and the names of three references to:

**Dr. Lewis Aronow
USUHS (Attention Personnel/Manpower)
4301 Jones Bridge Road
Bethesda, Md. 20014**

An Equal Opportunity Employer

CHAIRPERSON, DEPARTMENT OF PHARMACOLOGY. Downstate Medical Center, State University of New York, is searching for a chairperson for the Department of Pharmacology. Candidates in all aspects of pharmacology will be considered. Send letter of application with curriculum vitae and bibliography to: **James B. Ranck, Jr., M.D., Chairman, Search Committee, Box 1-5, Downstate Medical Center, 450 Clarkson Avenue, Brooklyn, N.Y. 11203. Equal Opportunity/Affirmative Action Employer.**

CHEMISTRY FACULTY POSITIONS

Two renewable 2-year appointments in Chemistry for Sept. 1981, one in Inorganic Chemistry (Assistant Prof.), one in Biochemistry (Assistant or Associate Prof.). Ph.D. to teach undergraduates in specialty and related areas in Chemistry and to direct undergraduate research in the specialty. Resume, transcripts, and 3 recommendations by February 27 to **K. Hellman, Dept. of Chemistry, Smith College, Northampton, MA 01063.**

AN EQUAL OPPORTUNITY EMPLOYER

FACULTY POSITIONS COLLEGE OF MEDICINE UNIVERSITY OF KENTUCKY SEARCH REOPENED

Anatomy—One faculty position at the assistant professor level for an electron microscopist with 2 years of postdoctoral training and an active research program in the areas of neuroendocrinology and neuroanatomy.

Submit curriculum vitae to:

**Karen Jenkins
Special Assistant to the Dean
College of Medicine
University of Kentucky
800 Rose Street
Lexington, Kentucky 40536**

The University of Kentucky is an Equal Opportunity Employer.

POSITIONS OPEN

CHEMIST—BIOCHEMIST. Postdoctoral positions to study mechanism of a pyrimidine biosynthetic metalloenzyme and to develop mechanism-based inhibitors; ss kinetics, protein modification, synthetic organic chemistry, NMR and other physical and spectral techniques will be used. Begin now to 1 September 1981 for 2 or 3 years. NIH salary scale. Send curriculum vitae and two letters of recommendation to: **Dr. Kim D. Collins, Department of Biochemistry, The Johns Hopkins University, 615 North Wolfe Street, Baltimore, Maryland 21205.**

Ph.D. CHEMISTRY. Position available in September 1981 for assistant professor. Duties include teaching undergraduate chemistry courses in an interdisciplinary natural science major, advising pre-medical students, directing undergraduate student projects, and maintaining active research in field of specialization. Deadline 1 March 1981. Send résumés to: **Dr. Grace Vernon, Chairperson, Division of Science and Mathematics, Fordham University, 113 West 60 Street, New York, N.Y. 10023. Affirmative Action/Equal Opportunity Employer, M/F/H/V.**

CHIEF OF CHEMICAL PATHOLOGY ASSOCIATE OR FULL PROFESSOR

University of California, Irvine, Department of Pathology, is recruiting for a faculty position at associate or full professor level. Required: M.D., clinical Board-eligible/qualified, service experience in clinical chemistry, demonstrated success in independent research and teaching. Duties: to direct Division of Chemical Pathology and to be responsible for medical students and house staff teaching in this area. Position effective 1 July 1981. *An Affirmative Action Employer.* Send curriculum vitae and references to: **H. Simpkins, M.D., Ph.D., University of California, Irvine, Department of Pathology, 101 City Drive South, Orange, Calif. 92804, by 27 March 1981.**

DEAN, College of Arts and Sciences, University of Northern Colorado. Position to begin 1 September 1981. Deadline for applications: 14 March 1981. For details on qualifications, job description, rank, salary, and application, contact: **Dr. Oliver P. Kolstoe, Chair, Search Committee, Dean, College of Arts and Sciences, Office of Academic Affairs, University of Northern Colorado, Greeley, Colo. 80639.**

An Equal Opportunity/Affirmative Action Employer

DIRECTOR WATER RESOURCES RESEARCH CENTER University of Massachusetts, Amherst

Water resources and environmental specialist with earned Ph.D. required for September 1981 as director of ongoing research, developer of new programs, and administrator of all funds assigned. Extensive experience in a special field of water resources is required. Experience in related multidisciplinary research/educational fields desirable. Director works closely with federal, state, regional, and local agencies, responding to requests for assistance and information, and identifying research needs and funding sources.

Submit applications and résumés by 1 March 1981 to: **Search Committee for Water Resources Director, Room A217 Graduate Research Center, University of Massachusetts, Amherst, Mass. 01003. An Affirmative Action/Equal Opportunity Employer.**

FACULTY POSITION IN BIOCHEMISTRY—UNIVERSITY OF CALIFORNIA, LOS ANGELES. The Biochemistry Division of the Department of Chemistry invites applications for a regular faculty position in the area of biophysical chemistry which will be open from September 1981. Applicants making use of x-ray diffraction in their research are especially encouraged, but others will also be considered. Preference will be given to applicants at the assistant professor level, but applications for appointment at a higher level will be considered. Candidates are sought who give evidence of potential distinction in scholarship and teaching and who show exceptional promise of creative and active careers as research scientists. Candidates should submit curriculum vitae, a list of publications, a one- to two-page description of proposed research interests, and have at least three letters of recommendation from professional references sent to: **Professor David Eisenberg, Chairman, Search Committee, Department of Chemistry, University of California, Los Angeles, Los Angeles, Calif. 90024. The University of California is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minority candidates.**

POSITIONS OPEN

DIRECTOR, DIVISION OF SURGICAL PATHOLOGY. The Department of Pathology in the School of Medicine at Stony Brook is seeking a Chief of Surgical Pathology in conjunction with the University Hospital. The conduct of all aspects of this Hospital's Surgical Pathology Service will be this individual's primary responsibility. Resident training, research, and medical school teaching are secondary, and administrative burdens are minimized by the presence of a separate Director of Anatomic Laboratories. Broad, in-depth, practical experience with, and competence in all facets of, surgical pathology are essential. Opportunity for collaboration with colleagues expert in ultrastructure, immunohistochemistry, histochemistry and with subspecialty interests spanning many areas of specific organ and neonatal-pediatric pathology are features of this position. Active collaboration with an academically oriented, highly energetic and productive clinical staff may also be anticipated. The University Hospital, opened in 1980, is a rapidly growing tertiary care facility. This Health Science Center is affiliated with a consortium of hospitals in the area, collectively serving a very substantial patient population. The Anatomic Pathology Laboratory already serves as a major referral center for regional hospitals, as well as a center for continuing education in pathology. This position is at the associate professorial level, and applicants should possess credentials commensurate with such appointment. Salaries and benefits are highly competitive. *The University and the state of New York are Equal Opportunity/Affirmative Action Employers.* Direct inquiries to: **Philip B. Kane, M.D., Department of Pathology, Health Sciences Center, State University of New York, Stony Brook, Long Island, N.Y. 11794. Telephone: 516-246-2223.**

DIRECTOR OF GRANTS AND SPONSORED PROGRAMS—Applications and nominations are invited for the position of Director of Grants and Sponsored Programs for Southern Illinois University (SIU) School of Medicine. Responsibilities include directing the Office of Grants and Contracts Administration and serving as staff assistant to the Associate Dean for Research. The position requires a baccalaureate degree; however, a master's degree or doctorate is preferable. Four years of sponsored program administration or comparable administrative experience in higher education or public administration is required. Successful candidate must also demonstrate effective written and oral communication skills. Deadline to apply: 1 April. Send letter of application, résumé, names and addresses of three references, and salary requirements to: **Annette Thomas, Secretary, Search Committee, SIU School of Medicine, P.O. Box 3926, Springfield, Illinois 62708.** *An Equal Opportunity/Affirmative Action Employer*

FACULTY POSITION—BIOCHEMISTRY

Applications are invited for a tenure-track appointment at the assistant professor level. Preference will be given to candidates with research interests complementary to those of the present members of the faculty. Please direct, by 15 March, curriculum vitae, a brief description of research plans, and letters from three references to: **Search Committee, Department of Biochemistry, Dartmouth Medical School, Hanover, N.H. 03755.** *An Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION available, **instructor/assistant professor level**, in the Department of Biochemistry with a joint appointment in the Department of Internal Medicine. Qualified candidates will have an earned doctorate plus interest and experience in endocrinology with emphasis in the broad area of diabetes mellitus. Candidates must be current in their knowledge of intermediary metabolism and the laboratory techniques essential to the conduct of related investigative work. Special consideration will be given to those candidates with direct experience and demonstrated competence related to insulin, insulin regulation, and insulin receptors. The successful candidate will be expected to collaborate with a research-oriented clinician but will also have the opportunity to pursue his/her independent research interests. Academic career development opportunities will be provided through the Department of Biochemistry. Candidates may apply by forwarding their complete curriculum vitae and three letters of recommendation to:

**Dr. C. M. Baugh, Chairman
Department of Biochemistry
College of Medicine
University of South Alabama
Mobile, Alabama 36688**

The University of South Alabama is an Equal Opportunity Employer.

13 FEBRUARY 1981



**KING ABDULAZIZ UNIVERSITY
JEDDAH, SAUDI ARABIA**

The **INSTITUTE OF METEOROLOGY AND ARID LANDS STUDIES** within King Abdulaziz University in Saudi Arabia announces the following vacancies in the following departments:

DEPARTMENT OF METEOROLOGY

Aeronautical Meteorology
Climatology
Micrometeorology
Tropical Meteorology
Meteorological Data Processing
Ocean Atmosphere Interaction
Cloud Physics and Weather Modification
Solar Energy
Numerical Modeling

DEPARTMENT OF ARID LANDS STUDIES

Crop Production
Plant Breeding
Forage and Pasture Production
Vegetable Production (General)
Fruit Production
Floriculture
Range Management
Silviculture
Forest Management
Soil (Chemistry and Fertility)
Statistics and Experimental Design
Plant Physiology

DEPARTMENT OF HYDROLOGY AND WATER RESOURCES MANAGEMENT

Water Resources System Analysis
Stochastic Hydrology
Hydrogeology

DEPARTMENT OF ENVIRONMENTAL SCIENCES

Industrial Wastes
Water Pollution
Toxicology and Environmental Health
Noise Pollution
Occupational Health
Environmental Legislator
Air Pollution
Microbiology

All applicants must fulfill the following requirements:

1. Only Ph.D. degree holders or its equivalent from a reputable institution should apply.
2. A letter of application along with one copy of degrees, two reference letters and a passport size photograph should be received by the Institute not later than end of May 1981 and must be sent directly to:

**Dr. Fawaz Alamy, Dean
Institute of Meteorology and Arid Lands Studies
King Abdulaziz University
P. O. Box 1540
Jeddah, Saudi Arabia**

3. Qualified applicants will be interviewed and recommended for the suitable post by Institute staff.
4. Contracts will be for one year (renewable) and the successful candidates should join the Institute not later than September 20, 1981.

SALARIES AND BENEFITS: Newly furnished accommodations, two months paid annual leave, annual round trip air tickets between home town and Jeddah for candidates and three members of family, monthly pay scales are attractive and free from taxes. (See schedule)

Asst. Professor: SR8,060-9,780
Assoc. Professor: SR9,935-11,975
Full Professor: SR11,150-15,560

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA AT IRVINE FACULTY POSITIONS IN COMPUTER SCIENCE

The Department of Information and Computer Science expects open faculty positions at tenured and nontenured levels. Preferred fields of research interest are computer architecture, theoretical computer science, software and software engineering, social analysis and social impacts of computing, and artificial intelligence.

Duties include research, teaching graduate and undergraduate courses, and participation in departmental governance. Applicants must have Ph.D. or equivalent at the time of appointment. Applicants for tenured appointments must have significant research achievements and demonstrated competence in teaching.

Opportunities for visitors for one, two, or three quarters of the 1981-1982 academic year will also be available.

Affirmative Action/Equal Opportunity Employer

Send résumé and names of three references to:

Julian Feldman, Chairman
Department of Information and Computer Science
University of California
Irvine, California 92717

To ensure consideration, apply by 1 March 1981.

MARINE INVERTEBRATE ZOOLOGIST. The Department of Biology, University of Southern Mississippi, invites applications for a tenure-track assistant professorship starting September 1981. Teaching responsibilities will include invertebrate zoology, marine biology, and biological oceanography. Appointee will be expected to develop a vigorous research program, preferably in developmental biology, marine ecology, or planktology. Send curriculum vitae, statement of research interests, and three letters of reference to: Dr. Donald E. Norris, Chairman, Department of Biology, Box 5018, University of Southern Mississippi, Hattiesburg, Miss. 39401. Complete applications must be received by 20 March 1981.

An Equal Opportunity/Affirmative Action Employer

KING FAISAL UNIVERSITY COLLEGE OF VETERINARY MEDICINE AND ANIMAL HEALTH Hofuf, Saudi Arabia

Faculty positions are presently open for the 1981-1982 academic year in the following fields:

Biology	Veterinary Medicine
Mathematics	and Therapeutics
Veterinary Surgery	Veterinary Anatomy
Veterinary Ob/Gyn	and Histology
Clinical Parasitology	Veterinary Clinical
Animal Production	Pathology
Genetics and Breeding	Food Hygiene and
Veterinary Bacteriology	Meat Inspection
Forensic Medicine	Toxicology and
Veterinarian	Forensic Medicine
Fish Diseases	

PREREQUISITES: Advanced degrees (B.A., Ph.D., or D.V.M.) with both practical and teaching experience.

Language of instruction is English. Positions open in September 1981. Interview dates to be announced.

BENEFITS: Free furnished apartments (two-bedroom), educational allowance for up to four children, annual air tickets to and from Saudi Arabia for up to four persons. 60-day paid vacation each summer, baggage allowance of one-half of one month's salary one time only. No Saudi income tax. Contracts for 1 year, renewable.

SEND curriculum vitae, copies of certificates, and names, addresses, and telephone numbers of three references to:

Dr. Ibrahim El Desourgi Mustafa
Dean, College of Veterinary Medicine
King Faisal University
c/o Saudi Arabian Educational Mission
2425 West Loop South
Houston, Texas 77027

OR

c/o P.O. Box 2
Sudbury-on-Thames
Middlesex TW16 5JP, England

POSITIONS OPEN

FACULTY POSITION—MINERAL ECONOMICS College of Mines The University of Arizona

Applicants are invited for a tenure-track faculty position in mineral economics. Preferably, applicants will be established, recognized mineral or energy economists and will qualify for an appointment at the full professor rank. However, applicants who qualify for appointment as associate professor also will be considered. Applicants must have a Ph.D. degree in mineral economics or economics. Preferably, applicants will also have acquired some background in mineral sciences or technology (either by education or experience), but this is not necessary as long as they have had abundant experience in the economics of minerals or energy. Mineral economics at the University of Arizona is exclusively a graduate degree (M.S. and Ph.D.) program; consequently, duties will include both teaching and research. Demonstration of research activity and ability is required. Send résumé and letters of reference to:

Dr. DeVerle P. Harris
Director of Mineral Economics
Room 235, Mines Building
The University of Arizona
Tucson, Arizona 85721

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

FACULTY POSITION, ASSISTANT OR ASSOCIATE PROFESSOR, DEPARTMENT OF MEDICINE, Brigham and Women's Hospital and Harvard Medical School, Boston, Massachusetts. Appointee should be a hepatologist-gastroenterologist with an active research program and substantial past accomplishment in hepatic biochemistry and metabolism. Candidates are invited to submit up-to-date curriculum vitae and bibliography to: Dr. Jerry S. Trier, Division of Gastroenterology, Brigham and Women's Hospital, 75 Francis Street, Boston, Massachusetts 02115.

Brigham and Women's Hospital and Harvard Medical School are Equal Opportunity/Affirmative Action Employers and qualified women and minority candidates are encouraged to apply.

FACULTY POSITIONS OPEN COLLEGE OF AGRICULTURAL SCIENCES AND FOODS

KING FAISAL UNIVERSITY HOFUF, SAUDI ARABIA Academic Year 1981-1982

The expanding College of Agricultural Sciences and Foods of King Faisal University invites inquiries from qualified applicants for the 1981-1982 academic year in the following fields:

Biology	Plant Pathology
Chemistry	Agricultural
Physics	Economics
Biochemistry	Animal Science
Agronomy	Animal Ecology
Horticulture	Dairy Science
Bee Keeping	Agricultural Engineering
Poultry Science	Water Resources and
Home Economics	Climatology
Agricultural Extension	Aquatic Wealth

PREREQUISITES: Ph.D. or master's or equivalent degrees, practical and/or teaching experience. Knowledge of Arabic helpful, but not required.

Language of instruction is English.

Positions available September 1981: interviews scheduled with the dean in Houston and London in April/May 1981.

SALARY RANGES (approximate annual U.S. dollars):

Professor—\$25,469 to \$33,965
Associate professor—\$22,779 to \$28,973
Assistant professor—\$18,750 to \$27,487
Lecturer—\$11,611 to \$16,035

Salaries are paid monthly in Saudi riyals.

BENEFITS: Free furnished accommodations; substantial education allowance for up to four children. Air tickets to and from Saudi Arabia once per year for family of four. Sixty-day paid summer holiday, overweight allowance. No Saudi income tax. Contracts are for 1 year and renewable.

Send curriculum vitae with current telephone number, and the names, addresses, and telephone numbers of three references to: Dr. Yahia Makki, Dean, College of Agricultural Sciences and Foods, King Faisal University, c/o Saudi Arabian Educational Mission, 2425 West Loop South, Houston, Texas 77027, OR c/o P.O. Box 2, Sudbury-on-Thames, Middlesex, TW16 5JP, England.

POSITIONS OPEN

CLEMSON UNIVERSITY, FACULTY POSITION IN BIOCHEMISTRY. The Department of Biochemistry invites applications and nominations for a tenure-track faculty position beginning 15 August 1981 at the level of assistant or associate professor. Responsibilities will include participation in the department's undergraduate and graduate teaching programs and the development of a rigorous independent research program. Applicants must hold a doctoral degree and preferably should have postdoctoral or previous faculty experience. Applicants with expertise in any area of biochemistry or closely related areas will be considered. Applicants, indicating the rank for which they wish to be considered, should submit curriculum vitae, publications list, a brief description of future research plans, and have at least three letters of recommendation sent not later than 15 March 1981 to: Dr. J. M. Shively, Department of Biochemistry, Clemson University is an Equal Opportunity/Affirmative Action Employer.

GLACIOLOGIST/University of Washington

The University of Washington seeks applications for a tenure-track position, with the individual to be appointed as assistant professor jointly in the Department of Atmospheric Sciences and Geophysics Program. Principal research interest of candidates should be directed toward geophysical or climate-related study of snow or ice. Candidates specializing in physical processes in snow are of particular, but not exclusive, interest. All applicants should be committed to graduate level teaching, research advising, and innovative research emphasizing advanced experimental methods and rigorous physical analysis. Duties will include teaching one or two undergraduate courses per year in atmospheric sciences. The appointment starts in September 1981. A Ph.D. is required. For additional information, telephone: C. F. Raymond at 206-543-4914. Interested persons may send a résumé and four letters of recommendation to: Professor R. T. Merrill, Geophysics Program AK-50, University of Washington, Seattle, Washington 98195. Deadline for application is 31 March 1981.

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL FELLOWS AND VISITING SCHOLARS IN HEALTH LAW 1982

TWO or three stipends for 3 to 8 months each will be awarded on a competitive basis, to start 1 January 1982 and end 31 August 1982. Minimum requirement: a doctoral degree or equivalent (Ph.D., M.D., Dr.P.H., J.D., L.L.B., and so forth). Applicants should have a degree or experience in a field related to health law. Stipends will be determined on the basis of experience.

FELLOWS AND SCHOLARS will study at the Institute for the Interprofessional Study of Health Law, which is a cooperative venture of the University of Houston College of Law and the University of Texas Health Science Center at Houston. Emphasis will be placed on scholarly research.

FELLOWS will conduct an in-depth study of a topic approved by the faculty. Topics of special interest to the resident faculty include environmental and occupational health law, genetics and the law, mental health law, professional-client relationships, and human values in professional school education.

SCHOLARS may choose to pursue research and writing in an area of health law which is outside the expertise of the resident faculty and will be encouraged to offer a one-semester seminar to graduate and/or professional students.

APPLICATION deadline is 1 April 1981. All applications will be considered for any duration of 3 to 8 months (January to August 1982). Applicants will be notified by 1 June 1981. For application forms (which contain detailed information), write: Margery W. Shaw, M.D., J.D., Acting Director, Institute for the Interprofessional Study of Health Law, Fannin Bank Building, 1020 Holcombe, Suite 600, Houston, Texas 77025.

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

FACULTY POSITIONS

TEXAS A & M UNIVERSITY AT GALVESTON

The Department of Marine Biology invites applications for several marine-oriented teaching/research positions. Appointments will be 9-month, tenure-track positions at the assistant/associate professor level. Applicants must have Ph.D. and strong research background in one of the following disciplines:

Aquatic Ecologist—Teach ecology of estuarine-dependent organisms; conduct research on behavioral, ecological and/or physiological ecology of estuarine organisms.

Coastal Plant Ecologist—Teach coastal plant ecology and field methodology; conduct research on botanical aspects of estuarine wetlands.

Fisheries Scientist/Systems Analyst—Teach population dynamics, biostatistics and/or aquatic ecosystems modeling; develop research in analysis and management of marine fisheries communities (dual appointment with Department of Wildlife and Fisheries Sciences, Texas A & M University at College Station).

Phycologist—Teach introductory phycology and marine biology courses; develop research program in area of expertise.

Salary and rank commensurate with experience. Submit curriculum vitae, three letters of recommendation, publication list, and statement of research interest by 15 March 1981 to: **Dr. Andre M. Landry, Head, Department of Marine Biology, Texas A & M University at Galveston, Galveston, Texas 77553.**

An Equal Opportunity/Affirmative Action Employer

GENETICS, ANIMAL PHYSIOLOGY. Continuing position at the assistant professor level available beginning September 1981. Applicants must be qualified in both genetics and animal physiology. Also, ability to teach microbiology or embryology desirable. Ph.D. required; \$13,500 to \$15,500, plus attractive housing possibilities at very low rents. Send application, transcripts, and letters of recommendation to: **Dr. Stanley Caine, Vice President for Academic Affairs, Hanover College, Hanover, Indiana 47243.**

CENTER FOR GENETICS UNIVERSITY OF ILLINOIS AT THE MEDICAL CENTER

The Center for Education and Research in Genetics of the University of Illinois at the Medical Center, Chicago, is seeking candidates for several faculty positions at the level of assistant professor or higher. The Center will focus on eukaryotic genetics and molecular biology, with emphasis on mammalian somatic cell genetics, gene transfer, recombinant DNA, mechanisms of mutagenesis, and developmental genetics. Candidates must possess the Ph.D. degree or its equivalent and have at least 2 years of relevant postdoctoral experience. Evidence of outstanding research potential is an important consideration.

Applicants should provide curriculum vitae, names of four references, and a brief statement of research interests and plans. Applications should be sent to:

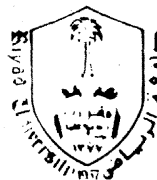
**Richard L. Davidson, Ph.D., Director
Center for Education and Research in Genetics
University of Illinois at the Medical Center
Box 6998
Chicago, Illinois 60680**

To receive full consideration, applications should be received by 1 April 1981; applications will be considered until the positions are filled.

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

IMMUNOLOGIST with postdoctoral experience to do research at staff level on humoral autoimmunity in humans. Contact: **Peter C. Dau, M.D., Children's Hospital of San Francisco, 3700 California Street, San Francisco, Calif. 94118.**

EXPERIENCED SECONDARY SCIENCE INSTRUCTOR: Needed to teach biology and chemistry at highly competitive, rural, Roman Catholic, college-preparatory boarding school for boys. Some graduate work and experience required. Extracurricular interests desirable. Send résumé and references to: **Headmaster, Portsmouth Abbey School, Portsmouth, R.I. 02871.**



KINGDOM OF SAUDI ARABIA UNIVERSITY OF RIYADH COLLEGE OF PHARMACY

The College of Pharmacy at the University of Riyadh in Riyadh, Saudi Arabia is seeking qualified staff for teaching and research for the 1981-82 academic year in the fields of **PHARMACEUTICAL CHEMISTRY, PHARMACOLOGY, PHARMACEUTICS, PHARMACOGNOSY, CLINICAL PHARMACY and BIOCHEMISTRY.**

QUALIFICATIONS: Candidates should hold a doctorate degree in their respective field and have reasonable experience. Clinical pharmacists should have experience in education and service since they will also be required to aid in the expansion and further development of clinical pharmacy services.

SALARIES AND ALLOWANCES: (Salaries and allowances in scale are in Saudi Riyals. One U.S. dollar is equivalent to 3.40 Riyals.)

PROFESSORS:

Monthly Salary	SR6,595-8,995
Annual Increments	SR400
Annual Housing Allowance	SR20,000
Furniture Allowance (Given once only)	SR10,000
Monthly Transportation Allowance	SR600

ASSOCIATE PROFESSORS:

Monthly Salary	SR5,835-7,585
Annual Increments	SR350
Annual Housing Allowance	SR17,000
Furniture Allowance (Given once only)	SR8,500
Monthly Transportation Allowance	SR600

ASSISTANT PROFESSORS:

Monthly Salary	SR4,695-7,215
Annual Increments	SR315
Annual Housing Allowance	SR15,000
Furniture Allowance (Given once only)	SR7,500
Monthly Transportation Allowance	SR550

NOTE: Salaries for those applying in the field of Clinical Pharmacy are negotiable.

BENEFITS:

1. Professional allowance of 20% of salary will be paid to Pharmacists.
2. Freight allowance equivalent to 50% of the first month salary for the academic books and instruments of contractees on the teaching staff who are on a first time contract with the University.
3. Four air tickets for contractee and family. First class tickets provided to full professors and their families, all other staff provided with economy class tickets.
4. Educational costs of contractee's children from primary to completion of secondary level. Number not to exceed four children and expenses may not exceed SR10,000 for the first child, SR7,500 for the second child, SR5,000 for the third and SR2,500 for the fourth child.
5. Accommodation allowance and furniture allowance will not be paid in cases where free furnished accommodation is provided.
6. No Saudi Arabian taxes.
7. Free medical treatment in government hospitals.
8. Annual leave.

Letters of application and curriculum vitae with 2 recent passport size photographs, and photocopies of academic and experience credentials should be sent airmail to:

**The Dean, College of Pharmacy
University of Riyadh, Saudi Arabia**

A second copy of applicants' papers should be sent to:

**University of Riyadh Recruitment Office
c/o Saudi Arabian Educational Mission
2425 West Loop South
Houston, Texas USA 77027**

POSITIONS OPEN

GENETIC ENGINEERING RESEARCH MANAGER AND PLANNER

Young, aggressive genetic engineering firm in Cambridge, Mass., seeks highly motivated, resourceful individual to be chief of scientific operations. Ongoing responsibilities include research direction, personnel recruitment, and business planning. Position requires technical expertise in recombinant DNA, analytical skill in market assessment, and imaginative ability in product development. Minimum requirements are Ph.D. in molecular biology and several years of postdoctoral research experience. All inquiries dealt with in strictest confidence. Commercial or industrial experience deemed valuable. Qualified applicants encouraged to send résumé and statement of interest to:

Box 29, SCIENCE

MEMBRANE BIOCHEMIST—Postdoctoral research associate position is available immediately to work on the isolation and identification of intestinal and renal brush border and basolateral membrane proteins that are involved in the transport of electrolytes and nonelectrolytes. Send curriculum vitae, names of three references, and any other supporting material to: Dr. Robert G. Faust, Department of Physiology, University of North Carolina at Chapel Hill, Medical Sciences Research Wing 206H, Chapel Hill, N.C. 27514. *Affirmative Action/Equal Opportunity Employer.*

MINERALOGIST/PETROLOGIST for Conservation-Analytical Laboratory, Smithsonian Institution. Temporary 1-year appointment, with the possibility of extension, to investigate archeological ceramics such as pottery and metal slags. Requires bachelor's degree or equivalent experience, including 24 semester hours of physical science plus 3 years of progressively responsible professional experience or appropriate graduate education. Must have knowledge of optical and electron microscopy and x-ray diffraction. Salary: \$22,486. Send SF-171 (Federal Personal Qualifications Statement) to: Office of Personnel Administration, Smithsonian Institution, 900 Jefferson Drive, SW, Room 1410 NL, Washington, D.C. 20560, attention: MPA-80-89. *The Smithsonian Institution is an Equal Opportunity Employer.*

MOLECULAR GENETICS/BOTANY assistant professor. Nontenure-track position available fall 1981. Annual appointment, not to exceed 3 years. Ph.D. required. Primary responsibilities will be teaching undergraduate and graduate courses in botany, genetics, and microbiology, and advising students. Send curriculum vitae, statement of teaching experience, official transcripts, and three current letters of reference to: Thomas L. Pearce, Chairman, Department of Biology, John Carroll University, Cleveland, Ohio 44118. *An Equal Opportunity Employer.*

NEUROSCIENCES ASSISTANT OR ASSOCIATE PROFESSOR

M.D. or Ph.D. with strong background in peptide biochemistry, immunoassay; interest in neuroendocrine physiology and/or clinical neuroendocrinology. Available June 1981. Minimum: 3 to 4 years. Relevant postgraduate training and record of productivity in original research. Position specially funded for research in Division of Endocrinology, Department of Medicine. Desired areas of specialization are regulation and role of brain and pituitary "pro-opiocortin" and components in normal and pathophysiological states. Send curriculum vitae, statement of research plans, and names of three references to: Dr. D. T. Krieger, Mount Sinai Medical Center, Annenberg 23-66, 1 Gustave L. Levy Place, New York, N.Y. 10029.

POSTDOCTORAL POSITION NEUROENDOCRINOLOGY

NIH Training Grant, M.D. or Ph.D., background in biochemistry and physiology. Areas of interest are regulation and role of brain and pituitary "pro-opiocortin" and components in normal and pathophysiological states, and circadian rhythms. Send curriculum vitae and names of three references to: Dr. D. T. Krieger, Mount Sinai Medical Center, Annenberg 23-66, 1 Gustave L. Levy Place, New York, N.Y. 10029.

POSITIONS OPEN

The University of Michigan, School of Natural Resources, is seeking applicants for a tenured or tenure-track, teaching-research position in **NATURAL RESOURCE POLICY**. Applications should be sent to: William J. Johnson, Dean, School of Natural Resources, The University of Michigan, 3516 Dana Building, Ann Arbor, Mich. 48109. *A nondiscriminatory, Affirmative Action Employer.*

NEUROANATOMIST

Postdoctoral position in program involving light and electron microscopic localization of neuroactive peptides and other neuroregulators. Please send description of research interests, résumé, and names of references to: Dr. Eckard Weber and Dr. Jack Barchas, Nancy Pritzker Laboratory of Behavioral Neurochemistry, Department of Psychiatry, Stanford University School of Medicine, Stanford, Calif. 94305. *Stanford University is an Equal Opportunity Employer.*

ORGANISMAL BIOLOGIST, Ph.D. One-year leave replacement appointment (presumably at the assistant professor level) at Swarthmore College beginning in September 1981. In addition to participating in a team-taught introductory biology course in the second semester, candidate must be prepared to offer intermediate to advanced work in one or more of the following: limnology, lower plants, entomology, biogeography, or paleobiology. Send curriculum vitae, statement of interests, and three letters of recommendation by 14 March to: Dr. R. E. Savage, Department of Biology, Swarthmore College, Swarthmore, Pa. 19081. *An Equal Opportunity Employer.*

PERINATAL TOXICOLOGY

The Environmental Protection Agency (EPA) invites applications for research positions of 1- to 2-year duration. Cooperative agreements are available to interested persons who must be full-time employees of nonprofit research organizations/universities. Applicants must be willing to spend 1 to 2 years at the EPA facility in Research Triangle Park, North Carolina, beginning fall 1981.

The Developmental Biology Program of the Health Effects Research Laboratory is seeking researchers who will work within the area of perinatal toxicology. Researchers will take part in a multidisciplinary effort to establish normative patterns of perinatal development, and to develop and validate suitable protocols for adequate testing of environmental agents. Specific areas of interest include functional development of key organ systems, onset and maturation of enzyme function, reproductive physiology, endocrinology, and the susceptibility of the neonate to diverse toxic insults.

Applicants should send a one- or two-page outline of their research interests and curriculum vitae to:

Dr. Neil Chernoff (MD-72)
Chief, Developmental Biology Branch
Health Effects Research Laboratory
U.S. Environmental Protection Agency
Environmental Research Center
Research Triangle Park, N.C. 27711
Equal Opportunity Employer

Applications are invited from those legally qualified to accept U.S. employment who hold a Ph.D. or M.D. degree for **POSTDOCTORAL POSITIONS** at the Institute for Molecular Virology, St. Louis University Medical Center. Research programs emphasize genetic engineering using animal virus vectors, genetic manipulation of viral genomes using recombinant DNA technology, investigation of tumor virus gene expression in bacterial cells, studies on nucleic acid-protein interaction, and basic studies on the molecular biology of DNA and RNA tumor viruses. The following virus systems are under investigation: human adenoviruses, herpes viruses, human papilloma viruses, and avian and mammalian retroviruses. Send curriculum vitae plus three references to:

Dr. G. Chinnadurai
St. Louis University Medical Center
Institute for Molecular Virology
3681 Park Avenue
St. Louis, Mo. 63110

St. Louis University Medical Center is an Equal Opportunity/Affirmative Action Employer, M/F/H.

POSITIONS OPEN

PHYSICAL CHEMIST. Assistant professor, tenure-track position, beginning fall 1981 in a Ph.D. degree-granting Chemistry Department. Postdoctoral experience is required. Applicant should have the ability and desire to teach undergraduate and graduate courses and is expected to develop a vigorous, independent research program in an area of experimental physical chemistry and to attract outside research grant funding. Send résumé, transcripts, description of proposed research (one or more pages per problem), and three letters of recommendation by 20 March 1981 to:

Chairman, Search Committee
Department of Chemistry
Duquesne University
Pittsburgh, Pa. 15219

Affirmative Action/Equal Opportunity Employer

PHYSICIST

The Department of Physics, Emory University, seeks applicants for a regular faculty position to expand our efforts in solid-state or laser physics. Rank will depend on qualifications. Our primary interest is in a solid-state theorist who will interact with experimental programs in superconductors, semiconductors, and defects in insulators. We will also consider an experimentalist who can contribute to the atomic/molecular aspects of our solid-state or gas laser programs. Applicants should write before 1 April 1981 to:

Professor Raymond C. DuVarney
Chairman, Search Committee
Department of Physics
Emory University
Atlanta, Georgia 30322

Emory University does not discriminate on the basis of race, color, religion, sex, national origin, handicap, age, or veteran status.

PLANT BIOLOGIST

The School of Life and Health Sciences is seeking a plant biologist to complement a strong research group in ecology and organismic biology. Desirable research areas include plant population biology, reproductive biology, genetic structure of plant populations, plant systematics, plant/animal interactions, and plant physiological ecology. Temperate and tropical researchers are encouraged to apply. Candidate will be expected to teach courses complementary to those in the research group and in his/her area of specialty. The position requires a Ph.D., and is tenure-track to be filled at the assistant professor level beginning September 1981. Applicants should send curriculum vitae and statement of research interests, and should arrange to have three letters of reference sent to:

G. Fred Somers, Chairman
Plant Biology Search Committee
School of Life and Health Sciences
University of Delaware
Newark, Del. 19711

Deadline for receipt of applications is 1 April 1981.
An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL FELLOWS. Two positions now available for persons with strong background in tissue culture, somatic cell genetics, and molecular biology for studies on cellular aging; 2 to 3 years with salary depending upon experience. Apply with curriculum vitae and names and addresses of three references to: Dr. Sam Goldstein, Division of Gerontology, Department of Medicine, University of Arkansas for Medical Sciences, 4301 West Markham, Little Rock, Arkansas 72205.

POSTDOCTORAL PLANT ECOLOGIST. Available spring 1981 to design and conduct community succession studies with other scientists on Nantucket Island. Research experience in systems techniques and coastal/island community ecology desired. Salary: mid-teens. Send résumé and three letters of recommendation to: Dr. John H. Fitch, Director, Scientific Staff, Massachusetts Audubon Society, Lincoln, Mass. 01773.

POSTDOCTORAL AND PREDOCTORAL POSITIONS open for training in tumor biology, including cell biology, biochemistry, molecular genetics, pharmacology, and virology. Available to qualified applicants beginning fall 1981. Research conducted at Sidney Farber Cancer Institute under guidance of Harvard Medical School faculty. For further information, send a brief résumé to: Dr. Arthur B. Pardee, SIDNEY FARBER CANCER INSTITUTE, 44 Binney Street, Boston, Mass. 02115. *An Equal Opportunity/Affirmative Action Employer.*

MONOCLONAL ANTIBODY RESEARCH & DEVELOPMENT BIOLOGISTS

Becton Dickinson and Company, a major developer of monoclonal reagents, seeks a highly skilled and creative PhD level Biologist to manage our Monoclonal Antibody Development Laboratories at our Corporate Research Center in Research Triangle Park, N.C.

Applicants should be experienced in the technology relating to the generation and characterization of specific antibody secreting hybridomas and be familiar with the technology for purification and characterization of macromolecules. Experience with hybridoma development relating to immunoreagents for microbial and clinically significant ligand assays and an interest in working with advanced instrumentation for fluorescence-activated cell sorting preferred.

We offer a creative work environment, excellent salary and the opportunity to be a significant contributor in the dynamic health care field. Please send resume and names of three references to: **F. R. Wilson**

RESEARCH CENTER

P.O. Box 12016

Research Triangle Park, N.D. 27709

An Equal Opportunity Employer M/F/H/V

**BECTON
DICKINSON**

BIOTECHNOLOGY RESEARCH OPPORTUNITIES

**GENERAL MANAGER,
LABORATORY DIRECTOR
and
SENIOR SCIENTISTS**

New company involving research and applications of monoclonal antibodies and hybridoma technology seeks general manager, Laboratory Director, Senior Scientists and Research Associates for our new laboratory to be established in Cambridge, MA. Exceptional opportunity to grow with a pioneering group developing new applications of biotechnology.

For confidential consideration, send resumes, including salary history to: **Linda Perullo, 300 (BT) Howard St., Framingham, MA 01701.**

**Biological Technology
Corporation**

An Equal Opportunity Employer

Attention: Career Scientists

GENETIC ENGINEERING-R&D

As part of SOHIO's massive commitment to development of future energy resources, our R&D group is engaged in projects related to increasing crop productivity. The project group is being expanded to conduct the investigations and long-term developmental research. YOU can now be part of this rewarding, leading-edge work.

We will be moving into a new \$20 million Research Center...and the R&D efforts of SOHIO are definitely not equipment-limited! We offer attractive salaries, outstanding benefits, stimulating research associates. Our relocation package for qualified new hires includes a mortgage interest differential allowance, third party home purchase option, and other features normally restricted to internal transfers.

Join us in this rewarding work. Send your resume/vitae in confidence to:

Mr. Rodney Butler, Executive Recruitment
THE STANDARD OIL COMPANY (Ohio)
1424 Midland Building - 171 • Cleveland, Ohio 44115
An Equal Opportunity Employer M/F

"Help us Help to Assure America's Energy Future"

Whole Plant Physiologist (PhD)

Drawing upon your PhD in plant physiology and interest in biochemistry, you will define the physiological limits to yield and pursue ways to circumvent those limits. The approach will be exploratory, and may involve CO₂ fixation, photosynthate partitioning, nitrogen metabolism, hormonal control, etc. You will be a Principal Investigator/Project Leader.

Molecular Biologist/ Microbiologist/Geneticist

If your training has included molecular biology and experience in nucleic acid technologies, consider this Project Associate position. Working closely with the Project Leader(s) you will design/perform experiments; record, analyze, summarize data; periodically summarize the project research and prepare reports. You will be in an excellent position for promotion within the project team. You should have a strong interest in plant molecular biology, as well as developed manipulative skills related to nucleic acid isolation and restriction enzyme analysis. Experience with cloning desirable.



POSITIONS OPEN

POSTDOCTORAL POSITION. Immediate opening for Ph.D. in the physical sciences to participate in an HHS-supported training program. The program seeks to train highly qualified scientists in medical applications of ionizing radiation through formal courses, participation in seminars, and involvement in research. Research projects include development of x-ray and gamma-ray imaging devices, development of short-lived radiopharmaceuticals, applications of computer science, and in vivo studies of tracer kinetics. Address correspondence to: **Dr. Gordon L. Brownell, Physics Research Laboratory, Massachusetts General Hospital, Fruit Street, Boston, Mass. 02114.**

POSTDOCTORAL POSITION IN ENZYMOLOGY available beginning between 1 April and 1 July 1981 for research related to structure-function relationships in microbial and higher plant *RuBP carboxylase/oxygenase*; \$12,500 to \$14,000 per year, for 2-year position. Send résumé and names of three references by 1 April to: **Dr. R. Chollet, Department of Agricultural Biochemistry, University of Nebraska, Lincoln, Neb. 68583. Telephone: 402-472-2936. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available immediately to study synthesis and expression of avian sarcoma virus DNA. Experience in recombinant DNA techniques is helpful. Send résumé and names of references to: **Dr. Ramareddy V. Guntaka, Department of Microbiology, College of Physicians and Surgeons, Columbia University, 701 West 168 Street, New York, N.Y. 10032.**

POSTDOCTORAL POSITION available to synthesize and evaluate monoclonal antibody-toxin conjugates as cytotoxic agents which selectively inhibit growth of tumor cells. This position is available for up to 4 years to a Ph.D. with appropriate training in biochemistry/cell biology. Send curriculum vitae and names of three references to: **Dr. L. L. Houston, Department of Biochemistry, University of Kansas, Lawrence, Kansas 66045. Equal Opportunity Employer.**

TWO POSTDOCTORAL POSITIONS available immediately for individuals to work on polypeptide hormone and membrane receptors and glycoprotein biosynthesis. Salary from \$14,000 to \$20,000, depending on experience. Send curriculum vitae and three letters of reference to: **Dr. O. P. Bahl, Department of Biological Sciences, Cooke Hall 109, State University of New York at Buffalo, Amherst, N.Y. 14260. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN MOLECULAR BIOLOGY available immediately in West Germany, to study interaction of steroid hormone receptors with cloned inducible genes. P-3 Laboratory available. Experience with modern nucleic acid techniques desirable. Knowledge of German not required. Salary: DM36,000 to DM50,000, depending on personal record. Send résumé and three letters of recommendation to: **Dr. M. Beato, Physiologisch-Chemisches Institut, 3550 Marburg, F.R.G.**

POSTDOCTORAL POSITIONS AND DOCTORAL STUDENT RESEARCH ASSISTANTSHIPS available for biochemical and biophysical investigations of nucleic acid structure and protein interactions by various methods including multi-nuclear NMR spectrometry. Backgrounds in biochemistry, genetics, biophysics, chemistry, and physics considered. Salary dependent on experience; 2-year tenure possible for each postdoctoral fellow, 4-year for each graduate student. Send letter of interest, résumé, and names of three references to: **Dr. Paul F. Agris, Division of Biological Sciences, 110 Tucker Hall, University of Missouri, Columbia, Mo. 65211.**

RAPE

Medical School of the University of Ottawa seeks a postdoctoral research assistant to conduct research projects in rapeseed microstructure and microchemistry. Responsibility for investigation of the major morphological and chemical characteristics of rapeseed in collaboration with breeders and the processing industry. Experience in stain development is needed to study localization of phytate, glucosinolates, and so forth. Extensive training in light, fluorescence, and electron microscopy with a background in plant sciences, biochemistry, or nutrition would be an asset. Salary (minimum of 2 years) dependent on qualifications. Excellent fringe benefits.

Please apply to: **Dr. I. Altosaar, Biochemistry Department, University of Ottawa, Ottawa, Ontario, Canada K1A 6N5.**

POSITIONS OPEN

POSTDOCTORAL POSITIONS. University of California, San Diego (UCSD), Cancer Center. Basic or clinical research in immunology, cancer chemotherapy, radiation biology, cell and molecular biology and carcinogenesis. Start between 1 March 1981 and 1 January 1982. Program participants: Drs. John Abelson, John Byfield, Dennis Citrin, Murray Friedkin, Theodore Friedmann, Mehran Goulian, Mark Green, Melvin Green, Stephen Howell, Dorothy Hudig, Paul Insel, Kenneth Jones, Nathan Kaplan, John Mendelsohn, Yosef Pilch, Ivor Boyston, Gordon Sato, Stephen Seagren, Stewart Sell, Raymond Taetle, Joella Utley, John Ward, Herbert Wohl, and Alice Yo. Address inquiries to:

John Mendelsohn, M.D.* and Dorothy Hudig, Ph.D.
*Director, UCSD Cancer Center
Department of Medicine, T-006
University of California, San Diego
La Jolla, California 92093

The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL AND RESEARCH ASSOCIATE POSITIONS IN MELANOMA BIOLOGY available immediately in the Cancer Center, University of Arizona. General research areas include: human melanoma as a problem of neurohormonal modulation and mechanisms of drug resistance in melanoma. Qualified applicants should submit curriculum vitae and the names of three references to: **Dr. Frank L. Meyskens, Cancer Center Division, University of Arizona, Tucson, Arizona 85724. The University of Arizona is an Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE

A position is available immediately to study cellular mechanisms of electrolyte transport in the small intestinal mucosa. Projects include microelectrode measurement of intracellular ion activities and characterization of intestinal bicarbonate secretion. Experience in electrolyte transport or membrane biology helpful. Send curriculum vitae and names of three references to: **Dr. John F. White, Department of Physiology, Emory University School of Medicine, Atlanta, Ga. 30322. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE CARCINOGENESIS UNIVERSITY OF WISCONSIN

Two positions available immediately. One to study cellular and biochemical aspects of chemical carcinogenesis in human and rodent mammary tissue with Dr. N. M. Gould and the second to study mechanisms of host resistance to Friend murine leukemia virus with Dr. R. A. Steeves. Send curriculum vitae, reprints, and names of three references to: **Dr. Gould or Dr. Steeves, Department of Human Oncology, 600 Highland Avenue, Madison, Wis. 53732.**

PROFESSOR-IN-RESIDENCE 1982

If you are a biochemist or microbiologist who is seeking first-hand industrial experience to expand your professional horizons you should apply for a temporary appointment as Professor-in-Residence at the A. E. Staley Manufacturing Co., Decatur, Illinois, Research Center. On academic leave, you can participate in ongoing R & D programs involving modification or use of carbohydrates, proteins, or enzymes. To qualify, you must hold a permanent position on the faculty of a U.S. university or college. Write: **Dr. T. F. Protzman, A. E. Staley Manufacturing Co., P.O. Box 151, Decatur, Ill. 62525.**

RESEARCH ASSISTANT PROFESSOR, nontenure-track, Ph.D. and at least 5 years of postdoctoral experience. Candidate will be expected to do full-time research in biological systems using resonance Raman spectrometry. In addition, candidate is required to spend 50 percent of his or her time in collaborative projects with other faculty. Please send résumé, including list of publications and summary of research, to:

**Dr. David R. Trentham, Chairman,
Department of Biochemistry and Biophysics
302 Anatomy-Chemistry Building/G3
University of Pennsylvania
School of Medicine
Philadelphia, Pa. 19104**

The deadline for applications is 28 February 1981. *The University of Pennsylvania is an Equal Opportunity/Affirmative Employer.*

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATES (two) available early summer for research on: (i) cloned gene systems coding for tRNA's and other small stable RNA's from *Escherichia coli*, yeast, and higher eukaryotic organisms, and (ii) the solution structures of *E. coli* 4.5S and 6S RNA's. In one case emphasis will be on cloning, DNA sequencing, gene expression, and the function of the non-tRNA's. The second project will involve the use of biochemical and physical methods, especially chemical modification, nuclease digestion, scanning calorimetry, laser light scattering, CD and high resolution proton NMR with collaborators to elucidate the structures of the 4.5S and 6S RNA's. Training in: (i) molecular biology including experience with nucleic acid methodology and (ii) physical biochemistry preferable. Send curriculum vitae and names of three references to: **Dr. Maurille J. Fournier, Department of Biochemistry, University of Massachusetts, Amherst, Mass. 01003. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE to study prokaryotic transcription initiation. Techniques include DNA sequencing, λ-phage genetics, in vitro transcription, recombinant DNA. Salary equivalent to NIH fellowship levels, plus fringe benefits. To be filled when qualified applicant is found after 1 April 1981. Send curriculum vitae and names of three referees to: **Dr. Gary Gussin, Zoology Department, University of Iowa, Iowa City, Iowa 52242. The University of Iowa is an Affirmative Action/Equal Opportunity Employer.**

Postdoctoral Research Associate position available immediately for research on posttranslational modification of chromosomal proteins, particularly protein methyltransferases. Salary: \$14,000. Applicant must be a recent M.D. or Ph.D. recipient with a background in molecular biology, biochemistry, or related field. Send résumé to: **Dr. John Duerre, Ireland Research Laboratory, University of North Dakota, School of Medicine, Grand Forks, N.D. 58202. An Equal Opportunity/Affirmative Action Employer.**

Genentech, Inc., a leader in the field of recombinant DNA research, invites applications for a **RESEARCH ASSISTANT POSITION** in our Protein Biochemistry Department. Applicants should have a master's degree in biochemistry, with a sound knowledge of organic chemistry. Position involves purification and chemical modification of proteins.

Genentech is located on the San Francisco peninsula and offers competitive salaries and excellent benefits. Please send résumé and list of two references to:

GENENTECH, INC.
460 Point San Bruno Boulevard
South San Francisco, Calif. 94080
Attention: Human Resources

RESEARCH ASSISTANT PROFESSOR. Department of Physiology, School of Medicine, University of Pennsylvania. Applicant will be expected to conduct research on cellular mechanisms of pulmonary oxygen toxicity. M.D. or Ph.D. in biochemistry or physiology acceptable. Must have had 2 years or more of experience in enzymology, cell culture, and organ perfusion techniques. Applicant will be expected to obtain independent grant support for at least 50 percent of salary, which will be commensurate with experience and qualifications. Send curriculum vitae and names of three references to:

**Dr. Robert E. Forster, Chairman
Department of Physiology
School of Medicine
A-201 Richards Building/G4
University of Pennsylvania
Philadelphia, Pa. 19104**

An Equal Opportunity/Affirmative Action Employer

RESEARCH FELLOW. Conduct research on the biochemical, ultrastructural, and immunological markers of the malignant state in human stratified squamous epithelia, utilizing electrophoretic methods, immunochemical techniques, electronmicroscopy, and cell culture. Requirements include Ph.D. in biochemical or biological sciences with strong background in electrophoretic methods for protein fractionation, immunochemical techniques, and electronmicroscopy. Salary: \$14,040 per year; 40 hours per week. Send résumé to: **Karen Baker, Sidney Farber Cancer Institute, 44 Binney Street, Boston, Mass. 02115.**

FOR THE FREEDOM TO RESEARCH

RESEARCH & DEVELOPMENT MANAGER

Novo Laboratories, Inc., the world's leader in the field of industrial enzymology, is seeking an individual to manage our new products R&D division at our Wilton, Connecticut facility.

Reporting to the Vice President, R&D, you will coordinate the activities of an inter-disciplinary team of scientists working in a dynamic industrial research environment.

A Ph.D. (or equivalent) in Microbiology or Biochemistry, supported by 3 to 6 years' industrial research experience, is required. Experience in microbial genetics is highly desirable.

We offer a salary commensurate with your experience and a comprehensive benefits package.

DISCOVER NOVO

For confidential consideration,
please forward your resume and salary history to:

J.L. Ungvary
Director of
Personnel



NOVO

Novo
Laboratories, Inc.
59 Danbury Road
Wilton, Conn. 06897

We are an equal opportunity employer.

Molecular Genetics, Inc. is a young and rapidly expanding company designing products based upon recombinant DNA and hybridoma technologies. Our laboratory facility supports projects involving molecular biology, immunology, genetic, tissue culture and animal research. We are now seeking additional personnel in the fields of:

**Biochemical Engineering
Fermentation Technology
Separation Chemistry**

Qualified candidates should have doctoral degrees with postdoctoral experience and an interest in participating in a unique, academically-oriented work program.

We are located in the pleasant environs of Minnesota offering easy access to some of the country's authentic wilderness areas and an excellent quality of life in Minneapolis.

Please supply resume and salary history to:

Molecular Genetics Inc.
5245 Edina Industrial Blvd.
Edina, MN 55435

An Equal Opportunity Employer M/F/Hc

Announcement of Open Position ASSOCIATE DIRECTOR Marine Science Institute University of Texas

The University of Texas at Austin seeks to fill the open position of Associate Director of the Marine Science Institute. The Associate Director is responsible for research and intellectual leadership of the Institute's Galveston Geophysics Laboratory. The position carries the line responsibility of senior administrator for the Galveston Geophysics Laboratory. Duties include research planning and management, fiscal monitoring and budgeting, personnel review and assignment, coordination of scientific programs and ship operations, administrative supervision, liaison with industrial and agency sponsors, representation and other directorship duties.

The Galveston Geophysics Laboratory maintains modern computing facilities, research laboratories, and two deep-ocean research vessels, the R/V *Fred Moore* and the R/V *Ida Green*. Research at Galveston includes programs in marine geophysics, marine geology, solid earth geophysics, earthquake and extra-terrestrial seismology, and instrument systems design, both basic and applied.

Applicants are asked to send the following:

- (1) Vita—including list of publications.
- (2) Brief statement on current research and support.
- (3) Brief statement on administrative experience.
- (4) Brief statement on teaching experience.
- (5) Names of six persons who may be contacted for personal and professional recommendations.

A letter of application and the above requested information should be sent to:

Dr. J. Robert Moore, Director
Marine Science Institute
University of Texas
P. O. Box 7999, University Station
Austin, Texas 78712

Salary based on qualifications. Ph.D. required. The successful candidate will also be considered for tenure appointment in the Department of Marine Studies. Position to be filled as soon as possible. Early application advised. Position located in Galveston, Texas.

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

IMMUNOLOGIST/ IMMUNOCHEMIST

**Study immunological means
for controlling parasitic diseases.**

Senior Research Immunologist

Ph.D. with significant post doctoral experience in the isolation and purification of membrane antigens.

Immunologist

M.S. with extensive experience in hybridoma techniques with a strong background in basic, applied and standard immunological procedures.

Comprehensive benefit program, salary commensurate with experience in an area which provides cultural and recreational activities. Please send resume with salary history in strict confidence to:

L.M. Hand, Professional Employment.



CYANAMID

Agricultural Research Division
P.O. Box 400
Princeton, N.J. 08540

An Equal Opportunity Employer, male/female

POSITIONS OPEN

RESEARCH ASSOCIATE—A position is available for in vitro studies of hemopoietic cell proliferation, particularly erythroid cell development. Requirements include a doctoral degree and additional laboratory experience, including a record of publications in cell biology or a related discipline. Salary is commensurate with qualifications. An appropriate academic appointment with Harvard Medical School will be arranged. Please send curriculum vitae, publication list, and names of three references to: **Dr. Stephen H. Robinson, Beth Israel Hospital, 330 Brookline Avenue, Boston, Mass. 02215. Telephone: 617-735-2131. An Equal Opportunity Employer.**

RESEARCH ASSOCIATE—The Division of Hematology of the State University of New York, Upstate Medical Center, Syracuse, is seeking a research associate to carry out studies in the field of platelet biochemistry as it relates to various physiologic and pathologic states including diabetes. Background: Ph.D. or Ph.D. equivalent with experience in HPLC, RIA, and lipid metabolism (including preferably previous prostaglandin- and/or platelet-related research). Salary: \$15,000 to \$23,000. Send curriculum vitae and names of three references to: **Dr. Marie Stuart, Department of Pediatrics, State University of New York, Upstate Medical Center, 750 East Adams Street, Syracuse, New York 13210.**

RESEARCH ASSOCIATE. Minimum of 5 years of postdoctoral research experience and proven ability to conduct independent research program required. Experience in field of chemical structure and metabolism of human tumor glycoprotein markers required; role of the liver in their clearance from the circulation. Knowledge of immunohistochemical techniques required. Collaborations with group of clinicians, oncologists, and pathologists essential; 40-hour week. Salary: \$25,000 per year. Send résumé to: **Mallory Gastrointestinal Research Laboratory, 784 Massachusetts Avenue, Boston, Mass. 02118. Equal Opportunity Employer.**

The University of Colorado is seeking a **FACULTY MEMBER** in **SOCIAL PSYCHOLOGY** with methodological skills in evaluation research and/or with research background in personality and social development. The position is to include the following responsibilities:

- 1) Supervision of graduate student research in program evaluation and/or personality and social development;
- 2) Graduate teaching in social-personality psychology; and
- 3) Undergraduate teaching in courses such as general psychology, social psychology, personality, and statistics.

Qualifications for the position include a Ph.D. in psychology, research experience and publications in the areas of program evaluation and/or personality and social development.

Our preference is for a person at the assistant professor level, and salary at this level is \$16,000 or higher, depending upon experience. We will consider applications at the associate or full professor levels.

Interested persons should submit current curriculum vitae, at least three letters of recommendation, and any additional information required to clarify the qualifications stated above. Materials should be addressed to:

**Stuart W. Cook, Ph.D.
Department of Psychology, Box 345
University of Colorado
Boulder, Colorado 80309**

Deadline for applications is 21 March 1981.

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

VERTEBRATE FUNCTIONAL MORPHOLOGIST (assistant professor). Ph.D. required. Duties include teaching in an integrated, freshman-level anatomy and physiology sequence and upper-division comparative anatomy. Interaction with the physiology program, active participation in the M.S. and Ph.D. programs, and development of a funded research program are expected. Application materials (complete curriculum vitae, statement of professional goals, reprints, transcripts, and three letters of recommendation) must be received by 15 March 1981. Address materials to: **Morphology Search Committee, Department of Zoology, University of Montana, Missoula, Montana 59812. An Equal Opportunity/Affirmative Action Employer. Female and minority applicants are encouraged.**

POSITIONS OPEN

STABLE ISOTOPE GEOCHEMIST DEPARTMENT OF GEOLOGY AND GEOPHYSICS UNIVERSITY OF MINNESOTA

The Department of Geology and Geophysics is seeking applications for a **tenure-track, assistant professor** position for the academic year 1981 in the general field of stable isotope geochemistry. Applicants must have a Ph.D. degree by the time of appointment. The successful candidate will be aided in establishing a laboratory facility, and is expected to pursue independent research and teach appropriate undergraduate and graduate courses. Existing faculty have active research programs in the isotope systematics of Sm/Nd, Rb/Sr, REE, noble gases, and U, Th and their decay products; and productive interactions are possible between the new position and one or more ongoing programs in geo- and cosmochemistry, geo- and cosmochronology, economic geology, paleoclimatology, paleoecology, sedimentology, hydrology, mineralogy, petrology, geophysics, and so forth.

The previously advertised search has been extended until 15 March 1981.

Send curriculum vitae, relevant reprints, research interests, and letters from three referees to:

**E. Calvin Alexander, Jr.
Department of Geology and Geophysics
University of Minnesota
310 Pillsbury Drive, SE
Minneapolis, Minn. 55455**

The University of Minnesota is an Equal Opportunity Educator and Employer and specifically invites and encourages applications from women and minorities.

STAFF FELLOW (POSTDOCTORAL), CENTERS FOR DISEASE CONTROL. Special Pathogens Branch, Virology Division, has a 2-year position available for a virologist/biochemist to continue studies on the molecular biology and antigenic analysis of Class 4 viruses, for example, Ebola, Marburg, and Lassa. Anticipated studies include characterization of viral macromolecules and production of monoclonal antibodies to investigate structure-function relationships and viral epidemiology and pathogenesis. The majority of studies are conducted within the CDC Maximum Containment Laboratory. U.S. citizenship and doctorate earned within the past 5 years are requirements for the position. Position available on or about 1 July 1981. Submit résumé and three letters of reference to: **Michael P. Kiley, Ph.D., Building 7-SSB 8, Centers for Disease Control, 1600 Clifton Road, NE, Atlanta, Ga. 30333; telephone: 404-329-3308. Affirmative Action/Equal Opportunity Employer.**

TEMPORARY POSITIONS

Three temporary appointments are available for the 1981-1982 academic year in the Department of Zoology, The University of Texas at Austin. The positions are: (i) full-time to teach vertebrate physiology (nervous and cardiovascular systems), (ii) full-time to teach and coordinate human physiology and vertebrate physiology laboratories, and (iii) half-time to teach introductory environmental biology. Successful candidates would have the opportunity to participate in research activities in one of the established research groups. Interested applicants should send curriculum vitae, names of at least three references, and a brief outline of their career objectives before 1 March 1981 to: **Clark Hubbs, Chairman, Department of Zoology, The University of Texas at Austin, Austin, Texas 78712.**

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

VERTEBRATE ECOLOGIST. A tenure-track position at the assistant professor level, beginning fall 1981. A strong background in field research and methodology is preferred. Teaching responsibilities include: principles of ecology, quantitative animal ecology, and team-teaching in general biology. The successful applicant should be interested in developing a program oriented towards applied ecology for undergraduates and graduates and teaching in an urban environment. Position depends upon funding allocation. Send curriculum vitae, three letters of reference, and reprints to:

**Dr. Jeanne Conry
Biology Department
University of Colorado at Denver
Denver, Colorado 80202**

Deadline for all materials: 1 March 1981.

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

RESEARCH ASSOCIATE: March 1981. Research related to management and conservation of animal, plant, and microbial gene resources. Expertise in areas such as policy analysis, population/quantitative genetics, resource management, economics. Advanced degree, experience in government and communication skills preferred. Send résumé to: **Dr. David Kafton, California Gene Resource Conservation Program, 2855 Telegraph Avenue, Number 216, Berkeley, Calif. 94705.**

RESEARCH ASSOCIATE position available for studying molecular control mechanisms in tumor cells. Ph.D. in biochemistry or molecular biology with 2 to 3 years of postdoctoral research experience with animal cell culture, viruses, nucleic acid chemistry and enzymology is required; 40 hours per week. Salary: \$15,000 per year. Please submit curriculum vitae with names of three references to: **GINNY WENTZ, Administrative Assistant, Department of Basic Oncology, AMC Cancer Research Center, 6401 West Colfax Avenue, Lakewood, Colo. 80214. Telephone: 303-233-6501, extension 236. An Equal Opportunity/Affirmative Action Program.**

VASCULAR CELL CULTURE

Tenure-track position in physiology for candidate having strong research interests and postdoctoral training in smooth muscle or endothelial cell culture with rank appropriate to experience. Primary responsibility for development of independent research program. Will also supervise culture facility for vascular smooth muscle cells supported by program project and teach M.D. and Ph.D. students. Submit curriculum vitae with statement of research interests and letters of recommendation by 15 March 1981 to: **Dr. R. A. Murphy, Department of Physiology, School of Medicine, Box 449, University of Virginia, Charlottesville, Virginia 22908; telephone: 801-924-5082. The University of Virginia is an Affirmative Action/Equal Opportunity Employer.**

AWARD

Nominations are invited for the **1981 ROSENSTIEL AWARD IN OCEANOGRAPHIC SCIENCE.**

This award, which is administered on behalf of the Rosenstiel Foundation by the Rosenstiel School of Marine and Atmospheric Science (RSMAS), University of Miami, recognizes outstanding contributions to marine science, including oceanographically relevant aspects of atmospheric science, and fundamental developments in ocean engineering. The award consists of a cash prize, currently \$5000, and a medal. The recipient of the award will be invited to spend a week at RSMAS for discussions with faculty and students. The award will be presented at a banquet at that time.

To accommodate the multidisciplinary value of oceanographic science, the award recognizes, on a rotating basis, achievements in four broad disciplinary areas. In 1981 the emphasized discipline will be physical oceanography and air-sea interaction. The achievements recognized may consist of contributions towards the development of ocean science in general, or of more focused individual research of recognized impact on our understanding of the marine environment.

Nominations for the 1981 award for outstanding achievement in physical oceanography or air-sea interaction should be directed to: **Interim Dean Warren J. Wisby, Rosenstiel School of Marine and Atmospheric Science, University of Miami, 4600 Rickenbacker Causeway, Miami, Florida 33149, before 29 March 1981.** Nominations should include a brief justification together with relevant references. The selection panel would especially welcome nominations of outstanding younger scientists whose early contributions suggest a continued role of leadership in the field.

FELLOWSHIPS

PRE- AND POSTDOCTORAL FELLOWSHIPS in neurophysiology; studies in brain metabolism utilizing microelectrodes.

**Dr. James Halsey
Department of Neurology
University of Alabama Medical Center
Birmingham, Ala. 35294
Telephone: 205-934-2400
An Equal Opportunity Employer**

**INTER-AMERICAN TROPICAL TUNA
COMMISSION (IATTC)
LA JOLLA, CALIFORNIA
TUNA-DOLPHIN INVESTIGATION**

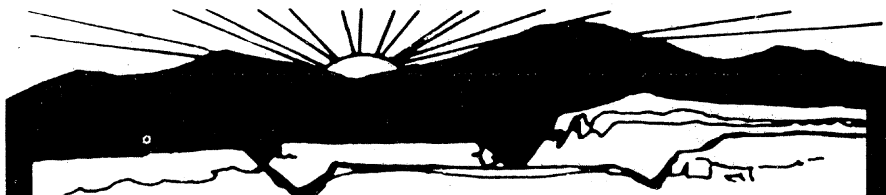
General: The IATTC has the responsibility for conducting research into the biology of tropical tunas and associated species in the eastern Pacific Ocean, and to make management recommendations for fisheries management to its member governments. Its laboratories are located on the campus of the Scripps Institution of Oceanography. The IATTC employs 30 scientists with research interests covering the fields of fisheries biology, population dynamics, marine mammal biology, modeling, oceanography, meteorology, and computing.

Duties: The appointee will lead a group of 13 scientists and up to 20 temporary observers concerned with the investigation into the involvement of dolphins in the purse seine fishery for yellowfin tuna. The work of the group involves the collection of data relating to abundance and incidental mortality of dolphins, stock assessment and population dynamics of dolphins, dolphin biology, and fishing gear research and development. As well as being concerned with the impact of the fishery on dolphin stocks, the group has responsibility to investigate suitable management schemes for the tuna fishery, taking into account the interaction of dolphins.

Qualifications: Applicants should have at least 6 years of research experience at a postdoctoral level, preferably in population dynamics of marine mammals or fish. Applicants with a strong background in statistics or population census methods will be preferred.

Salary: U.S.\$34,291 to U.S.\$36,577.

Applications should be made in writing, giving professional and personal details and the names and addresses of two references, to: **The Director of Investigation, IATTC, 8604 La Jolla Shores Drive, La Jolla, California 92037.**



ASSISTANT DIRECTOR

FOR INSTITUTE OF GEOPHYSICS AND PLANETARY PHYSICS AT LOS ALAMOS NATIONAL LABORATORY, UNIVERSITY OF CALIFORNIA

Distinguished scientist with demonstrated administrative record sought to head a new branch of the University of California's Institute of Geophysics and Planetary Physics (IGPP) that has recently been established at the Los Alamos National Laboratory, Los Alamos, New Mexico.

This fourth branch of IGPP needs a leader to build a program suitable for Los Alamos and the remainder of the University of California. The successful applicant will serve both as Assistant Director of the Los Alamos National Laboratory reporting to the Director and as an Assistant Director of IGPP. The Assistant Director will be responsible for the coordination with the remainder of the University of California through the Director of Systemwide IGPP, O. L. Anderson.

REQUIREMENTS: Extensive research experience in a field related to the geosciences, an extensive publication record, proven managerial ability within a scientific organization, excellent communication skills, a Ph.D. or equivalent experience in Earth Sciences, Physics, or Chemistry.

Respond to Dr. Donald M. Kerr, Director, Los Alamos National Laboratory, DIV 81-AD, Los Alamos, New Mexico, 87545. Applications must be received by March 31, 1981.

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

An Affirmative Action/Equal Opportunity Employer. Women, Minorities, the Handicapped, and Veterans are Urged to Apply. U.S. Citizenship Required.

Careers in Biotechnology

Product Manager

MS/Ph.D. — Nucleic Acids Enzymes. Background in biochemistry with business experience. Key position requires effective working relationships with sales, production, R & D, finance and communications.

Technical Services Manager

Molecular Biology Division. Technical liaison between laboratories, customers and sales force. Produce newsletter, catalogue and product literature for recombinant DNA products. Assist customers, train sales personnel.

Strong background in nucleic acids enzymology. Well developed communications skills, oral and written.

Send Resumes/C.V.'s to:

Mr. Wayne E. Fowler/Personnel Director

BRL BETHESDA
RESEARCH
LABORATORIES

Box 577, 8705 Grovemont Circle
Gaithersburg, Maryland 20760
(A suburb of Washington, D.C.)

An Equal Opportunity Employer, M/F/H

EXPAND YOUR CAREER WITH MRI!

We are Midwest Research Institute, one of the largest not-for-profit research organizations in the United States. Our goals are to define and solve problems related to people, their environment, institutions and social systems through science and technology.

GENETICISTS

We are expanding our genetic toxicology program. The scientists we seek will be responsible for developing experimental projects and establishing mutagenesis test procedures in mammalian cell genetics, cytogenetics and insect genetics. These individuals will collaborate with scientists in microbial and mammalian cell mutagenesis, biochemical pharmacology and biochemistry.

The successful candidates will possess a PhD/MS in Genetics or equivalent training with experience in mutagenesis, somatic cell genetics-cytogenetics or Drosophila genetics. The position offers and requires the development of individual research interests.

Our facilities house the latest in scientific and research laboratories, and are located in the heart of Kansas City's varied educational and cultural center. Kansas City is among one of the lowest cost of living metropolitan areas. Midwest Research Institute offers excellent employee benefits, a paid relocation program and a growth-oriented professional climate. Respond today by sending resume, a statement of research interests and list of publications and complete salary history in confidence, to Mr. Larry Brown.



"Serving Science and Society"

**MIDWEST
RESEARCH
INSTITUTE**

**425 Volker Boulevard
Kansas City, MO 64110**
An Equal Opportunity Employer

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS FOR RESEARCH TRAINING IN HYPERTENSION AND CARDIOVASCULAR DISEASE

Two-year postdoctoral fellowships starting in 1981 are available for qualified applicants with the M.D. or Ph.D. degree as part of a multidisciplinary training program. Possible areas for intensive research experience include biochemical, physiological, pathological, and epidemiological studies on the cardiac, renal, adrenal, and neural components of vascular regulation. For further information, write to: **Dr. R. L. Soffer, Departments of Biochemistry and Medicine, Cornell University Medical College, 1300 York Avenue, New York, N.Y. 10021.**

POSTDOCTORAL FELLOWSHIPS—The Cancer Research Center of the University of North Carolina at Chapel Hill will have openings 1 July 1981 for persons completing graduate studies to train with investigators in basic cancer-related research in tumor virology, tumor immunology, chemical carcinogenesis, cancer cell biology, and drug development. Training available in receptors, membranes, nucleic acid hybridization, gene cloning, DNA replication, cell cycle analysis, and so forth. Unique resources and departmental affiliations. Candidates must be U.S. citizens or permanent residents. Send for brochure and apply with curriculum vitae, three letters of recommendation, a statement of research interests, and graduate school records to: **Director, Cancer Research Center, Box 30, MacNider Building, Chapel Hill, N.C. 27514.**

POSTDOCTORAL FELLOWSHIP IN PLANT SCIENCES AT YALE UNIVERSITY

Applications are invited for the **Forest B. H. and Elizabeth D. W. Brown Postdoctoral Fellowship in Botany**, providing for 1 year of research in any aspect of plant science relevant to faculty in the Department of Biology at Yale University, the appointment to commence during academic year 1981-1982. Send inquiries and résumé (curriculum vitae, reprints, and names of potential references) to: **Departmental Administrator, Yale University (KBT 102), P.O. Box 6666, New Haven, Conn. 06511.** Application deadline: 15 March 1981. *Yale University is an Equal Opportunity/Affirmative Action Employer.*

PAUL J. CAMS FOUNDATION FELLOWSHIP. Applications are invited for a multiple sclerosis senior fellowship from suitably qualified persons wishing to pursue full-time research work bearing on biochemical immunology of multiple sclerosis. The host institution is the **Dr. L. Willems-Instituut, Belgium.** This 1-year appointment is open to Ph.D.'s and/or M.D.'s with extensive laboratory experience in the cellular immunology of lymphocytes seeking an opportunity for a sabbatical year abroad. The stipend offered is \$30,000 per annum. Economy travel to and from Belgium for the fellow and one dependent will be paid. Three copies of complete curriculum vitae and names, addresses, and telephone numbers of two references should be mailed before 15 March 1981 to: **Dr. Jef Raus, Director, Dr. L. Willems-Instituut, Universitaire Campus, 3610 Diepenbeek, Belgium.** Final selection will be made by interview in the United States.

POSTDOCTORAL FELLOWSHIP. A position of research fellow in jet propulsion and mechanical engineering is available immediately to study unsteady combustion phenomena in air-breathing power plants. Position requires knowledge and experience in combustion instability and experience in developing computer simulations of large combustion systems. Experimental experience with large utility boilers is desirable. Send résumé and names of references to: **Dr. Frank E. Marble, 205-45 Guggenheim Aeronautical Laboratory, California Institute of Technology, Pasadena, California 91125.** *Caltech is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH FELLOWSHIP at the Stanford Magnetic Resonance Laboratory to work on problems of protein structure and dynamics by high resolution NMR. Starting date: spring or summer 1981; tenable for 2 years. Candidates with a background in protein chemistry will be preferred. Experience in NMR desirable but not essential. Applications should be sent to: **Dr. Oleg Jardetzky, Stanford Magnetic Resonance Laboratory, Stanford University, Stanford, Calif. 94305.** *Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

POSTDOCTORAL RESEARCH FELLOWSHIPS IN NEUROENDOCRINOLOGY

Emphasis on the relation between the brain and the renin-angiotensin system and the regulation of vasopressin, ACTH, and growth hormone secretion. Supported by NIH training grant. Send curriculum vitae and references to:

William F. Ganong, M.D.
Director, Neuroendocrine Laboratory
Department of Physiology
University of California
San Francisco, Calif. 94143

An Equal Opportunity/Affirmative Action Employer

POSTDOCTORAL FELLOWSHIP. Available immediately. Research is focused on functional and cytotoxic evaluations of macrophage subpopulations. Background in immunology, microbiology, and/or in vitro techniques desirable. Send résumé, research interests, and names of three references to: **Dr. Alvin Volkman, Department of Pathology and Laboratory Medicine, East Carolina University, Greenville, North Carolina 27834.** *Equal Opportunity through Affirmative Action.*

SYMPOSIUM

PLANT BIOLOGY SYMPOSIUM

Molecular Biology of Plant Proteins:
Developmental and Environmental Induction
25 to 27 March 1981
University of Minnesota, St. Paul
For information:
Plant Biology Symposium
Department of Agronomy and Plant Genetics
University of Minnesota
St. Paul, Minn. 55108
Telephone: 612-373-0855

PROGRAMS

PLANETARY BIOLOGY INTERNSHIP PROGRAM Funded by NASA

The Department of Biology at Boston University invites applications from graduate students and seniors accepted at graduate institutions for awards to carry out research at NASA centers and a number of collaborating universities for 6 to 10 weeks, primarily in summer 1981. Studies include development of life-support systems in closed environments; biogenic contributions to metalliferous deposits and atmospheric gases; origins and maintenance of life in extreme environments and remote sensing of the biota. Interns will be paid the costs of transportation, living expenses, and a stipend of \$100 per week. A research summary is required at the termination of the internship. Deadline for applications: April 1981; announcements made 1 May 1981. For a brochure and application form, contact: **Linda M. Reeves, Administrator, Planetary Biology Internship, Department of Biology, Boston University, 2 Cummings Street, Boston, Massachusetts 02215.** *An Equal Opportunity/Affirmative Action Institution.*

POSTDOCTORAL PROGRAM IN IMMUNOLOGY

The Department of Immunology invites applications from qualified individuals interested in postdoctoral training in immunology. The department involves 20 full-time faculty with active ongoing research programs centering around studies of the biology and chemistry of the acute phase proteins; chemistry and biology of the complement systems; cellular immunology and immunogenetics; mechanisms of inflammation and host defense; immunopharmacology; and the chemistry and biology of the allergic response. The department offers a graduate program leading to a Ph.D. in immunology, with 16 students currently enrolled. Special programs also are available in clinical immunology, since a comprehensive Clinical Immunology Laboratory, an active resident training program in allergy and clinical immunology, and medically oriented investigations are integral components of the department. Please direct inquiries to:

Henry Gewurz, M.D., Chairman
Department of Immunology
Rush-Presbyterian-St. Luke's Medical Center
1753 West Congress Parkway
Chicago, Ill. 60612

PROGRAMS

Predocutorial Training Program in Cellular and Molecular Biology

An interdepartmental cadre of established investigators has organized a new training program in cellular and molecular biology at The University of Texas Health Science Center at Dallas. They invite applications for a limited number of positions available in the September 1981 class. Major research interests of the faculty include: cell-cell and cell-substratum interactions; membrane receptors; cytoskeletal function; lysosome function; cell genetics; cell and molecular differentiation; mitochondrial biogenesis; molecular biology of RNA viruses; structure and function of nucleosomes. Stipends are available for qualified trainees. Deadline for applications is 30 April 1981.

For applications, write:

Dr. Richard G. W. Anderson
Graduate Program in Biophysics
Department of Cell Biology
The University of Texas Health Science Center
5323 Harry Hines Boulevard
Dallas, Texas 75235

GRADUATE STUDY

GRADUATE STUDIES IN BIOLOGY. TUFTS UNIVERSITY. Teaching and research assistantships with tuition remission are available for highly qualified applicants. Research areas include animal behavior, biochemistry, cell biology, developmental biology, ecology, mammalian physiology, microbial genetics, plant biology, and reproductive biology. For further information, write: **Dr. E. C. Siegel, Department of Biology, Tufts University, Medford, Mass. 02155.** *Equal Opportunity/Affirmative Action Employer.*

MARKETPLACE

RIA SOFTWARE

Radioimmunoassay data acquisition and analysis programs for PDP-11, LSI-11, and Apple computers are now available. Features include: weighted or unweighted logit-log analysis; dose v. percent binding computations and printer plot; actual/theoretical logit, dose, and percent binding calculations; data archiving; auto QC function for standards; and more. System operations manual is available for \$25 (applicable to purchase).

PRINCETON DATA PROCESSING CONSULTANTS

3 Kean Court, RD Number 4
Princeton, N.J. 08540

NUCLEAR INSTRUMENT BROKERS

BUY—SELL—FIELD UPGRADE
Searle—Packard—Beckman

(714) 287-2700

WestChem
A Division of InterChem Enterprises, Inc.

WESTCHEM PRODUCTS
P.O. Box 19368
San Diego, CA 92119

Circle No. 257 on Readers' Service Card

Thermocouple THERMOMETERS



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

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

Models

- BAT-4 BIOLOGICAL
- BAT-5 CRYOGENIC
- BAT-9 DIGITAL
- BAT-8 DIGITAL °C or °F
- TH CLINICAL

The Modern Way to Measure

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

Circle No. 184 on Readers' Service Card

SELECTED TITLES at SAVINGS from 60% to OVER 70% OFFERED NOW at ONLY \$19.95* EACH

These volumes have been carefully selected from the CRC Handbook Series in Clinical Laboratory Science and the CRC Handbook Series in Nutrition and Food. Each work encompasses a wealth of data for its field and is organized as a ready reference source of information in your fields of interest.

MICROBIOLOGY

Edited by ALEXANDER von GRAEVENITZ, M.D., Yale University School of Medicine and Yale-New Haven Hospital.

These volumes are a compilation of data and references for clinical bacteriologists and microbiologists. Volume I covers techniques in clinical microbiology along with the genera of medically important bacteria. Volume II deals with the fungi, protozoa, helminths, and arthropods that cause disease in man, the laboratory control of chemotherapy, disinfection and sterilization, and hospital infection control.

Volume I, 408 pp., 1977, ISBN-0-8493-7031-0.

Regularly \$69.95 (U.S.).

Catalog no. 7031KJQ

Volume II, 584 pp., 1977, ISBN-0-8493-7032-9.

Regularly \$74.95 (U.S.).

Catalog no. 7032KJQ

HEMATOLOGY

Edited by ROBERT M. SCHMIDT, M.D., M.P.H., International Reference and Research Center for Blood Diseases, Lihue, Kauai, Hawaii.

This is a single source for information that previously could only be found in a variety of texts, lab manuals, and journals. Emphasis is on data presented in tabular form with supporting text, diagrams, and illustrations. Included are lab procedures, blood collection equipment, chromatographic and electrophoretic techniques, and the structure and disorders of blood. 544 pp., 1979, ISBN-0-8493-7091-4. Regularly \$67.95 (U.S.).

Catalog no. 7091KJQ

CULTURE MEDIA for CELLS, ORGANS and EMBRYOS

Edited by MILOSLAV RECHCIGL, JR., Ph.D., U.S. Agency for International Development.

This book is devoted to discussion of natural and synthetic mixtures used in cultivation. It includes nutrient requirements and chemical composition of media for cell, organ and embryo cultivation. 471 pp., 1977, ISBN-0-8493-2739-3. Regularly \$59.95 (U.S.).

Catalog no. 2739KJQ

IMMUNOLOGY

Edited by ALEXANDER BAUMGARTEN, M.D. and FRANK F. RICHARDS, M.D., Yale University School of Medicine.

Emphasis is on factual and clinically important data to aid diagnosis and management of patients with immunological problems and to help assess the parameters of immune response.

Volume I, Part 1, 464 pp., 1978, ISBN-0-8493-7021-3.

Regularly \$64.95 (U.S.).

Catalog no. 7021KJQ

Volume I, Part 2, 480 pp., 1979, ISBN-0-8493-7022-1.

Regularly \$69.95 (U.S.).

Catalog no. 7022KJQ

VIROLOGY and RICKETTSIOLOGY

Edited by GUEH-DJEN HSIUNG, Ph.D., Yale University School of Medicine, VA Hospital, West Haven, CT and ROBERT H. GREEN, M.D., Middlesex Memorial Hospital, U. of Connecticut School of Medicine, Yale University School of Medicine.

The two volumes of this work are a wealth of information for medical virologists and virological researchers. Volume I, Part 1, concentrates on general clinical virology while Volume I, Part 2, covers DNA viruses, viral infections, rickettsiae, and cell cultures.

Volume I, Part 1, 448 pp., 1979, ISBN-0-8493-7061-2.

Regularly \$62.95 (U.S.).

Catalog no. 7061KJQ

Volume I, Part 2, 448 pp., 1979, ISBN-0-8493-7062-0.

Regularly \$62.95 (U.S.).

Catalog no. 7062KJQ

BLOOD BANKING

Edited by TIBOR J. GREENWALT, M.D., Paul I. Hoxworth Blood Center, U. of Cincinnati and EDWIN A. STEANE, Ph.D., U. of Texas Health Science Center, Dallas.

Blood Banking is a handy reference for physicians, technologists, nurses, management, and maintenance staff for use in performing their daily work. Emphasis is on practical and factual data, presented in tabular, graphic, and narrative form. 616 pp., 1977, ISBN-0-8493-7011-6. Regularly \$69.95 (U.S.).

Catalog no. 7011KJQ

CULTURE MEDIA for MICROORGANISMS and PLANTS

Edited by MILOSLAV RECHCIGL, JR., Ph.D., U.S. Agency for International Development.

Discussed in this volume are natural and synthetic mixtures used in cultivation. It includes nutrient requirements and chemical composition of media for microorganism and plant cultivation. 644 pp., 1977, ISBN-0-8493-2738-5. Regularly \$74.95 (U.S.).

Catalog no. 2738KJQ

NUTRITIONAL REQUIREMENTS

Edited by MILOSLAV RECHCIGL, JR., Ph.D., U.S. Agency for International Development.

Contained in this volume is information relating to the qualitative requirements and utilization of nutrients in major classes of organisms, covering both plant and animal kingdoms and including microorganisms. 576 pp., 1977, ISBN-0-8493-2721-0. Regularly \$69.95 (U.S.).

Catalog no. 2721KJQ

*Plus \$2.00 each for shipping and handling

ORDER FORM

Please send the following titles at \$19.95 *each,
plus \$2.00 each for postage and handling.

Quantity

Catalog no.

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Enclosed is my check / money order for \$ _____

To qualify for this special offer, each order must:

- be prepaid directly to CRC Press
- be postmarked by April 30, 1981

Name _____

Institution _____

Address _____

City _____

State _____

Zip _____

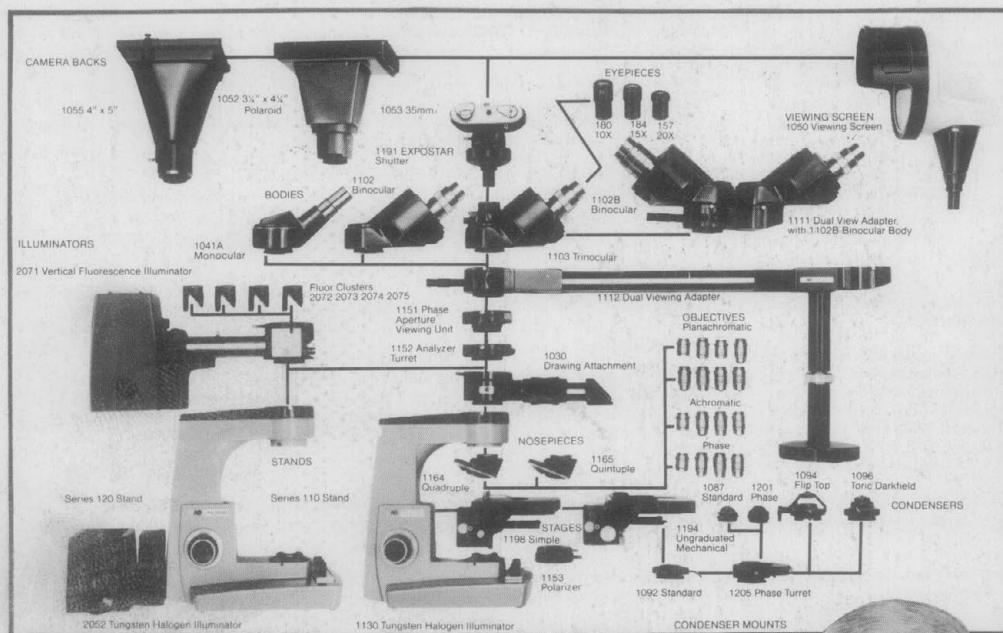
* Outside U.S., \$22.95 per copy. Payable in U.S. currency or draft on a U.S. bank. Florida residents add 4% sales tax.



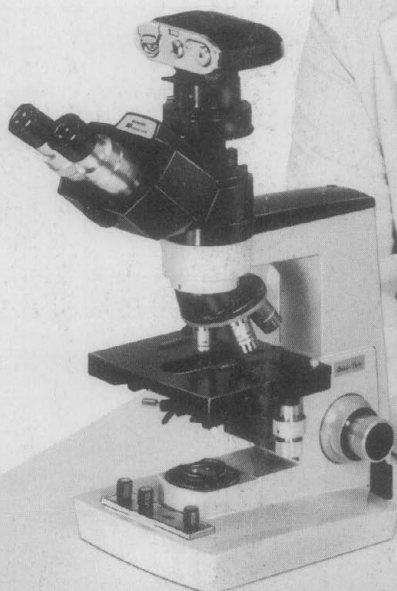
CRC PRESS, INC.
2000 N.W. 24th Street, Boca Raton, FL 33431

5698

The total microscope system.



AO Series One-Ten MICROSTAR® microscope



We call the AO One-Ten a microscope system because you can buy as much capability as you need. The "building block" design lets you add components whenever you need them. Models are available for brightfield/darkfield. Add phase contrast, fluorescence, dual view, multiview and photographic accessories.

The advanced One-Ten is widely accepted. Users like its contemporary styling and smooth, rich finish. But most of all, they like its performance and many features: the magnificent illumination from the bright tungsten-halogen illuminator with continuously variable intensity; the fine AO optics that give a flat edge-to-edge image over a 20mm field of view; the focusable nosepiece that allows the stage to remain secure and solid; the convenient low positioning of the coaxial coarse and fine focusing controls; plus much more.

Send for a detailed brochure or ask your AO dealer representative for a demonstration. American Optical, Scientific Instrument Division, Box 123, Buffalo, NY 14240.

AO
American Optical

Circle No. 56 on Readers' Service Card