

for occurrences of komatiites, plus some specialized papers discussing many of the intriguing aspects of this type of magmatism. The 29 papers have been grouped into seven sections, two of which (those on regional surveys and on the geochemistry and composition of the mantle in the Archaean) constitute more than half of the book. The other five sections, more or less equal in length, cover history and definitions, textures, alteration, economic geology, and petrogenesis.

The editors state that the volume has two principal objectives, to summarize present knowledge of komatiites and to present new information and emphasize areas of study in which problems still exist. They succeed quite well in the former but fail in the latter. Most of the work in the volume has been published elsewhere, with new data appearing only in a few papers on trace elements and isotopes. However, the book succeeds quite well as a review and is an excellent source of references, especially for the world's komatiite occurrences, many of which are given almost overly succinct treatment, though key references are cited.

The regional survey section is the longest in the book, comprising 12 contributions. Classic geological cross sections are given in only two of the 12. This reflects either the vast amount of work required before our understanding of the regional settings of these enigmatic rocks is satisfactory or the vast amount of work it is going to take to get today's crop of field geologists back to basics.

The contributions are generally well organized and the diagrams usually clear. Large print and an acceptable frequency of misprints make the book visually pleasing and easy to read. However, the photomicrographs are not of particularly high quality and have commonly been reproduced at a much larger size than is warranted by the information they carry. Whether the papers have abstracts seems to be based on whether their authors felt like providing them. Like most books of its type, *Komatiites* suffers from unbalanced coverage of the data and a lack of continuity between sections. Arndt and Nisbet have attempted to overcome these difficulties by including an introductory preamble to each section.

On the whole the book is a worthwhile acquisition for anyone interested in petrology, the mantle, igneous geochemistry, Archean geology, or simply teaching senior undergraduate geology. Certainly it provides a polite and informative reply to the student question, "Where should I

go to read up on komatiites?" The specialized researcher will not find too much to excite him or her, however. *Komatiites* could be considered as a suitable companion volume to *Basalts*, edited by H. H. Hess and Arie Poldervaart, or *Andesites*, edited by R. S. Thorpe.

CHRISTOPHER BROOKS
Department of Geology,
University of Montreal,
Montreal, Quebec H3C 3J7, Canada

Planetology

Formation of Planetary Systems. Formation des Systèmes Planétaires. Papers from a school, Grasse, France, Aug. 1980. A. BRAHIC, Ed. Cepadues, Toulouse, France, 1982. 894 pp., illus. 295 F.

Speculations about the origin of the solar system are undoubtedly as old as intelligent life on Earth. This volume is a snapshot of the speculations as of 1980. In a foreword, Curien attributes the passion of planetologists to rapid growth of their field in the era of space exploration. True, there are many new facts that were not at hand for Lucretius, Descartes, Buffon, Kant, or Laplace. But the facts at hand are sufficient only to color a very small part of a very large canvas that is still mostly blank. Thus, today's natural philosophers are still free to spin their creative hypotheses in the spirit of their illustrious predecessors. And spin they do. The book begins with Brahic's recounting of the history of speculation about the origin of the solar system. The tone is set by a lovely quote from Poincaré in which he concludes that despite a paucity of facts the human mind is irresistibly drawn to this topic. "It is for this reason that cosmogonic hypotheses are so numerous and varied; it is for this reason that every day new ones spring up, equally as uncertain but nevertheless as plausible as the more ancient theories."

Following the historical introduction the book is divided into four parts: Astrophysics and Cosmochemistry, Dynamical Evolution, The Solar System Today, and Other Planetary Systems and Life. Multipart lectures are interspersed with short contributed papers. Most of the lectures are thorough and useful. Part of their utility comes from their being introductory in nature, with the goal of teaching scientists in other fields. For example, two series of lectures, one by Burns and one by Greenberg, make a nice introduction (totaling almost 150 pages) to dynamical processes in the

solar system. There is a wealth of information in lectures by Elmegreen, Lattimer, and Allegre in the part of the book on astrophysics and cosmochemistry. However, overall the book retains a free-wheeling spirit. Even the part *The Solar System Today*, which one would suppose to be factual, contains a potpourri of papers on some of the more speculative topics, such as planetary rings, the origin of the moon, the geological evolution of Mars, and the origin of the satellites of Mars. The introductory lecture series in this section is a highly readable and entertaining overview of the solar system by Owen. The section on other planetary systems and life consists of two very short contributions.

The major failings of the book have to do with details, but distracting details. I assume the book was produced from camera-ready typescript prepared in English by a mostly French-speaking staff, for typographical errors appear at the rate of about one per page. Higher-order errors such as scrambling of superscripted mass numbers or breaks in the text that were clearly meant to be filled in by an author I can only attribute to some breakdown in the editorial process. Hyphenation at the ends of lines is totally unrelated to syllables. There is no indication in the table of contents whether a paper is a short contribution or a lecture series; there are no running author or title headings at the tops of pages; and there is no index.

Nevertheless, the vigor and enthusiasm of the European planetary sciences community and the drive and sense of humor of the editor are strongly reflected in this very lively book.

LAUREL L. WILKENING
Department of Planetary Sciences,
Lunar and Planetary Laboratory,
University of Arizona, Tucson, 85721

Books Received

Applied Atomic Collision Physics. Vol. 1, Atmospheric Physics and Chemistry. H. S. W. Massey and Dr. R. Bates, Eds. Academic Press, New York, 1982. xiv, 484 pp., illus. \$67.50. Pure and Applied Physics, vol. 43-1.

Applied Electron Spectroscopy for Chemical Analysis. Hassan Windawi and Floyd F.-L. Ho. Wiley-Interscience, New York, 1982. x, 214 pp., illus. \$45. Chemical Analysis, vol. 63.

Applied Therapeutic Drug Monitoring. Vol. 1, Fundamentals. Thomas P. Moyer and Roger L. Boeckx, Eds. American Association for Clinical Chemistry, Washington, D.C., 1982. 242 pp., illus. Paper, \$15.

Applying Mathematics. A Course in Mathematical Modelling. David Burghes, Ian Huntley, and John McDonald. Horwood, Chichester, England, and Halsted (Wiley), New York, 1982. 194 pp., illus. \$44.95. Ellis Horwood Series in Mathematics and Its Applications.

Archaeology of Urban America. The Search for Pattern and Process. Roy S. Dickens, Jr., Ed. Aca-

(Continued on page 1246)



Scanning Ion Microscope

Model MIG100 offers high-resolution chemical imaging and rapid, three-dimensional depth profiling. Insulators and conductors are equally able to be analyzed without surface preparation of a conducting material. Elements from hydrogen to uranium may be analyzed with sensitivity to less than 1 part per million. This analytical instrument may be supplied complete or as a component for the user's vacuum chamber (Auger, SAM, or ESCA). VG Instruments. Circle 598.

Accessory for FTIR Analysis of Liquids

Circle provides smooth sample flow for easy quantitative or qualitative analysis of aqueous or otherwise opaque solutions with an FTIR spectrophotometer. Circle has an insoluble zinc selenide cylinder with conical ends sealed into the sample chamber. The circular beam optics match the FTIR beam with minimum vignetting. Built to avoid leaks, it withstands pressures up to 3 atmospheres with a standard glass body cell and higher pressures with a stainless steel cell. Barnes Analytical. Circle 599.

Spectrophotometer

The Spectronic 1001 is a single-beam instrument. A fraction of the available light is used as a reference beam to cancel the effect of any drift created by the light source. It features automated execution of analytical programs with up to 30 sets of the user's own parameters. The wide ultraviolet-visible wavelength range provides versatility and high ener-

gy is available to analyze even murky samples without dilution. Peaks are located automatically and multipoint curves are generated and stored by the microprocessor. Time is saved by automatic multiwavelength testing and calculation of absorbance ratios and absorbance differences (one time or kinetic). There is a plug-in interface to allow two-way communication with a computer. Bausch & Lomb. Circle 600.

Spectrometer

SpectraSpan VI combines a computer-controlled echelle scanning monochromator with a direct-current plasma source to determine elemental components in liquids and gases by plasma emission. Software features cursor-prompted instruction. Samples with high total dissolved solids may be analyzed. Echelle optics minimize spectral interference and require few analyte corrections. Accessories include an Auto Sampler, Microsoft BASIC software, a standard or deluxe printer, computer-selected dual-photomultiplier detection, and a work station. SpectraMetrics, a subsidiary of Beckman Instruments. Circle 601.

Automated Liquid Chromatography

The LC/934 combines an easy-to-use chromatograph and a computer with high-resolution graphics. The chromatograph features a pulse-free pump, ternary-gradient capability, and a variety of sensitive detectors. With an automatic sampler, the instrument may be operated unattended. The computer features a key pad and application software. The 12-inch cathode-ray tube displays multiple chromatograms in real time or from stored data. User programmable keys permit interactive manipulation of the data. With a chromatography applications program, up to four chromatographs may be controlled at once. IBM Instruments. Circle 607.

NMR Spectrometers

The AM series includes microprocessor control of console operation, the Aspect 3000 data system with large memory capacity, Fourier-transform processor, and a fast eight-color raster scan display processor and plotter. Accessories include a multinuclear observation unit, a computer-controlled dual hydrogen/carbon-13 probe/amplifier, and a remote data-processing station. The AM system is available at frequencies from 200 to 500 megahertz. Bruker Instruments. Circle 602.

Specimen Preparation for X-ray

Diffraction

Model 620-00 provides tools and accessories to prepare specimens for camera and diffractometer work. All items are stored in bench compartments. The Pyroceram work surface is heat-, chemical-, and abrasion-resistant. The surface is also removable for cleaning. Custom and specialty tools are provided for optimum diffraction work. Buhrke Scientific. Circle 603.

Filter System for Gas Chromatograph

The Gas-Clean filter system enables the operator to replace filters in seconds without column cooling or disconnection of gas supplies. The base connector plate is attached in the gas line and may be wall- or bench-mounted. The filter is mounted on the base connector plate with a hand-tightened bushing. Check valves, O-rings, and dust filters in the base plate prevent contamination during filter changes. A positioning post ensures proper orientation and the new filter is simply pressed into position. The seal at the bottom of the filter is punctured by the valves which open when the bushing is tightened. Filters include an indication moisture filter for carrier gases. Chrompack. Circle 604.

Gas Chromatograph-Mass Spectrometer

The 8200 series GC/MS supports analysis of complex samples with high molecular weights. Resolution, mass range, sensitivity, and scan speed are all in the high-performance range. The 8200 series has a combined EI/CI ion desorption chemical ionization, and combined field desorption/field ionization/electron ionization. The reverse Nier-Johnson design allows metastable ion analysis in

Newly offered instrumentation, apparatus, and laboratory materials of interest to researchers in all disciplines in academic, industrial, and government organizations are featured in this space. Emphasis is given to purpose, chief characteristics, and availability of products and materials. Endorsement by *Science* or AAAS is not implied. Additional information may be obtained from the manufacturers or suppliers named by circling the appropriate number on the Readers' Service Card (on pages 1162A and 1250A) and placing it in a mailbox. Postage is free.

—RICHARD G. SOMMER

If You Need A Liquid Chromatography Chamber, Then You Need A Revco.

Revco's new top-of-the-line Chromatography Chambers deliver a dependable 4°C temperature uniformity and have these standard features:

- Four Temperature Controls for Maximum Safety and Uniformity.
- Four Temperature Alarms for Complete Protection.
- Continuous Temperature Display in All Quadrants.
- An Alarm System that Automatically Tests Itself Every 24 Hours.
- Audible and Visual Alarms for Low Voltage or Power Failure, Door Ajar or Unsafe Temperature Conditions.

- Alarm Delays with Automatic and Manual Re-set Modes.
- Computer Connections for Automatically Collecting, Storing and Monitoring Temperature Data and Test Functions.
- The Industry's Only 13 Month Full Warranty on both Parts and Labor.

All Revco Chromatography Chambers are equipped for options like these: an Auto-Dialer Alarm System (it will call your home or nine other numbers), a 240 Day Electronic Temperature Recorder, and a Remote Audio Alarm.

Available in three sizes for convenient in-lab use: 23, 50 and 75 cubic feet.



Write or call today for your free full-color catalog, or contact one of these nationwide dealers:

American Scientific Products
Curtin Matheson Scientific
Fisher Scientific
Sargent-Welch Scientific
Arthur H. Thomas Company
VWR Scientific

REVCO

Rheem Manufacturing Company/Scientific Products Division, Aiken Road, Box 275, Asheville, N.C. 28804. Tel.: 704/658-2711, Telex: 57-7449.

both the first and second field-free regions. The magnetic sector is a fully laminated H-shape magnet for high scan speeds and dynamic focusing. The Incos data system operates in a single-terminal, single-acquisition mode or in a dual-terminal, dual-acquisition mode. It also operates in a true priority interrupt foreground/background mode. Finnigan MAT. Circle 605.

Chromatography Data System

Model 446 is based on the HP 86 desktop computer with 12-inch cathode-ray tube, dual floppy disks, and a printer-plotter. Software includes data storage, reconstruction, reintegration, recalculation, and automatic branching to user programs. Quantitation features area percent, internal and external standards, and naming of up to 300 peaks with reference peak normalization. The 446 works with any commercial gas or liquid chromatograph and with any common autosampler. Nelson Analytical. Circle 610.

Pyrolysis Mass Spectrometer

Model 5000 is a Curie point instrument designed for optimum pyrolysis mass spectrometry. However, it retains capability for easy conversion to more conventional (gas inlet or direct probe) modes of mass spectrometry. Complex intractable molecules may be characterized rapidly. Contamination is minimized by the open design of the electron impact ion source. The Curie point pyrolysis inlet provides readily repeatable temperature profiles to ensure quantitative reproducibility. A removable gold-coated expansion chamber serves as a buffer between reactor and ion source. Model 5000 also features a modular design, so the operator may convert to other modes of analysis with ease. Extranuclear Laboratories. Circle 606.

NMR Spectrometer for Solids

The S-100 incorporates cross-polarization/magic angle spinning techniques and high power dipolar decoupling capabilities for routine carbon-13 NMR studies of solid materials. High RF power and efficient probe coil design enhance sensitivity and resolution. The S-100 uses a 2.3-tesla superconducting magnet. Sample changing is simple and reliable. Sample spinning is accurate and repeatable. The probe produces spectra free of back-

ground interference. The operator sets sequences and selects experimental parameters for routine operation. Nicolet Analytical Instruments. Circle 611.

Variable Wavelength Detector

Model LC-85B ultraviolet-visible detector offers an optional 1.4-microliter flow cell with the same 6-millimeter pathlength and virtually the same light throughput as the standard 8-microliter flow cell. Both offer performance free of the effects of flow, refractive index, and temperature. The LC-85B with the optional flow cell is especially suited for use with both small-bore columns and high-resolution/high-speed columns. Full-scale sensitivity of the LC-85B is 0.005 absorbance units. Perkin-Elmer. Circle 612.

Dual Variable Wavelength Detector

Model 788 uses two user-selectable ultraviolet-visible wavelengths to analyze chemical compounds of similar molecular structure. Chromatographers may resolve overlapping peaks without changing analysis parameters. Monitoring at two wavelengths allows comparison of sample constituents based on absorbance, absorbance ratio, and absorbance sums or differences. Detection occurs in a single cell. The 788 employs a deuterium lamp; a high-pressure (4000 pounds per square inch) flow cell; and a variable-angle, concave grating; and two photodiode pairs (one adjustable). It measures wavelengths between 190 and 750 nanometers. Micrometrics Instrument. Circle 609.

Ultraviolet-Visible Spectrophotometer

The DW-2C is a double-beam, dual-wavelength instrument with integral data processing. Features include digital readout, automatic correction of baseline, n th derivatives of spectra and kinetic reaction data, 14 spectral storage locations, memory display on any oscilloscope, and plotting on an integral recorder. The DW-2C will do digital filtering, smoothing, averaging, and logarithms, and it will store kinetic reactions from 75-millisecond to 25-minute full scale. Operating modes include dual-wavelength, dual-wavelength scanning, rapid kinetics, and user-defined X -axis modes. In the double-beam mode, a single beam is chopped by a rotating mirror. SLM/Aminco. Circle 618.

Literature

Blood Collection by Skin Puncture describes approved standard technique, equipment, sites, depth of puncture, container, and other aspects. National Committee for Clinical Laboratory Standards. Circle 590.

EIA Dilutions for Peroxidase Conjugated Antisera gives working dilutions for 17 antisera. An extensive bibliography is available. Research Products Division, Miles Laboratories. Circle 593.

Cytocentrifuge is devoted to the Cytospin 2 benchtop instrument for rapid processing of small samples. Shandon Southern Instruments. Circle 594.

Oxygen Equilibrium Curve Analyzer describes the Hem-O-Scan analyzer which offers a rapid, easy method that requires only small samples. SLM Instruments. Circle 595.

Chromatography Data System Selection lists criteria for the intelligent selection of appropriate equipment to meet individual needs in liquid chromatography. System Instruments Corporation of America. Circle 596.

Temperature Calibration Baths includes 14 models for laboratory applications. Techne. Circle 597.

Thin Electrode describes a device 8 inches long by $\frac{1}{4}$ inch in diameter for pH readings in narrow tubes. Fisher Scientific. Circle 627.

Catalysts gives applications references and classification by starting material, end product, and reaction type of homogenous and heterogenous catalysts. Spex Industries. Circle 628.

Research Chemicals offers hundreds of substances of use in multiple disciplines. It includes fluorescent dyes, biological buffers, and diagnostic chemicals. Research Organics. Circle 629.

Biochemical and Organic Compounds for Research includes diagnostic and clinical reagents, standards and controls, kits, and equipment. Sigma Chemical. Circle 630.

Silicon Compounds Register and Review covers structural, physical, toxicity data on over 800 organosilanes. It also provides data on over 200 silicones. Petrarch Systems. Circle 631.

New Titles includes 85 volumes available spring 1983 from *Basic Physics of Radiotracers to Total Parenteral Nutrition*. Eighteen of them are new entries in the "Handbook" series. CRC Press. Circle 632.

Nuclear Magnetic Resonance is devoted to a research grade Fourier-transform system and its associated software from an applications standpoint. Nicolet Magnetics. Circle 634.

ARE THE MEDIA FAIR TO SCIENCE? IS SCIENCE FAIR TO THE MEDIA?

Read *Reflections on Science and the Media*, a provocative new book by June Goodfield, author of *An Imagined World*, and decide for yourself.

REFLECTIONS ON SCIENCE AND THE MEDIA

128 pp. 1981
ISBN: 0-87168-252-4
Paper, \$9.00/AAAS member
price, \$8.00

Mail order to AAAS Sales Dept. SM6,
1515 Massachusetts Ave., NW,
Washington, DC 20005.

Please allow 6-8 weeks for delivery. All
orders under \$10.00 must be prepaid.

If You Need An Explosion-Safe Refrigerator, Then You Need A Revco.

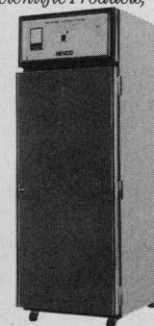
Revco's new line of Explosion-Safe Refrigerators (4°C) have these standard features:

- Audible and Visual Alarms for Low Voltage or Power Failure, Door Ajar or Unsafe Temperature Conditions.
- Continuous Temperature Display.
- Alarm Delays with Automatic and Manual Re-set Modes.
- Computer Connections for Automatically Collecting, Storing and Monitoring Temperature Data.
- Key Operated Master Switch for Maximum Protection.
- Stainless Steel Interior and Stainless Steel Wire Shelves.

- UL Rated Explosion-Proof Interior Motors.
- The Industry's Only 13 Month Full Warranty on both Parts and Labor.

Available in two convenient lab sizes: 23 and 50 cubic feet.

Write or call today for your free full-color catalog, or contact one of these nation-wide dealers: American Scientific Products, Curtin Matheson Scientific, Fisher Scientific, Sargent-Welch Scientific, Arthur H. Thomas Company and VWR Scientific.



REVCO

Rheem Manufacturing Company/Scientific Products Division
Aiken Road, Box 275, Asheville, N.C. 28804. Tel.: 704/658-2711. Telex: 57-7449.

Circle No. 307 on Readers' Service Card

Catecholamines and Metabolites or other neurochemically significant compounds

WITHIN

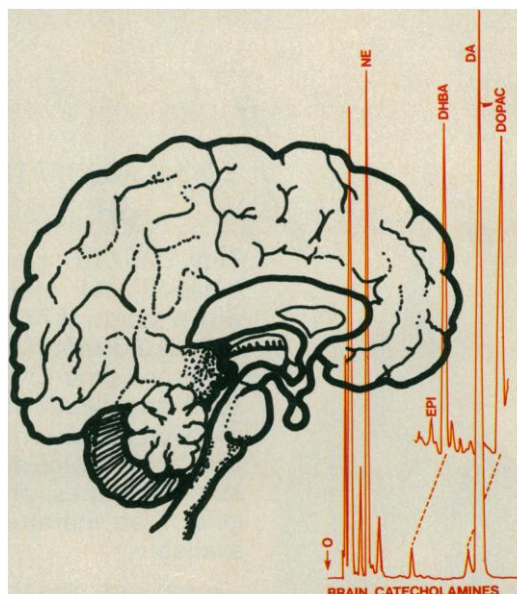
Brain Tissue
Adrenal Tissue
Body Fluids
Dosage Forms
Plant Matter
Insect Tissue

WITHOUT

Derivatives
Radioisotopes
Fluorescence
Gas Chromatography
Mass Spectrometry
A Rich Uncle

BAS Analyzers based on liquid chromatography/electrochemistry (LCEC) have replaced radiochemical and fluorescence procedures in all of the above areas. Detailed procedures, sample preparation materials, and support from our own analytical laboratory complement each complete instrument package. These systems are capable of monitoring many phenolic natural products and drugs. All of the 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 specific requirements.

DON'T CIRCLE THE BINGO CARD! Call or write today for a detailed reply!



DOPAMINE • NOREPINEPHRINE • EPINEPHRINE • VMA • HVA • DOPAC • MHPG • M • NM • 3-MT • 5-HT • 5-HIAA • TH • DBH
COMT • NMT • MORPHINE • PHENOTHIAZINES • TRICYCLIC ANTIDEPRESSANTS • GLUTATHIONE • GABA



bioanalytical systems

1205 Kent Ave • West Lafayette • IN 47906 USA • (317) 463-2505
JAPAN: Tokai Irika SWITZERLAND: Paul Bucher ITALY: Analytical Control

BOOKS RECEIVED

(Continued from page 1214)

demic Press, New York, 1982. xxiv, 468 pp., illus. \$39.50. Studies in Historical Archaeology.

Art, Mind, and Brain. A Cognitive Approach to Creativity. Howard Gardner. Basic Books, New York, 1982. xx, 380 pp., illus. \$20.

Aspects of Micropalaeontology. Papers Presented to Professor Tom Barnard. F. T. Banner and A. R. Lord, Eds. Allen and Unwin, Boston, 1982. xvi, 324 pp., illus. \$50.

An Assessment of Research-Doctorate Programs in the United States: Mathematical and Physical Sciences. Lyle V. Jones, Gardner Lindzey, and Porter E. Coggeshall, Eds. National Academy Press, Washington, D.C., 1982. xii, 244 pp. Paper, \$10.50.

The Audubon Society Encyclopedia of Animal Life. Ralph Buchsbaum and 11 others. Potter, New York, 1982 (distributor, Crown, New York). 608 pp., illus. \$45. A Chanticleer Press Edition. Based on *Double-day's World of Nature* series.

Automatic Speech Analysis and Recognition. Proceedings of an institute, Bonas, France, June 1981. Jean-Paul Haton, Ed. Reidel, Boston, 1982 (distributor, Kluwer Boston, Hingham, Mass.). xii, 372 pp., illus. \$48. NATO Advanced Study Institutes Series C, vol. 88.

The Benzamides. Pharmacology, Neurobiology, and Clinical Aspects. Michael Stanley and John Rotrosen, Eds. Raven, New York, 1982. xii, 210 pp., illus. \$31. Advances in Biochemical Psychopharmacology, vol. 35.

Beyond the Freeze. The Road to Nuclear Sanity. Daniel Ford, Henry Kendall, and Steven Nadis. Beacon Press, Boston, 1982. x, 132 pp. Paper, \$4.95.

Biological and Behavioral Technologies and the Law. Michael H. Shapiro, Ed. Praeger, New York, 1982. xvi, 380 pp. \$34.50. Reprinted from the *Southwestern California Law Review*.

Biological Scanning Electron Microscopy. Barbra L. Gabriel. Van Nostrand Reinhold, New York, 1982. xiv, 186 pp., illus. \$24.95.

The Biology of Crustacea. Dorothy E. Bliss, Ed. Academic Press, New York, 1982. Vol. 1, Systematics, the Fossil Record, and Biogeography. Lawrence G. Abele, Ed. xxii, 320 pp., illus. \$38.50. Vol. 3,

Neurobiology: Structure and Function. Harold L. Atwood and David C. Sandeman, Eds. xxiv, 480 pp., illus. \$59.

The Biology of Social Insects. Proceedings of a congress, Boulder, Colo., Aug. 1982. Michael D. Breed, Charles D. Michener, and Howard E. Evans, Eds. Westview, Boulder, Colo., 1982. xii, 420 pp. \$25.

Cleaning Up Coal. A Study of Coal Cleaning and the Use of Cleaned Coal. Cynthia A. Hutton and Robert N. Gould. Richard C. Allen, Ed. Ballinger (Harper and Row), Cambridge, Mass., 1982. xvi, 398 pp. \$37.50. An INFORM Book.

Climate, History and the Modern World. H. H. Lamb. Methuen, New York, 1982. xx, 388 pp., illus. Cloth, \$33; paper, \$16.95.

Clinical Biofeedback. Efficacy and Mechanisms. Papers from a symposium, Stony Brook, N.Y., May 1980. Leonard White and Bernard Tursky, Eds. Guilford Press, New York, 1982. xviii, 468 pp., illus. \$39.50.

Clinics in Oncology. Vol. 1, No. 1, Hormone Therapy. B. J. A. Furr, Ed. Saunders, Philadelphia, 1982. viii, 312 pp., illus. \$24.

Collected Papers. Willard Frank Libby. Vol. 7. Talking to People. Leona Marshall Libby, Ed. Geo Science Analytical, Santa Monica, Calif., and University of California, Los Angeles, 1982. Various pagings, illus. Paper, \$15.

Colour Vision Deficiencies VI. Proceedings of a symposium, Berlin-Steglitz, Sept. 1981. G. Verriest, Ed. Junk, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). x, 522 pp., illus. \$99.50. Documenta Ophthalmologica Proceedings Series, vol. 33.

Comets. Vagabonds of Space. David A. Seargent. Doubleday, Garden City, N.Y., 1982. xx, 234 pp., illus. \$15.95.

Cytapheresis and Plasma Exchange. Clinical Indications. Proceedings of a symposium. Atlanta, Ga., Mar. 1980. W. R. Volger, Ed. Liss, New York, 1982. xvi, 318 pp., illus. \$34. Progress in Clinical and Biological Research, vol. 88.

Dominant Exudative Vitreoretinopathy and Other Vascular Developmental Disorders of the Peripheral Retina. C. E. van Nouhuys. Junk, The Hague, 1982 (U.S. distributor, Kluwer Boston, Hingham, Mass.). xiv, 416 pp., illus. \$83.

Dr. Kinsey and the Institute for Sex Research.

Wardell B. Pomeroy. Yale University Press, New Haven, Conn., 1982. xvi, 480 pp. Cloth, \$35; paper, \$10.95. Reprint with new foreword of 1972 edition.

Dynamics of the Excited State. K. P. Lawley, Ed. Interscience (Wiley), New York, 1982. viii, 668 pp., illus. \$83. Advances in Chemical Physics, vol. 50.

Ecology of the Northern Lowland Bogs and Conifer Forests. James A. Larsen. Academic Press, New York, 1982. xii, 308 pp., illus. \$34.

Economic Issues and Political Conflict. US-Latin American Relations. Jorge I. Domínguez, Ed. Butterworth, Boston, 1982. viii, 246 pp. \$45.95. Butterworths Studies in International Political Economy.

The Functional Integration of Cells in Animal Tissues. John D. Pitts and Malcolm E. Finbow, Eds. Cambridge University Press, New York, 1982. viii, 360 pp., illus. \$69.50. The Fifth Symposium of the British Society for Cell Biology.

Fusion. Science, Politics, and the Invention of a New Energy Source. Joan Lisa Bromberg. MIT Press, Cambridge, Mass., 1982. xxviii, 344 pp., illus. \$30.

The Future of American Political Parties. The Challenge of Governance. Papers from a meeting, Harriman, N.Y., Apr. 1982. Prentice-Hall, Englewood Cliffs, N.J., 1982. xii, 180 pp. Paper, \$6.95.

The Future of Research. Papers from a seminar, Kingston-upon-Thames, Mar. 1982. Geoffrey Oldham, Ed. Society for Research into Higher Education (University of Surrey), Guildford, England, 1982. xii, 220 pp., illus. Paper, £6.60.


Gametes and Spores. Ideas about Sexual Reproduction, 1750-1914. John Farley. Johns Hopkins University Press, Baltimore, 1982. xii, 300 pp., illus. \$24.50.

The Historical Development of Quantum Theory. Vol. 1, Part 2, The Quantum Theory of Planck, Einstein, Bohr and Sommerfeld: Its Foundation and the Rise of Its Difficulties, 1900-1925. Jagdish Mehra and Helmut Rechenberg. Springer-Verlag, New York, 1982. vi + pp. 373-878. \$36.

The Historical Development of Quantum Theory. Vol. 2, The Discovery of Quantum Mechanics, 1925. Jagdish Mehra and Helmut Rechenberg. Springer-Verlag, New York, 1982. vi, 356 pp. \$32.

A History of Women's Bodies. Edward Shorter. Basic, New York, 1982. xiv, 398 pp. \$24.95.

Hopi. Susanne and Jake Page. Abrams, New York, 1982. 240 pp., illus. \$50.



TINY & ACCURATE pH

Tiny MI-710 combination pH probe with a length of 7 cm, O.D. of 2.5 mm. Fast response time (5-15 sec.) and depth immersion (1.5-2 mm); excellent choice for small volumes and gels. Free literature available.

(603) 668-0692

MICROELECTRODES, INC.

P.O. Box 365, Oak Hill Park, Londonderry, N.H. 03053

Circle No. 297 on Readers' Service Card

New for receptor binding assays...

All the quality for half the price.

There's a new glass fiber filter for receptor binding assays that's just as effective as the brand you may now be using—but costs only half as much. It's S&S #32—U.S.-made so you can always be sure of a ready supply when needed.

Contact S&S for a free sample request form and information on quantity discounts.

Schleicher & Schuell

Innovators in Separation Science

Keene, N.H. 03431 (603) 352-3810

Circle No. 312 on Readers' Service Card

FILMS IN THE SCIENCES

Reviews and Recommendations

Compiled and edited by
Michele M. Newman and
Madelyn A. McRae

This indispensable reference reviews nearly 1000 films from all areas of science. It provides detailed summaries, evaluations, and complete ordering information for films appropriate to students, teachers, professionals, and general audiences. The reviews are grouped by Dewey decimal category. Subject-title and film distributor indexes also make them easy to use. A must for the librarian, the science teacher, or the curious browser.

182 pages 1980
Cloth: ISBN 87168-304-7 \$14.00

American Association for the
Advancement of Science, Box
FL6, 1515 Massachusetts
Avenue, N.W., Washington, D.C.
20005

If You Need A Lab Refrigerator Or Freezer, Then You Need A Revco.

Revco's new line of Laboratory Refrigerators (4°C) and Laboratory Freezers (-35°C) have these standard features:

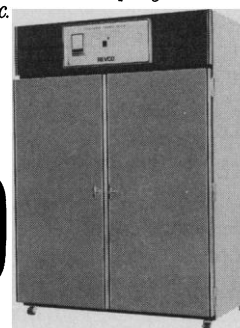
- Audible and Visual Alarms for Low Voltage or Power Failure, Door Ajar or Unsafe Temperature Conditions.
- Continuous Temperature Display.
- Alarm Delays with Automatic and Manual Re-set Modes.
- Computer Connections for Automatically Collecting, Storing and Monitoring Temperature Data.
- Key Operated Master Switch for Maximum Protection.

- The Industry's Only 13 Month Full Warranty on both Parts and Labor.

And a list of options that'll knock your eyes out.

Available in three sizes for convenient in-lab use: 7, 23 and 50 cubic feet.

Write or call today for your free full-color catalog, or contact one of these nation-wide dealers: American Scientific Products, Curtin Matheson Scientific, Fisher Scientific, Sargent-Welch Scientific, Arthur H. Thomas Company and VWR Scientific.



REVCO

Rheem Manufacturing Company/Scientific Products Division
Aiken Road, Box 275, Asheville, N.C. 28804. Tel.: 704/658-2711. Telex: 57-7449.

Circle No. 308 on Readers' Service Card

Miles-Made Undiluted hormone and drug antisera.

No more compromising... Miles introduces a convenient selection of undiluted hormone, drug and protein antisera. These products were formerly available *only* in high dilutions for use in RIA procedures.

Miles-made high-titer antisera offer flexibility and economy for nonisotopic immunoassay and immunohistology as well as RIA.

This listing represents a small sampling of our wide range of new products for research use.

	Host/Form	Code Number
Anti-Amikacin (RSA)	gt/lq	64-804
Anti-βHCG, Monoclonal	mo/lq	63-401
Anti-HGH	rb/lq	65-875
Anti-Insulin, Porcine	gt/ly	65-104
Anti-Prostatic Acid Phosphatase	gt/lq	65-304
Anti-T3 (BSA)	rb/lq	65-851
Anti-T4 (BSA)	rb/lq	65-850
Anti-THC (BSA)	gt/lq	61-496
Anti-TSH	rb/lq	65-860

To place an order or obtain complete product information, call or write:

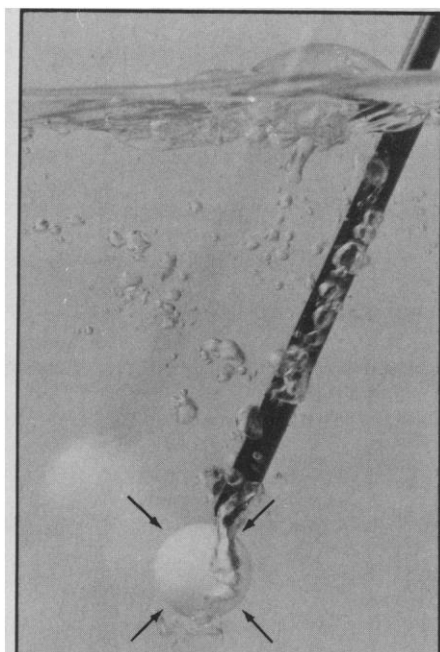
Miles Scientific
Div. Miles Laboratories, Inc.
30W 475 North Aurora Road
Naperville, IL 60566
USA
Tel: Toll-free 800-348-7465
in Canada, 416-248-0771

Miles Scientific
Div. Miles Laboratories, Ltd.
Stoke Court, Stoke Poges
Slough SL2 4LY
United Kingdom
Tel: Farnham Common 5151



MILES

© 1982 MILES LABORATORIES, INC.



Measure light from all directions... instantly!

With the Quantum Scalar Irradiance Meter (QSL-100), now you can measure the total photosynthetically active light available for plant growth in one instantaneous reading. Its small, 2cm probe-mounted light collector dips directly into culture vessels, responding to light (PAR: 400-700nm) from all directions.

Portable, rugged and battery-powered, the versatile QSL-100 is calibrated for wet or dry conditions and also adapts to field use.

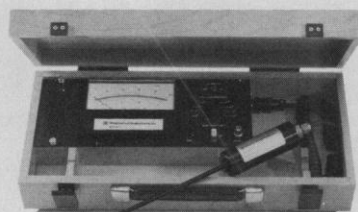
Ask about our other precision-packed instruments. There's the MER series of spectroradiometers, the QSI-140 *in situ* integrating irradiance meter, the QSR reference irradiance series, and the QSP vertical profiling system. All can be computer-interfaced with our RS-232c analog interfaces.

Call or write today for more information.

Biospherical Instruments Inc.
4901 Morena Blvd. Suite 1003
San Diego, Calif. 92117
(619) 270-1315



Biospherical Instruments Inc.



Circle No. 240 on Readers' Service Card

How to Write and Publish Engineering Papers and Reports. Herbert B. Michaelson. ISI Press, Philadelphia, 1982. xii, 158 pp., illus. Cloth, \$17.95; paper, \$11.95. The Professional Writing Series.

Human Biochemistry. Wilhelm R. Frisell. Macmillan, New York, Collier Macmillan Canada, Toronto, and Collier Macmillan, London, 1982. x, 846 pp., illus. \$35.

Human Body Dynamics. Impact, Occupational, and Athletic Aspects. Dhanjoo N. Ghista, Ed. Clarendon (Oxford University Press), New York, 1982. xii, 550 pp., illus. \$69. Oxford Medical Engineering Series.

Ion Implantation Techniques. Papers from a school, Berchtesgaden, Germany, Sept. 1982. H. Ryssel and H. Glawischnig, Eds. Springer-Verlag, New York, 1982. xii, 372 pp., illus. \$30. Springer Series in Electrophysics, vol. 10.

Isolation, Characterization, and Utilization of T Lymphocyte Clones. C. Garrison Fathman and Frank W. Fitch, Eds. Academic Press, New York, 1982. xxx, 550 pp., illus. \$59.50.

Laboratory Exercises in Human Physiology. Paul M. Spannbauer. Harper and Row, New York, 1982. x, 166 pp., illus. Spiral bound, \$12.95.

Last Aid. The Medical Dimensions of Nuclear War. Papers from a congress, Washington, D.C., Mar. 1981. Eric Chivian, Susanna Chivian, Robert Jay Lifton, and John E. Mack, Eds. Freeman, San Francisco, 1982. xxiv, 338 pp., illus. Paper, \$9.95.

The Mysterious Carolina Bays. Henry Savage, Jr. University of South Carolina Press, Columbia, 1982. xvi, 122 pp., illus. \$14.95.

The Myths of Human Evolution. Niles Eldredge and Ian Tattersall. Columbia University Press, New York, 1982. x, 198 pp. \$16.95.

The Natural History of Nematodes. George O. Poinar, Jr. Prentice-Hall, Englewood Cliffs, N.J., 1983. x, 324 pp., illus. \$29.95.

Nature of Earth Materials. Anthony C. Tennen. Prentice-Hall, Englewood Cliffs, N.J., ed. 2, 1983. xvi, 416 pp., illus. \$21.95.

The Psychology of Physical Symptoms. James W. Pennebaker. Springer-Verlag, New York, 1982. x, 198 pp. \$19.95.

Psychosocial Theories of the Self. Proceedings of a conference, Chicago, Mar. 1979. Benjamin Lee, Ed. Plenum, New York, 1982. viii, 222 pp. \$27.50. PATH in Psychology.

The Pulse Point Plan. Forrest H. Blanding. Random, New York, 1982. xiv, 194 pp. \$13.95.

Quality in Science. Marcel Chotkowski La Follette, Ed. MIT Press, Cambridge, Mass., 1982. xiv, 170 pp. Cloth, \$25; paper, \$12.50. Reprinted from *Science, Technology, and Human Values*.

Quantitative Chemical Analysis. Daniel C. Harris. Freeman, San Francisco, 1982. xviii, 748 pp., illus. \$29.95.

Rural Energy and the Third World. A Review of Social Science Research and Technology Policy Problems. Andrew Barnett, Martin Bell, and Kurt Hoffman. Pergamon, New York, 1982. x, 214 pp. Cloth, \$36; paper, \$18.

The Science Profession in the Third World. Studies from India and Kenya. Thomas Owen Eiseemon. Praeger, New York, 1982. xvi, 170 pp. \$21.95. Praeger Special Studies Series in Comparative Education.

Science and the National Environmental Policy Act. Redirecting Policy Through Procedural Reform. Lynton K. Caldwell. University of Alabama Press, University, 1982. xii, 178 pp. Cloth, \$17.75; paper, \$7.95.

Science in Context. Readings in the Sociology of Science. Barry Barnes and David Edge, Eds. MIT Press, Cambridge, Mass., 1982. xii, 372 pp. Paper, \$9.95.

Transport and Bioenergetics in Biomembrane. Ryo Sato and Yasuo Kagawa, Eds. Japan Scientific Societies Press, Tokyo, and Plenum, New York, 1982. xii, 250 pp., illus. \$45.

Tutorials on Motion Perception. Papers from a symposium, Veldhoven, Netherlands, Aug. 1980. Alexander H. Wertheim, William A. Wagenaar, and Herschel W. Leibowitz, Eds. Plenum, New York, 1982. xvi, 264 pp., illus. \$39.50. NATO Conference Series III, vol. 20.

UFOs and Outer Space Mysteries. A Sympathetic Skeptic's Report. James E. Oberg. Donning, Norfolk, Va., 1982. viii, 192 pp., illus. Paper, \$6.95.

Universal Languages and Scientific Taxonomy in the Seventeenth Century. M. M. Slaughter. Cambridge University Press, New York, 1982. x, 278 pp. \$47.50.

Water. A Comprehensive Treatise. Vol. 7, Water and Aqueous Solutions at Subzero Temperatures. Felix Franks, Ed. Plenum, New York, 1982. xiv, 484 pp., illus. \$49.50.

The World in Space. A Survey of Space Activities and Issues Prepared for UNISPACE 82. Ralph Chipman, Ed. Prentice-Hall, Englewood Cliffs, N.J., 1982. xiv, 690 pp., illus. \$49.95.

Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. 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, handicap, or sexual preference.

CLASSIFIED ADVERTISING DEADLINES:

1 April issue (mailed 25 March): **11 March**
8 April issue (mailed 1 April): **18 March**
15 April issue (mailed 8 April): **25 March**
22 April issue (mailed 15 April): **1 April**

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): \$9.80 per millimeter; \$245 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 107
1515 Massachusetts Avenue, NW
Washington, D.C. 20005
Telephone: 202-467-4456

Send copy for **Display** ads 1/6 page and larger and all **Marketplace** ads 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 Avenue, NW
Washington, D.C. 20005

POSITIONS WANTED

Biochemist. Ph.D. Seeks position in industry or academia. Experience with recombinant DNA technology and protein purification/enzymology, some immunological, cell culture techniques. Publications, teaching experience. Box 65, SCIENCE.

3/11, 18

Biologist—Zoologist: M.S. 1982, B.S. 1978. Areas of interest and expertise include cell biology, physiology, and general biology. Seeks position in academia, industry, or research institution. Teaching and research assistantship for Ph.D. acceptable. Box 64, SCIENCE.

X

Statistically Oriented Biologist. Ph.D. (1983) in plant ecology. Extensive experience in project design and statistical data analysis. Broad training in both univariate and multivariate statistics. Programming experience in SAS, BMDP, SPSS, and FORTRAN. Exceptionally diverse background includes both field and laboratory research. B.S. degree in zoology. Publications. Graduate teaching experience in botany and ecology. Seeks position in industry, government, consulting, or academia that will take advantage of quantitative skills. Box 45, SCIENCE.

3/11, 18

Environmental-Comparative Toxicologist. Ph.D. 1981. Bridging biological and toxicological perspectives. Toxicity testing with developing vertebrates and invertebrates; acute and chronic lethality; sublethal effects on physiological and biochemical parameters. Experimental animal surgery, isolated organ perfusion, GC, HPLC, TLC, and EM methods. Solid training in physiology, nutrition, and toxicology. Teaching and postdoctoral experience. Seeking industrial or academic position. Box 66, SCIENCE.

X

Mature Scientist desires partnership—employment possibility with small product-service oriented fermentation, wastewater treatment company. Box 46, SCIENCE.

X

POSITIONS WANTED

Human Cytogeneticist/Geneticist. Ph.D. More than 20 years of experience in hands-on and administrative positions. Experienced in attracting funding and in developing innovative cytogenetic and medical genetic programs. Seeks senior level position in medical school to initiate, develop, and/or administer human cytogenetic and medical genetic programs involving service, teaching, and research activities. Box 55, SCIENCE. X

Pharmacologist: Ph.D. 1974. Seven years of postdoctoral research (psychopharmacology, behavioral pharmacology/toxicology, screening of psychoactive drugs). Three years of industrial drug research at B.S. level. Presently, research assistant professor at university and teacher of pharmacology course at community college. Respected publications and references. Desires position combining research and teaching or industrial research. Telephone: 301-665-0899. Box 63, SCIENCE. X

Virologist/Cell Biologist, postdoctoral experience in cell culture, avian and tumor virology; seeks position in Indiana after August 1983. Box 62, SCIENCE. 3/11, 18, 25

POSITIONS OPEN

ACADEMIC HAND SURGERY POSITION AVAILABLE JULY 1983

The University of Michigan, Section of Orthopaedic Surgery, has an opening for an **instructor/assistant professor** to attend to patients with problems involving the hand and upper extremity. The position involves patient care, teaching, and research. Microsurgical expertise and interest are requisite qualifications. The applicant should be Board-eligible or Board-certified in orthopaedic surgery, and should have completed at least 1 year of a hand surgery fellowship. All inquiries should be directed to: **William S. Smith, M.D., Professor and Head, Section of Orthopaedic Surgery, Department of Surgery, University of Michigan Hospitals, C4115 O.P.B., Box 054, Ann Arbor, Mich. 48109.** The University of Michigan is a nondiscriminatory, Affirmative Action Employer. Code PCN 164HO.

ANATOMIST. Applications are being accepted for a tenure-track position in the discipline of anatomy, available 1 July 1983. Applicants should possess a Ph.D. degree and the ability to teach gross anatomy and assist in the neuroanatomy laboratory. Salary is competitive and commensurate with experience. Send curriculum vitae to: **Dr. James F. May, Chairman, Anatomy Search Committee, College of Osteopathic Medicine of the Pacific, 309 Pomona Mall East, Pomona, Calif. 91766.** Affirmative Action/Equal Opportunity Employer.

ANATOMY—ASSISTANT PROFESSOR

Tenure-track position available 1 July 1983. Teaching and research in gross anatomy and/or neuroanatomy. Ph.D. required. Send curriculum vitae and names of three references to: **Dr. Neal A. Cross, Acting Chairperson, Department of Anatomy, University of New England College of Osteopathic Medicine, Biddeford, Maine 04005.**

ASSISTANT OR ASSOCIATE PROFESSOR OF MICROBIOLOGY AND IMMUNOLOGY

Applications are invited for a tenure-track position in the Department of Microbiology and Immunology, Texas College of Osteopathic Medicine (TCOM). Candidates must have a Ph.D. in microbiology or immunology and postdoctoral training. A broad educational base in microbiology is required for teaching of medical and graduate students. The ideal candidate will have strong interest and skills in teaching medical students and demonstrated capability and motivation for conducting independent research. Responsibilities in addition to teaching medical students include productive research activity in the applicant's area of interest, development of graduate courses, and direction of M.S. and Ph.D. students. Curriculum vitae, including list of publications, copies of transcripts, and a statement of research accomplishments and future objectives, should be submitted. Three letters of recommendation should also be requested from individuals qualified to evaluate the applicant's research. Send applications and letters of recommendation by 30 April 1983 to: **Dr. Elizabeth F. Harris, Chairman, Department of Microbiology and Immunology, Texas College of Osteopathic Medicine, Camp Bowie at Montgomery, Fort Worth, Texas 76107.** TCOM is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

ANATOMY TEACHING POSTDOCTORAL FELLOW. To start 1 July 1983. For at least 2 years. Full participation in teaching histology or gross anatomy to first-year medical students and research in the laboratory of a faculty member interested in neurobiology, reproductive endocrinology, cell motility and tissue culture, immunology of muscle proteins, cardiac muscle, or adrenal gland. Send curriculum vitae and two letters of reference to: **Dr. F. Wilson, Search Committee, Department of Anatomy, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY—Rutgers Medical School, Piscataway, N.J. 08854.** An Equal Opportunity/Affirmative Action Employer, M/F.

ASSISTANT PROFESSOR

University of California, Irvine, Department of Pathology, is recruiting for a faculty position at the assistant professor level. Required: M.D., must be Board-certified or -eligible in anatomic pathology and eligible for licensure in California. Duties: assist the division chief in such administrative activities as the functioning of the histology laboratory, maintenance of clerical support and the Residency Teaching Program; instructing medical students and residents in pathology; and presenting conferences for the clinical staff and the community. Basic science research background and experience desirable. Send curriculum vitae and references to: **Henry Simpkins, M.D., Ph.D., University of California, Irvine, Department of Pathology, 101 City Drive South, Orange, California 92668,** by 11 April 1983. Affirmative Action Employer.

ASSISTANT PROFESSOR

The Department of Microbiology and Immunology of Morehouse School of Medicine invites applications for two faculty positions at the assistant professor level. Candidates should possess a Ph.D. degree in medical microbiology with specialization in the areas of clinical immunology and virology. Prospective candidates should have at least 2 years of postdoctoral experience in these areas and should be capable of developing a competitive research program. Applications should include curriculum vitae, a brief but detailed description of research goals, and the names of three individuals from whom we may request letters of recommendation. Applications will be accepted until 10 April 1983 and should be directed to: **Dr. Ram G. Navalkar, Professor and Chairman, Department of Microbiology and Immunology, Morehouse School of Medicine, 720 Westview Drive, SW, Atlanta, Ga. 30310.** An Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR. The Department of Physics at East Tennessee State University (ETSU) will have a temporary one academic year position available beginning 15 August 1983. Applicants should have a Ph.D. in physics with a strong interest in teaching. Duties include teaching introductory physics courses for general education, pre-professional, and technical students, and upper-division physics major courses. Send letter of application with résumé and three letters of reference to: **Personnel Office, Box 24, 070A, East Tennessee State University, Johnson City, Tennessee 37614.** Review of applications will begin 15 March 1983, and continue until the position is filled. ETSU is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR, CLINICAL VESTIBULAR RESEARCH. A tenure-track faculty position in the Department of Otorhinolaryngology is available 1 July 1983. A well-equipped, privately funded laboratory is available to conduct human vestibular and oculomotor research in conjunction with a neurologist. Applicant should have a Ph.D. degree in biomedical engineering, physiology, or neurophysiology. Exceptional applicants with other backgrounds will also be considered. Candidates should submit curriculum vitae and names of three references to: **Dr. Herman A. Jenkins, Department of Otorhinolaryngology, Baylor College of Medicine, Houston, Texas 77030.** An Affirmative Action Employer.

ASSISTANT PROFESSOR OF PHARMACOLOGY IN MEDICINE. Full-time position in cardiovascular research and teaching. Qualifications: Ph.D. in biochemistry with experience in tissue culture techniques and measurements of prostaglandins and leukotrienes by HPLC, GC/MS. Respond to: **P. J. Cannon, M.D., Department of Medicine, Columbia University, 630 West 168 Street, New York, N.Y. 10032.**

An Affirmative Action/Equal Opportunity Employer

POSITIONS OPEN

ASSISTANT/ASSOCIATE PROFESSOR

Research and teaching, tenure-track position. Research should be active in metabolic areas relating to nutrient factors and should include a combination of laboratory and clinical investigations. The research and program interests of the successful candidate are expected to be compatible with those of the current faculty. Teaching includes undergraduate and graduate courses in nutrition and nutrition science. Ph.D. required in nutrition, nutrition science, or related discipline. Clinical experience and/or R.D. desirable. Send résumé and references to: **Dr. M. Taylor, Chairman, Search Committee, Department of Nutrition and Food Sciences, Room 13-605, Drexel University, Philadelphia, Pa. 19104.** Drexel University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR, BIOLOGY

Applications are invited for a tenure-track position in animal morphology, physiology, or behavior. A second tenure-track position is anticipated in molecular biology, immunology, or animal virology. Both positions begin 1 August 1983. Qualified candidates in related areas are urged to apply. Applicants with postdoctoral experience preferred. Research is strongly encouraged and supported within the context of a liberal arts college. Teaching responsibilities will include introductory courses and advanced courses in the area of specialization.

Submit curriculum vitae, statement of teaching and research interests, and three letters of reference by 25 March 1983 to: **Dr. Daniel Burke, Chairman, Biology Department, Mercer University, Macon, Ga. 31207.** Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR OF HORTICULTURE.

Department of Horticulture, Northwest Plant Germplasm Repository, Oregon State University, tenure-track, full-time research position. Ph.D. required in horticulture, physiology, genetics, or closely related field of plant science. Appointee will provide physiological laboratory research leadership. Salary range: \$28,000 to \$32,000. Application deadline: 15 April 1983. Filing date: 1 July 1983. Contact: **Dr. C. J. Weiser, Head, Department of Horticulture, Oregon State University, Corvallis, Ore. 97331.** Telephone: 503-754-3695. Oregon State University is an Affirmative Action/Equal Opportunity Employer and complies with Section 504 of the Rehabilitation Act of 1973.

UNIVERSITY OF ILLINOIS AT CHICAGO HEALTH SCIENCES CENTER

Applications or nominations are invited for tenure-track positions at **ASSISTANT PROFESSOR** in the **Department of Microbiology and Immunology.** Preferred disciplines are molecular virology, molecular bacteriology, or molecular immunology. Applicants should have demonstrated ability to perform important original research and show promise of excellence in teaching. Candidates should submit curriculum vitae, including a list of publications, a description of research interests, and the names of at least three individuals who can serve as references.

Send material to: **Head, Department of Microbiology and Immunology, University of Illinois at Chicago, Health Sciences Center, Room E-703, 835 South Wolcott Avenue, Chicago, Ill. 60612.** The University of Illinois is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR, RESEARCH PEDIATRICS PHARMACOLOGY—CELL BIOPHYSICS University of Cincinnati College of Medicine

Tenure-track assistant professor position available for Ph.D. (now or July 1983). Applicants must have postdoctoral experience, demonstrated research productivity, and potential in a specific aspect of calcium homeostasis: bone mineral metabolism, vitamin D metabolites, or calcitropic hormones. Expected to join an established group involved in fetal and perinatal calcium metabolism. Candidate will be expected to develop an independent research program. Joint appointment is possible in Departments of Pediatrics and Basic Science, such as Pharmacology-Cell Biophysics. Interested candidate should send curriculum vitae, brief statement of research goals, reprints of significant publications, and names of three references to: **Reginald C. Tsang, M.D., Department of Pediatrics, Mail Location 541, University of Cincinnati Medical Center, Cincinnati, Ohio 45267;** telephone: 513-872-5341.

POSITIONS OPEN

ASSISTANT OR ASSOCIATE PROFESSOR OF PHYSIOLOGY AND BIOPHYSICS. The Department of Physiology and Biophysics at the University of Vermont College of Medicine invites applications for a tenure-track position. Applicants for assistant professor level should have Ph.D. in physiology and/or biophysics and two or more years of postdoctoral training, or the M.D. degree and equivalent research training. Candidates must demonstrate outstanding teaching ability and excellence in independent research, and have strong commitments to both activities. The successful candidate will be expected to fulfill moderate teaching responsibilities in medical, undergraduate, and graduate courses with distinction, and to establish a vigorous and productive independent research program that merits extramural support. Preference will be given to those whose research areas complement those of the existing faculty and to those willing and able to teach in areas other than their specialties. *Women and minority candidates are encouraged to apply.* Letters of application, curriculum vitae, a brief description of research and career goals, and the names of three referees must be received by 25 April 1983. Address to: **Dr. W. R. Gibbons, Search Committee, Department of Physiology and Biophysics, University of Vermont College of Medicine, Burlington, Vt. 05405.** *The University of Vermont is an Equal Opportunity/Affirmative Action Employer.*

ASSISTANT/PROFESSOR OF RADIATION ONCOLOGY DEPARTMENT OF RADIATION MEDICINE

M.D. or M.D./Ph.D. clinical, teaching, and research in academic radiation medicine for Board-eligible or -certified person. University of Kentucky position in tenure-track. Research interests and experience in hyperthermia desirable. Active research programs ongoing. Send curriculum vitae, bibliography, and names of three references to: **Chairman, Department of Radiation Medicine, University of Kentucky Medical Center, Lexington, Kentucky 40536-0084.** *An Equal Opportunity Employer.*

The Board of Environmental Studies, University of California, Santa Cruz, invites applications for a full-time faculty position at the **ASSISTANT PROFESSOR** level in an area that can be broadly classified as **wildlife ecology.** Extensive knowledge of the natural history of California as well as wildlife management, manipulated ecosystems, and insect ecology. Applicants must have Ph.D. Submit résumé and names of three references by 1 April 1983 to: **Chair, Environmental Studies, University of California, Santa Cruz, Calif. 95064.** *Affirmative Action/Equal Opportunity Employer.*

ASSOCIATE/POSTDOCTORAL FELLOW

Research associate/postdoctoral fellow with Ph.D. in a field of neuroscience and training in neuroanatomy and/or neurophysiology. The work involves extracellular and intracellular recording from neurons of the olfactory bulb to study the relation between cell morphology and olfactory responses. Position available in June 1983. Send curriculum vitae and names of three references to: **Dr. John W. Scott, Department of Anatomy, Emory University School of Medicine, Atlanta, Georgia 30322.**

Emory University is an Affirmative Action/Equal Opportunity Employer.

ASSOCIATE PROFESSOR/PROFESSOR, ASSISTANT PROFESSOR

Two new tenure-track positions at the associate professor/professor level and at the assistant professor level will be available on 1 July 1983. Applicants should have a background in the cellular/molecular aspects of neuroscience such as development and differentiation of nerve cells, neurotransmitters and their receptors, biosynthesis of brain proteins and hormones, and membrane structure including ion channels and transport proteins. Applicants for the assistant professor position must have at least 2 years of postdoctoral experience, with a record of productivity in research. For the associate professor/professor position, a demonstrated ability to carry out an independent and productive research program is required. Screening will begin 1 May 1983. Please send curriculum vitae, description of research plans, and the names of three references to: **Dr. Howard E. Morgan, Chairman, Department of Physiology, The Pennsylvania State University, Hershey, Pa. 17033.**

The Pennsylvania State University is an Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

BIOCHEMIST. The Department of Biochemistry at the Faculty of Medicine invites applications for a full-time faculty position to commence by summer 1983. Appointment is at the assistant professor level. Preference will be given to candidates with programmatic expertise in recombinant DNA, monoclonal antibodies, molecular genetics or molecular and cell biology with particular reference to mammalian systems; but outstanding candidates in other biochemistry subspecialties will be given full consideration. Postdoctoral training and potential for an independent career as an experimental scientist is a prerequisite.

An interest in developing expertise and a desire to become an effective educator are desirable qualities. *The position is open to both men and women. In accordance with Canadian Immigration requirements priority will be given to Canadian citizens and permanent residents of Canada.* For full consideration send a concise description of projected research goals and interests, a list of a minimum of four individuals for letters of reference, curriculum vitae, and any additional information to:

**Dr. J. N. Kanfer
Department of Biochemistry
Faculty of Medicine
UNIVERSITY OF MANITOBA
770 Bannatyne Avenue
Winnipeg, Manitoba, Canada R3E 0W3**

BIOCHEMIST/CRYSTALLOGRAPHER

A postdoctoral with some biochemical experience is required to work on crystallography of interferons. Prior crystallographic experience not essential. Contact:

**Professor Robert M. Stroud
UNIVERSITY OF CALIFORNIA, S-964
Department of Biochemistry and Biophysics
San Francisco, Calif. 94143**

BIOCHEMIST. Applications are invited for a senior research officer to work on a project supported for 3 years by the National Health and Medical Research Council of Australia. The position is concerned with the study of lysosomal enzyme uptake mechanisms and development of protocols for enzyme replacement therapy in human lysosomal storage disorders. The successful applicant will join a group currently investigating the enzymology of mucopolysaccharide degradation in normals and inheritable disorders in humans. Postdoctoral experience in enzyme (protein) purification, preferably some experience with integral membrane proteins, receptors, or recognition markers for the endocytosis of proteins would be an advantage. The position has a starting salary according to experience currently up to A\$27,538 per annum. Applications, including curriculum vitae, summary of recent research activities, and names of two referees, should be sent to: **Dr. John J. Hopwood, Department of Chemical Pathology, Adelaide Children's Hospital Inc., North Adelaide, South Australia, 5006, Australia,** from whom further particulars may be obtained. Telephone: 618-267-4999, extension 737.

CELL BIOLOGIST/RENAL PHYSIOLOGIST

A Ph.D. research position is available in a newly developing Nephrology Division of a university-affiliated hospital located in a highly desirable area. A major research interest of this position is morphological correlates of epithelial transport. Expertise in the area of transmission electron microscopy and freeze fracture, as well as an interest in epithelial transport is highly desirable. This position is hospital based and not grant dependent. Competitive salary, comprehensive benefit package, and professional working environment. Send curriculum vitae and two letters of recommendation to: **Vincent A. DiScala, M.D., Professor of Medicine, Director, Division of Nephrology, Nassau Hospital, 259 First Street, Mineola, Long Island, New York 11501.**

ENDOCRINOLOGIST

Position available immediately for a **POSTDOCTORAL FELLOW OR RESEARCH ASSOCIATE** with interests and expertise in biochemical endocrinology to investigate pituitary and hypothalamic hormone biosynthesis, processing, and secretion. Experience in recombinant DNA methodology helpful but not essential. Salary up to \$20,000, depending on qualifications and training. Send curriculum vitae, reprints, statement of experience and goals, and list of three references to: **Dr. J. D. Neill, Department of Physiology and Biophysics, University of Alabama in Birmingham, Birmingham, Ala. 35294.** *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

Cell Biologist and/or Geneticist positions available for 1 August 1983 at assistant professor level in undergraduate campus of University of Puerto Rico (UPR). Ph.D. required. Teaching duties include speciality fields and introductory biology. Research involving students highly recommended. Preferably bilingual (Spanish-English). Send résumé, transcript, and three letters of recommendation by 30 March 1983. **Department of Biology, c/o Personnel Committee, UPR, Cayey Campus, Cayey, P.R. 00633.** *An Equal Opportunity/Affirmative Action Employer.*

CHAIRPERSON DEPARTMENT OF BIOLOGY

HAMILTON COLLEGE, a highly selective coeducational liberal arts college with 1625 students and about 135 faculty, seeks a senior biologist to take over the leadership of its eight-person Biology Department, ideally by 1 July 1983. Candidates must be devoted to the teaching of talented undergraduates. Other qualifications are a capacity for leadership, and a solid record of research achievement. Future hiring opportunities and strong institutional backing will give the new chairperson an exciting opportunity to build an outstanding small college department. *Hamilton College is an Equal Opportunity Employer. Women and members of minority groups are strongly encouraged to apply.* Applications and nominations should be submitted by 4 April to: **Professor Peter Millet, Associate Dean of the College, Hamilton College, Clinton, N.Y. 13323.**

COMPARATIVE PHYSIOLOGIST

The Department of Biology, University of Alabama in Birmingham, invites applications for a tenure-track position at the assistant professor level. The position is for a **COMPARATIVE PHYSIOLOGIST** and will begin 1 September 1983. Postdoctoral experience desirable. Specialization in the areas of endocrinology, reproductive strategies, and/or physiological ecology is preferred. Ability and willingness to teach undergraduate courses in physiology and to contribute to graduate programs are necessary. Send curriculum vitae, three letters of reference, and other pertinent information by 15 April 1983 to: **Dr. Daniel D. Jones, Department of Biology, University of Alabama in Birmingham, University Station, Birmingham, Ala. 35294.** *An Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITION in the Fels Research Institute. A new tenure-track position is available in the biochemistry program in the **FELS RESEARCH INSTITUTE,** Temple University School of Medicine. This position is for an assistant professor but a higher level will be considered. Areas of particular interest are: biochemistry of the cell nucleus with special reference to the genetic elements and proteins, animal- or immunogenetics, cytoskeletal structure, and receptors. Send curriculum vitae and a brief statement of independent research plans, and have three letters of recommendation sent to: **Dr. Gerald Litwack, Chairman, Search Committee, Fels Research Institute, Temple University School of Medicine, 3420 North Broad Street, Philadelphia, Pa. 19140.** *An Equal Opportunity Employer.*

FACULTY POSITION

ENGINEERING MATERIALS PROGRAM tenure-track position now open for teaching and research in polymer science/engineering. Background in theory required. Prefer candidates with experience after Ph.D. Send résumé to: **Dr. John D. Hoffman, Director, Engineering Materials Program, Department of Chemical and Nuclear Engineering, University of Maryland, College Park, Md. 20742.** *An Equal Opportunity/Affirmative Action Employer.*

Comprehensive Cancer Center and Division of Hematology-Oncology—**FACULTY POSITIONS** available in large research-oriented division for both Board-certified hematologists and oncologists. Send inquiries and curriculum vitae to: **Albert F. LoBuglio, M.D., Director, Comprehensive Cancer Center, University of Alabama in Birmingham, University Station, Birmingham, Alabama 35294.** *Affirmative Action Employer.*

FACULTY POSITION IN BIOCHEMISTRY, tenure-track, assistant or associate professor, January 1984. Candidates should show promise and/or evidence of excellence in teaching and research. Postdoctoral training is required. Submit résumé, a one-page summary of research goals, three references, and a recent reprint by 15 April 1983 to: **Dr. George C. Tremblay, Department of Biochemistry and Biophysics, University of Rhode Island, Kingston, Rhode Island 02881.** *An Affirmative Action/Equal Opportunity Employer, M/F.*

CALIFORNIA BIOTECHNOLOGY INC.

Cal Biotech invites applications from molecular biologists at all levels of experience with a Ph.D., M.S., or B.S. degree. We seek highly motivated individuals with training and experience in recombinant DNA technology including gene isolation, sequencing, and expression, in protein chemistry, or in other related fields.

Cal Biotech is a recently established company created to apply techniques of molecular genetics to several areas of commercial importance.

We offer a highly stimulating research environment, competitive salaries and fringe benefits, and the possibility of equity participation for the most highly qualified personnel.

Applicants should send a curriculum vitae and names of three references in strict confidence to:

Dr. Brian J. McCarthy
Director of Research
California Biotechnology Inc.
P.O. Box 51650
Palo Alto, Ca. 94303

The University of Calgary NEUROSCIENCE FACULTY POSITIONS

The Neuroscience Research Group, Faculty of Medicine, at the University of Calgary, is searching for junior investigators in the following areas:

1. *Developmental Neurobiology*: emphasis on path-finding, excitability, synapse formation or plasticity using a combination of electrophysiological, morphological or biochemical techniques.
2. *Motor Control*: emphasis on intracellular recording from mammalian CNS or systems approach to integrative neurophysiology.
3. *Neurochemistry*: emphasis on mechanisms in development, regeneration or plasticity or properties of functional constituents of the neuronal membrane or bases of neurological disorders.
4. *Visual Neurophysiology*: emphasis on structure and function of primate geniculocortical pathways and intrinsic cortical organization; intracellular recording, marking, and computer-aided structure analysis.

Successful candidates will compete for Scholarships from the Alberta Heritage Foundation for Medical Research which provide salary, generous start-up funds and an initial two year operating grant. They will devote 75% of their time to research and will be appointed in appropriate Departments of the Faculty.

Applicants should have the PhD or MD degree plus at least 2 years postdoctoral research experience. "In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents." (However all qualified persons are invited to apply.) Deadline for receipt of application is April 30, 1983. Send CV, statement of research goals, copy of your most significant publication, and request three referees to send letters to:

Dr. K. Lukowiak, Chairperson
Neuroscience Research Group
Department of Medical Physiology
Faculty of Medicine, The University of Calgary
3330 Hospital Drive N. W.
Calgary, Alberta Canada T2N 4N1

SCIENTISTS

Cetus Madison Corporation, a bioindustrial company focusing on the application of biotechnology to agriculture, is currently seeking individuals with a minimum of 2 years' postdoctoral experience in the following areas:

- Molecular Biology
- Cell and Tissue Culture
- Microbe Interaction with Plants

Candidates will possess excellent communication skills and the ability to work in a "team" environment. This is an opportunity to join a dynamic growth oriented company that offers an excellent benefit program and compensation package. For confidential consideration, please send your resume to:

Personnel Director
Cetus Madison Corporation
2208 Parview Road
Middleton, WI 53562

An Equal Opportunity
Employer, M/F/Handicapped.

cetus

KING ABDULAZIZ UNIVERSITY JEDDAH, SAUDI ARABIA FACULTY OF SCIENCE

Applications for academic positions are now being accepted for the academic year 1983/84. If you are interested send the following requirements:

1. Complete resume.
2. Copies of degrees and letter of experience.
3. List of research and publications.

All the listed requirements should be sent to:

King Abdulaziz University
Recruitment Office
c/o Saudi Arabian Educational
Mission
2425 West Loop South, Suite 654
Houston, Texas 77027
Telephone: (713) 629-5170

Deadline for all applications will be April 24, 1983.

CSIRO

FISHERIES BIOLOGIST
A\$23,340 to A\$34,330 PER ANNUM
DIVISION OF FISHERIES RESEARCH
MARINE LABORATORIES
CRONULLA, NSW, AUSTRALIA

CSIRO has a broad charter for research into primary and secondary industry areas. The Organization has approximately 7,400 employees, 2,900 of whom are research and professional scientists, located in divisions and sections throughout Australia.

GENERAL: The CSIRO Marine Laboratories, which include the Divisions of Fisheries Research and Oceanography, is Australia's principal marine research institution, employing about 200 scientists and support staff to investigate the physical, chemical, and biological features, including fisheries, of the oceans around Australia. The main laboratory is at Cronulla in Sydney, with smaller laboratories in Brisbane, Hobart, and Perth. On line access to a Cyber 76 computer is available. Two well-equipped chartered vessels (53m and 43m) are available for research use and a modern oceanographic ship is being acquired to replace the 43m ship.

The Sydney activities will be transferred to new laboratories being constructed in Hobart, Tasmania, and appointees must be prepared to transfer to Hobart in 1984.

The interests of the Division of Fisheries Research encompass marine biology and ecology, ocean productivity and the population dynamics of commercial and potentially commercial fish, crustaceans, and molluscs.

The fish resources of the Australian 200-mile fishing zone receive special attention. Emphasis has been on the multi-species demersal trawl fishery and it is likely that attention will be given to investigations of Skipjack tuna and a number of potential pelagic species. The 53m stern trawler *Soela*, which is equipped with advanced sonar, echo sounders, satellite navigator, winches and gear for long-time, mid-water and demersal trawling, and sampling gear for plankton, larvae, and young fish, is used by the Division for carrying out fisheries investigations.

DUTIES: As a member of a team of scientists investigating the fish resources of the temperate waters of southeastern Australia, the appointee will develop a research program on the biology and ecology of commercially important species of fish. It is expected that studies on pelagic species will be undertaken by this team.

QUALIFICATIONS: A Ph.D. degree, or equivalent, in fisheries biology or ecology with at least 3 years of research experience in temperate pelagic fisheries, and a working knowledge of population dynamics. Experience in the use of acoustics for quantitative fishery resource evaluation an advantage.

TENURE: A fixed term appointment of 3 or 5 years. Superannuation (pension) benefits available.

APPLICATIONS: In writing, stating full personal particulars, including details of qualifications and experience, copy of academic transcript, and the names of at least two professional referees, and quoting reference number A2405, should reach:

The Acting Chief
Division of Fisheries Research
CSIRO
P.O. Box 21
Cronulla, NSW 2230, Australia

by 18 April 1983.

POSITIONS OPEN

CURATOR OF FISHES

The Smithsonian Institution seeks applications for a curatorial position in ichthyology. Candidates must be U.S. citizens and ichthyologists with: curatorial experience, research programs in systematic ichthyology using collections, and a strong publication record. The successful candidate will be expected to develop as his/her major career research and field effort, a program in the systematics of Indo-Pacific marine shorefishes. Position level (term appointment not to exceed 2 years) will be GS-11 to 13 (starting salary: \$24,508 to \$34,930), based on candidate's qualifications. Send curriculum vitae, publications (returnable), narrative statement of qualifications, and names of three references (letters not desired at this time) by 1 May 1983 to: **Chairman, Search Committee, Division of Fishes, National Museum of Natural History, Washington, D.C. 20560.** A final decision is expected to be made prior to 1 August 1983. *The Smithsonian is an Equal Opportunity Employer.*

MANAGING EDITOR

The National Academy of Sciences is seeking a managing editor for the proceedings of the National Academy of Sciences. A degree in the sciences is required, with an advanced degree in the biological sciences preferred. Substantial editorial experience as well as supervisory experience is required. Salary will be competitive, based on experience and training. Send résumé to: **Dr. Robert W. Johnston, Director of Personnel and Appointments, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** *An Equal Opportunity Employer.*

NMR RESEARCH POSITION. Ph.D. level training helpful, but not required. Familiarity with peptide and ion studies desirable. Salary commensurate with experience and expertise. Please send résumé to:

**Dr. Dan W. Urry, Director
Laboratory of Molecular Biophysics
The University of Alabama in Birmingham
Birmingham, Alabama 35294**

An Equal Opportunity/Affirmative Action Employer

THE UNIVERSITY OF ADELAIDE (South Australia)

Invites applications from both men and women for the following position:

LECTURER IN ANATOMY AND HISTOLOGY (A1551) (tenurable)

Available in 1983.

The Department of Anatomy and Histology teaches university students from the Faculties of Medicine, Dentistry, and Science and South Australian Institute of Technology students from the School of Physiotherapy and the Department of Occupational Therapy. Research areas are cell biology, comparative histology, experimental embryology, neuroendocrinology, reproductive biology, and clinical anatomy.

The appointee's teaching duties will include gross anatomy and some teaching experience in that area will be expected. Experience in one or more other aspects of anatomy, particularly cytology, will also be an advantage.

Holders of full-time tenured or tenurable academic appointments have the opportunity to take leave without pay on a half-time basis for a specific period of up to 10 years where this is necessary for the care of children.

It is University policy to encourage women to apply for consideration for appointment to, in particular, tenurable academic positions.

FURTHER INFORMATION about the general conditions of all appointments may be obtained from the Personnel Manager of the University.

SALARY per annum: Lecturer: A\$22,430 × 7 to A\$29,467 plus A\$4,205 per annum pre-clinical loading for an appointee with a medical qualification registrable in South Australia.

APPLICATIONS, IN DUPLICATE, quoting reference number and giving full personal particulars (including citizenship), details of academic qualifications, and names and addresses of three referees, should reach: **The Personnel Manager, University of Adelaide, GPO Box 498, Adelaide, South Australia, 5001, Australia** (telex: UNIVAD AA 89141), not later than 2 April 1983.

POSITIONS OPEN

DIRECTOR OF SAFETY PROGRAMS

Candidate sought to coordinate multi-faceted safety programs at large voluntary New York City medical center. Candidate should be eligible for faculty appointment, must possess experience in the handling and disposal of chemical, radiological, and biohazardous waste and have experience in the design and implementation of educational safety programs.

Requirements: M.D. in industrial or occupational medicine, or Ph.D. in chemical, physical, or biomedical sciences; M.P.H., in addition, desirable; experience in industrial or academic medical center safety programs; excellent communication skills; and knowledge of federal, state, and local environmental and safety regulations. Engineer certified and/or licensed as a professional engineer, safety professional, industrial hygienist, or health physicist will be considered. Send curriculum vitae, names of three references, and salary history to:

Box 67, SCIENCE
An Equal Opportunity Employer

The University of Michigan Medical School, **Department of Radiology**, has on occasion open **FACULTY POSITIONS** within the department and its affiliated hospitals. Physicians filling these positions will take part in the programs of patient care, teaching, and research in the Department of Radiology. They will supervise the activities of house officers and aid in the teaching of house officers and medical students. Qualified applicants must be American Board of Radiology-certified and Board-eligible. Previous training or work experience in an academic institution as well as demonstration of previous academic research and teaching experience are desirable. Academic rank will depend on qualifications and experience.

Interested applicants should contact: **William Martel, M.D., Chairman, Department of Radiology, The University of Michigan Medical School, Ann Arbor, Michigan 48109.** *A nondiscriminatory, Affirmative Action Employer. Code 41HO.*

The newly-established H. Allen Chapman Research Institute of Medical Genetics has openings for **THREE INVESTIGATORS.**

BIOCHEMIST—Ph.D. with experience in the study of metabolic disorders. Expertise in amino acid analysis and radioimmunoassay is desirable.

MOLECULAR GENETICIST—Ph.D. with experience in molecular approaches to investigation of human genetic diseases.

PEDIATRIC IMMUNOLOGIST—M.D. with experience in the study of immunodeficiency disorders.

The positions require demonstrated research ability and academic qualifications. Salaries will be commensurate with qualifications and experience. Academic appointments are available. Send résumé and names of three references to: **Burhan Say, M.D., Children's Medical Center, P.O. Box 35648, Tulsa, Okla. 74135.**

Ph.D. NEUROPHYSIOLOGIST to coordinate and supervise clinical Neurophysiology Laboratory (EEG, EP, EMG, NC studies). Possibilities for clinical research available. **Dr. V. Bosch, Neurology Department, UNIVERSITY OF MEDICINE AND DENTISTRY OF NEW JERSEY, 100 Bergen Street, Newark, N.J. 07103.** *An Equal Opportunity/Affirmative Action Employer, M/F.*

POSTDOCTORAL/RESEARCH ASSOCIATE. Two year position is available beginning summer 1983 to study cytogenetics of human tumors. Candidates having a Ph.D. with some experience in chromosome analysis of bone marrows and solid tumors preferred. Send résumé and names of three references to: **Nancy J. Carpenter, Ph.D., H. Allen Chapman Research Institute of Medical Genetics, Children's Medical Center, 5300 East Skelly Drive, Tulsa, Okla. 74135.**

POSITIONS OPEN

FRED HUTCHINSON CANCER RESEARCH CENTER

The Fred Hutchinson Cancer Research Center (FHCRC) conducts a broad-based program of research in basic sciences. The Basic Sciences Division invites applications for **several open faculty positions** at the assistant through full member (professor) level. Applicants must have postdoctoral training and demonstrated research productivity in fields such as cell, molecular, or developmental biology, immunology, virology, protein or nucleic acid biochemistry, or carcinogenesis. Submit curriculum vitae and names of three references by 22 April 1983 to: **Associate Director, Basic Sciences, Room C-141, Fred Hutchinson Cancer Research Center, 1124 Columbia Street, Seattle, Wash. 98104.** *FHCRC is an Equal Opportunity/Affirmative Action Employer.*

DEPARTMENT OF PATHOLOGY University of Arizona College of Medicine Forensic Sciences Section

Applications are solicited for a (non-tenured) faculty position in the following area: **FORENSIC PATHOLOGIST** with an appointment as Deputy Medical Examiner, Pima County, and Medical Examiner in the other counties of the State of Arizona served by the Forensic Sciences Section of the Department of Pathology. The position requires a major commitment to the practice of forensic pathology, management of a medical examiner's office, research, consultation, and teaching in forensic pathology. Minimum requirements are certification in anatomic, clinical, and forensic pathology or anatomic and forensic pathology with 3 years of forensic practical teaching and research experience; the position will carry appropriate academic status at the University requiring medical student and house officer contact (assistant or associate professor). Applicants should send curriculum vitae to: **Jack M. Layton, M.D., Head, Department of Pathology, University of Arizona College of Medicine, Tucson, Arizona 85724.** *An Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.*

INSTRUCTOR/ASSOCIATE PROFESSOR OF NEUROLOGY

The Department of Neurology at the University of Michigan is seeking applicants for tenure-track faculty positions at the instructor through associate professor levels. Individuals with a background suitable for initiating an independent program of clinical research are encouraged to apply. Broad range of opportunities to establish a program of clinical investigation in applicant's area of interest. *The University of Michigan is a nondiscriminatory, Equal Opportunity Employer. Codes 7 and 8.*

Curriculum vitae and three letters of recommendation should be sent to:

**Kenneth L. Casey, M.D.
Department of Neurology
The University of Michigan Medical School
B4908 Clinical Faculty Office Building, M056
Ann Arbor, Mich. 48109**

MICROBIOLOGY POSITION. Starting 1 September 1983, a 1-year replacement position will be available to teach each semester an introductory course in molecular (cell) biology or a non-major introductory biology course. In addition, each semester an advanced undergraduate course will be taught, preferably immunology and some other area of microbiology. Also, weekly participation in a senior seminar is expected. Please send curriculum vitae and three letters of recommendation by 25 March to: **Dr. R. K. Pettegrew, Chairman, Biology Department, Denison University, Granville, Ohio 43023.** *Denison is an Equal Opportunity/Affirmative Action Employer.*

MICROBIOLOGIST—A tenure-track faculty position will be available 1 July 1983. Applicants should have postdoctoral experience and demonstrated excellence in conducting research in molecular virology, molecular genetics, or microbial physiology, including mechanisms of pathogenesis (preference will be given to applicants who can interface with several of these broad categories). The appointee will be expected to develop an independent research program and to participate in teaching medical, dental, and graduate students. Rank and salary commensurate with qualifications. Send curriculum vitae and the names of three references by 15 April 1983 to: **Dr. L. William Clem, Department of Microbiology, University of Mississippi Medical Center, Jackson, Miss. 39216.** *Equal Opportunity Employer, M/F/V/H.*

Sr. Scientist Coagulation Research

The General Diagnostics Division of Warner-Lambert, a world leader in the development, manufacturing, and marketing of consumer goods, pharmaceuticals, and health care products, is seeking a creative Ph.D. for complex research programs involving the development of new diagnostic systems.

As a Sr. Scientist, you will carry out research programs for the development of diagnostic systems in Coagulation. You will provide original, fresh input for experimental design and will apply specialized knowledge of the field to particular problems. Other responsibilities include critical evaluation and written documentation of all experiments.

You should have a Ph.D. in Biochemistry and a minimum of 3 years post-doctoral experience with special emphasis on protein chemistry and enzyme kinetics. Also necessary is experience with diverse instrumentation and procedures used in the purification and characterization of proteins. A strong working knowledge of coagulation biochemistry is also required.

Please send your resume and salary history, in confidence, to Ms. Robin Mullen, Diagnostics Human Resources, Warner-Lambert Co., 170 Tabor Road, Morris Plains, NJ 07950. Equal opportunity in action! m/f.

**WARNER
LAMBERT**

Molecular Biologists

The 3M Company, a world leader in scientific technology, is seeking Molecular Biologists to join a rapidly growing research effort in Biotechnology.

We are particularly interested in scientists with doctoral and postdoctoral training in the areas of: 1) **molecular biology** (mRNA isolation, cDNA cloning and gene expression); and 2) **protein biochemistry** (immobilization experience necessary, isolation and purification experience desirable).

This is an exceptional opportunity to participate in the development of a challenging research program tied in with pharmaceutical, diagnostic, medical, surgical, and agricultural objectives. For the talented scientist 3M offers an interactive multi-disciplinary environment with abundant opportunity for personal and professional advancement.

Interested persons should send their resumes in complete confidence to James S. Egan.

Staffing and Employee Resources/3M
224-1W-02, 3M Center
St. Paul, Minnesota 55144

We Are An Equal Opportunity Employer M/F/H/V

3M

MEDICAL LIAISON OFFICER

Due to expansion, a leading international pharmaceutical company with principal interests in cardio-vascular diseases, asthma, neurology, immunology and endocrinology, is seeking a scientist, with knowledge of pharmacology and physiology, and who is interested in preparing and presenting scientific information to specialists.

RESPONSIBILITIES INCLUDE:

- Selection and synthesis of publications along with preparation of materials to be communicated to medical schools.
- Contacting medical specialists in hospitals and medical schools.
- Providing scientific support to the Marketing and Medical Departments.

The ideal candidate will have a Ph.D. in Cardio-vascular pharmacology or Neuropharmacology. Candidates with experience in other areas will also be considered. Excellent communication skills are required, along with a knowledge of clinical trials and methodology.

The location will be Toronto or Montreal. Travel throughout Canada could be required.

If you enjoy working in a challenging environment and possess the above qualifications, please forward your curriculum vitae, including salary requirements, in confidence to:

Mrs. B. Beck
SANDOZ CANADA INC.
P.O. BOX 385
Dorval (Quebec) M9R 4P5

SANDOZ

POSITIONS OPEN

The DEPARTMENT OF IMMUNOLOGY invites applications for three staff positions at assistant/associate professor or professor rank. Salaries for assistant professor (\$27,720 to \$39,820), associate professor (\$35,420 to \$51,658) and professor (current floor—\$46,010) are negotiable, in accordance with the individual's qualifications. The successful candidate must have a Ph.D. and/or M.D. degree(s). Preference will be given to investigators who have already demonstrated outstanding potential for an independent research career in the field of molecular and cellular immunology. The successful candidates will have the responsibility to establish a dynamic research team with an independent program. These positions will be funded through an external agency, but the incumbent will enjoy the privileges of the University academic rank at which the appointment is made. The granting of these awards is by competition and is made on the basis of excellence. Candidates should forward their curriculum vitae, outlines of their research interests, and names of three references to:

Dr. E. Diener, Chairman
Department of Immunology
University of Alberta
845E Medical Sciences Building
Edmonton, Alberta, Canada T6G 2H7

Closing date for receipt of applications: 1 April 1983.

The University of Alberta is an Equal Opportunity Employer, but in accordance with Canada Employment and Immigration regulations, this advertisement is directed to Canadian citizens and permanent residents.

IMMUNOLOGIST

The newly developed Division of Immunology of The Christ Hospital Institute of Medical Research (CHIMR) invites applications for the position of assistant member. A Ph.D. degree and postdoctoral training in cellular or molecular immunology are required. CHIMR offers excellent salary and seed money support, laboratory space, and the opportunity to develop a career in independent research. Send curriculum vitae, names and addresses of three references, and summary of research goals to: **Ann B. Bjornson, Ph.D., Member and Director, Division of Immunology, The Christ Hospital Institute of Medical Research, 2141 Auburn Avenue, Cincinnati, Ohio 45219. An Equal Opportunity Employer.**

INTERFERONS CELL BIOLOGY AND ANTITUMOR EFFECTS

Postdoctoral fellow (M.D. or Ph.D.) appointments for individuals interested in *in vitro* and *in vivo* effects of human interferons. Research laboratories collaborating on the program are investigating effects of interferons on cell proliferation, immune function, enzyme induction, and cell surface alterations. Particularly sought are individuals with backgrounds in cell biology. Participating faculty include L. Andrew Ball, Ph.D. (2-5A synthetase), E. C. Borden, M.D. (NK cells), Paul M. Sondel, M.D., Ph.D. (T cells), J. Willson, M.D. (antiproliferative effects), and M. Gould, Ph.D. (radiation effects). Participants will work with individual faculty on common research interests and participate in core seminars. Résumés and letters of reference to: **Ernest C. Borden, M.D., University of Wisconsin Clinical Cancer Center, K4/410, 600 Highland Avenue, Madison, Wis. 53792.**

ORAL BIOLOGY—University of California, Los Angeles (UCLA). Full-time position effective 1 July. Responsibilities include active research and undergraduate and graduate teaching in pharmacology and dental therapeutics. Requires Ph.D. in pharmacology and either D.D.S. degree or experience in dental education. Rank and salary commensurate with qualifications and experience. *Equal Opportunity/Affirmative Action Employer. Women and minorities encouraged to apply.* Send application and curriculum vitae to: **Dr. John Yagiela, UCLA School of Dentistry, Center for the Health Sciences, Los Angeles, Calif. 90024.**

PHYSICAL BIOCHEMISTRY—Postdoctoral research associate for program in structure and conformation of glycoproteins and glycopeptides. Techniques include proton NMR (Nicolet supercon instrument), conformational energy calculations, vacuum ultraviolet circular dichroism, and HPLC. Systems include antifreeze glycoprotein of polar fish, human milk oligosaccharides, and ovarian cyst glycoproteins. **C. Allen Bush, Department of Chemistry, Illinois Institute of Technology, Chicago, Ill. 60616. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

NEUROPHYSIOLOGIST IN OPHTHALMOLOGY

The Department of Ophthalmology of the University of Pittsburgh School of Medicine is planning to appoint a neurophysiologist at the rank of assistant professor, tenure-track, effective 1 July 1983.

Required is a Ph.D. in physiology or neurophysiology with postdoctoral work in neuro-ophthalmology, preferably in the field of processing visual information. Salary will be commensurate with experience.

All applications accompanied by curriculum vitae and submitted by 31 March 1983 will be considered. Applicants should also submit names of three references to:

Chairman
Department of Ophthalmology
University of Pittsburgh School of Medicine
Eye and Ear Hospital
230 Lothrop Street
Pittsburgh, Pa. 15213

An Equal Opportunity/Affirmative Action Employer

UNIVERSITY OF OKLAHOMA COLLEGE OF MEDICINE

PATHOLOGY (number 404): Professor and Head. To serve as head of the academic department of Pathology in the College of Medicine, as well as director of the Pathology Laboratories. Position requires M.D., Board-certification in pathology, with demonstrated abilities in undergraduate and graduate teaching, as well as experience in operating hospital laboratories.

Applicants may send curriculum vitae, identifying the vacancy number for the position which they are applying, to: **Charles McCall, M.D., Dean, University of Oklahoma College of Medicine, P.O. Box 26901, Oklahoma City, Oklahoma 73190. We are an Equal Opportunity Employer.**

Ph.D. TO INITIATE AND COORDINATE FLOW CYTOMETRY PROGRAM. Northwestern University Medical Center, Department of Pathology, has recently initiated a flow cytometry program for clinical and research applications. Immediate opening available for Ph.D. with postdoctoral level experience for tenure-track position in Pathology Department to coordinate activities and collaborate with multiple investigators for both research and clinical applications and to carry on independent investigations. Salary: competitive and commensurate with experience. Applicants should submit curriculum vitae by 31 March 1983 to: **Dr. Robert Marder, Northwestern Memorial Hospital, Room 530, Wesley Pavilion, 250 East Superior Street, Chicago, Illinois 60611. Telephone: 312-649-2712.**

PLANT PHYSIOLOGICAL ECOLOGY—POSTDOCTORAL POSITION (1 year minimum); field and laboratory research on photosynthetic characteristics and stomatal response or competitive balance in the context of a solar UV radiation research program. Knowledge of plant gas exchange, solar spectral irradiance assessments, chloroplast extractions, computer skills and modelling desirable. Send résumé and names of three references to: **Martyn M. Caldwell, Ecology Center, Utah State University, Logan, Utah 84322. Closing: 1 April 1983 or until suitable applicant found. Utah State University is an Affirmative Action/Equal Opportunity Employer.**

DEPARTMENT OF BOTANY UNIVERSITY OF TORONTO Plant Sciences/Molecular Biology

The Department of Botany, University of Toronto, invites applications for a tenure-track position in plant bioengineering. Applicants should have experience in recombinant DNA techniques and an interest in photosynthesis and photosynthetic organisms at the molecular level. The appointee is expected to develop an independent research programme, to train graduate students, to collaborate with other departments at University of Toronto, and with other universities in Ontario. The appointee will be expected to teach in undergraduate courses and to help develop a training programme in recombinant DNA technology. The appointment would be made at a level commensurate with experience and qualifications. Send curriculum vitae and three letters of reference to: **J. P. Williams, Professor and Chairman, Department of Botany, University of Toronto, Toronto, Ontario, Canada M5S 1A1. Deadline for applications is 15 April 1983. In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.**

POSITIONS OPEN

POSTDOCTORAL ASSOCIATES. Two positions available immediately for ongoing studies involving structure and function analysis of genes for α -lactalbumin (Dr. Kurt E. Ebner) and genes for structural proteins of flaviviruses (Dr. R. Padmanabhan) using recombinant DNA techniques. Send curriculum vitae and list of references to: **Dr. R. Padmanabhan, Department of Biochemistry, University of Kansas Medical Center, 39th and Rainbow Boulevard, Kansas City, Kans. 66103. Equal Opportunity/Affirmative Action Employer.**

THE AUSTRALIAN NATIONAL UNIVERSITY invites applications for **POSTDOCTORAL FELLOW/RESEARCH FELLOW/SENIOR RESEARCH FELLOW** (three posts) in **PHYSIOLOGY, JOHN CURTIN SCHOOL OF MEDICAL RESEARCH.** Appointees would work on synaptic transmission at peripheral and central synapses; calcium ionic and gating currents; charge movements in nerve and muscle; contractile activation in mammalian muscle. Appointments will be from January 1984. Further information is available from the head of department (Professor (Elect) P. W. Gage). Salary in accordance with qualifications and experience within the ranges: senior research fellow, \$31,332 to \$37,373 per annum; research fellow, \$22,430 to \$29,467 per annum; postdoctoral fellow grade 1 (at fixed point) \$19,333 to \$22,148 per annum. Current exchange rates: A\$1=U.S.\$0.96=UK£63P. Appointment will be: senior research fellow/research fellow initially for 3 years with the possibility of extension to 5 years; postdoctoral fellow for 2 years with the possibility of extension to 3 years. Grants are provided toward travel and removal; assistance towards housing; superannuation. The University reserves the right not to make an appointment or to make an appointment by invitation at any time. Applicants may obtain further particulars from: **The Registrar, The Australian National University, P.O. Box 4, Canberra, Australia,** with whom applications close on 31 March 1983.

POSTDOCTORAL POSITION available. Seeking person to initiate studies in cellular toxicology and metabolism of cardiovascular tissues. Experience in cell culture techniques, especially of smooth muscle and endothelial cells, and an interest in basic biochemistry and metabolism required. Send curriculum vitae and three references to: **Dr. Paul J. Boor, Department of Pathology, University of Texas Medical Branch, Galveston, Texas 77550. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available in 1983 to study the regulation of the cholinergic muscarinic receptor in heart. Ph.D. or M.D. degree with a background in biochemistry, physiology, or pharmacology. Techniques used include cell culture, perfusion, and interventions *in vivo*. Experience with radioligand binding studies and membrane preparation is desirable, but not essential. Salary is \$18,000 or more, depending on experience. Send curriculum vitae and names and telephone numbers of three references to the following: **Robert Roskoski Jr., Department of Biochemistry, Louisiana State University Medical Center, New Orleans, La. 70119. An Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION available 1 July 1983. This position is in association with a multi-departmental research group active in the biology of tumor invasion and metastasis. The research involves isolation, characterization and determining distribution of enzymes involved in tumor invasion. Contact: **John D. Crissman, M.D., Department of Pathology, Scott Hall, Wayne State University School of Medicine, Detroit, Mich. 48202. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITIONS IN NEUROBIOLOGY AND NEUROPATHOLOGY available immediately. A multidisciplinary neurobiology group (Drs. N. K. Gonatas, W. F. Hickey, R. Hogue-Angeletti, V. M.-Y. Lee, W. W. Schlaepfer, and J. Q. Trojanowski) offers positions in a training program to individuals interested in: endocytosis and intracellular transport of ligands *in vitro* and *in vivo*; immunological mechanisms mediating EAE; neurofilament protein structure, molecular biology, metabolism and expression *in vitro* and *in vivo*; molecular mapping of chromaffin granule membrane. Send résumé and names of three references to: **Dr. N. K. Gonatas, Director, Division of Neuropathology, 447 Johnson Pavilion/G2, University of Pennsylvania School of Medicine, Philadelphia, Pa. 19104. The University of Pennsylvania is an Equal Opportunity/Affirmative Action Employer.**

The Basic Research Program, operated by Litton Bionetics, Inc. at the National Cancer Institute's Frederick Cancer Research Facility (NCI-FCRF), invites applications for

DIRECTOR BASIC RESEARCH PROGRAM

Applicants should possess an M.D. or Ph.D. and have extensive research experience in a relevant field of biological science, coupled with proven administrative skills. The Director will be responsible for a research program encompassing over 175 scientists and technicians involved in studies in molecular biology, biological and chemical carcinogenesis, metastasis, immunology, and genetic engineering as well as having an opportunity to conduct his/her own research. The Director, along with the senior staff, will formulate and present research plans to the NCI, with subsequent implementation and overview. Additionally, the Director will ensure meaningful collaboration between the Basic Research Program scientists and the large contingent of NIH-NCI intramural scientists located both on the site and in Bethesda, Maryland.

Located in Frederick, Maryland, the NCI-FCRF is government-owned and contractor-operated. Litton Bionetics, Inc. is a prime contractor at the Facility for the Basic Research Program which features an exceptional scientific staff, physical resources, core facilities, and attractive training programs. The Frederick area, with its proximity to Washington, D.C. and Baltimore, offers a rich assortment of research-oriented and cultural activities.

Litton Bionetics, Inc. offers a competitive salary and benefits package along with opportunity for professional growth. To establish your interest in this position, send a curriculum vitae, a bibliography, and three references to Ms. Linda Davis who is acting as Executive Secretary to the Search Committee chaired by Dr. Sherman Weissman of Yale University.

Applications to:

Ms. Linda Davis
Executive Secretary
P.O. Box B, Building 428
Frederick, Maryland 21701

U.S. PUBLIC HEALTH SERVICE CENTERS FOR DISEASE CONTROL

The Centers for Environmental Health (CEH), Centers for Disease Control, is seeking to recruit approximately 20 professionals to design protocols for and conduct epidemiological studies. One such study is commonly referred to as the Agent Orange Study whose purpose is to detect any long-term adverse health effects in Vietnam veterans from exposure to phenoxy herbicides and other herbicides, chemicals, medications, or environmental hazards or conditions. The following categories are required.

- **Statistician/Mathematical Statistician** with professional training and experience in biomedical research (doctoral degree preferred).
- **Psychologist/Sociologist** with professional training and experience in biomedical research (doctoral degree preferred).
- **Clinical Chemist** with professional training and experience in internal and external laboratory quality control (doctoral degree preferred).
- **Biochemist** with professional training and experience in preparing laboratory reference materials and methods (doctoral degree preferred).
- **Epidemiologist** with professional training and experience in public health (M.D. or Ph.D. preferred).
- **Physician** with training (Board-certification preferred) in pediatrics or obstetrics and degree or experience in public health.

These positions are in the Career Civil Service or the Public Health Service Commissioned Corps with salary ranging from the \$30,000's to \$50,000's per year, depending on qualifications, experience, and personnel system.

Candidates should send applications, indicating position(s) in which they are interested, curriculum vitae, and list of scientific publications to the following:

Personnel Management Office (CEH)
Centers for Disease Control
Atlanta, Georgia 30333
Attention: Barbara Fincher

The Department of Health and Human Services is an Equal Opportunity Employer.

MANAGERS REGULATORY AFFAIRS

- **Anti-cancer**
- **Anti-infective/Gastrointestinal**

Newly established Pharmaceutical Research & Development Division of Bristol-Myers Company has new opportunities for MS or PhD Scientists knowledgeable and experienced in FDA and international related operations.

Selected candidates will be primary sources of information and guidance to pre-clinical and clinical personnel in all regulatory matters concerning above-listed pharmaceutical compounds in pre-registration and registration phases. Broad involvement will include:

- Liaison with project planners and managers in developing time and event schedules to satisfy regulatory mandates
- Review of registration documents (for technical compliance and clarity of expression)
- Preparation of summaries and application forms
- Coordination of all communications between regulatory agencies and company personnel

To qualify, you need an advanced degree in an applicable scientific or pharmaceutical discipline and 3-4 years regulatory/clinical background in one of the product areas listed above. Current knowledge of and experience with FDA requirements essential. We offer excellent starting salaries, full ranging benefits, and exceptional opportunity for professional achievement. For prompt, confidential consideration, please forward your resume, including salary history and requirement, to:

Employment Recruiter



BRISTOL-MYERS COMPANY
RESEARCH AND DEVELOPMENT DIVISION

P.O. Box 657, Syracuse, New York 13201
An equal opportunity employer M/F

VACANCY ANNOUNCEMENT

National Institutes of Health Public Health Service Department of Health and Human Services

The National Institutes of Health invites nominations and applications for the position of Chief, Mineralized Tissue Research Branch, NATIONAL INSTITUTE OF DENTAL RESEARCH (NIDR). This is a Civil Service position in the Senior Executive Service with a salary range of \$56,945 to \$63,800 per annum. The person selected may be eligible for Physician's Comparability pay up to \$10,000 per year. A one-year probationary period must be served if the individual selected is not currently in the Senior Executive Service.

The Chief, Mineralized Tissue Research Branch, NIDR, provides leadership and direction for a comprehensive scientific research program involving basic and clinical research directed to the study of the development, structure, function and metabolism of mineralized tissues of diseases and disorders, both systemic and localized, that affect bones and teeth.

Further information about the position and qualification requirements may be obtained by contacting Mrs. Bonnie R. Kalberer at 301-496-6971. Applications (SF-171, Personal Qualifications Statement) accompanied by a current curriculum vitae and bibliography should be submitted to Mrs. Kalberer at: NIDR Personnel, Building 31, Room 2C-23, National Institutes of Health, 9000 Rockville Pike, Bethesda, Maryland 20205.

Applications must be postmarked not later than March 31, 1983. (The SF-171 form is available at all Federal Personnel Offices and Job Information Centers.) Applications from women and minority group candidates are solicited.

AN EQUAL OPPORTUNITY EMPLOYER

POSITIONS OPEN

POSTDOCTORAL POSITIONS

Available immediately for up to 3 years. Ongoing research on metallothionein and metal toxicology. Background in one or more of the following areas desirable: primary cell cultures, RIA, monoclonal antibodies, steroid hormones, receptors. Send curriculum vitae and names of three references to: **Dr. Z. A. Shaikh, Department of Pharmacology and Toxicology, University of Rhode Island, Kingston, R.I. 02881.**

POSTDOCTORAL POSITION—Available immediately for research in mammalian gamete biology. The successful applicant will become a member of a multidisciplinary basic science and clinical research team. Projects are now under way in the areas of mammalian sperm physiology, sperm transport in the female, and fertilization. The research program in human gamete biology also includes studies of contraception, male and female infertility, and occupational and environmental effects on fertility. Send curriculum vitae and three references to: **David F. Katz, Ph.D., or James W. Overstreet, M.D., Ph.D., Department of Obstetrics/Gynecology, School of Medicine, University of California, Davis, Calif. 95616.**

POSTDOCTORAL POSITION available July 1983 to study the effects of hormones on the growth and transport functions of cultured kidney epithelial cells in serum free medium. Applicants should have a Ph.D. in biochemistry, physiology, cell biology, or a related field. Experience in membrane transport or cell culture is desirable. Send curriculum vitae and names of three references to: **Dr. Mary L. Taub, Department of Biochemistry, 102 Cary Hall, State University of New York at Buffalo, Buffalo, New York 14214. Affirmative Action/Equal Opportunity Employer.**

POSTDOCTORAL POSITION

Applicant must have Ph.D. in chemistry. Will conduct research on the synthesis and characterization of new organic compounds for neuroreceptor studies, and for cardiac and cerebral metabolism research. Knowledge of biochemistry and handling radioactive materials will be helpful. Starting date: spring 1983. Salary range: approximately \$15,900 to \$19,800, depending on qualifications, plus fringe benefits. Send résumé and two letters of recommendation to: **JB—Laboratory Personnel Officer, University of California, Los Angeles, L.B.E.S., 900 Veteran Avenue, Los Angeles, Calif. 90024. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL POSITION IN NEURONAL PLASTICITY. Two-year fellowship available for qualified individual to study neuronal rearrangements in the mammalian CNS. Applicant should have a Ph.D. in some field of neuroscience and a strong interest in development, regeneration and/or collateral sprouting. Send curriculum vitae and references to: **Dr. Keith A. Crutcher, Department of Anatomy, University of Utah School of Medicine, Salt Lake City, Utah 84132.**

POSTDOCTORAL RESEARCH FELLOWS: Positions available immediately for biophysical/biochemical studies of cell membranes and plasma lipoproteins with Drs. G. Graham Shipley, Donald M. Small, and David Atkinson. Experience in biophysical methods or membrane research desirable. A doctorate in biochemistry, biophysics, or related area is required. Candidates should send curriculum vitae, publications, and the names of three references to: **Linda McNeil, Administrator, Biophysics Institute, Boston University School of Medicine, 80 East Concord Street, Boston, Mass. 02118.**

RUTH HUTCHINS PROFESSOR OF FOREST TREE PHYSIOLOGY

Tenure-track appointment at the professor or associate professor rank. Emphasis on basic problems in physiology to support research in silviculture, tree improvement, and protection. A research oriented position with involvement in graduate teaching. Must have a Ph.D. degree and at least 5 years of experience in a tree physiology or silvicultural position emphasizing some aspect of physiology. An endowment in the name of Ruth Hutchins provides a substantial stipend in addition to base salary for the position. Interested persons are invited to forward, by 15 May, a letter of application, résumé and names of three references to: **Dr. Fred B. Knight, Chairman, Tree Physiology Search Committee, College of Forest Resources, 202 Nutting Hall, University of Maine at Orono, Orono, Maine 04469. An Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE. Microbiology/biochemistry Ph.D. sought to join laboratory working on phage lysis and bacterial membranes. You can learn molecular biology on the job, including latest recombinant DNA techniques, DNA sequencing. Fully equipped laboratory in new building, and access to Applied Biosystems DNA synthesizer, protein sequenator. Sun-belt locale, near Houston, Austin. Write: **Dr. Ry Young, Medical Biochemistry, 110 Heep, Texas A & M University, College Station, Texas 77843. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATE positions available immediately: (i) for research in somatic cell genetics with emphasis on expression and organization of liver specific genes, experience in recombinant DNA technology desired; and (ii) for research and development of human hepatocyte cell culture system. Experience in epithelial cell culture desired. Send curriculum vitae, with description of research background, interests, and names and addresses of three references to: **Dr. Gretchen J. Darlington, Department of Pathology, Baylor College of Medicine, Texas Children's Hospital, P.O. Box 20269, Houston, Texas 77030.**

POSTDOCTORAL RESEARCH POSITION to study prenatal development of visual system. Experience in anatomical tracing methods, electron microscopy, and single-unit recordings desirable.

Minimum of 2 years, with a starting date of spring/summer 1983. Ph.D. required. Salary based on experience. Send curriculum vitae and names of three references to: **L. M. Chalupa, Department of Psychology, University of California, Davis, Calif. 95616. Equal Opportunity/Affirmative Action Employer.**

DEPARTMENT OF BOTANY VISITING PROFESSORSHIP

Applications are invited for a temporary replacement position, available from 15 October 1983 to 30 June 1984 (budget permitting). The successful applicant will be expected to teach a full-year course in **PLANT ULTRASTRUCTURE** (fungi, algae, and higher plants), a half-year course on the **MORPHOLOGY AND EVOLUTION OF VASCULAR PLANTS**, and participate in a first year **INTRODUCTORY BIOLOGY COURSE**. Applicants should have a Ph.D. and preferably some teaching experience. A research interest in fungal ultrastructure and/or plant pathology would be an advantage. Salary: \$24,200 or commensurate with experience. *In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents.* Applicants should send curriculum vitae and three letters of reference to: **The Chairman, Department of Botany, University of Toronto, Toronto, Ontario, Canada M5S 1A1.** Deadline for applications is 30 April 1983.

Open full-time position for a **RESEARCH ASSISTANT** in protein chemistry with an emphasis on organic or analytical chemistry to commence June 1983. Qualified applicants should have a B.S. or M.S. in chemistry or biochemistry. Experience with HPLC, peptide synthesis or sequencing and micro-purification methodology is preferred. Salary commensurate with experience. Employment will also include liberal fringe benefits. Interested applicants should send résumé with three letters of reference and transcripts to: **Personnel Office, W. Alton Jones Cell Science Center, Old Barn Road, Lake Placid, New York 12946.**

An Affirmative Action/Equal Opportunity Employer

RESEARCH ASSOCIATE POSITIONS (Two): Veterinarian, D.V.M. (possible M.S./Ph.D., given right experience) and **M.S./Ph.D.** in biochemistry, immunology, microbiology, or genetics. Immediate openings for two individuals in a university based biotechnology program dealing with domestic animal lymphokines, including interferon. Full-time research positions; funded 3-year program. Candidates must be experienced in cell culture, gene cloning, and macromolecule purification. Candidates must be clinically innovative and have experience in dealing with domestic animals in a research setting. Expertise in basic biomedical research is essential. Salary dependent upon experience. Applications should consist of curriculum vitae, statement of research and clinical experiences and interests, and list of three references. *Michigan State University is an Affirmative Action/Equal Opportunity Institution.* Applications and inquiries should be directed to: **Dr. Robert W. Bull, Department of Medicine, Michigan State University, East Lansing, Michigan 48824-1317. Telephone: 517-355-4616.**

POSITIONS OPEN

POSTDOCTORAL POSITION to develop assays for toxic compounds based on the effects of toxicants on the behavioral response of fish to pheromones and chemical feeding stimuli. Background in behaviour, toxicology or physiology of fish preferred, but not required. Salary range: \$16,560 to \$19,500. Apply, with curriculum vitae and names and addresses of three references, to: **R. J. F. Smith, Biology Department, University of Saskatchewan, Saskatoon, Saskatchewan, Canada S7N 0W0.**

POSTDOCTORAL POSITION in carcinogenesis supported by NIH training grant. Available 1 July 1983. Candidate will be involved in a collaborative research project investigating DNA damage in cultured hepatocytes treated with chromate, the role of drug metabolizing activities on such damage, and the overall effect on inducible hepatic functions. Applicants should have experience in transcription-translation and/or DNA repair processes. Send curriculum vitae, description of research experience, and three references to: **Dr. Karen Wetterhahn, Department of Chemistry, Dartmouth College, Hanover, N.H. 03756.**

POSTDOCTORAL AND PREDOCTORAL POSITIONS AVAILABLE. National Institute on Aging, Training Program in the Neurobiology and Endocrinology of Aging. Appointments will be made through the Andrus Gerontology Center, Department of Physiology and Biophysics, University of Southern California (USC) School of Medicine and the Department of Biological Sciences at USC. Interested candidates should send curriculum vitae, brief statement of research interests, and three references to: **Dr. Caleb E. Finch, Andrus Gerontology Center, University of Southern California, University Park MC-0191, Los Angeles, Calif. 90089-0191. Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL/RESEARCH ASSOCIATES. Prominent research laboratory affiliated with Yale University has two positions immediately available in environmental health sciences. Project deals with indoor air pollution and effect on health and comfort. Send curriculum vitae and names of three references to: **Dr. William S. Cain, John B. Pierce Foundation Laboratory, 290 Congress Avenue, New Haven, Conn. 06519. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE. A 2-year position, beginning 1 September 1983 (or earlier), to study genetic polymorphism in *Drosophila* at the molecular level. Demonstrated experience with recombinant DNA techniques is required (mRNA isolation, cDNA preparation, cloning, and Southern blot hybridization). Salary: \$19,000 to \$20,000 per year. Send curriculum vitae and names of three references to: **F. J. Ayala, Genetics Department, University of California, Davis, Calif. 95616. The University of California is an Equal Opportunity/Affirmative Action Employer.**

TWO POSTDOCTORAL RESEARCH POSITIONS in infectious diseases available 1 July 1983. Basic and/or applied research on mechanisms of disease processes in one of the following specialties: bacteriology, parasitology, molecular virology, or immunology. Both positions are hard money appointments, funded at \$15,000 to \$20,000 per year. Send curriculum vitae, names of three references, and specialty interest before 1 May 1983 to: **Burt Firehammer, Department of Veterinary Science, Montana State University, Bozeman, Montana 59717. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSISTANT PROFESSOR for research in the application of Time-dependent Hartree-Fock theory for rearrangement atomic and nuclear collisions. Required: Ph.D. in theoretical physics with 2 years of experience in Time-dependent Hartree-Fock theory for atomic and nuclear collisions and numerical analysis which might be obtained in a Ph.D. program. Salary: \$17,700 per year; 40 hours per week; 9 to 5 p.m. Interested persons send résumé with this ad to: **DES/JS, 316 West Fort Lowell, Tucson, Arizona 85705, or any nearest DES/JS office. JB Number 0801021; job location Tucson; employer paid ad. Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATE OR POSTDOCTORAL POSITION in the Laboratory of Developmental Neurobiology. Candidate for this long-term position should have extensive experience with axoplasmic tracer techniques and an interest in neuroembryology. Salary negotiable, depending on experience. Send inquiries and curriculum vitae to: **Dr. Joseph Altman, Department of Biological Sciences, Purdue University, West Lafayette, Indiana 47907. An Equal Opportunity/Affirmative Action Employer.**

The MX Missile and the Strategic Balance of Power

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

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

—*The Boston Globe*

Winner of the National Association of Science Writers 1982 Science-in-Society Journalism Award

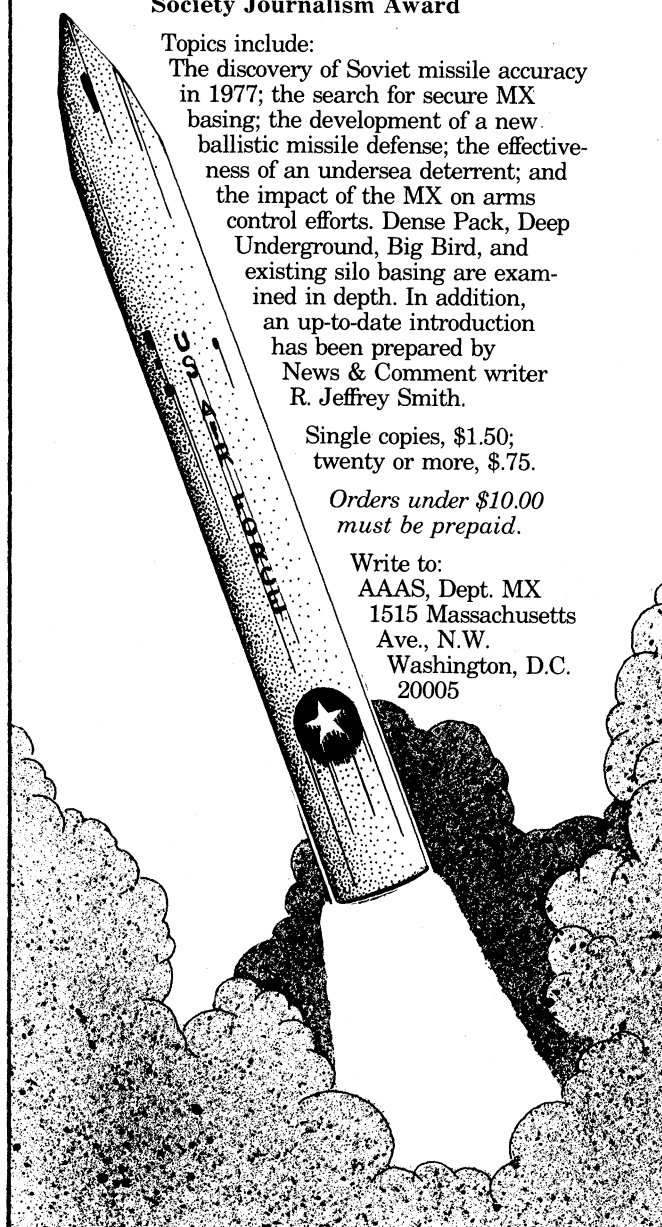
Topics include:

The discovery of Soviet missile accuracy in 1977; the search for secure MX basing; the development of a new ballistic missile defense; the effectiveness of an undersea deterrent; and the impact of the MX on arms control efforts. Dense Pack, Deep Underground, Big Bird, and existing silo basing are examined in depth. In addition, an up-to-date introduction has been prepared by News & Comment writer R. Jeffrey Smith.

Single copies, \$1.50;
twenty or more, \$.75.

Orders under \$10.00
must be prepaid.

Write to:
AAAS, Dept. MX
1515 Massachusetts
Ave., N.W.
Washington, D.C.
20005



SCIENCE

SCIENCE Introduces "The Four-Day Close"

We now offer our recruitment advertisers the convenience formerly found only in daily newspapers. We call it "**The Four-Day Close.**" Instead of reserving space a month or more in advance, you now have until just four days before the issue is mailed to its 160,000-plus subscribers.

Film (right-reading, emulsion face down, 1/4 or 1/2 page size only) and insertion order must reach: **SCIENCE, Room 107, 1515 Massachusetts Avenue, N.W., Washington, D.C. 20005**, by 3 p.m. Mondays (except for legal holidays when material must reach Washington by 3 p.m. Fridays). Because space is limited, the four-day close page will be reserved on a first-come, first-served basis.*

Now you don't have to wait for the professional you need **as soon as possible**. Nor must you advertise in a Sunday paper that pans a lot of sand, but not much gold. Scientific employers know that SCIENCE ads fill the job better. Now they fill it faster, too.

We call it "**The Four-Day Close.**"

You can call it "**Instant Recruitment.**"

For further information, telephone **Dick Charles at SCIENCE: 212-730-1050**, or write: **1515 Broadway, New York, N.Y. 10036**.

*At a 15% premium.

POSITIONS OPEN

POSTDOCTORAL POSITION available for NMR study of anion and water transport across red-cell and other membranes. Experience with membrane or red-cell biochemistry and physiology highly desirable. The project offers an opportunity to learn NMR techniques in an established NMR laboratory. Standard NIH stipend. Send curriculum vitae and names of three references to: **Dr. Maurice Eisenstadt, Department of Medicine, Albert Einstein College of Medicine, Bronx, N.Y. 10461. An Equal Opportunity/Affirmative Action Employer.**

POSTDOCTORAL RESEARCH ASSOCIATE position available for an individual with expertise in biochemistry interested in research and training in the area of molecular endocrinology to start in summer 1983. Existing studies include: (i) characterization of the estrogen receptor with monoclonal antibodies, (ii) estrogen- and antagonist-receptor binding interactions, and (iii) receptor-chromatin interactions. Send curriculum vitae and names of three references to: **Dr. A. C. Notides, Department of Radiation Biology and Biophysics, University of Rochester School of Medicine and Dentistry, 601 Elmwood Avenue, Rochester, New York 14642. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH ASSOCIATES in bio-inorganic chemistry (two) to work on: (i) synthetic Fe-S-flavin clusters, and (ii) Mo-Fe-S clusters. Require Ph.D. with 2 years of experience in metal sulfur cluster chemistry, anaerobic techniques, spectroscopy, and X-ray crystallography or FT-NMR. Salary: \$15,400 per year. Send résumé and specify position applied for to: **Professor B. A. Averill, Chemistry Department, University of Virginia, Charlottesville, Virginia 22901.**

RESEARCH ASSOCIATE. Supervise and direct research personnel and participate in experimental research in molecular biology using knowledge of protein chemistry, genetics, immunology, and nucleic acid biochemistry in a project involving characterization of enzymes in messenger RNA processing. Ph.D. in biochemistry and 1 to 2 years of postdoctoral experience, with specialization in protein purification, nucleic acid separation, immunoglobulin preparation and bacterial genetics, and experience with photoaffinity labeling of proteins, two dimensional and gradient gel electrophoresis, affinity chromatography, and high-pressure liquid chromatography required; \$1250 per month. Apply with résumé to: **Dr. Robert Bambara, Department of Biochemistry, Box 607, University of Rochester Medical Center, Rochester, N.Y. 14642.**

RESEARCH INSTRUCTOR/RESEARCH ASSISTANT PROFESSOR to participate in research on structure-function relationships of enzymes. The prospective candidate should have a recent Ph.D. degree in biochemistry, molecular biology, or chemistry. Starting salary: \$14,000 to \$20,000 per calendar year, depending on experience. Send curriculum vitae to: **Director, Bioenergetics Laboratory, Acheson Hall, State University of New York at Buffalo, Buffalo, N.Y. 14214-3094. An Equal Opportunity/Affirmative Action Employer.**

RESEARCH PHYSIOLOGIST. Ph.D. Applications are invited for a 3-year position (possible extension up to 4 years) in the area of diabetes research. The applicant must have experience with biochemical investigation of hormone action, studies of carbohydrate transport, of hormone receptors, of enzymology, and preferably a knowledge of islet hormone secretion and regulation. Salary equivalent to a GS-12. Adjunct academic appointment possible. Send curriculum vitae and names of three references to: **Dr. Lillian Recant, Chief, Diabetes Research Laboratory, Veterans Administration Medical Center, 30 Irving Street, NW, Washington, D.C. 20422.**

VIROLOGIST

An established biotechnology company is looking for a **project leader** in the Corporate Research Division. The project leader will be responsible for developing immunological reagents for the diagnosis of bacterial and viral infections in man. Candidate must have a Ph.D. in microbiology, biochemistry, or immunology with two or more years of postdoctoral experience with clinically relevant viruses. A strong background in mammalian cell culture is desirable. Applicants should send a statement of career goals, curriculum vitae, and three references to: **Dennis Murray, Director, Corporate Research Division, Kalstad Laboratories, Inc., 2101 East Ben White Boulevard, Austin, Texas 78741.**

WORKSHOP

IMAGE PROCESSING IN ELECTRON MICROSCOPY

An informal workshop on 24 and 25 March 1983 will be sponsored by Pennsylvania Muscle Institute's Training Grant, "Cardiovascular Training in Electron Optical Research." Attendance for limited number of registrants is available for registration fee of \$50. Fee does not cover accommodations or living expenses. Applicants should contact the organizer, **Dr. Terrence Frey, directly at: Department of Biochemistry and Biophysics, D501 Richards Building/G4, University of Pennsylvania, Philadelphia, Pa. 19104. Telephone: 215-898-5089.**

TRAINING GRANT

TRAINING GRANT ANNOUNCEMENT

The Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, has a limited number of pre- and postdoctoral traineeships available beginning July to September 1983. Applicants should have either a prior professional health degree, experience in a health related field or a master's degree in public health, behavioral sciences, nutrition, or exercise physiology. Traineeships are available in cardiovascular, diabetes, psychiatric, and alcohol epidemiology training programs. Applicants should apply to: **Dr. Lewis Kuller, University of Pittsburgh, Graduate School of Public Health, Department of Epidemiology, Pittsburgh, Pa. 15261.** Please state area of interest and include curriculum vitae. *The University of Pittsburgh is an Affirmative Action/Equal Opportunity Educational Institution.*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIPS in neurovirology and immunology; M.D.'s, Ph.D.'s, and D.V.M.'s welcome. Orientation to molecular biology and immunology as it relates to the nervous system. One position open immediately and one after July 1983. Please send curriculum vitae and two letters of recommendation. **NINCDS Institutional Training Grant in Neurology, Microbiology and Pathology. Equal Opportunity Employer, M/F/H.**

Leslie P. Weiner, M.D.
University of Southern California
Chairman, Department of Neurology
Professor of Microbiology
2025 Zonal Avenue
Los Angeles, Calif. 90033

POSTDOCTORAL FELLOWSHIP MEDICAL PHYSICS

A postdoctoral position will be available 1 May 1983 in the Medical Physics Division, Tufts-New England Medical Center. Research opportunities exist in hyperthermia, dosimetry, computer-assisted treatment planning, imaging, and other topics in radiological science. Fellows participate in the clinical physics training program which covers all branches of radiology. Applicants must be U.S. citizens or permanent residents. Send curriculum vitae and the names of three references to: **Dr. E. S. Sternick, Medical Physics Division, Tufts-New England Medical Center, 171 Harrison Avenue, Boston, Mass. 02111. An Equal Opportunity Employer, M/F.**

FELLOWSHIP IN CARDIAC MOLECULAR BIOLOGY. NIH-funded position immediately available for recent Ph.D. (less than 2 years) to study hormonal influences on cardiac protein formation with special emphasis on quantitation of mRNA levels and isolation and maintenance of viable cardiac myocytes. Send curriculum vitae and three letters of references to: **Dr. W. H. Dillmann, Department of Medicine H-811-C, University of California, San Diego, 225 Dickinson Street, San Diego, Calif. 92103.**

POSTDOCTORAL FELLOWSHIP available to study brain arachidonic acid metabolism and/or the effects of prostaglandins and leukotrienes on the cerebral microcirculation. Stipend plus health insurance. Must be U.S. citizen or permanent resident. Send curriculum vitae and names of three references to: **Dr. Earl Ellis, Department of Pharmacology, Medical College of Virginia, Richmond, Virginia 23298. An Equal Opportunity/Affirmative Action Employer.**

FELLOWSHIPS

POSTDOCTORAL RESEARCH TRAINING FELLOWSHIPS for M.D. or Ph.D. graduates are available in the area of endocrinology, metabolism, and diabetes under the guidance of one of 13 training faculty in six basic or clinical departments of Emory University School of Medicine. Due to NIH pay-back regulations, only U.S. nationals or permanent residents can be considered. Send curriculum vitae, area of research interest, and two letters of reference by 1 May 1983 to: **Dr. Mario DiGirolamo, Program Director, Emory University School of Medicine, 69 Butler Street, Atlanta, Ga. 30303. An Equal Opportunity Employer.**

CLINICAL FELLOWSHIPS IN ENDOCRINOLOGY, METABOLISM, AND DIABETES for M.D. graduates with 2 to 3 years of internal medicine postgraduate training. In-depth training in all aspects of clinical endocrinology with research opportunity. Available 1 July 1983 and 1984. Send curriculum vitae and three letters of reference to: **Dr. Mario DiGirolamo, Acting Director, Division of Endocrinology and Metabolism, Emory University School of Medicine, 69 Butler Street, Atlanta, Ga. 30303. An Equal Opportunity Employer.**

POSTDOCTORAL FELLOWSHIPS NEUROBIOLOGY—ANATOMY UNIVERSITY OF ROCHESTER SCHOOL OF MEDICINE AND DENTISTRY

Postdoctoral positions are available on a competitive basis in a research-intensive Anatomy Department. Opportunities are available for training in neurogerontology, behavioral teratology, development-plantation, neuroendocrinology, neuronal interactions, cell biology, central pathways and surface markers. Techniques available include computer-assisted Golgi analysis, peptide immunohistochemistry, transmitter histochemistry, radioimmunoassay, quantitative morphometry, tissue culture, flow cytometry, autoradiography, HRP and fluorescent dye tract tracing, behavioral analysis, and microsurgery. Preceptors include:

Ken Bauer, Ph.D.	Mary Notter, Ph.D.
Paul Coleman, Ph.D.	David Penney, Ph.D.
Manuel del Cerro, M.D.	Patricia Rodier, Ph.D.
Don Gash, Ph.D.	Celia Sladek, Ph.D.
Suzanne Haber, Ph.D.	John Sladek, Jr., Ph.D.
Gloria Hoffman, Ph.D.	Loretta Tang, Ph.D.
Rebekah Loy, Ph.D.	Stanley Wiegand, Ph.D.

To apply, send curriculum vitae, representative publications, a statement of research goals, and the names of three references to: **Dr. Don M. Gash, Department of Anatomy, Box 603, University of Rochester School of Medicine and Dentistry, 601 Elmwood Avenue, Rochester, N.Y. 14642. Equal Opportunity Employer, M/F.**

MARKETPLACE

PHORBOL ESTERS

99+ % PURE MPMA

4-O-METHYLPHORBOL 12-MYRISTATE
13-ACETATE

Cat. #M2550 5mg/\$65**

L C Services Corporation
225 Wildwood Street
Woburn, MA 01801 (617) 938-1700

Circle No. 7 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-12 DIGITAL
BAT-8 DIGITAL °C or °F
TH 3 NEW CLINICAL TYPES

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

Circle No. 37 on Readers' Service Card

Never before has UV-Vis been so visible.



With the new DMS 100 UV-Vis Spectrophotometer and DS 15 Data Station, you are unquestionably in command. You can look at your results in a variety of ways, store spectral information and methods on floppy discs, and use an array of software programs, such as wavelength scanning, single- and multicomponent analysis, kinetics assays, color measurement, and gel scan integration.

But even without the Data Station, the DMS 100 is a strikingly intelligent spectrophotometer. It works fast and visibly, lets you watch your spectrum unfold in real time on a video monitor. Simultaneously, the spectrum is stored in memory—to be recalled anytime you snap your fingers.

You can

- replot the spectrum in a variety of photometric modes
- overlay separate plots, like absorbance and second-derivative scans
- zoom in on a portion of the spectrum and expand over the full video screen
- change the ordinate scale and replot
- safeguard your method storage with an optional memory-protect module
- get a permanent record with a digital printer/plotter

The DMS 100/DS 15 System offers you the most visible UV-Visible you could wish for.

Call your local Varian office for our special introductory offer. Or circle Reader Service Number **355** for literature.

For immediate assistance contact: Florham Park NJ (201) 822-3700

• Park Ridge IL (312) 825-7772 • Sugar Land TX (713) 491-7330
• Los Altos CA (415) 968-8141 • Georgetown, Ontario (416) 457-4130

Or write 611 Hansen Way, Palo Alto CA 94303

In Europe: Steinhauserstrasse, CH-6300 Zug, Switzerland

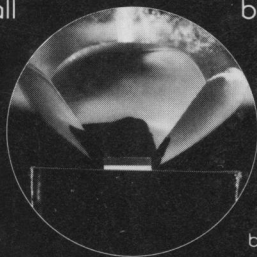


***Intelligent automation...
from Varian***

ULTRA·PRECISION MADE ULTRA·EASY

When it comes to ultra-thin, ultra-precise sectioning made easy, only one ultramicrotome is unmatched - the AO/Reichert Ultracut. □ Simple to operate, the Ultracut features fewer and simpler controls - all of which can be operated while viewing the specimen. A highly advanced mechanical feed system is inertia-free and less sensitive to temperature changes thus assuring accurate, reproducible sections. You can obtain continuously variable cutting speeds without disturbing knife to specimen orientation. □ Designed with a new, 3-piece shell construction,

the Ultracut insulates the feed and drive mechanisms from external disturbances - while the hydraulically dampened anti-vibration system provides further stability. □ The AO/Reichert Ultracut. For ultra-precision made ultra-easy. For a demonstration, see your AO/Reichert dealer or representative. Or write for our brochure: AO Scientific Instruments, Box 123, Buffalo, NY 14240.



Exclusive darkfield knife alignment lets you view the gap between specimen and knife. You see a bright slit on a dark background making it easy to orient the knife to the specimen.



AO/Reichert

AO Scientific Instruments

DIVISION OF WARNER-LAMBERT TECHNOLOGIES, INC.

Circle No. 324 on Readers' Service Card