

sights: "It will become evident that this second use of theory has been more important in my studies because available theories concerning the ecological traits I examined are highly simplified and are not readily tested in the complex, uncontrolled field conditions in which I worked." Too often modifying factors not included in the theory made results open to more than one interpretation. But Orians claims that the theories suggested measurements not otherwise thought of, and he gained a greater understanding of blackbird adaptations as a result. He has succeeded in sharing his understanding in this book.

P. R. GRANT

*Division of Biological Sciences,
University of Michigan,
Ann Arbor 48109*

Books Received

Advances in Food Research. Vol. 25. C. O. Chichester, E. M. Mrak, and G. F. Stewart, Eds. Academic Press, New York, 1979. viii, 292 pp., illus. \$28.

Advances in Inorganic Chemistry and Radiochemistry. Vol. 22. H. J. Emeléus and A. G. Sharpe, Eds. Academic Press, New York, 1979. xii, 458 pp., illus. \$48.

Advances in Marine Biology. Vol. 16. Frederick S. Russell and Maurice Yonge, Eds. Academic Press, New York, 1979. xii, 426 pp., illus. \$75.

Blood Cell Formation and the Cellular Basis of Immune Responses. Arthur W. Ham, Arthur A. Axelrad, and David H. Cormack. Lipincott, Philadelphia, 1979. xii + pp. 225-372, illus. Paper, \$9.25. Reprinted from the 8th edition of *Histology*.

Brain Function in Old Age. Evaluation of Changes and Disorders. Papers from a symposium, Cologne, Oct. 1978. F. Hoffmeister, C. Müller, and H. P. Krause, Eds. Springer-Verlag, New York, 1979. xii, 534 pp., illus. \$48.40. Bayer-Symposium VII.

Chemical Engineering. Vol. 3, Chemical Reactor Design, Biochemical Reaction Engineering Including Computational Techniques and Control. J. M. Coulson, J. F. Richardson, and D. G. Peacock, Eds. Pergamon, New York, ed. 2, 1979. xvi, 648 pp., illus. Paper, \$20.

The Decision Problem. Solvable Classes of Quantificational Formulas. Burton Dreben and Warren D. Goldfarb. Addison-Wesley, Reading, Mass., 1979. xiv, 272 pp. \$27.50. Advanced Book Program.

Defining Child Abuse. Jeanne M. Giovannoni and Rosina M. Becerra. Free Press (Macmillan), New York, and Collier Macmillan, London, 1979. xviii, 302 pp. \$15.95.

Exploring the Unknown. Great Mysteries Reexamined. Charles J. Cazeau and Stuart D. Scott, Jr. Plenum, New York, 1979. xii, 284 pp., illus. \$15.95.

Fiber and Integrated Optics. Proceedings of a NATO Advanced Study Institute, Cargèse, France, June 1978. D. B. Ostrowsky, Ed. Plenum, New York, 1979. xiv, 418 pp., illus. \$42.50. NATO Advanced Study Institutes Series B, vol. 41.

Global and Large Scale System Models. Proceedings of a seminar, Dubrovnik, Yugoslavia, Aug. 1978. B. Lazarević, Ed. Springer-Verlag, New York, 1979. viii, 232 pp., illus. Paper, \$12.50. Lecture Notes in Control and Information Sciences, vol. 19.

A Guide to Econometrics. Peter Kennedy. MIT Press, Cambridge, Mass., 1979. xii, 176 pp., illus. Cloth, \$19.95; paper, \$7.95.

Handbook of Biological Psychiatry. Part 1, Disciplines Relevant to Biological Psychiatry. Herman M. van Praag, Malcolm H. Lader, Ole J. Rafaelsen, and Edward J. Sachar, Eds. Dekker, New York, 1979. xvi, 430 pp., illus. \$45. Experimental and Clinical Psychiatry, vol. 1.

Investigating Animal Abundance. Capture-Recapture for Biologists. Michael Begon. University Park Press, Baltimore, 1979. vi, 98 pp., illus. Paper, \$9.95.

Kosciusko Alpine Flora. A. B. Costin, M. Gray, C. J. Totterdell, and D. J. Winbush. CSIRO, East Melbourne, and Collins, Sydney, Australia, 1979. 408 pp., illus. \$A25.

Lectures in Isotope Geology. E. Jäger and J. C. Hunziker, Eds. Springer-Verlag, New York, 1979. x, 330 pp., illus. Paper, \$27.

Lectures on Curves on Rational and Unirational Surfaces. M. Miyanishi. Published for the Tata Institute of Fundamental Research by Narosa Publishing House, New Delhi, 1978 (U.S. distributor, Springer-Verlag, New York). vi, 308 pp. Paper, \$9.90.

Margaret Mead. A Portrait. Edward Rice. Harper and Row, New York, 1979. xviii, 204 pp., illus. \$10.

Mathematical Models in the Health Sciences. A Computer-Aided Approach. Eugene Ackerman and Laël Cranmer Gatewood. University of Minnesota Press, Minneapolis, 1979. xiv, 358 pp., illus. \$23.50.

Mathematical Statistical Mechanics. Colin J. Thompson. Princeton University Press, Princeton, N.J., 1979. x, 278 pp., illus. Paper, \$5.95. Reprint of the 1972 edition.

Mathematical Studies of Information Processing. Proceedings of a conference, Kyoto, Japan, Aug. 1978. E. K. Blum, M. Paul, and S. Takasu, Eds. Springer-Verlag, New York, 1979. viii, 630 pp. Paper, \$30.80.

Measures of Association for Cross Classifications. Leo A. Goodman and William H. Kruskal. Springer-Verlag, New York, 1979. x, 146 pp. \$12. Springer Series in Statistics.

Medical Responsibility. Paternalism, Informed Consent, and Euthanasia. Wade L. Robison and Michael S. Pritchard, Eds. Humana Press, Clifton, N.J., 1979. xvi, 224 pp. \$19.50.

The Messier Album. An Observer's Handbook. John H. Mallas and Evered Kreimer. Cambridge University Press, New York, and Sky Publishing Corporation, Cambridge, Mass., 1979. viii, 216 pp., illus. + plates. \$11.95.

Nucleosides as Biological Probes. Robert J. Suhadolnik. Wiley-Interscience, New York, 1979. xviii, 346 pp., illus. \$37.50.

Nutrition and Cancer. Proceedings of a meeting, Houston, June 1977. Jan van Eys, Mildred S. Seelig, and Buford L. Nichols, Jr., Eds. SP Medical and Scientific Books, New York, 1979. xvi, 298 pp., illus. \$25. Monographs of the American College of Nutrition, vol. 3.

Of Speech and Time. Temporal Speech Patterns in Interpersonal Contexts. Papers from a symposium, Louisville, Ky., May 1976. Aaron W. Siegman and Stanley Feldstein, Eds. Erlbaum, Hillsdale, N.J., 1979 (distributor,

Halsted [Wiley], New York). x, 230 pp. \$19.95.

On the Loose. Jerry and Renny Russell. Sierra Club Books, San Francisco, 1979. Unpagged, illus. Paper, \$6.95. Reprint of the 1969 edition.

Optical Fiber Telecommunications. Stewart E. Miller and Alan G. Chynoweth, Eds. Academic Press, New York, 1979. xxii, 706 pp., illus. \$48.50.

Pediatric Education and the Needs of Exceptional Children. Papers from a conference, Washington, D.C., June 1978. Michael J. Guralnick and H. Burr Richardson, Jr., Eds. University Park Press, Baltimore, 1979. xviii, 218 pp. \$18.95.

The Prima Bajo of Central Sonora, Mexico. Vol. 2, Vocabulario en la Lengua Névome. Campbell W. Pennington, Ed. University of Utah Press, Salt Lake City, 1979. xxx, 130 pp. \$16.

Private Practice. A Handbook for the Independent Mental Health Practitioner. Robert M. Pressman. Gardner, New York, 1979 (distributor, Halsted [Wiley], New York). xvi, 230 pp. \$18.95.

A Radical Proposal for Full Use of Free Speech. Stephen T. Clafin, Jr. Philosophical Library, New York, 1979. xvi, 106 pp. \$9.95.

Research in the Psychobiology of Human Behavior. Papers from a symposium. Eugene Meyer III and Joseph V. Brady, Eds. Johns Hopkins University Press, Baltimore, 1979. xiv, 146 pp., illus. \$14.

Reviews of Neuroscience. Vol. 4. Diana M. Schneider, Ed. Raven, New York, 1979. x, 242 pp., illus. \$16.

Reviews of Physiology, Biochemistry and Pharmacology. 86. R. H. Adrian and 14 others, Eds. Springer-Verlag, New York, 1979. vi, 206 pp., illus. \$48.40.

Ring Theory, Waterloo 1978. Proceedings of a meeting, Waterloo, Canada, June 1978. David Handelman and John Lawrence, Eds. Springer-Verlag, New York, 1979. xii, 352 pp. Paper, \$17.80.

Sex Roles and Social Policy. A Complex Social Science Equation. Jean Lipman-Blumen and Jessie Bernard, Eds. Sage Publications, Beverly Hills, Calif., 1979. viii, 404 pp. Cloth, \$17; paper, \$8.95. Sage Studies in International Sociology 14.

The Sky Explored. Celestial Cartography 1500-1800. Deborah J. Warner. Liss, New York, and Theatrum Orbis Terrarum, Amsterdam, 1979. xviii, 294 pp., illus. \$70.

Sodium-NaK Engineering Handbook. Vol. 5, Sodium Purification, Material, Heaters, Coolers, and Radiators. O. J. Foust, Ed. Gordon and Breach, New York, 1979. xii, 330 pp., illus. \$57.

Space Weapons/Space War. John W. Macvey. Stein and Day, New York, 1979. xvi, 246 pp. \$9.95.

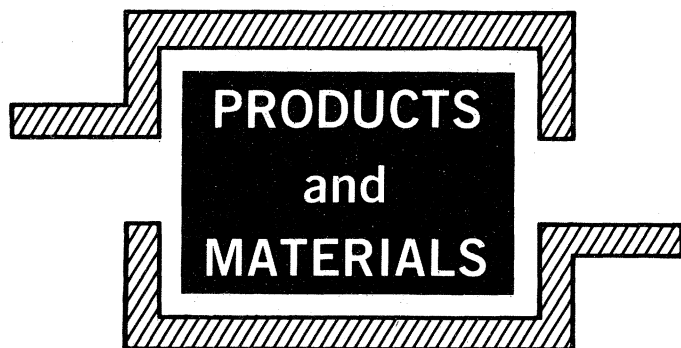
Spin Eigenfunctions. Construction and Use. Ruben Pauncz. Plenum, New York, 1979. xvi, 370 pp., illus. \$35.

Stability of Adaptive Controllers. Bo Egardt. Springer-Verlag, New York, 1979. vi, 158 pp. Paper, \$9.80. Lecture Notes in Control and Information Sciences, vol. 20.

Stress for Success. A Holistic Approach to Stress and Its Management. Donald Roy Morse and M. Lawrence Furst. Van Nostrand Reinhold, New York, 1979. xx, 380 pp., illus. \$13.95.

The Structuralist View of Theories. A Possible Analogue of the Bourbaki Programme in Physical Science. Wolfgang Stegmüller.

(Continued on page 726)



Liquid Chromatography

Vista 54 combines a data system with up to four liquid chromatographs to form an automated, microprocessor-controlled network for analytic or preparative applications. The 401 data system features floppy disk memory; interactive keyboard terminal; a fixed-head, dual-channel printer/plotter for chromatograms and programmed methods for standard calculations. The LC5040 chromatographs feature a digitally controlled hydraulic pumping system that can deliver as little as 1 percent miscible solvent in a binary or ternary mix at 0 to 15 milliliters per minute. The chromatographs can use solvent bottles as reservoirs to eliminate gas entrainment. Their detectors, low-dead-volume refractive-index and ultraviolet, connect directly to their columns. The terminal displays in real time such parameters as temperature, pumping rates, solvent mixing by digital proportioning valves, alternation of solvent pairs, and retention times. Varian Instrument Group. Circle 757.

Amino Acid Analyzer

The Liquimat III offers microprocessor control for calibration and programming analytic routines. The device analyzes hydrolysates in 1 hour with a sensitivity to 0.5 nanomole. Analysis of physiologic fluids requires 3 hours. The fluorescence detector is sensitive to amounts as small as 25 picomoles. This single-column analyzer is available with a 100-sample injector and a keyboard for program entry. Operating functions are shown on an LED display. Sequemat. Circle 774.

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 646A and 718A) and placing it in the mailbox. Postage is free.

—RICHARD G. SOMMER

Physiological Recorders

The ICT-1H and ICT-2H models feature heated stylus, rectilinear recording; event marker; two-speed chart drive; and 50-millimeter stylus deflection per recording channel. Chart speeds are 2.5 or 25 millimeters per second. Units are available that offer ten speeds as well. These devices record electrocardiograms, electroencephalograms, electromyograms, respiration, pulse, and any other phenomena measured galvanometrically. Both models are compact and portable. Gilson Medical Electronics. Circle 771.

Electronic Top-Loading Balances

The New Decade balances are available in four models. The 3300 is a dual-range top-loader with capacities of 30 or 300 grams and resolutions of 0.001 and 0.01 gram. Model 3320's capacity is 100 grams with a resolution of 0.001 gram. Model 3340's capacity is 1 kilogram, and model 3350 accommodates 5 kilograms. An optional, plug-in keyboard allows the operator to program the balances for weighing in percent, converting units of weight, time averaging, setting tare, and calibration. Sciencetech. Circle 773.

Metabolism Cages for Small Animals

A line of glass metabolism cages is available in three sizes for mice, rats, or guinea pigs. These cages allow one to study intake of food, water, and air and output of expired air and waste products. Custom Scientific Glass. Circle 770.

Data Terminal

Micropad accepts hand-written data. The user enters alphanumeric data with a pen, pencil, or stylus on a pressure-sensitive writing surface. A microprocessor captures the data entered and displays

them on an integral 40-character line display. The data are converted to ASCII characters for transmission. Each character is transmitted with information regarding its position on the document. Laboratory data may be hand-entered into a computer system with this peripheral device. Micropad. Circle 772.

Gas Chromatograph

Model 215ACA is an automated tracer gas monitor. Its electron-capture detector (titanium tritide foil with 300 millicurie beta source) responds to gases such as sulfur hexafluoride or selected halocarbons. It is suited to environmental, meteorologic, infiltration, or leak detection applications with remote or untended sensors. A microprocessor controls sampling, analysis, and output of data. Systems, Science and Software. Circle 775.

Liquid Scintillation Counter

The Iso Trac 300 has a 300-sample capacity. Its barium-133 external standard is precisely mechanically positioned. The device is microprocessor-controlled and expandable to meet changing experimental needs. It may be upgraded for multiple users, automatic data reduction, set or adjustable windows, LED display, printers, refrigeration, and other options. The touch pad control panel offers both visible and audible signals. The instrument has an RS232C interface for data processing. Tracor Analytic. Circle 776.

Literature

Organic Chemicals lists more than 3000 research chemicals, most of which are indexed into 22 classes, such as benzofurans, imidazoles, ureas, and so forth. Trans World Chemicals. Circle 763.

Specialty Gases is a 204-page catalog that contains a glossary, conversion tables, specifications, and equipment. Union Carbide, Linde Division. Circle 764.

Guide to Economy Sized Computers describes a line of small data processing systems. Vector Graphic. Circle 765.

Instruments is a catalog of scientific electronic apparatus with sections for biophysical instrumentation, logic analyzers, recorders, oscilloscopes, signal conditioners, and test equipment. Gould. Circle 778.

HELLMA
...tomorrow's designs today!



OS[®] QH[®] QS[®] OF[®] QU[®] QI[®]

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

HELLMA
CELLS, INC.

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

Circle No. 153 on Readers' Service Card



Less is more.

Less Work.

More Dependability.

They're ready-to-use kits with everything you need except your sample. Room temperature set-up, no salting out, no second incubation. We've pre-reacted the first antibody with the second antibody to save you time.

And we've given you NEN quality to assure you of dependable assays — accurate and reproducible. Sensitivity reaches the femtomole range with the acetylating reagents provided. A tritium-labeled marker is included to monitor recovery. The iodinated tracer is exceptionally stable.

These are some of the reasons to choose NEN's Cyclic AMP and GMP [¹²⁵I] RIA kits, the world's most widely used for their convenience and quality. Send for the whole story in our technical brochure.

Not for use in humans or clinical diagnosis.

NEN New England Nuclear

549 Albany Street, Boston, Mass. 02118
Call toll-free: 800-225-1572
(In Massachusetts and International: 617-482-9595)
NEN Chemicals GmbH: D-6072 Dreieich, W. Germany
Postfach 401240, Telephone (06103) 85034, Telex 4-17993 NEN D
NEN Canada Ltd., 2453 46th Avenue, Lachine, Que H8T 3C9
Telephone 514-636-4971, Telex 05-821808

Circle No. 199 on Readers' Service Card

2',3'-Dideoxynucleoside 5'-Triphosphates DNA Sequencing Reagents (Chain — Terminators)

4831 2', 3'-Dideoxythymidine 5'-Triphosphate
Pkg. Sizes and Prices:

5 mg \$40.00 25 mg \$175.00

4823 2', 3'-Dideoxycytidine 5'-Triphosphate
Pkg. Sizes and Prices:

4 μ moles ... \$60.00 5x4 μ moles ... \$275.00

4819 2', 3'-Dideoxyadenosine 5'-Triphosphate
Pkg. Sizes and Prices:

4 μ moles ... \$60.00 5x4 μ moles ... \$275.00

4817 2', 3'-Dideoxyguanosine 5'-Triphosphate
Pkg. Sizes and Prices:

4 μ moles ... \$60.00 5x4 μ moles ... \$275.00

4865 Dideoxynucleoside Triphosphate Kit
One micromole of each of the four
dideoxynucleoside triphosphates 1 Kit ... \$80.00

Available from stock

excellence in biochemistry



P.L. biochemicals, inc.

1037 WEST MCKINLEY AVENUE, MILWAUKEE, WIS. 53205

® Call 414/347-7442 TWX 910-262-1111

Circle No. 183 on Readers' Service Card

There's only one answer to your questions about disposable filter units.

What disposable, presterilized filter units have the most filter surface area for more efficient filtration?

Nalgene Filter Units (17.4 cm²)

What disposable, presterilized filter units are the simplest, most convenient to use?

Nalgene Filter Units. (The 3-piece design eliminates the extra parts that can cause error or contamination.)

What disposable, presterilized filter units have the longest performance record?

Nalgene Filter Units. (Only Nalgene Filter Units have been proven reliable in over 15 years of laboratory use.)

What disposable, presterilized filter units give you the choice of three membrane porosities using a proven nontoxic membrane?

Nalgene Filter Units. (Their membrane is nontoxic to cell cultures and comes in 0.20 μ , 0.45 μ , and 0.80 μ porosities.)

What disposable, presterilized filter units cost least and can be purchased from laboratory supply dealers everywhere?

Nalgene Filter Units. (Ask your dealer.)

**Specify NALGENE®
filter units from your
laboratory dealer.
The one right answer to
your filtering needs.**

SYBRON | Nalge

Nalge Company,
Division of Sybron Corporation
P. O. Box 365
Rochester, N. Y. 14602

Circle No. 188 on Readers' Service Card

BOOKS RECEIVED

(Continued from page 683)

Springer-Verlag, New York, 1979. viii, 104 pp. Paper, \$15.40.

Structure and Bonding. Vol. 37. J. D. Dunitz and seven others, Eds. Springer-Verlag, New York, 1979. iv, 218 pp., illus. \$48.40.

Studies in Heat Transfer. A Festschrift for E. R. G. Eckert. J. P. Hartnett, T. F. Irvine, Jr., E. Pfender, and E. M. Sparrow, Eds. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1979. xii, 516 pp., illus. \$42.50.

Surprises in Theoretical Physics. Rudolf Peierls. Princeton University Press, Princeton, N.J., 1979. viii, 168 pp. Cloth \$15; paper, \$3.95. Princeton Series in Physics.

Theoretical Foundations of Cardiovascular Processes. D. N. Ghista, E. Van Vollenhoven, W.-J. Yang, and H. Reul, Eds. Karger, Basel, 1979. x, 182 pp., illus. \$64. Advances in Cardiovascular Physics, vol. 1.

Toxic Injury of the Liver. Part A. Emmanuel Farber and Murray M. Fisher, Eds. Dekker, New York, 1979. viii, 486 pp., illus. \$47.50. Liver, vol. 2.

Transfer Processes. An Introduction to Diffusion, Convention, and Radiation. D. K. Edwards, V. E. Denny, and A. F. Mills. Hemisphere, Washington, D.C., and McGraw-Hill, New York, ed. 2, 1979. xviii, 422 pp., illus. \$21.50. Series in Thermal and Fluids Engineering.

A Treatise of Social Labor. Lawrence Kramer. Van Gorcum, Assen, the Netherlands, 1979. x, 514 pp. Dfl. 85. Dialectic and Society, 5.

Turbulent Forced Convection in Channels and Bundles. Theory and Applications to Heat Exchangers and Nuclear Reactors. Papers from a NATO Advanced Study Institute, Istanbul, July 1978. S. Kakaç and D. B. Spalding, Eds. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1979. Two volumes. xxviii, 1132 pp., illus. \$80.

Tutorial Essays in Psychology. A Guide to Recent Advances. Vol. 2. N. S. Sutherland, Ed. Erlbaum, Hillsdale, N.J., 1979 (distributor, Halsted [Wiley], New York). x, 162 pp., illus. \$14.95.

Two-Phase Momentum, Heat and Mass Transfer in Chemical Process, and Energy Engineering Systems. Papers from a seminar, Dubrovnik, Yugoslavia, Sept. 1978. F. Durst, G. V. Tsiklauri, and N. H. Afgan, Eds. Hemisphere, Washington, D.C., and McGraw-Hill, New York, 1979. Two volumes. xx, 1080 pp., illus. \$92. Series in Thermal and Fluids Engineering.

Tzintzuntzan. Mexican Peasants in a Changing World. George M. Foster. Elsevier, New York, ed. 2, 1979. xvi, 392 pp. Paper, \$7.95.

Water Flow in Plants. John A. Milburn. Longman, New York, 1979. xiv, 226 pp., illus. Paper, \$16.50. Integrated Themes in Biology.

The White Men. The First Response of Aboriginal Peoples to the White Man. Julia Blackburn. Times Books, New York, 1979. 192 pp., illus. \$14.95.

The Wine of Life and Other Essays on Societies, Energy and Living Things. Harold L. Morowitz. St. Martin's Press, New York, 1979. xii, 266 pp. \$10.

Women. Psychology's Puzzle. Joannaunker Rohrbaugh. Basic Books, New York, 1979. xvi, 506 pp. \$15.

Personnel Placement

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

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

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

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

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

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

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

Blind ad replies should be addressed as follows:

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

POSITIONS WANTED

Agronomist/Pesticide Residue Chemist. Ph.D. Strong background in instrumentation and modern analytical techniques. Characterization and relative rates of sorption of chemicals by a variety of soils. Pesticide residue analysis of fat, water, and soils. Seeks industrial/academic position. Box 192, SCIENCE. 8/8, 22

Bioengineer. Ph.D. 1974. Significant multidisciplinary research experience. Well published. Seeks position in any promising scientific/technical discipline immediately. Box 193, SCIENCE. X

Laboratory Supervisor position sought. Twelve years of experience in medical and research EM, histology, histochemistry laboratories (8 years supervisory). Graduate degree. Prefers technical services position in pathology in health care firm or medical center. Box 194, SCIENCE. X

Physicist-Engineer with strong background in biomedical computing, signals processing, time series analysis, mathematical modelling, physiological systems engineering and biostatistics. Seeks position in research and/or development and/or teaching. Previous experience includes cardiovascular and pulmonary physiology and sleep research. Broad experience and several publications. Available from September 1980. Prefers to work in United States, Canada, Holland, and England. Box 195, SCIENCE. X

POSITIONS OPEN

ASSISTANT PROFESSOR, ENDOCRINOLOGY. Ohio State University; tenure-track; research, teaching, patient care. Should be Board-certified in internal medicine with a minimum of 2 years of training in endocrinology and with experience in research and teaching. Send curriculum vitae and references to: Dr. Jack George, Director, University Hospital, Columbus, Ohio 43210. Telephone: 614-421-8730. An Equal Opportunity Employer.

POSITIONS OPEN

Augusta—ACADEMIC PSYCHIATRISTS for full-time faculty appointment, in development and reorganization of clinical and teaching programs. Senior administrative positions: (i) Chief, Child and Adolescent Psychiatry, (ii) Residency Director, (iii) Undergraduate Education Director, and (iv) Chief, Outpatient Clinics. Additional positions in consultation/liaison, social/community, inpatient, outpatient, child and adolescence. Interest in geriatrics, mental retardation, biological, group and family, and forensics encouraged. Major emphasis on teaching and scholarship. Rank and salary commensurate with qualifications. Positions available at present and for next year. Contact: **E. Mansell Pattison, M.D., Professor and Chairman, Department of Psychiatry, Medical College of Georgia, Augusta, Ga. 30912; telephone: 404-828-3284. Equal Opportunity Employer.**

AQUATIC ECOLOGIST

ICHTHYOPLANKTON. M.S. degree, experience desirable. Successful applicant will be responsible for designing field studies, directing projects, sampling ichthyoplankton and macroplankton, data management, and report writing. Applicant must be interested in ecological problems with ichthyoplankton and doing original research. Send curriculum vitae and names of three references to: **Dr. Louis E. Sage, Academy of Natural Sciences of Philadelphia, Benedict Estuarine Research Laboratory, Benedict, Maryland 20612. Equal Opportunity Employer.**

ASSISTANT PROFESSORSHIP—Ph.D. in entomology or a closely related field with demonstrated research and teaching capabilities is required. The candidate will be expected to do research in one of the following areas: insect population dynamics in agroecosystems, insect transmission of plant diseases, or biological control utilizing microbial agents. The candidate will focus a strong research program in one of the above areas on an agricultural pest problem in Delaware. Teaching of undergraduate and graduate-level courses is expected. Salary is commensurate with training and experience. The position is a 12-month appointment and is available after 1 January 1981. Applications will be received until 15 September 1980, or until a suitable candidate is selected. Applicants should submit curriculum vitae, transcripts, reprints of publications and at least three letters of references. Send to: **Dr. T. K. Wood, Search Committee Chairperson, Department of Entomology and Applied Ecology, University of Delaware, Newark, Del. 19711. Telephone: 302-738-2526.**

University of Michigan Medical School. A tenure-track **ASSISTANT PROFESSORSHIP** position is available for a neurophysiologist in the Department of Physiology. Duties include: conducting research in the area of neurophysiology, and teaching physiology to medical, other health professional students, and graduate students. Necessary qualifications: Ph.D. or M.D. degree, at least 2 years of postdoctoral research training, and record of published work dealing with the physiology of the nervous system. Reply to: **Box 191, SCIENCE. Code 200BO. A nondiscriminatory, Affirmative Action Employer.**

ASSISTANT PROFESSOR, GENETICS. The Department of Biology, The Johns Hopkins University, invites applications for a tenure-track appointment in molecular genetics. The principal teaching duties involve participation in undergraduate and graduate courses in genetics, advising students, and guiding graduate students to the Ph.D. degree. Applicants must have the Ph.D. and/or M.D. degree and two or more years of postdoctoral training, with a record of productivity in original research. Please send curriculum vitae, reprints, a statement of research plans, and names of three references prior to 15 October 1980 to: **Dr. Philip E. Hartman, Chairman, Genetics Search Committee, Department of Biology, The Johns Hopkins University, Baltimore, Maryland 21218. The Johns Hopkins University is an Equal Opportunity/Affirmative Action Employer.**

Tenure-stream **ASSISTANT PROFESSOR IN MEDICAL SCHOOL.** Start immediately. Doctoral degree biostatistician. About 40 percent time in teaching of medical and graduate health science students. About 60 percent in consulting-research activities of Biometrics Division involving basic biomedical research and clinical trials conducted in departments of the medical school. Curriculum vitae and three letters of recommendation to: **F. H. Taylor, Sc.D., Head, Biometry Division, Department of Community Medicine, University of Pittsburgh, Pittsburgh, Pa. 15261. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

Academic position at **ASSISTANT OR ASSOCIATE PROFESSOR** level in Department of Pediatrics, University of Michigan. Board-certified. Patient care and teaching in ambulatory pediatrics at major affiliated hospital. Contact: **Dr. Ruth Strang, Department of Pediatrics, Wayne County General Hospital, Eloise, Michigan 48132. A nondiscriminatory, Affirmative Action Employer. Code 400FO.**

ASSISTANT OR ASSOCIATE PROFESSOR OF ANATOMY

The Department of Anatomy at the University of Cincinnati invites applicants for two faculty positions in molecular aspects of developmental biology. Applicants must have at least 2 to 3 years of both postdoctoral experience and evidence of productivity on a research program with current extramural grant support. The applicant should also have training or background in teaching one of the anatomical sciences (histology, gross, or neuroanatomy).

Candidate should respond by 1 October 1980 with curriculum vitae, bibliography, and a statement of past and planned research activity to: **Dr. Robert R. Oardell, Department of Anatomy, University of Cincinnati, 231 Bethesda Avenue, Cincinnati, Ohio 45267.**

An Equal Opportunity Employer, M/F/H

ASSISTANT PROFESSOR—INDUSTRIAL HYGIENE AND INDUSTRIAL TOXICOLOGY PURDUE UNIVERSITY

Assistant professor, tenure-track (12-month) position for teaching undergraduate and graduate courses in occupational health and industrial toxicology. Applicants will be provided excellent facilities and be encouraged to pursue research in areas of interest.

A Ph.D. in industrial hygiene, air pollution, industrial or environmental toxicology is required. Send résumés to:

**Dr. John E. Christian
Head, School of Health Sciences
Purdue University
West Lafayette, Ind. 47907**

An Equal Opportunity/Affirmative Action Employer

ASSISTANT/ASSOCIATE PROFESSOR OF INTERNAL MEDICINE. Primary appointment in Section of Endocrinology. Take active part in teaching, research, and clinical activities of the section. Active research program. Demonstrated experience in teaching and clinical activity. Board-certified or -eligible with valid California medical license. Send curriculum vitae and three references to: **Lindy Kumagi, M.D., Chief, Section of Endocrinology, University of California, Davis, Professional Building, 4301 X Street, Sacramento, Calif. 95817. The University of California is an Equal Opportunity/Affirmative Action Employer. Applications accepted through 30 September 1980.**

ASSISTANT PROFESSOR OF PHYSIOLOGY. To teach medical and graduate students in cardiovascular and endocrine physiology. To join active research group studying microcirculation and the functional significance of prostaglandins in blood flow and blood pressure regulation. Candidate should have strong background in biochemical methodology related to enzyme assays and radioimmunoassay procedures. Position available from 1 February 1981. Qualified applicants should send curriculum vitae to: **Gabor Kaley, Ph.D., Chairman, Department of Physiology, New York Medical College, Valhalla, N.Y. 10595. Affirmative Action/Equal Opportunity Employer.**

Faculty position available immediately for **ASSISTANT RESEARCH BIOCHEMIST.** Experience required in recombinant DNA methods, DNA sequencing, oligonucleotide synthesis, and molecular hybridization methods. Salary is determined by the level of rank. Send applications by 22 August 1980 to: **Dr. Theodore Friedmann, Department of Pediatrics, Division of Molecular Genetics, School of Medicine, University of California, San Diego, La Jolla, California 92093. The University of California, San Diego, is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

ASSISTANT RESEARCH POSITION

Research position in neurophysiology available immediately for person experienced in intracellular recording in cat spinal cord motoneurons. Experiments related to the study of the central pattern generation of locomotion. Salary commensurate with experience (\$15,000 to \$19,000). Submit curriculum vitae to:

**Dr. Louis J. Goldberg
Department of Anatomy
Center for the Health Sciences
University of California, Los Angeles
Los Angeles, Calif. 90024**

Equal Opportunity/Affirmative Action Employer

BIOCHEMIST POSTDOCTORAL

Tumor mitochondrial bioenergetics; membrane lipids and metabolite exchange transport. Available immediately. Competitive salary. Familiarity with mitochondrial techniques desired. Please send résumé and two letters of recommendation to: **Peter S. Coleman, Laboratory of Biochemistry, Department of Biology, New York University, New York, N.Y. 10003.**

DIRECTOR—VIRGINIA GRADUATE MARINE SCIENCE CONSORTIUM. Experienced marine science administrator to serve as director of Graduate Marine Science Consortium in the Commonwealth of Virginia. Primary responsibilities will be to develop and coordinate the Virginia Sea Grant Office and to facilitate matters concerning graduate marine science activities in Virginia. The director's office will be located at the University of Virginia in Charlottesville and the director will be eligible for academic appointment at that institution. Salary commensurate with education and experience. Résumés should be submitted, along with names of three references, to: **Dr. W. Dexter Whitehead, Dean, Graduate School of Arts and Sciences, 444 Cabell Hall, University of Virginia, Charlottesville, Virginia 22903. Deadline: 1 September 1980. The Commonwealth of Virginia is an Equal Opportunity Employer.**

RESEARCH ASSOCIATE Energy/Environment

The East-West Center is a national educational institution founded by the U.S. Congress in 1960 to promote better relations and understanding among nations through cooperative programs of study, research, and training. These programs focus on crucial problems of mutual concern to countries of Asia and the Pacific and the United States. Staff, visiting scholars, senior professionals, and graduate degree students form teams which work on these problems. All Center programs are multinational and multidisciplinary. In its staff, the Center seeks excellence in team research; commitment to the development of policy aids, educational products, and practical applications of such research; and ability to work cooperatively with those from other cultures and disciplines.

Applications and nominations are being accepted for a full-time academic staff position in the Center's Environment and Policy Institute. In addition, Fellowships and Research Internships are available from time to time.

Candidates for the staff position must have a Ph.D. or its academic equivalent plus at least three years of experience in research on the environmental aspects of one or more of the following areas:

1. Coal production, conversion, or combustion, including the implications for air quality standards;
 2. Off-shore oil exploration and production and the effects of oil on aquatic systems;
 3. Growing and processing fuelwood or agricultural crops for energy.
- Cover letter should give examples of demonstrated ability to: (a) discover knowledge about natural resource and environmental issues, especially at the international level; (b) develop applications of this knowledge, for example, curricula, educational materials, policy aids; and (c) design and implement research and education projects and activities in a team context, preferably multinational. Experience in Asia/Pacific region as well as in the United States preferred. Working proficiency in the English language required.

Salary commensurate with extent of experience and qualifications. Additional current cost-of-living allowance of 12.5% (subject to change). All nominees will be contacted to determine interest. Applications with cover letter, complete curriculum vitae, and names and addresses of three professional references must be postmarked no later than October 31, 1980. Starting date flexible. Send to Rebecca Dixon, Personnel Division, Dept. 19, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96848.

An Equal Opportunity Employer M/F

POSITIONS OPEN

Department of Preventive Medicine and Biometrics, School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Md., is seeking qualified applicants for the positions of:

ASSOCIATE PROFESSOR, DIVISION OF EPIDEMIOLOGY ASSISTANT PROFESSOR/INSTRUCTOR, DIVISION OF EPIDEMIOLOGY

Qualifications for these positions are an M.D. or Ph.D. degree and experience in medical school teaching, educational administration, and research. Applicants' expertise in epidemiology should be reflected by publications in critically reviewed scientific journals. Experience with medical application of electronic data processing and manipulation of large data bases is desirable. Incumbents will be expected to participate in teaching and research programs and supervise medical and graduate students and postdoctoral assistants at the tutorial level.

The Department of Preventive Medicine and Biometrics has divisions of Biometrics, Epidemiology, Tropical Public Health, Environmental and Occupational Health, and Health Programs Administration, and has considerable laboratory and automated data processing capabilities. Interested persons should contact: **The Personnel/Manpower Directorate Chairman, Department of Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20814; telephone: 301-295-3170.**

The Uniformed Services University of the Health Sciences is an Equal Opportunity Employer.

ASSOCIATE PROFESSOR OF PHARMACOLOGY

Associate professor. Department of Pharmacology and Therapeutics of Texas Tech University Health Sciences Center is seeking candidates for associate professor of pharmacology, available 1 September 1980. Qualifications include the Ph.D. degree, preferably in pharmacology, with at least 2 years of postdoctoral research training. Candidates should have had several years of experience on a medical school faculty, and have demonstrated a high level of competence with respect to the teaching of pharmacology to medical students, and have exhibited independence and productivity in research and research funding. The candidate will be expected to conduct an active, independent, and productive research program and to be persistent in seeking and obtaining research funds. Candidates with research interests in the areas of cardiovascular and autonomic pharmacology, biochemical pharmacology, or toxicology will be given preference, but candidates with research interests in other areas will also be considered. Applications should include curriculum vitae and three names for reference purposes and should be sent prior to 15 September 1980 to: **Dr. Alexander D. Kenny, Chairman, Department of Pharmacology and Therapeutics, Texas Tech University Health Sciences Center, Lubbock, Texas 79430. Equal Opportunity Employer.**

BIOCHEMICAL ENDOCRINOLOGY OF TUMORIGENESIS. Postdoctoral position available immediately. Experience in techniques of cell culture, handling small animals, and analytical biochemistry. To join ongoing program investigating role of hormones in tumorigenesis. Apply with résumé and letters of reference to: **Dr. Claude A. Villee, Laboratory of Human Reproduction and Reproductive Biology, Room 503, Department of Biological Chemistry, Harvard Medical School, 45 Shattuck Street, Boston, Massachusetts 02115.**

CELL BIOLOGIST/NEUROBIOLOGIST UNIVERSITY OF CALIFORNIA, SAN FRANCISCO (UCSF)

The Department of Physiology, UCSF, is seeking an investigator who uses electron microscopy in the correlation of structure and function, and who will participate in campus programs in neural science and cell biology. Appointment to this full-time faculty position can be made at the assistant, associate, or full professor level. Send curriculum vitae and bibliography, and arrange to have at least three letters of recommendation sent to:

**William F. Ganong, M.D.
Chairman, Department of Physiology
University of California
San Francisco, California 94143**

UCSF is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

POSITIONS OPEN

BOTANY: Mississippi State University. Ph.D. with specialization in plant anatomy. Available January 1981 (tenure-track position) with the rank of assistant professor. Applicant must provide evidence of research or potential for research. Teaching in area of specialty, plus general botany. Forward application, including transcripts, curriculum vitae, and three letters of recommendation, to: **Dr. James D. Yarbrough, Department of Biological Sciences, Drawer GY, Mississippi State University, Mississippi State, Miss. 39762. An Equal Opportunity Employer.** Application deadline: 15 September 1980.

The Australian National University invites applications for appointment to the **CHAIR OF GEOLOGY** in the Faculty of Science. No special field of interest in geology is specified. The University seeks to appoint a person with his/her own active research interest but with a concern for the other areas of research endeavours in the Department of Geology, a capacity for academic leadership in both the department and the Faculty of Science, and a capacity to stimulate the teaching program of the department. It is hoped that the appointee will be able to take up duty during 1981. Appointment to age 65. Salary: A\$35,654 per annum. (Present exchange rates: A\$1:U.S.\$1.15:C\$1.32.) Superannuation; appointment expenses; housing assistance. Applications to: **Registrar, P.O. Box 4, Canberra, ACT 2600, Australia, before 30 September 1980.**

The Australian National University invites applications for appointment to the **CHAIR OF ZOOLOGY** in the Faculty of Science. No particular field of interest is specified. The University seeks to appoint a person who can provide strong academic leadership in both teaching and research in the Department of Zoology and in the Faculty of Science. It is hoped that the appointee will be able to take up duty during 1981. Appointment to age 65. Salary: A\$35,654 per annum. (Present exchange rates: A\$1:U.S.\$1.15:C\$1.32.) Superannuation; appointment expenses; housing assistance. Applications to: **Registrar, P.O. Box 4, Canberra, ACT 2600, Australia, before 30 September 1980.**

The Department of Medicine at the University of Kentucky College of Medicine is recruiting a **CHIEF** for the Division of Hematology-Oncology. There are active basic science and clinical programs in cancer research within the division and the potential for collaboration with several other departments at the Medical Center. Interested individuals are invited to contact: **Theodore A. Kotchen, M.D., Professor of Medicine, University of Kentucky College of Medicine, 800 Rose Street, Lexington, Kentucky 40536.**

From time to time, positions are available in the Department of Anesthesiology, Yale University School of Medicine, at the **CLINICAL AND RESEARCH FACULTY AND RESIDENT LEVELS.** Interested individuals should apply to:

**Luke M. Kitahata, M.D., Ph.D.
Chairman, Department of Anesthesiology
Yale University School of Medicine
333 Cedar Street**

New Haven, Connecticut 06510

Please respond by 1 November 1980. *Equal Opportunity/Affirmative Action Employer. Qualified women, minority group members, and handicapped individuals are encouraged to apply.*

UNIVERSITY OF TORONTO—TORONTO GENERAL HOSPITAL DEPARTMENT OF PATHOLOGY ELECTRON MICROSCOPIST

An electron microscopist is required to fill a full-time academic post supervising the EM facility in a large pathology department active in research, teaching, and diagnostic pathology.

The successful candidate will be expected to carry out independent research, to be responsible for the training of graduate students and residents, and for the supervision and development of the departmental EM facility.

Academic rank and salary will be dependent upon qualifications and experience. Applicants possessing an advanced degree in cell biology, pathology, medicine, veterinary medicine, or other equivalent background are invited to send curriculum vitae, bibliography, and the names of three referees to:

**Dr. Emmanuel Farber
Professor and Chairman
Department of Pathology
Banting Institute
100 College Street
Toronto, Ontario, Canada M5G 1L5**

POSITIONS OPEN

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

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

DIRECTOR, LABORATORY OF ORNITHOLOGY CORNELL UNIVERSITY

Applications are invited for the directorship of the Laboratory of Ornithology.

The appointee is expected to be an established ornithologist with a record of scholarly research. Depending on qualifications and interest, the director also may hold a tenured (or tenure-track) faculty appointment in the Division of Biological Sciences.

Applicants should have demonstrated administrative capabilities, have a strong interest in serving the amateur ornithologist, and be able to foster amateur participation in productive research programs.

Send curriculum vitae and names of references by 5 September 1980 to: **James W. Spencer, Vice-Provost, 303 Day Hall, Cornell University, Ithaca, New York 14853.**

An Equal Opportunity/Affirmative Action Employer

UNIVERSITY OF COLORADO HEALTH SCIENCES CENTER

DIRECTOR, Radioimmunoassay Laboratory. Responsibilities include supervision and daily management of busy clinical radioimmunoassay laboratory. Candidates should also have strong research interest and experience, including publications, in the area of peptide hormone receptors. Candidates must generate own research support. Faculty appointment possible, depending on research accomplishments. **Radioimmunoassay Laboratory, University of Colorado Medical Center, 4200 East Ninth Avenue, Denver, Colo. 80262.** *The University of Colorado is an Equal Opportunity/Affirmative Action Employer.*

FACULTY OPENING MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) DEPARTMENT OF NUCLEAR ENGINEERING

Faculty position in the area of reactor physics and thermal hydraulic numerical analysis. Candidate would be expected to teach graduate courses and lead research in these areas. Level of position will be dependent on qualifications of candidate. *MIT is an Equal Opportunity/Affirmative Action Employer.* Write to:

**Professor Norman C. Rasmussen
Massachusetts Institute of Technology
Department of Nuclear Engineering
24-102
Cambridge, Mass. 02139**

FACULTY POSITION—BIOCHEMISTRY. The Department of Biochemistry, State University of New York (SUNY) at Stony Brook, has a tenure-track position available at the assistant professor level. The successful applicant, who could be appointed as early as fall 1980, will have an outstanding potential for research and a strong commitment to teaching. Applicants should send complete curriculum vitae with reprints, research interests, and names of three references to: **Dr. Bernard Dudoek, Chairman, Department of Biochemistry, SUNY at Stony Brook, Long Island, N.Y. 11794.** Application deadline: 30 August 1980. *An Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

MEDICAL TECHNOLOGY INTERN PROGRAM DIRECTOR. Full-time, temporary position for 1980-1981 academic year involving laboratory instruction, lecturing, and administration of a medical technology intern program. Salary will depend on qualifications, degree status, and experience. Closing date: 22 August 1980. **Biological Sciences Department, San Jose State University, San Jose, Calif. 95192.**

EPIDEMIOLOGY—ASSISTANT PROFESSOR OF PLANT PATHOLOGY

The Department of Plant Pathology, University of California, Berkeley, announces a faculty position for a scientist with a Ph.D. in plant pathology or closely related discipline and a background and interest in pathogen epidemiology and ecology. Training and/or experience in computer science and statistics is desirable. The appointee will be expected to develop a research program on the epidemiology, ecology, and control of a pathogen, or group of pathogens, of importance to California agriculture or forestry. Research areas could include epidemiology, biology, or population genetics of soilborne and foliar pathogens, and disease forecasting and crop loss appraisal. Teaching responsibility will be at both the undergraduate and graduate levels. Applicants should send curriculum vitae, publications, and the names of three references to: **Dr. A. R. Weinhold, Chairman, Department of Plant Pathology, University of California, Berkeley, Calif. 94720**, by 30 September 1980.

The University of California is an Affirmative Action Employer.

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

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

FACULTY POSITION available in comparative immunology at the Tufts University School of Veterinary Medicine. Requires an ability to initiate and develop new programs of marine vertebrate immunopathology, focusing on mechanisms of resistance to diseases in aquatic species of economic importance. The individual selected must be able to develop new sources of support and foster links with existing research programs in immunology and pathology at the Boston Campus. Teaching of veterinary students and direction of research for thesis requirements are also required. The applicant should possess a strong background in independently supported basic research in immunology or immunopathology, not necessarily in marine species, but with a willingness to move into this area to develop the required programs of research and teaching. Salary and position are negotiable. Applications should be received no later than 1 September 1980 and should be sent to: **Dr. Sidney Leskowitz, Department of Pathology, Tufts University, 136 Harrison Avenue, Boston, Mass. 02111.** Include a brief statement of present and future objectives and names of five references. *An Affirmative Action/Equal Opportunity Employer.*

FACULTY POSITIONS

Growing, well-established, accredited school of chiropractic seeks quality teacher/scholars with doctorates for positions opening in the Basic Science Division. **BIOCHEMIST:** preference to individual with interest in nutrition; January or August 1981. One or more **PHYSIOLOGIST(S)** with preference given to those interested in digestive cardiovascular or neuromuscular physiology; January 1981. Interested persons with these and **OTHER SPECIALITIES** relevant to the preclinical sciences are invited to submit a letter discussing career goals in teaching and research, curriculum vitae, and names and addresses of three references to: **Basic Science Division, Northwestern College of Chiropractic, 1834 South Mississippi River Boulevard, St. Paul, Minnesota 55116.**

8 AUGUST 1980

Our client, a division of a large, successful, multi-national health care company, situated in a desirable SUBURBAN NEW JERSEY area, has retained us to locate a talented professional for the position of

BIOCHEMICAL PHARMACOLOGY SECTION HEAD

Reporting to the Director of Biological Research, and having direct responsibility for managing four laboratory groups, the ideal candidates for this opportunity should hold a PhD plus 6 or more years' pharmaceutical industry experience and have particular interest in at least one of the following specialties: immediate and delayed hypersensitivity, cardiovascular, central nervous system, reproduction.

Must have current knowledge of state-of-the-art techniques; have the talent to fulfill a leadership role in the overall direction of the research process; and have the ability to oversee PhDs and other professional staff members as well as conduct personal research on disease entities and drug candidates. Must be familiar with approaches to explore mechanism of action, binding, receptor sites, etc. Will also provide guidance in the synthesis of new drug entities.

This firm has up-to-date research facilities, noted for their excellence. The package offered is quite comprehensive and includes cash compensation to the

LOW \$40s

For consideration, please send your résumé, including salary history, in strict professional confidence to:
Mr. D. A. Silverstein, President—or call him for details.

DANIEL A. SILVERSTEIN ASSOCIATES INC.

CONSULTANTS TO MANAGEMENT ON EXECUTIVE SELECTION
375 PARK AVENUE, NEW YORK, NEW YORK 10022 (212) 759-4953

DIRECTOR ANALYSIS AND SUPPORT DIVISION

THE OFFICE OF NAVAL RESEARCH is seeking an individual to serve in this Senior Executive Service (SES) position.

The Director of the Division plans, directs, coordinates and manages fleet analysis and support activities of the Office of Naval Research. The person serves as Technical Development and Evaluation (TAC D&E) Support Project Manager and assumes responsibility for technical management of all TAC D&E funds. The primary objective of the TAC D&E Support Project is to provide the effectiveness of operational equipment and assets. A second objective is to provide guidelines for the development of research programs that will make these programs responsive to the far-reaching requirements of future Naval Systems.

Candidates must have a Ph.D. or its equivalent experience in the physical sciences, mathematics, operations research and/or engineering with at least five years of specialized experience in research or development efforts and management directed to the solution of military development/operational problems.

Salary is dependent upon qualifications.

Interested persons should send a Standard Form SF-171, Personal Qualifications Statement (available at Federal Job Information Offices) by 15 August 1980 to:

**OFFICE OF NAVAL RESEARCH
Personnel Services Division
800 North Quincy Street, Room 823
Arlington, Virginia 22217
Announcement #80-27 S
(202) 696-4705**

Candidates who fail to submit the required forms will not be considered.
An Equal Opportunity Employer U.S. Citizenship Required

POSITIONS OPEN

FACULTY POSITION

The University of California, Irvine, Department of Biological Chemistry in the College of Medicine, invites applications for two appointments as assistant professor; under exceptional circumstances, applications will also be considered at other professorial levels. Teaching responsibilities involve instructing medical and graduate students in selected areas of biochemistry. Research experience and interest in eukaryotic cell systems dealing with genetics, protein synthesis, DNA and RNA synthesis and metabolism, or macromolecular processing and its control is preferred. Faculty members are expected to develop a strong, independent research program. *The University of California is an Affirmative Action Employer.* Send curriculum vitae, three letters of reference, and a detailed description of proposed research program by 15 October 1980 to:

Search Committee
Department of Biological Chemistry
University of California, Irvine
California College of Medicine
Irvine, California 92717

INDUSTRIAL HYGIENIST

The University of Texas Medical Branch (UTMB) is seeking a qualified individual to conduct its program for the control of toxic chemicals and hazardous biological agents. Candidates should have a M.S. in industrial hygiene, public health, or related field and a working knowledge of microbiology, biochemistry, toxicology, and general principles of laboratory ventilation. An ability to communicate effectively with individuals of differing levels of education is essential. Candidates should have a minimum of 2 years of experience, preferably in a medical or academic institution.

Send résumé and references to:

Leo Wade, Jr., Ph.D.
Office of Environmental Health
Room 106 Basic Science Building
University of Texas Medical Branch
Galveston, Texas 77550

UTMB is an Equal Opportunity/Affirmative Action Employer, M/F/H.

POSITIONS OPEN

GEOPHYSICAL FLUID DYNAMICIST/PHYSICAL OCEANOGRAPHER. Applications are solicited for a junior faculty position in oceanic physics or dynamics to begin in the academic year 1981-1982. Areas of interest to the department include analytical, numerical, and laboratory modeling of physical processes and phenomena in the sea.

Yale University is an Equal Opportunity/Affirmative Action Employer and encourages women and members of minority groups to compete for this position.

Curriculum vitae, publications, and the names of three or more referees should be sent by 15 October 1980 to: **Robert B. Gordon, Chairman, Department of Geology and Geophysics, P.O. Box 6666, New Haven, Conn. 06511.**

University of Michigan Medical School. One position at **INSTRUCTOR OR ASSISTANT PROFESSOR-level**, 1 September 1980, in the Department of Anesthesiology. Board-certified or -eligible anesthesiologist with Michigan licensure. Research, clinical, and didactic experience. Reply to: **Box 190, SCIENCE.** Code 800HO. A nondiscriminatory, Affirmative Action Employer.

MICROBIOLOGIST OR IMMUNOLOGIST—Research associate, Ph.D., preferably with experience in bacterial infections and pathogenesis of bacterial diseases. Experience in immunochemistry and purification of polysaccharides desirable. Send curriculum vitae to: **L. E. Tevelson, Administrator, Department of Microbiology and Immunology, Temple University School of Medicine, Philadelphia, Pa. 19140.** Equal Opportunity/Affirmative Action Employer.

PHARMACOLOGISTS needed in all fields of teaching subjects for accredited School of Medicine. Preferred attention will be given to appointment of an experienced chairperson but other ranks for teachers qualified in pharmacology are also requested. Research encouraged. Please send curriculum vitae and three references to: **Acting Chairperson, Pharmacology Department, Ponce School of Medicine, P.O. Box 7004, Ponce, P.R. 00731.** Equal Opportunity Employer.

POSITIONS OPEN

FISHERIES: Extension, Research and Teaching in Aquaculture

The Department of Entomology, Fisheries and Wildlife, the Minnesota Sea Grant Program, and the Agricultural Experiment Station are jointly sponsoring an assistant professorship (tenure-track) in aquaculture. Doctorate in fisheries (aquatic) biology required, and professional or field experience preferred. Specialization in genetics, fish diseases, or nutrition desirable. Individual will develop innovative research program and teach courses in aquaculture and will provide expertise to state and federal groups and aquabusiness through Minnesota Sea Grant Extension Program. Cooperative research with faculty of Departments of Ecology and Behavioral Biology, Animal Science, and Food Science and Nutrition probable. Salary competitive. *Affirmative Action/Equal Opportunity Employer; we encourage women and members of minority groups to apply.* Send curriculum vitae, statement of research interests, and three letters of recommendation to: **Dr. M. Weller and Dr. D. McNaught, Minnesota Sea Grant Program, 435 Animal Science, University of Minnesota, St. Paul, Minn. 55108,** by 30 September 1980.

POSTDOCTORAL RESEARCH ASSOCIATE

Ph.D. in experimental psychology, physiology, physiological optics, or equivalent to assist in experiments in human visual electrophysiology (VEP, ERG) funded by NEI. Experience with DEC computers essential, with knowledge of various signal analysis techniques (averaging Fourier spectrum, cross-correlations, and so forth) necessary. Experience and ability to record from single neurons in primate visual system desirable, but not mandatory. Salary: \$12,000 per year, minimum. Position available fall 1980. Deadline for application is 22 August 1980. Send curriculum vitae and three letters of recommendation to: **John B. Siegfried, Ph.D., Coordinator, Neuro-Visual Science Tract, Pennsylvania College of Optometry, 1200 West Godfrey Avenue, Philadelphia, Pa. 19141.** An Equal Opportunity/Affirmative Action Employer.

THE OFFICE OF NAVAL RESEARCH

is seeking a

TECHNICAL DIRECTOR

Eastern/Central Regional Office
Boston, Mass.

Salary range \$40,832-\$50,113 commensurate with qualifications

The incumbent of this position will be responsible for technical direction of research and technology programs assigned to the Office by the Chief of Naval Research. This involves the management of a multidisciplinary group of 27 senior scientists/engineers located in Boston and Chicago.

Candidates require at least three years progressively responsible experience, preferably with professional education at the doctoral level, in research and development in one or more of the following fields: physical sciences, life sciences, material and computer sciences, mathematics or appropriate engineering disciplines. Applicants should possess the ability to lead and manage and have an established stature and reputation in the scientific community.

Interested persons should send Standard Form SF-171 by September 2, 1980 to:

DIRECTOR FOR ADMINISTRATION
ONR EASTERN/CENTRAL REGIONAL OFFICE
666 Summer Street
Boston, MA 02210
Attn: Ann. #80-53 S

An Equal Opportunity Employer

U.S. Citizenship Required

BIOLOGICAL OCEANOGRAPHER

Lamont-Doherty Geological Observatory invites applications for two post-doctoral fellows. The successful applicant will be expected to conduct process-oriented research in collaboration with biologists, geochemists and physical oceanographers at L-DGO. Appointments will be for one year with reconsideration for a second year. The fellowship is \$18,500 per annum. Send curriculum vitae, three letters of recommendation and a statement of proposed research to: Search Committee, Marine Biology, Lamont-Doherty Geological Observatory, Palisades, New York 10964.

POSITIONS OPEN

UNIVERSITY OF PETROLEUM & MINERALS DHAHRAN, SAUDI ARABIA

The Department of Physics will have **FACULTY POSITIONS** open for the academic year 1981-1982, starting 1 September 1981.

Academic qualifications and experience: physicists with Ph.D. degrees interested in teaching and developing laboratories for M.Sc. program in physics are sought.

Facilities available are IBM 370/158, PDP 11, Mössbauer spectrometer, nitrogen and helium liquefiers, X-ray spectrometer, GCA/McPherson ESCA-36, Varian FC 12E UHV chamber with Leed, Auger, and photoemission capabilities, Varian 3117 sputtering equipment, and SPEX Industries Laser Raman spectrometer.

Language of instruction is English.

Minimum regular contract for 2 years, renewable. Competitive salaries and allowances. Air-conditioned and furnished housing provided. Free air transportation to and from Dhahran each year. Attractive educational assistance grants for school-age dependent children. All earned income without Saudi taxes. Ten months duty each year with two months vacation with salary. There is also possibility of selection for university's ongoing summer program with good additional compensation.

Apply with complete résumé on academic, professional, and personal data, list of references, publications and research details, and with copies of transcripts and degrees, including home and office addresses and telephone numbers, to:

University of Petroleum & Minerals
Houston Office
2223 West Loop South, Suite 410
Houston, Texas 77027

The University of Michigan Medical School, Department of Radiology, has **three positions** available immediately for **INSTRUCTOR THROUGH PROFESSOR**. Must be Board-eligible and Board-certified. Entering level commensurate with qualifications and experience. The physician will take part in the program of patient care, teaching, and research carried on in the Department of Radiology. He or she will supervise the activities of the resident staff and aid in the teaching of residents and medical students. Reply to: **Box 189, SCIENCE**. Codes 600HO, 1000HO, 200HO. A nondiscriminatory, Affirmative Action Employer.

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

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

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

TEKNEKRON RESEARCH, INC.

Teknekron Research is a successful research/consulting firm specializing in the application of advanced technology. We are looking for **MICROBIOLOGISTS** and/or **MOLECULAR BIOLOGISTS** with expertise in genetic engineering to join our **Biotechnology Division**. Salaries are very competitive and commensurate with experience. Interested applicants please send résumés to:

Director
Biotechnology Group
Teknekron Research, Inc.
1483 Chain Bridge Road, Suite 205
McLean, Va. 22101

POSTDOCTORAL FELLOW IN BIOCHEMISTRY to perform collagen cross-linking and glycosaminoglycan analyses on healing ligaments and tendons. Position available immediately as part of a newly funded 3-year NIH grant. Experience in amino acid analysis and radioactive labelling desirable. Send curriculum vitae and the names of three references to: **Dr. David L. Butler, Department of Orthopaedic Surgery, University of Cincinnati Medical Center, 5703 Medical Sciences Bridge, Cincinnati, Ohio 45267.**

8 AUGUST 1980

RESEARCH OPPORTUNITIES AT ABBOTT LABORATORIES

Consistent growth and expansion have created outstanding career opportunities in several of Abbott's largest divisions. As a \$1.6 billion leader in the worldwide health care industry, we can offer you exceptional career potential in a highly professional environment.

PHARMACOLOGY

Position involves development of analytical procedures for drugs in biological samples as well as interpreting pharmacokinetic data. Successful candidates will also assay samples from toxicological and clinical studies and have various supervisory and administrative responsibilities. A Ph.D. or equivalent background in analytical, pharmaceutical or biochemistry areas coupled with experience in analytical methods development will be required. Familiarity with GLP's and RIA procedures is desirable. Address replies to Chris Gude.

VIROLOGY

An opportunity exists to assist in developing an ongoing research program in cancer etiology. To qualify, you should be an independent, self-directed individual with a Ph.D. or equivalent background in biochemistry and a basic background in enzymology. Practical knowledge of tissue culture and experience in nucleic acid research is preferred and Post-doctoral experience is highly desirable. Address replies to Chris Gude.

BIOCHEMICAL PHARMACOLOGIST/BIOCHEMIST

An opportunity exists for an individual to assist in the development of assay procedures to study arachidonic acid metabolism and the effects of drugs on same. The qualified candidate will supervise a small staff and should have a Ph.D. in Biochemical Pharmacology or Biochemistry coupled with up to 3 years of related experience. Experience in the area of anti-arthritis research is also desirable. Address replies to Chris Gude.

ORGANIC CHEMISTRY-SPECTROSCOPY

Responsibilities include structural identification of mixtures of components using GC/MS. The person we seek will have an MS or BS in Organic Chemistry and will have some experience using GC/MS and, ideally, IR spectroscopy and NMR spectrometry. Address replies to Sondra Taylor.

INDUSTRIAL TOXICOLOGY

We seek an individual to assist in developing an Industrial Toxicology program for one of our growing divisions. The qualified candidate will be capable of establishing a viable testing protocol for raw materials, intermediates, final products and waste systems, interpret toxicological data to determine exposure risks and recommend appropriate solutions to management. A Ph.D. in Toxicology or MS with at least 2 years experience will be essential. Your background should also include prior experience in establishing toxicology protocols and interpreting data as well as demonstrated initiative in problem solving. Ability to work closely with medical, hygiene and safety personnel will be essential. Address replies to Sondra Taylor.

Abbott's outlook for the 80's is exceptional and we can offer strong growth potential to the individuals who qualify for positions in the above areas. Abbott provides an attractive salary and benefits program that includes profit sharing, relocation assistance and stock retirement program. For consideration, send your resume in complete confidence to:

Corporate Placement
Dept. S2

 **ABBOTT**
NORTH CHICAGO, ILL. 60064

Abbott is an Affirmative Action Employer

POSITIONS OPEN

LABORATORY ANIMAL PROGRAM DIRECTOR—Northeastern University in Boston, Massachusetts, has an immediate need for a laboratory animal program director. The position requires a wide range of duties and responsibilities including managing the University's animal care facilities, advising research staff, developing and conducting University courses, and ensuring the safe, efficient care and utilization of laboratory animals. Minimum requirements include a master of science degree in laboratory animal science, relevant professional society membership, and at least 2 years of relevant professional experience which must have included supervisory, teaching, and budgetary exposure. Also required is veterinary or equivalent training to present some diagnosis, therapeutics, surgery, and medical management of higher- and lower-order animal species. Starting salary for a 5-day, 35-hour work-week with 24-hour on call availability is \$20,500, and includes life, medical, and disability insurance, and 3 weeks of annual vacation. Interested applicants respond with résumé and list of references to: **Philip LaTorre, Director of Personnel, Northeastern University, 360 Huntington Avenue, Hayden Hall, Room 101, Boston, Mass. 02115.** *An Equal Opportunity/Affirmative Action Employer.*

MASS SPECTROSCOPIST RICE UNIVERSITY

The Department of Biochemistry of Rice University announces the availability of a staff position for an experienced bioorganic mass spectroscopist to operate GC-MS unit and to participate in research on sterol biosynthesis and chemistry of complex lipids. Additional experience in IR and NMR desired but not essential. Salary dependent on qualifications and experience. Position available immediately. Interested persons should send résumé and the names of three references to: **G. J. Schroepfer, Jr., Biochemistry Department, Rice University, Houston, Texas 77001.** *An Equal Opportunity/Affirmative Action Employer.*

REPRODUCTIVE PHYSIOLOGIST. Career federal service. To develop independent research program in bovine embryonic and fetal development. Position located at Roman L. Hruska U.S. Meat Animal Research Center, Clay Center, Nebraska. GS-11/12/13; salary based on qualifications and experience. For applications, contact: **J. Brooks, USDA-SEA/AR-B1, 2000 West Pioneer Parkway, Peoria, Illinois 61615.** Telephone: 309-671-7813. *An Equal Opportunity Employer.*

RESEARCH ASSISTANT PROFESSOR

Enzymologist experienced in isolation and assay of membrane peripheral proteins to set up laboratory and collaborate in reconstitution of cyclic nucleotide control system of visual receptors. Submit curriculum vitae, bibliography, and three letters of recommendation to: **Professor P. A. Lieberman, Department of Anatomy, University of Pennsylvania School of Medicine/G3, Philadelphia, Pa. 19104.** *An Equal Opportunity/Affirmative Action Employer.*

STAFF OFFICER

The National Research Council (NRC) seeks a staff officer with Ph.D. in a behavioral or social science and a minimum of 2 years of postdoctoral experience for position as executive secretary to Panels on Behavioral Sciences and Health Services Research, advisory to the NRC's Committee on a Study of National Needs for Biomedical and Behavioral Research Personnel. Position involves the collection and analyses of data, initiation of special studies, organization of workshops and symposia, provision of technical and professional support services to the panels, the preparation of panel reports, and assistance in the preparation of committee reports.

Samples demonstrating ability to write for a non-technical audience will be required during application process. Familiarity with the design and conduct of survey questionnaires, and relevant experience with science-public policy issues concerning human resources, particularly in the areas of training and utilization, is desirable. Salary: \$25,000 to \$31,000, commensurate with experience. Please send curriculum vitae and references to:

**Herbert B. Pahl, Ph.D., Staff Director
National Research Council, JH 717
2101 Constitution Avenue, NW
Washington, D.C. 20418**

An Equal Opportunity/Affirmative Action Employer

POSITIONS OPEN

SMITHSONIAN TROPICAL RESEARCH INSTITUTE (STRI) MARINE BIOLOGIST

The Smithsonian Tropical Research Institute announces a vacancy for a scientist interested in the evolutionary aspects of the physiology, behavior, or ecology of marine organisms. The successful candidate will also be expected to spend part of his/her time in the coordination of the activities of staff, visiting scientists, and students at the Naos Island (Pacific) Marine Facility at STRI. Preference may be given to a candidate with a research program designed to take advantage of the unique opportunities for two-ocean comparative studies offered by the Isthmus of Panama, although candidates with more geographically prescribed interests may also apply. A candidate will be expected to have a Ph.D. degree, and knowledge of, or willingness to learn, Spanish would be helpful. *The Smithsonian Tropical Research Institute is an Equal Opportunity Employer; candidate will be selected on scientific merit, without consideration of nationality, sex, race, or religion.*

This is a full-time, permanent, excepted authority federal position (GS 11-13) with starting salary range of \$20,611 to \$29,375, plus benefits. Candidates should send their complete curriculum vitae, the names, addresses, and telephones of three references familiar with their work, copies of publications and papers in press, and a brief outline of the research they would like to pursue in Panama.

Closing date for application: **15 September 1980.** Address applications to:

**Chairman, Marine Search Committee
Smithsonian Tropical Research Institute
APO Miami 34002**

Department of Preventive Medicine and Biometrics, School of Medicine, Uniformed Services University of the Health Sciences, Bethesda, Md., is seeking qualified applicants for the position of:

PROFESSOR AND DIRECTOR, DIVISION OF BIOMETRICS

Qualifications are an M.D. or Ph.D. degree with substantial experience in teaching of biostatistics, educational administration, personnel management, and research development. The applicant's expertise in the field should be reflected by a significant number of publications in critically reviewed scientific journals. Experience with medical applications of electronic data processing and collection, storage, manipulation, retrieval, and analysis of large amounts of biomedical and demographic data is essential. Individual will be responsible for teaching and research and for administration of the division and will assist in planning and development of curricula and specific courses of study for the department. Incumbent expected to supervise medical and graduate students and postdoctoral assistants at the tutorial level.

The Department of Preventive Medicine and Biometrics has divisions of Biometrics, Epidemiology, Tropical Public Health, Environmental and Occupational Health, and Health Programs Administration and has considerable laboratory and automated data processing capabilities. Interested persons should contact: **The Personnel/Manpower Directorate Chairman, Department of Preventive Medicine and Biometrics, Uniformed Services University of the Health Sciences, 4301 Jones Bridge Road, Bethesda, Md. 20014; telephone: 301-295-3170.**

The Uniformed Services University of the Health Sciences is an Equal Opportunity Employer.

TEACHING LABORATORY COORDINATOR

The Department of Microbiology and Public Health at Michigan State University (MSU) is seeking an individual who will assume responsibility for the organization and coordination of departmental teaching laboratory support services. Applicants should have a master's degree in microbiology and at least 2 years of experience in laboratory teaching and/or preparation. Knowledge of laboratory techniques in general microbiology, virology, genetics immunology, parasitology, tissue culture, and microbial physiology is desirable. The coordinator is assisted by an operating supervisor and is directly responsible to the departmental administrator. He/she will consult with faculty and will supervise three technicians and student labor. Starting salary is \$15,000. Résumé and names of three references should be sent to: **MSU Personnel Office, Room 110 Nisbet Building, East Lansing, Mich. 48824; telephone: 517-353-3720.** Refer to position number AO141. *MSU is an Affirmative Action/Equal Opportunity Institution.*

POSITIONS OPEN

POSTDOCTORAL POSITION—Available immediately to study human epidermal structural proteins. The enzymology of several post-translation processes in these proteins is emphasized as are monoclonal (hybridoma) techniques to develop new immunological probes for the epidermal structural proteins. Position funded by Institutional National Research Service Award with salaries of \$13,380 to \$17,040, depending on years of relevant experience. Candidates must be permanent resident of the United States or a U.S. citizen. Candidates should have recent doctorate with training in protein purification and characterization; some tissue culture experience desirable. Send curriculum vitae and references to: **Dr. L. A. Goldsmith, Department of Medicine, Box 3030, Duke University Medical Center, Durham, N.C. 27710.** *An Equal Opportunity/Affirmative Action Employer*

POSTDOCTORAL POSITIONS/NIH training grant in pulmonary biology, available immediately for Ph.D.'s in cell biology and biochemistry to study endocytosis of collagen and collagenase production by lung fibroblasts in tissue culture and to carry out biochemical studies of collagen and elastin. Three-year appointments are available. Send résumé and names of three references to: **Dr. Gordon L. Snider, Boston University Medical Center, 80 East Concord Street, Boston, Mass. 02118.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION

A research associate position is available in the laboratory of Dr. Peter F. Hall to study: (i) the cell biology and biochemistry of trophic regulation of steroidogenesis, and (ii) the cell biology and endocrinology of spermatid function. Send curriculum vitae, synopsis of Ph.D. thesis research, and list of three references to: **Dr. Peter Hall, c/o Personnel Office, Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, Mass. 01545.** *An Equal Opportunity/Affirmative Action Employer*

RESEARCH ASSOCIATE

A permanent position as section head within a clinical-immunochemical research group for work on detailed characterization of human cancer-associated glycoconjugates. Doctorate in biochemistry, molecular biology, or chemistry with extensive recent laboratory work experience in preparative and structural carbohydrate research required. Excellent salary and benefits. Send résumé to: **Dr. Georg F. Springer, Professor of Surgery and Microbiology-Immunology (Northwestern University Medical School), Director, Immunochemistry Research, Evanston Hospital, 2650 Ridge Avenue, Evanston, Illinois 60201.** *An Equal Opportunity Employer.*

RESEARCH ASSOCIATES

The Energy, Environment, and Resources Center invites applications for the following positions: senior and junior research associates in the areas of energy and environmental research and public service. Applicants should possess appropriate advanced degrees or experience. Duties will include program development and writing proposals, carrying out and reporting projects, and working with a wide variety of people, both public and private, in a multidisciplinary setting. The Energy, Environment, and Resources Center maintains programs in Energy Conservation, Solar Energy, Appalachian Resources/Coal Program, Policy Analysis and International Student Program. Positions open November 1980. Salary negotiable, depending on experience. Applications should be addressed to: **Director, Energy, Environment, and Resources Center, The University of Tennessee, Knoxville, Tennessee 37916, Attention: Dr. Helen Hafford.**

The University of Tennessee, Knoxville, is an Equal Opportunity/Affirmative Action/Title IX/Section 504 Employer.

RESEARCH INSTRUCTOR. Ph.D. required with postdoctoral training. Previous experience in DNA excision repair and synchronized cell proliferation required. Experience with use of chemical carcinogens desirable. Send curriculum vitae and three letters of reference by 1 September 1980 to: **Dr. J. W. Grisham, Department of Pathology, University of North Carolina School of Medicine, Chapel Hill, N.C. 27514.** *The University of North Carolina is an Equal Opportunity/Affirmative Action Employer.*

PHARMACOLOGY POST-DOCTORAL FELLOW

Last fall we opened a modern Pharmaceutical Research and Administration Center, doubling our capacity to discover and develop potentially valuable ethical drugs. We are the U.S. subsidiary of ICI Ltd. (UK) whose research efforts introduced the first beta blocker, clofibrate, halothane, tamoxifen citrate, and chlorhexidine. Our STUART Division is the manufacturing and marketing arm for discoveries which promise to place us in a leading position among research-intensive drug firms in the U.S. We are attempting to develop new atypical antipsychotic drugs to aid in the search for such compounds; we wish to determine the locus of, and the nature of, the biochemical lesion or lesions in schizophrenia. Toward these ends, we seek a neurophysiologist experienced in electrical and chemical stimulation of, and intracellular recording from nerve cells grown in culture.

Campus setting, 26 miles south of Philadelphia. Comprehensive benefits, including unique tax sheltered investment program. Please submit detailed CV in confidence. Principals only.

C.T. Brodigan
Employee Relations



Americas Inc.
Wilmington, Delaware 19897
An Equal Opportunity Employer M/F

NRL

THE NAVAL RESEARCH LABORATORY
is presently searching for an

ASTROPHYSICIST

HEAD, RADIO AND INFRARED ASTRONOMY BRANCH
(\$40,832 to \$50,112 commensurate with qualifications)

Manages a group of 19 or more professional, technical, and support personnel engaged in a program of research, development, and evaluation in the areas of extraterrestrial radio and IR radiation; propagation and electronics. Emphasis is placed on research in identification and specifications of extraterrestrial sources of radio and IR radiation and the interpretation of source mechanisms. Generates long and short range plans, new areas of investigations, necessary sponsorship, and technical talent to accomplish branch goals. As the laboratory's expert in field, selectee will present new findings to the scientific community and participate in scientific panels and committees.

A B.S. degree in Physics or other appropriate discipline is required and a Ph.D. is highly desirable.

This position is in the Federal Career Service with all Civil Service benefits. Interested applicants should submit a Personal Qualifications Statement (SF-171) or detailed resume, prior to August 29, 1980 to:

**Naval Research Laboratory
Civilian Personnel Office
Attention: 1811 S
4555 Overlook Avenue, S.W.
Washington, D.C. 20375**

For additional information or to request application forms, please call Mr. Jim Horn on AC 202-767-3030.

An Equal Opportunity Employer

U.S. Citizenship Required

Research Pharmacist

Mallinckrodt, Inc., a growth oriented pharmaceutical and chemical manufacturing firm, has an immediate opening for a Research Pharmacist in a KEY position in the Medical Products Research & Development Division. The preferred individual will have a Ph.D. in Physical Pharmacy and related experience in dosage form development of diagnostic agents.

The position offers an opportunity for innovative formulation work in semi-solid and parenteral dosage forms. Knowledge of surface chemistry is desirable.

We offer excellent salary, benefits and an opportunity to achieve personal and professional growth. Our modern research and development facility is located in a campus setting in suburban St. Louis.

Qualified candidates interested in this career opportunity should send their credentials to: Dr. P. Bruce McDoniel, MALLINCKRODT, INC., P.O. Box 5840, St. Louis, Missouri 63134.

Mallinckrodt

An Equal Opportunity Employer M/F

DIRECTOR MOUNT WILSON AND LAS CAMPANAS OBSERVATORIES

Carnegie Institution of Washington invites applications and nominations for the directorship of the Mount Wilson and Las Campanas Observatories. The headquarters of the Observatories are in Pasadena, California; Las Campanas Observatory is located near La Serena, Chile. The director has principal responsibility for the planning and operations of the Observatories.

The director should be an outstanding scientist with an earned doctorate in the physical sciences, preferably astronomy, and an understanding of the significance of a wide range of astronomical research. Familiarity with observatory operations, and especially with modern instrumentation, is essential.

Candidates must present evidence of distinction in research, accomplishment in administration, and the ability to communicate easily with colleagues and the public. Proficiency in Spanish will be an asset. The appointment will begin on or about 1 July 1981.

Carnegie Institution of Washington operates five research departments in the fields of astronomy, biology, and earth and planetary science, with most of the funding coming from its endowment. The director of the Mount Wilson-Las Campanas Observatories reports to the Institution's president. The staff of the Mount Wilson-Las Campanas Observatories consists of ten staff members, plus postdoctoral fellows, long-term visitors, and a highly competent technical support group. The Mount Wilson site remains one of excellent seeing, and the modernization of the 100-inch and 60-inch telescopes, and the continued effective use of the solar telescopes, are seen as objectives of high priority. The Las Campanas site combines superb seeing with a dry climate. The 1-meter Swope telescope and the 2.5-meter duPont telescope, both with their wide field capability, are major modern instruments for southern hemisphere astronomy. The staff at Las Campanas consists of 20 support personnel, all of them Chilean nationals.

Applications, accompanied by a résumé and names and addresses of at least three professional references, or nominations and supporting statements should be submitted as soon as possible, but not later than 1 October to:

**Dr. Charles Townes, Chairperson
Mount Wilson-Las Campanas Director Search Committee
Carnegie Institution of Washington
1530 P Street, NW
Washington, D.C. 20005
An Equal Opportunity Employer**

POSITIONS OPEN

SCIENCE WRITER

Sun Belt not-for-profit applied research organization. Major or minor in hard science or engineering requisite. Writing ability and ability to work comfortably with top management a must. Duties include preparation of semi-technical speeches and articles, exhibit development, and working with the press. Please send curriculum vitae in confidence to:

**Personnel Department No. 280
Southwest Research Institute
P.O. Drawer 28510, San Antonio, Tx 78284**

or inquire:

**Bill Crumlett, Asst. Director of Personnel
512/684-5111, Ext. 2072**



**SOUTHWEST RESEARCH
INSTITUTE**

We Are An Equal Opportunity Employer M/F

STOMATAL PHYSIOLOGIST

The Department of Biological Sciences at Stanford University is seeking the employment of a botanist of international stature to interface with research programs in the physiology, development, and ecology of plants, with emphasis on stomatal physiology. The position available is that of an adjunct professor of research, and appointment will be made for a limited 6-year-term appointment, coterminous with the candidate obtaining grant support for both salary and research activities. The person appointed will be involved solely with research activities and will interface with other research programs in the department.

Interested persons should apply to: **Robert T. Schimke, Chairperson, Department of Biological Sciences, Stanford University, Stanford, California 94305.**

Stanford is an Equal Opportunity Employer.

HARVARD UNIVERSITY VERTEBRATE BEHAVIORIST

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

Salaries for tenured positions will range upward from \$27,000 annually, depending upon experience and qualifications.

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

Harvard is an Equal Opportunity/Affirmative Action Employer.

VICE PRESIDENT—GROUP MEDICAL AFFAIRS to perform the following duties: designing, running, and evaluating the results of clinical studies on potential or existing products and devices; innovating new devices or principles to be applied in the bioengineering field; rendering advice and information to management; technological evaluation of new business opportunities and candidates for acquisition; ensuring compliance with corporate and FDA regulations; liaison with senior members of the medical profession, clinical engineers, biomedical technicians and physicists; and attendance at technical conferences. M.D. degree required. In lieu thereof Ph.D. or D.Sc. in physiology or biophysics required. Five years of experience in job being offered or 5 years of experience in medical advisory posts in health care industry. Ph.D. or D.Sc. candidates must have technical background in biophysics plus medical electronics or physiology plus biomedical engineering. Must have managerial and administrative experience; responsibility and experience in evaluating new drugs or medical devices; and experience in ethical principles governing clinical research. Forty hours per week; \$53,000 per year. Send résumé to: **R. Rook, G. D. Searle Company, 4901 Searle Parkway, Skokie, Illinois 60076.**

POSITIONS OPEN

RESEARCH BOTANIST MISSOURI BOTANICAL GARDEN

Immediate opening for Ph.D.-level systematic botanist with curatorial and supervisory experience to manage large, active herbarium collection and support staff of 20, and carry out taxonomic research on vascular plants. Salary negotiable based on experience. Send curriculum vitae and résumé to: **Personnel Office, Missouri Botanical Garden, P.O. Box 299, St. Louis, Mo. 63166.**

An Equal Opportunity Employer

STRUCTURE AND BIOLOGICAL ACTIVITIES OF PLANT DISEASE TOXINS

Two, possibly three, postdoctoral positions available for Ph.D.'s with interests in the biochemical action of plant disease toxins. Studies may include isolation, structural determination, biosynthesis, and mode of action of host-specific toxins. Experience is desired in plant biochemistry, physiological plant pathology or bioorganic chemistry, including an understanding of NMR and mass spectroscopy. Salary: \$13,000 to \$14,000 per year. Starting date: immediate to 1 November 1980. Applications close 1 September 1980. Direct applications to: **H. W. Knoche or J. M. Daly, Agricultural Biochemistry, University of Nebraska, Lincoln, Neb. 68583. Telephone: 402-472-2932. Equal Opportunity/Affirmative Action Employer.**

STOCKTON STATE COLLEGE

Three unanticipated undergraduate teaching positions are available to begin 1 September 1980.

MARINE BIOLOGY

Field-oriented invertebrate zoologist to teach introductory marine science courses and invertebrate zoology and to develop marine science courses in his or her area of specialty. The candidate should enjoy and excel in directing independent study and student research projects. This position could be filled as a 1-year visiting appointment.

PHYSICS

Experimental or theoretical physicist to teach introductory physics and to supervise physics laboratory classes. This position is a 1-year visiting appointment.

ENVIRONMENTAL STUDIES

A person with experience in environmental issues and background in air or water pollution control methods to teach courses in these areas. This position could be filled as a 1-year visiting appointment.

Faculty are expected to participate in Stockton's General Studies Program offering science or non-science courses to students as part of their general education distribution requirements. An interest in teaching and an M.S. (Ph.D. preferred) are required, rank and salary are commensurate with experience. Stockton is an undergraduate state college of about 5000 students located in coastal southern New Jersey near Atlantic City. *Women and members of minority groups are encouraged to apply.* Send a résumé and three letters of recommendation as soon as possible to: **Edward Paul, Dean, Natural Sciences and Mathematics, Box 7740, Stockton State College, Pomona, N.J. 08240.**

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP BIOCHEMICAL PHARMACOLOGY

A position is available immediately for an individual with biochemical background to study the role of lipids in drug metabolism, with emphasis on age-related changes. Send résumé and three references to: **Martin P. Schulman, Department of Pharmacology, University of Illinois Medical Center, P.O. Box 6998, Chicago, Ill. 60680.**

The California Institute of Technology invites applications for the **BANTRELL POSTDOCTORAL FELLOWSHIP PROGRAM IN EARTHQUAKE SEISMOLOGY** at the Seismological Laboratory. Appointments will be made for 1 year with the possibility of a second year renewal. The 1980-1981 stipend is \$20,000, plus travel expenses. The program is limited to United States and Israeli citizens. Interested persons are asked to contact: **Dr. Barclay Kamb, Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, California 91125. An Equal Opportunity/Affirmative Action Employer.**

TRAINEESHIPS

POSTDOCTORAL TRAINEESHIPS IN ENVIRONMENTAL TOXICOLOGY AND PATHOLOGY. Positions available immediately in NIH-funded interdisciplinary program. Research areas include pathology of chemically-induced disease (chemical carcinogenesis, morphological, and biochemical effects of chemicals, mechanisms of chemical toxicity, teratology, human cytogenetics); food-borne disease (biochemistry and mechanisms of action of microbial toxins, food additives, naturally occurring toxicants in foods); epidemiology; human behavioral toxicology; fate of pesticides in the environment. U.S. citizenship or permanent residence required. To apply, identify area of interest, and send résumé, transcripts, and three letters of recommendation to: **Dr. R. D. Hinsdill, Environmental Toxicology Center, University of Wisconsin, 1550 Linden Drive, Madison, Wis. 53706; telephone: 608-263-4580. Equal Opportunity/Affirmative Action Employer.**

GRADUATE TRAINEESHIPS IN CLINICAL MICROBIOLOGY AVAILABLE

The Department of Microbiology of Thomas Jefferson University is seeking outstanding candidates for its master of science program in clinical microbiology. B.S. degree, ASCP registration, GRE's, and 3 years of experience in a clinical microbiology laboratory required. Traineeship includes tuition and 12-month stipend of \$3900.

Direct inquiries to: **Department of Microbiology, Thomas Jefferson University, 1020 Locust Street, Philadelphia, Pa. 19107; telephone: 215-928-7772.**

MARKETPLACE



Wizard Laboratories

Announces the availability of ¹³C and ¹⁴C **CUSTOM LABELED COMPOUNDS.** For information or for a quotation, contact:

**Alan J. Brattesani, Ph.D.
Wizard Laboratories
1362 Monarch Lane
Davis, Calif. 95616
Telephone: 916-753-6700**

**Thermocouple
THERMOMETERS**

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

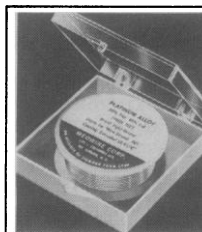
Unbreakable probes are steel sheathed including World's Smallest Microprobe, 0.01" dia.

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

The Modern Way to Measure

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

Circle No. 13 on Readers' Service Card



Medwire Corp.
stocks a wide variety of

**TEFLON®
COATED**

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

Medwire Corp.

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

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

Circle No. 128 on Readers' Service Card

ENGINEERING AND SCIENTIFIC ADMINISTRATORS

THE OFFICE OF NAVAL RESEARCH is seeking administrators for Research and Technology in the following Engineering and Scientific disciplines:

| POSITION | LOCATION |
|---------------------------------------------------------------------------|--------------------|
| Mechanical Engineer (Structural) | Boston |
| Electronics Engineer/Physicist | Boston or Chicago |
| Ceramics/Materials Engineer, Metallurgist | Boston |
| Electronics Engineer/Computer Scientist | Boston and Chicago |
| Physicist (Plasma and Laser Physics) | Boston |
| Chemist (Organic) | Boston |
| Chemist/Chemical Engineer | Chicago |
| Electronics Engineer/Physicist (Solid State and Semiconductor Physics) | Boston or Chicago |
| Mechanical Engineer (Energy Conversion) | Boston or Chicago |

All positions are at the GS-12 level with a starting salary of \$24,703 to \$32,110 depending upon qualifications.

Applicants must have completed all the requirements for a doctoral degree (Ph.D., Sc.D., or equivalent) in the above fields. Additionally three years of progressively responsible experience in the above fields is required. Equivalent combinations of professional experience and graduate education of the types described above are acceptable.

Interested persons should send Standard Form SF-171 no later than September 2, 1980 to:

**OFFICE OF NAVAL RESEARCH
PERSONNEL SERVICES DIVISION
800 North Quincy Street, Room 823
Arlington, VA 22217
Announcement #80-52 S
(202) 696-4705**

An Equal Opportunity Employer

U.S. Citizenship Required

DERMAL RESEARCH

Johnson Wax currently has openings for a pharmacologist, a biophysicist and a bioanalytical chemist brought on by growth in the dermal research department of our corporate research and development division. These positions will be responsible as team members in collaborative fundamental research on skin chemistry and biology.

Candidates for these positions should have an advanced degree, preferably a Ph.D. and be ready to take on challenging research problems. Interest in carrying out basic research in the areas of skin permeability, skin metabolism *in vitro* or animal models is essential. Qualified candidates should have a demonstrable research record and willingness to integrate their own research specialty with a multi-disciplinary team of R&D personnel. Excellent communication skills are required.

Johnson Wax is a multi-national chemical specialties company located in a pleasant, medium-size city located between Milwaukee and Chicago. Coupled with professional growth opportunities, we offer a competitive salary commensurate with experience and excellent benefits program including cash and deferred profit sharing.

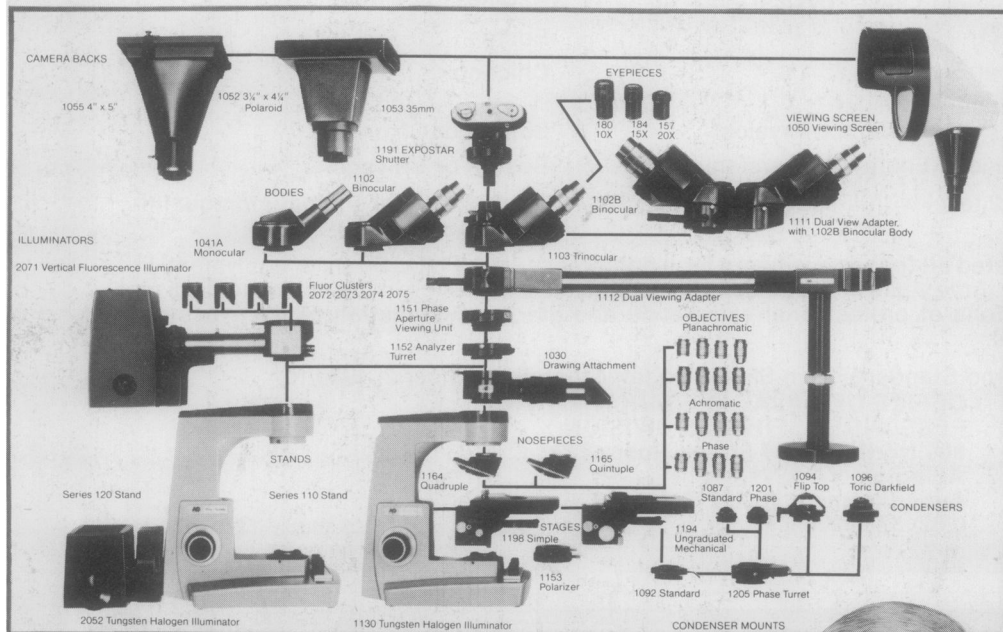
If you would like to join our research team, send a detailed resume in confidence to:

**R. W. Clark,
Personnel Manager,
Administrative & Professional,
S.C. JOHNSON & SON, INC.,
1525 Howe Street,
Racine, WI 53403.**

 Johnson wax

an equal opportunity employment employer-male/female

The total microscope system.



AO Series One-Ten MICROSTAR® microscope



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

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

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

AO
American Optical®

Circle No. 182 on Readers' Service Card