

fluctuations at Milankovitch frequencies during the last 700,000 years.

In addition to discussing the observational evidence, the first part of the book examines problems involved with the estimation of geological spectra. There are also important papers that discuss the limitations in accuracy and frequency stability of orbital insolation calculations. These papers clearly point out the mathematical problems involved in achieving exact calculations for planetary motions for time intervals prior to about two million years ago.

The second part of the book deals with models of climate change during the Pleistocene. A hierarchy of modeling approaches is discussed—conceptual models, simple energy-balance models, models with ice sheets, “oscillator” models, and simulations involving complex atmospheric general circulation models. The papers adequately cover the range of ideas that have been advanced to explain the origin of the ice ages. In addition to being useful as a compendium of ideas, this section illustrates a fundamental problem that the theoreticians have yet to address adequately: the multiplicity of theories is so great that they can't all be right. Though at some stage in the evolution of a field it is useful to examine the range of possible explanations for a phenomenon, one hopes that this book will mark the turning point at which theorists begin to eliminate some models.

To be fair, some of the modeling papers are sufficiently insightful or provocative to merit comment. Papers by Broecker and by Manabe and Broccoli are especially interesting, perhaps because they point out what models can't explain at the present time. For example, both papers discuss the difficulty of explaining the synchronicity of Northern and Southern Hemisphere glaciation, an effect not predicted by simple orbital theory. Perhaps natural variations of carbon dioxide or changes in deep water production rates account for the inter-hemispheric climate connection. There is also a nice paper by Kutzbach and Guetter on simulating the variations of the early Holocene African-Asian monsoon. This study is a particularly elegant conjunction of theory, simulation, and observational verification. The model is especially intriguing because the insolation-driven precipitation changes might explain some of the pre-Pleistocene (and presumably pre-glacial) rhythmic bedding patterns discussed in the first part of the book.

Physical oceanographic modeling of Pleistocene oceans is not discussed in the modeling section, probably because

there has been little work done on the subject. Apparently oceanographic models have not reached the stage at which they can be applied to ice-age boundary conditions with any degree of confidence. Perhaps this volume will stimulate physical oceanographers to improve their models so that they can start to address some of the first-order changes in surface and deep waters of the Pleistocene.

The volumes close with a summary and recommendations for future study. In addition, there is an interesting biographical sketch of Milankovitch written by his son. The work is well edited and nicely produced. It has already become essential for those interested in following the evolution of a fascinating field.

Within two weeks of the conference on Milankovitch and climate another meeting was held in Brussels on paleoclimatic research and modeling. On the whole, the book resulting from that meeting is less satisfying than the Milankovitch book. Many of the papers appear to be hastily written news items rather than polished research papers. The book is also hurt by some poor editing, typographical errors, and unclear figures and captions.

The one redeeming feature of the book is that all of the papers are written by European scientists, only about a third of whom have widespread contact with the research community in the United States. Thus, the book exposes American scientists to parallel research efforts by their European colleagues.

THOMAS J. CROWLEY

*Climate Dynamics Program,
National Science Foundation,
Washington, D.C. 20550*

Books Received

- Advances in Nutritional Research.** Vol. 6. Harold H. Draper, Ed. Plenum, New York, 1984. xvi, 335 pp., illus. \$49.50.
- Advances in the Study of Behavior.** Vol. 14. Jay S. Rosenblatt, et al., Eds. Academic Press, Orlando, Fla., 1984. xii, 238 pp., illus. \$29.50.
- Album of Science: Antiquity and the Middle Ages.** John E. Murdoch. Scribner, New York, 1984. xii, 403 pp., illus. \$55.
- Algorithm-Structured Computer Arrays and Networks.** Architectures and Processes for Images, Percepts, Models, Information. Leonard Uhr. Academic Press, Orlando, Fla., 1984. xxiv, 415 pp., illus. \$34.50. Computer Science and Applied Mathematics.
- The Alkaloids.** Chemistry and Pharmacology. Vol. 23. Arnold Brossi, Ed. Academic Press, Orlando, Fla., 1984. xx, 399 pp., illus. \$85.
- Ancient Astronauts, Cosmic Collisions and Other Popular Theories about Man's Past.** William H. Stiebing, Jr. Prometheus, Buffalo, N.Y., 1984. viii, 217 pp., illus. \$19.95; paper, \$9.95.
- Annual Reports in Medicinal Chemistry.** Vol. 19. Dennis M. Bailey, Ed. Academic Press, Orlando, Fla., 1984. xiv, 341 pp., illus. \$35.
- Annual Review of Anthropology.** Vol. 13. Bernard J. Siegel, Alan R. Beals, and Stephen A. Tyler, Eds. Annual Reviews, Palo Alto, Calif., 1984. x, 599 pp. \$27.

The Behavior of Penguins. Adapted to Ice and Tropics. Dietland Müller-Schwarze. State University of New York Press, Albany, 1984. xii, 193 pp., illus. \$29.50; paper, \$10.95. SUNY Series in Animal Behavior.

Beta-Adrenoceptors in Asthma. J. Morley, Ed. Academic Press, Orlando, Fla., 1984. x, 283 pp., illus. \$21.50. Perspectives in Asthma, 2. From a symposium, Kent, England, Sept. 1983.

Beyond Illness. Discovering the Experience of Health. Larry Dossey. New Science Library (Shambhala), Boulder, Colo., 1984 (distributor, Random, New York). xiv, 208 pp. \$14.95.

Beyond the Neighborhood Unit. Residential Environments and Public Policy. Tridib Banerjee and William C. Baer. Plenum, New York, 1984. xviii, 253 pp., illus. \$29.50.

Bibliographie der Pflanzenschutzliteratur. Bibliography of Plant Protection. W. Laux, Ed. Biologische Bundesanstalt für Land- und Forstwirtschaft, Berlin, 1984. xviii, 160 pp. + index. Paper, DM 55.

Bilinear Transformation Method. Yoshimasa Matsuno. Academic Press, Orlando, Fla., 1984. viii, 223 pp. \$50. Mathematics in Science and Engineering, vol. 174.

Biochemical Actions of Hormones. Vol. 11. Gerald Litwack, Ed. Academic Press, Orlando, Fla., 1984. xiv, 392 pp., illus. \$58.

The Biochemical Mode of Action of Pesticides. J. R. Corbett, K. Wright, and A. C. Baillie. 2nd ed. Academic Press, Orlando, Fla., 1984. x, 382 pp., illus. \$59.

Contemporary Topics in Polymer Science. Vol. 5. E. J. Vandenberg, Ed. Plenum, New York, 1984. xii, 458 pp., illus. \$75. From a symposium, Dorado Beach, P.R., Nov. 1982.

Control and Dynamic Systems. Advances in Theory and Applications. Vol. 21. Nonlinear and Kalman Filtering Techniques, Part 3 of 3. C. T. Leondes, Ed. Academic Press, Orlando, Fla., 1984. xx, 422 pp. \$49.

Coping with Physical Illness 2. New Perspectives. Rudolf H. Moos, Ed. Plenum, New York, 1984. xviii, 433 pp. \$39.50.

Coupled Mode Theory. As Applied to Microwave and Optical Transmission. Huang Hung-chia. VNU Science Press, Utrecht, Netherlands, 1984 (distributor, Proost & Brandt, De Meern, Netherlands). xx, 364 pp., illus. DM 118.

Crime Control. The Use and Misuse of Police Resources. David John Farmer. Plenum, New York, 1984. xx, 233 pp. \$25. Criminal Justice and Public Safety.

Current Concepts in Plant Taxonomy. V. H. Heywood and D. M. Moore, Eds. Published for the Systematics Association by Academic Press, Orlando, Fla., 1984. xvi, 432 pp., illus. \$50. The Systematics Association Special Volume, No. 25. From a conference, Reading, England, July 1982.

Current Concepts in Surfactant Research. P. von Wichert, Ed. Karger, Basel, 1984. x, 307 pp., illus. \$148. Progress in Respiration Research, vol. 18. From a symposium, Marburg, Germany, Sept. 1983.

Current Developments in Language Testing. Arthur Hughes and Don Porter, Eds. Academic Press, Orlando, Fla., 1983. x, 167 pp. \$33. Applied Language Studies. From a seminar, Reading, England, Dec. 1981.

Current Topics in Bioenergetics. Vol. 13. C. P. Lee, Ed. Academic Press, Orlando, Fla., 1984. xvi, 283 pp., illus. \$55.

Current Topics in Cellular Regulation. Vol. 24. Enzyme Catalysis and Control. Marlene DeLuca, Henry Lardy, and Richard L. Cross, Eds. Academic Press, Orlando, Fla., 1984. xxvi, 509 pp., illus. \$89. From a conference, Los Angeles, June 1983.

Current Topics in Cellular Regulation. Vol. 23. Bernard L. Horecker and Earl R. Stadtman, Eds. Academic Press, Orlando, Fla., 1984. xii, 268 pp., illus. \$41.

Current Topics in Research on Synapses. D. Gareth Jones, Ed. Liss, New York, 1984. Vol. 1, xiv, 222 pp., illus. \$38. Vol. 2, xii, 172 pp., illus. \$29.

Current Treatment of Anorexia Nervosa and Bulimia. Pauline S. Powers and Robert C. Fernandez, Eds. Karger, Basel, 1984. xvi, 347 pp., illus. \$58.75. Karger Biobehavioral Medicine Series, 4.

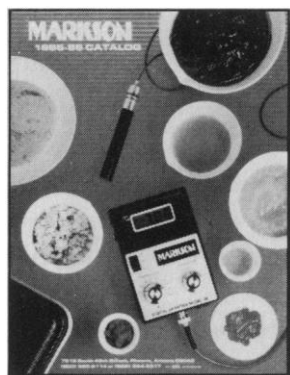
Dictionary of Scientific and Technical Terminology. English, German, French, Dutch, Russian. Nijhoff, The Hague, 1984 (U.S. distributor, Kluwer Boston, Hingham, Mass.). 496 pp. \$34.50.

Distributed Computing. Fred B. Chambers, David A. Duce, Gillian P. Jones, Eds. Academic Press, Orlando, Fla., 1984. xii, 330 pp., illus. \$22.50. A.P.I.C. Studies in Data Processing, vol. 20.

Doubling the Brain. On the Evolution of Brain Lateralization and Its Implications for Language. Janet Dunai-Hattis. Lang, New York, 1984. xiv, 213 pp. \$27. American University Studies.

Drying '84. Arun S. Mujumdar, Ed. Hemisphere, Washington, D.C., 1984. viii, 488 pp., illus. \$70.

Dynamics of First-Order Phase Transitions in Equi-
(Continued on page 786)



FREE!
MARKSON
Catalog of
Hard-to-Find
Laboratory
Equipment

- THERMOMETRY
- SPECTROSCOPY
- PLASTICWARE
- ELECTROCHEMISTRY
- LIQUID HANDLING
- SAFETY SUPPLIES

This new Markson Science catalog is jam-packed with page after page of essential equipment for every type of laboratory . . . research, clinical, medical or analytical. Includes low-cost glassware, pipettes, state-of-the-art multi-function pH and conductivity meters, plus thousands of other hard-to-find items. Call or write for your free catalog today.

MARKSON

Markson Science, (800) 528-5114
 7815 S. 46th Street Phoenix, AZ 85040

Circle No. 113 on Readers' Service Card

Announcing the 10th Annual

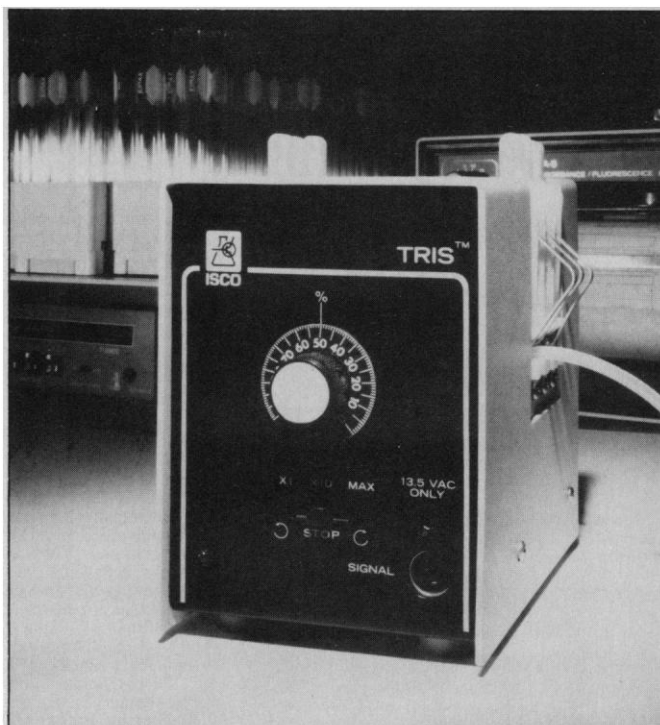
AAAS Colloquium on
R&D Policy

R&D in FY 1986

3 & 4 April 1985
The Capital Hilton
Washington, DC

For information, see the 1st, 15th, and 22nd February and 1st March issues of **Science** or write or call: AAAS/COSEPP, 1776 Massachusetts Avenue, NW, 6th Floor, Washington, DC 20036; phone: (202) 467-4310

American Association for the
Advancement of Science



NEW
PRECISION-
CONTROL PUMP

TRIS™ is the peristaltic pump that's different. You get three channels, precision control with 2% reproducibility, robust metal construction, electronic intercommunication with your other instruments, a three-year warranty, and a price lower than you're asked to pay for someone else's single channel plastic model. The removable, computer-designed tubing cassettes give you low pulsation, uniform channel-to-channel flow, and long tubing life — all without manual adjustment.

TRIS' price is just \$650. But if you buy it with an ISCO detector or fraction collector, the pump you've been waiting for costs only \$550.

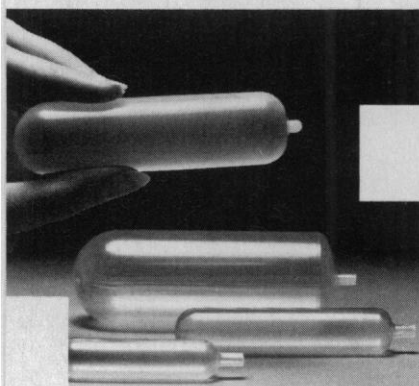
To order or get more information, phone toll free [800]228-4250. Or write ISCO, P.O. Box 5347, Lincoln, NE 68505.



Circle No. 155 on Readers' Service Card

QUICK-SEAL®

The
ultracentrifuge
tube with
no cap!



Patented Beckman Quick-Seal tubes eliminate most of the time-consuming steps in preparing tubes.

No caps to assemble, no stems, crowns, gaskets, or torquing. Simply fill the Quick-Seal tube, place it in the Sealer, and in seconds your tube is safely sealed and ready to spin.

Available in Ultra-Clear™ and polyallomer materials. Ideal for biohazardous or radioactive samples. And they hold 20 percent more volume than conventional capped tubes.

For a free Quick-Seal tube, mail coupon to Gertrude Burguières, P.O. Box 10200, Palo Alto, CA 94304.

Name _____
Institution _____
Dept. _____
Street _____
City _____
State _____ Zip _____

BECKMAN

BOOK REVIEWS

(Continued from page 746)

librium and Nonequilibrium Systems. S. W. Koch. Springer-Verlag, New York, 1984. iv, 148 pp., illus. Paper, \$6.50. Lecture Notes in Physics, vol. 207.

The Early Years of Radio Astronomy. Reflections Fifty Years after Jansky's Discovery. W. T. Sullivan, III, Ed. Cambridge University Press, New York, 1984. x, 421 pp., illus. \$39.50.

The Economic Structure of Backward Agriculture. Amit Bhaduri. Academic Press, Orlando, Fla., 1983. xii, 151 pp. \$30. Studies in Political Economy.

The Effect of Gravity on the Solidification of Immiscible Alloys. European Space Agency, Paris, 1984. x, 90 pp., illus. Paper, 60 F. ESA SP-219. From a workshop, Järva Krog, Sweden, Jan. 1984.

Electronic Properties of Doped Semiconductors. B. I. Shklovskii and A. L. Efros. Springer-Verlag, New York, 1984. xii, 388 pp., illus. \$49. Springer Series in Solid-State Sciences, vol. 45.

Electrophysiology of Epilepsy. P. A. Schwartzkroin and V. Wheal. Academic Press, Orlando, Fla., 1984. xii, 420 pp., illus. \$69.

Emergency Psychiatry. Concepts, Methods, and Practices. Ellen L. Bassuk and Ann W. Birk, Eds. Plenum, New York, 1984. xxii, 445 pp. \$45. Critical Issues in Psychiatry.

Encyclopedic Dictionary of Industrial Technology. Materials, Processes and Equipment. David F. Tver and Roger W. Bolz. Chapman and Hall, London, 1984 (U.S. distributor, Methuen, New York). vi, 353 pp., illus. \$34.50.

Energy Balance and Temperature Regulation. M. W. Stanier, L. E. Mount, and J. Bligh. Cambridge University Press, New York, 1984. viii, 152 pp., illus. \$29.95; paper, \$12.95. Cambridge Texts in the Physiological Sciences, 4.

Energy Conservation in the Process Industries. W. F. Kenney. Academic Press, Orlando, Fla., 1984. xii, 329 pp., illus. \$46. Energy Science and Engineering.

The Future for Automotive Technology. Ulrich Seiffert and Peter Walzer. Pinter, Dover, N.H., 1984. xviii, 197 pp., illus. \$22.50. The Future for Science and Technology Series.

Future Man. Brian Stableford. Crown, New York, 1984. 192 pp., illus. \$17.95; paper, \$12.95.

The Gemini Syndrome. A Scientific Evaluation of Astrology. R. B. Culver and P. A. Ianna. Prometheus, Buffalo, N.Y., 1984. xii, 222 pp., illus. \$18.95; paper, \$11.95.

Gene Expression. The Translational Step and Its Control. Brian F. C. Clark and Hans Uffe Petersen, Eds. Munksgaard, Copenhagen, 1984. 527 pp., illus. D.kr. 350. Alfred Benzon Symposium 19. From a symposium, Copenhagen, June 1983.

Heterogeneous Catalysis. Bernard L. Shapiro, Ed. Published for the IUCCP by Texas A&M University Press, College Station, 1984. xviii, 411 pp., illus. \$40. From a symposium, College Station, Tex., April 1984.

A Historical Catalogue of Scientists and Scientific Books. From the Earliest Times to the Close of the Nineteenth Century. Robert Mortimer Gascoigne. Garland, New York, 1984. xxii, 1177 pp. \$150. Garland Reference Library of the Humanities, vol. 495.

A History of Technology. Charles Singer *et al.*, Eds. Vol. 8. Consolidated Indexes. Compiled by Richard Raper. Clarendon (Oxford University Press), New York, 1984. xii, 232 pp. \$45.

Hormonal Control of the Hypothalamo-Pituitary-Gonadal Axis. Kenneth W. McKerns and Svi Naor, Eds. Plenum, New York, 1984. xiv, 622 pp., illus. \$85. Biochemical Endocrinology. From a meeting, Rehovot, Israel, Oct. 1983.

Human Alkaline Phosphatases. Torgny Stigbrand and William H. Fishman, Eds. Liss, New York, 1984. xxiv, 368 pp., illus. \$48. Progress in Clinical and Biological Research, vol. 166. From a symposium, Umeå, Sweden, Sept. 1983.

Human Cataract Formation. Pitman, London, 1984 (U.S. distributor, CIBA Pharmaceutical Co., Newark, N.J.). x, 284 pp., illus. \$35. Ciba Foundation Symposium 106. From a symposium, London, Oct. 1983.

International Review of Cytology. Vol. 88, G. H. Bourne, J. F. Danielli, and K. W. Jeon, Eds. Academic Press, Orlando, Fla., 1984. viii, 471 pp., illus. \$54.

International Review of Cytology. G. H. Bourne, J. F. Danielli, and K. W. Jeon, Eds. Academic Press, Orlando, Fla., 1984. Vol. 86. x, 331 pp., illus. \$45. Vol. 87. x, 341 pp., illus. \$45.

The International Uranium Market. Thomas L. Neff. Ballinger, Cambridge, Mass., 1984. xxiv, 335 pp., illus. \$32.50.

Interpretation of Breast Biopsies. Darryl Carter. Raven, New York, 1984. x, 201 pp., illus. \$37.50. Biopsy Interpretation Series.

Interstellar Chemistry. W. W. Duley and D. A. Williams. Academic Press, Orlando, Fla., 1984. viii, 251 pp., illus. \$45.

Intracellular Staining of Mammalian Neurones. A. G. Brown and R. E. W. Fyfe. Academic Press, Orlando, Fla., 1984. x, 115 pp., illus. \$23.

The Meat Industry in the 21st Century. Robert G. Cassens, Charles F. Cook, and Robert G. Kauffman, Eds. University of Wisconsin Department of Agricultural Journalism, Madison, 1984. viii, 101 pp., illus. Paper, \$5. From a symposium, Madison, Wis., May 1984.

Mechanisms of Intestinal Electrolyte Transport and Regulation by Calcium. Mark Donowitz and Geoffrey W. G. Sharp, Eds. Liss, New York, 1984. xiv, 374 pp., illus. \$78. Kroc Foundation Series, vol. 17. From a conference, Santa Ynez Valley, Calif., Sept. 1983.

Mechanisms of Morphological Evolution. A Combined Genetic, Developmental and Ecological Approach. Wallace Arthur. Wiley-Interscience, New York, 1984. xvi, 275 pp., illus. \$36.

Medicine and the Management of Living. Taming the Last Great Beast. William Ray Arney and Bernard J. Bergen. University of Chicago Press, Chicago, 1984. x, 202 pp., illus. \$19.95.

Membranes, Channels, and Noise. Robert S. Eisenberg, Martin Frank, and Charles F. Stevens, Eds. Plenum, New York, 1984. viii, 288 pp., illus. \$47.50. From a workshop, Denver, Feb. 1981.

Metabolic Probes of Central Nervous System Activity in Experimental Animals and Man. Louis Sokoloff. Sinauer, Sunderland, Mass., 1984. x, 97 pp., illus. Paper, \$17.95. Magnes Lecture Series, vol. 1.

Metal Ions in Biological Systems. Vol. 18, Circulation of Metals in the Environment. Helmut Sigel, Ed. Dekker, New York, 1984. xxvi, 397 pp., illus. \$79.75.

Methods in Enzymology. Sidney P. Colowick and Nathan O. Kaplan, Eds. Academic Press, Orlando, Fla., 1984. Vol. 105, Oxygen Radicals in Biological Systems. Lester Packer, Ed. xxx, 600 pp., illus. \$67.50. Vol. 107, Posttranslational Modifications, Part B. Finn Wold and Kivie Moldave, Eds. xxviii, 688 pp., illus. \$69.50.

Methods in Pharmacology. Vol. 5, Myocardial Biology. Arnold Schwartz, Ed. Plenum, New York, 1984. xii, 236 pp., illus. \$42.50.

Microbial Chemoautotrophy. W. R. Strohl and O. H. Tuovinen, Eds. Ohio State University Press, Columbus, 1984. xiv, 351 pp., illus. \$32.50. Ohio State University Biosciences Colloquia. From a colloquium, Columbus, Ohio, Oct. 1982.

Microtubules. Pierre Dustin. 2nd ed. Springer-Verlag, New York, 1984. xviii, 484 pp., illus. \$59.

The Microwave Debate. Nicholas H. Steneck. MIT Press, Cambridge, Mass., 1984. xx, 279 pp. \$25.

Military Modeling. Wayne P. Hughes, Jr., Ed. Military Operations Research Society, Alexandria, Va., 1984. xvi, 370 pp., illus. Paper, \$17.50.

Milkweed Butterflies. Their Cladistics and Biology. P. R. Ackery and R. I. Vane-Wright. British Museum (Natural History) London, and Comstock (Cornell University Press), Ithaca, N.Y., 1984. x, 425 pp., illus. \$75.

Mind: An Essay on Human Feeling. Vol. 3. Susanne K. Langer. Johns Hopkins University Press, Baltimore, 1984. xiv, 246 pp., illus. Paper, \$8.95. Reprint, 1982 edition.

Modelling in the Technology of Wastewater Treatment. Imre Horváth. Pergamon, New York, 1984. x, 202 pp., illus. \$40. Translated from the Hungarian edition.

Modern Cell Biology. Vol. 3. Birgit H. Satir, Ed. Liss, New York, 1984. x, 314 pp., illus. \$49.

The Molecular Biology of Adenoviruses 3. 30 Years of Adenovirus Research 1953-1983. Walter Doerfler, Ed. Springer-Verlag, New York, 1984. viii, 110 pp., illus. \$24.50. Current Topics in Microbiology and Immunology, 111.

The Molecular Virology and Epidemiology of Influenza. Charles H. Stuart-Harris and C. W. Potter, Eds. Academic Press, Orlando, Fla., 1984. xiv, 305 pp., illus. \$29.50. From a colloquium, London, Sept. 1983.

Neurotransmitter Receptors. Mechanisms of Action and Regulation. Shozo Kito *et al.*, Eds. Plenum, New York, 1984. xii, 297 pp., illus. \$49.50. Advances in Experimental Medicine and Biology, vol. 175. From a meeting, Hiroshima, Oct. 1983.

The New Story of Science. Mind and the Universe. Robert M. Augros and George N. Stanciu. Regnery Gateway, Lake Bluff, Ill., 1984. xii, 234 pp., illus. Paper, \$6.95. A Gateway Edition.

Nondestructive Methods for Material Property Determination. Clay Olaf Ruud and Robert E. Green, Jr., Eds. Plenum, New York, 1984. x, 410 pp., illus. \$65. From a symposium, Hershey, Pa., April 1983.

North American Game Birds and Mammals. A. Starker Leopold, Ralph J. Gutiérrez, and Michael T. Bronson. Illustrated by Gene M. Chritman. Scribner, New York, 1984. x, 198 pp. Paper, \$12.95. Reprint, 1981 edition.

Not from the Apes. Björn Kurtén. Columbia University Press, New York, 1984. xvi, 184 pp. Paper, \$9.95. Translated from the Swedish edition (Stockholm, 1971). Reprint, 1972 edition.

Nowcasting II. Mesoscale Observations and Very-Short-Range Weather Forecasting. European Space Agency, Paris, 1984. xii, 524 pp., illus. Paper, 140 F. ESA SP-208. From a symposium, Norrköping, Sweden, Sept. 1984.

Nuclear Power. Futures, Costs and Benefits. Nigel Evans and Chris Hope. Cambridge University Press, New York, 1984. xviii, 171 pp., illus. \$29.95.

The Omo Micromammals. Systematics and Paleogeology of Early Man Sites from Ethiopia. Henry B. Wesselman. Karger, Basel, 1984. x, 219 pp., illus. \$58.75. Contributions to Vertebrate Evolution, vol. 7.

On Rare and Scattered Metals. Tales about Metals. S. I. Venetsky. Mir, Moscow, 1984 (U.S. distributor, Imported Publications, Chicago). 152 pp., illus. Paper, \$5.95. Translated from the Russian edition (Moscow, 1980) by N. G. Kittell.

Ontogeny of Bonding-Attachment. P. O. Hubinont, Ed. Karger, Basel, 1984. vi, 178 pp., illus. \$87. Progress in Reproductive Biology and Medicine, vol. 11. From a seminar, Brussels, Jan. 1984.

The Physiology and Pathophysiology of the Skin. Vol. 8, The Photobiology of the Skin; Lasers and the Skin. A Jarrett, Ed. Academic Press, Orlando, Fla., 1984. xxii pp. + pp. 2375-2704, illus. \$75.

Physiology of the Intestinal Circulation. A. P. Shepherd and D. N. Granger, Eds. Raven, New York, 1984. xx, 420 pp., illus. \$76.

Plastics in Hydrotechnical Construction. Glossary: Russian-English, English-Russian. Bureau of Reclamation, Denver, Colo., 1984 (available from the Superintendent of Documents, Washington, D.C.). xiv, 143 pp. \$7.20.

Polyimides. Synthesis, Characterization, and Applications. Vol. 1. K. L. Mittal, Ed. Plenum, New York, 1984. xvi, 614 pp., illus., + index. \$89.50. From a conference, Ellenville, N.Y., Nov. 1982.

Polymer Additives. Jiri E. Kresta, Ed. Plenum, New York, 1984. x, 408 pp., illus. \$72.50. Polymer Science and Technology, vol. 26. From a symposium, Las Vegas, March 1982.

Polymer Blends. Processing, Morphology, and Properties. Vol. 2. Marian Kryszewski, Andrzej Galeski, and Ezio Martuscelli, Eds. Plenum, New York, 1984. x, 287 pp., illus. \$52.50. From a seminar, Lodz, Poland, Sept. 1982.

Poppies, Pipes, and People. Opium and Its Use in Laos. Joseph Westermeyer. University of California Press, Berkeley, 1983. xxii, 336 pp. + plates. \$28.50.

Powder Surface Area and Porosity. S. Lowell and Joan E. Shields. Chapman and Hall, London, 1984 (U.S. distributor, Methuen, New York). xiv, 234 pp., illus. \$45. Powder Technology Series.

Presidential Parties. John H. Kessel. Dorsey Press, Homewood, Ill., 1984. xviii, 645 pp. \$22.95.

Quantum Electrodynamics and Quantum Optics. A. O. Barut, Ed. Plenum, New York, 1984. x, 471 pp., illus. \$75. NATO ASI Series B, vol. 110. From an institute, Boulder, Colo., May 1983.

Resolving Development Disputes through Negotiations. Timothy J. Sullivan. Plenum, New York, 1984. xvi, 222 pp. \$24.50. Environment, Development, and Public Policy.

Resource Energy. Robert A. Gross. Wiley-Interscience, New York, 1984. xvi, 328 pp., illus. \$41.95.

Risk Theory. The Stochastic Basis of Insurance. R. E. Beard, T. Pentikäinen, and E. Pesonen. 3rd ed. Chapman and Hall, London, 1984 (U.S. distributor, Methuen, New York). xviii, 408 pp., illus. \$49.95; paper, \$24. Monographs on Statistics and Applied Probability.

Role of Medroxyprogesterone in Endocrine-Related Tumors. Vol. 3. A. Pellegrini *et al.*, Eds. Raven, New York, 1984. xiv, 177 pp., illus. \$35. From a symposium, Rome.

Rural Energy to Meet Development Needs. Asian Village Approaches. M. Nurul Islam, Richard Morse, and M. Hadi Soesastro, Eds. Westview, Boulder, Colo., 1984. xxiv, 563 pp., illus. \$30. Westview Special Studies in Social, Political, and Economic Development.

SADCC: Energy and Development to the Year 2000. Jorge Tavares de Carvalho Simoes, Ed. Published for the SADCC Energy Sector by Beijer Institute, Stockholm, and Scandinavian Institute of African Studies, Uppsala, 1984. viii, 184 pp., illus. SEK 75. Energy, Environment and Development in Africa, 2. From a seminar, Harare, Zimbabwe, Nov. 1982.

The Unconscious Reconsidered. Kenneth S. Bowers and Donald Meichenbaum, Eds. Wiley-Interscience, New York, 1984. xx, 311 pp. \$33.95.

Water Management. Technology and Institutions. Warren Viessman, Jr., and Claire Weltry. Harper and Row, New York, 1984. xxii, 618 pp., illus. \$41.95.

You Don't Have to Be Sick! Phyllis Cilento. Keats, New Canaan, Conn., 1984. vi, 326 pp. Paper, \$3.50.

STAT/PROTRAN®

IMSL's Natural Resource for Statistical Problem Solving

In the plethora of statistical software systems available today, only one was designed for the professional who expects a straightforward approach to problem solving — STAT/PROTRAN, one of IMSL's Natural Resources.

You don't need any programming knowledge to use this remarkable system. In a surprisingly short time, STAT/PROTRAN is at your command. Convenient "help" files provide on-line reference, and the system automatically checks your statements for errors.

STAT/PROTRAN lets you define problems naturally. Your data and a few simple commands are all that STAT/PROTRAN needs to generate accurate, detailed analyses, including frequency tables and crosstabulation, analysis of variance, correlation, regression analysis and random number generation.

If you're now solving problems using FORTRAN, you'll appreciate the ability to combine FORTRAN and PROTRAN statements for tailored problem solving. This added measure of flexibility sets STAT/PROTRAN apart from other statistical systems.

Copyright © 1985 IMSL, Inc., Houston, Texas

IMSL®

Problem-Solving Software Systems

STAT/PROTRAN is a member of the PROTRAN family of problem-solving systems for mathematics, linear programming and statistics. These systems use accurate, reliable numerical techniques to give you the consistently dependable results you have come to expect from IMSL, a world leader in affordable technical software.

STAT/PROTRAN is the natural resource for a wide variety of statistical applications. And the low subscription rate makes this powerful system extremely affordable, even if only one person in your organization uses it.

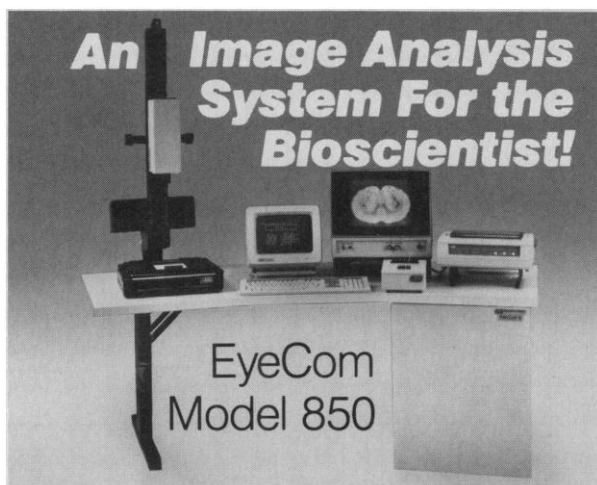
To find out more, return this coupon to:
IMSL, NBC Building, 7500 Bellaire Boulevard, Houston, Texas 77036 USA. In the U.S., call, toll-free, 1-800-222-IMSL. Outside the U.S. (and in Texas), call (713) 772-1927. Telex: 791923 IMSL INC HOU.

Please send complete technical information about STAT/PROTRAN, IMSL's Natural Resource for mathematical problem solving.

Name _____
Dept. _____ Title _____
Organization _____
Address _____
City _____ State _____ Zip _____
Area Code / Phone _____
Computer Type _____ SCI255

The IMSL PROTRAN problem-solving systems are compatible with most Control Data, Data General, Digital Equipment and IBM computer environments.

Circle No. 161 on Readers' Service Card



Powerful: Digital Equipment Corporation LSI-11/23 CPU with 256 KBytes of memory gives you the stellar performance you need for image analysis

Fast: The EyeCom real-time video processor means no waiting for spatial filters, accumulation, subtraction, contrast or pseudo color enhancements.

Reliable: The dependable host CPU, combined with our EyeCom Image Processor, has one of the best reliability records in the industry. We have systems that have been in operation at customer sites for over four years, and more than 200 systems have been delivered to date.

Friendly: Menu selections, joystick control and function keypad ease you through your tasks. With a EyeCom Model 850 there is no need to be a computer scientist to capture, analyze, store an image or build a statistics data base.

Accurate: The EyeCom Preprocessor and the Shading and Calibration routines assure you of accurate and consistent measurement of image data, time after time.

Ergonomics: The terminal is sleek, comfortable and easy to work with. The detachable keyboard on the compact console workstation lets you work in any position comfortably without feeling cramped.

Cost Effective: No one knows more about image processing than Spatial Data Systems. We delivered the world's first real-time digital image processor to an aerospace corporation in 1969. Since then we have led the industry in the design, development and manufacture of highly sophisticated yet cost effective image processing equipment.

Delivery: Model 850 can be shipped to your facility within 60 days of your order. Call or write for more information.

First in Image Processing

 **Spatial Data Systems, Inc.**

420 So. Fairview Ave., Box 978
Goleta, CA 93116-0978 (805) 967-2383 Telex: 658336

Circle No. 200 on Readers' Service Card

SCIENCE

News Department Reprint Series

Tumor Viruses and Oncogenes

During the past 2 to 3 years interest in oncogenes—genes that can cause cells to become cancerous—has surged. A series of discoveries is providing important clues to the origins of cancer and to the normal mechanisms that regulate the growth and development of cells.

This collection of articles from *Science* by Jean L. Marx, Gina Kolata, and Roger Lewin covers many of those discoveries, including: Recent advances in understanding how oncogenes might work; the relation of oncogenes to naturally occurring growth factors; a description of the discovery of human T-cell leukemia virus—one of the best candidates for a viral cause of human cancer. This series is available now.

Single copies \$2.00, twenty or more \$1.00 each.
Orders must be prepaid.

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

SCIENCE

News Department Reprint Series

Artificial Intelligence

This collection of articles from *Science* by M. Mitchell Waldrop explores the newly emerging field of artificial intelligence, AI. What AI has really accomplished, where might it plausibly be expected to go, and what are its limits? In particular, the articles focus on the foundations of AI—the effort to understand the phenomenon of intelligence. Included are such topics as expert systems, natural language understanding, computer vision, and parallel processing. This series is available now.

Single copies \$2.00; twenty or more \$1.00 each.
Orders must be prepaid.

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

Personnel Placement

SCIENCE publishes each Friday, except the last Friday of the year. Advertising is accepted only in writing; no abbreviations. Any deadline in ad must be at least 2 weeks after date of issue in which ad appears. Also, personnel advertising is accepted only with the understanding that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual preference.

LINE CLASSIFIED ADVERTISING DEADLINES:
8 March issue (mailed 1 March): **15 February**
15 March issue (mailed 8 March): **22 February**
22 March issue (mailed 15 March): **1 March**
29 March issue (mailed 22 March): **8 March**

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

LINE DISPLAY (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth): \$11.40 per millimeter; \$285 minimum, per week (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 address required for all other advertising.

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

SCIENCE, Room 107
1515 Massachusetts Avenue, NW
Washington, D.C. 20005
Telephone: 202-467-4456

Send copy for **Fractional Display** ads, 1/6 page and larger, and all **Marketplace** ads to:

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

Blind ad replies should be addressed as follows:

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

POSITIONS WANTED

Biochemist, M.S. 1985. Three years of experience with protein purification, radioactive and chemical modification and chemical digest in studying structure-function of membrane proteins. Also 4 years of experience in toxicology. Seeks entry level position into research in industry, preferably in pharmacology and genetic areas. Box 34, SCIENCE. X

Collagen Biochemist, Ph.D. Extensive research experience in extracellular matrix macromolecules. Box 45, SCIENCE. X

Diagnostic Radiologist, A.B., M.S., Ph.D., M.D., with academic appointments, teaching, research, administrative experience, publications; medicine internship, diagnostic radiology residency, CT ultrasound fellowship; nuclear medicine fellowship; seeks teaching position in diagnostic imaging and medical education. Box 46, SCIENCE. 2/15, 22

Immunologist, Ph.D. 1970. Academic and industrial research experience in cellular and molecular immunology, immunopotentialization, lymphokines, lymphocyte-target cell killing, immunoassay development, hybridoma and monoclonal antibodies. Excellent publications and references. Seeking academic faculty position. Box 42, SCIENCE. 2/15, 22

Pathology Professor Scientist with broad experience in both human and animal pathology, nutrition in cancer, carcinogenesis, experimental cancer chemotherapy, and atherogenesis. Desires opportunity for teaching and research. Box 44, SCIENCE. X

Research Technician, B.S. biology, 1981, 6 hours toward M.S., 3 years of research hospital experience. Lymphokine production, purification and assay system, animal studies, tissue culture. B-cell hybridoma, photomicroscopy. Publication and excellent references. Seeking position in academia/industry. Will relocate. Box 36, SCIENCE. 2/15, 22

POSITIONS WANTED

Scientific and Technical Translator, for food, pharmaceutical, and chemical industries (English-German-Arabic). Food technologist with doctorate in biotechnology. Several years of experience in Germany and the Middle East. P.O. Box 1689, Dover, Delaware 19903. X

POSITIONS OPEN

UNIVERSITY OF CALIFORNIA
Cooperative Extension
Agronomist-Sugar Beet/Oil Seed
Davis Campus

An academic career track appointment, subject to administrative review of position and incumbent's performance prior to end of 3-year period.

Conduct a highly creative position involving in-depth knowledge of and the ability to develop specific applications of both emerging and existent research knowledge with specific expertise in production of the agronomic crops of sugar beets, soilseed crops, and nonconventional industrial crops. Assure affirmative action in development and delivery of programs. Graduate education in agronomy, plant science, or closely related field plus experience. Salary in associate level rank. **Contact: Cooperative Extension Personnel, University of California, Berkeley, Calif. 94720. Telephone: 415-644-4320.** Close 12 April 1985. Refer to A-84-222.

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

ASSISTANT PROFESSOR OF ENTOMOLOGY. The Department of Entomology at Kansas State University is seeking applicants for this tenure-track position to begin summer 1985. Responsibilities include: Research (70 percent). Behavior of insects or related arthropods. The successful candidate is expected to investigate the principles of insect behavior in areas such as behavioral ecology, ethology or sensory physiology and neurophysiology. Teaching (30 percent). Responsible for developing a basic course in insect behavior and an advanced course in the candidate's area of specialty. Candidates must have a Ph.D. in entomology or related biological sciences. Training and research experience with behavior of insects or closely related arthropods is required. Closing date is 1 April 1985. Send letter of application, résumé, transcripts, and names and addresses of three references to: **Dr. R. G. Helgesen, Department of Entomology, Kansas State University, Manhattan, Kans. 66506. Kansas State University is an Equal Opportunity/Affirmative Action Employer.**

GENERAL PATHOLOGIST

Assistant/associate professor, tenure-track position available immediately in the multidisciplinary Office of Preclinical Education. A doctoral-level degree in pathology is required. The principal responsibilities include teaching general pathology lectures and laboratories, teaching in selected systemic pathology sections of systems biology, and a commitment to basic or clinical research. Candidates are expected to participate with microbiological and anatomical scientists in preclinical education courses and continuing medical education. Preference will be given to candidates with proven teaching skills in pathology in a graduate or medical school setting and ability to develop research programs. Please submit curriculum vitae and three letters of reference by 15 April 1985 to: **Robert C. Ritter, Ph.D., Associate Dean of Preclinical Education, The Oklahoma College of Osteopathic Medicine and Surgery, 1111 West 17 Street, Tulsa, Okla. 74107. An Affirmative Action/Equal Opportunity Employer.**

MICROBIOLOGIST/IMMUNOLOGIST

Assistant/associate professor, tenure-track position available immediately in the multidisciplinary Office of Preclinical Education. A Ph.D., or equivalent, in microbiology with speciality in immunology is required. The principal responsibilities include teaching in medical microbiology lectures and laboratories, teaching in selected systems biology areas, and development of basic or practical research programs. Candidates are expected to participate with faculty of other disciplines in their courses and continuing medical education. Preference will be given to candidates with proven teaching skills and ability to develop funded research programs. Please submit curriculum vitae and three letters of reference by 15 March 1985 to: **Robert S. Conrad, Ph.D., Professor of Microbiology, The Oklahoma College of Osteopathic Medicine and Surgery, 1111 West 17 Street, Tulsa, Oklahoma 74107. An Affirmative Action/Equal Opportunity Employer.**

POSITIONS OPEN

ANATOMIST

Histology/gross anatomy. The Department of Preclinical Education is seeking applicants for two tenure-track positions available immediately at the assistant and/or associate level. Primary responsibility will be teaching courses in human gross anatomy. Earned doctorate in anatomical sciences required. Preference will be given to individuals having prior teaching experience in histology and gross anatomy. Facilities, resources, and time are available for research. The college is a free-standing, state-supported institution located near downtown Tulsa. Send curriculum vitae and three letters of reference by 15 March 1985 to: **James F. Taylor, Ph.D., Associate Professor of Anatomy, The Oklahoma College of Osteopathic Medicine and Surgery, 1111 West 17 Street, Tulsa, Oklahoma 74107. An Affirmative Action/Equal Opportunity Employer.**

ASSISTANT/ASSOCIATE AGRONOMIST (hop breeding and genetics)—The Department of Agronomy and Soils seeks a Ph.D. to lead the Pacific Northwest hop and genetics breeding program. Candidates must have a Ph.D. in agronomy or closely related field, emphasizing plant breeding and physiology. Salary open; application review begins 1 April 1985. Submit résumé, statement of career interests, academic transcripts, and names of five personal/program evaluators to:

Dr. J. C. Engibous, Chairman
Department of Agronomy and Soils
Washington State University
Pullman, Wash. 99164-6420

An Equal Opportunity/Affirmative Action Employer

ASSISTANT/ASSOCIATE PROFESSOR IN CELLULAR NEUROBIOLOGY

Applications are invited for a tenure-track position available 1 September 1985. Candidates should have demonstrated ability to conduct independent research. Preference will be given to those working in the areas of synaptogenesis, cell cytoskeleton, plasma membrane, or developmental neurobiology. Experience in electron microscopy and immunocytochemistry desirable. Teaching experience in anatomical science courses also desirable. Rank and salary will be commensurate with qualifications. For fullest consideration, applicants should submit curriculum vitae, a brief statement of research interests, representative reprints, and names and addresses of three references by 15 May 1985 to: **Dr. G. D. Pappas, Department of Anatomy, University of Illinois College of Medicine, P.O. Box 6998, Chicago, Ill. 60680. The University of Illinois is an Equal Opportunity/Affirmative Action Employer and encourages applications from women and minorities.**

ASSISTANT PROFESSOR OF ENTOMOLOGY

The Department of Entomology, University of Missouri-Columbia, invites applications for the above 12-month, tenure-track faculty position. Ph.D. in entomology, effective communication and teaching skills, and demonstrated research ability. Responsibilities primarily in extension with complementing research program in forage, soybean, and small grain insect pests. One advanced course in IPM in alternate years. Candidates should submit, by 20 March 1985, a letter describing qualifications, interest in the position and professional goals; résumé, transcripts, major publications, and request four letters of reference, all to be sent to:

Chairman
Search Committee
Department of Entomology
1-87 Agriculture Building
University of Missouri
Columbia, Missouri 65211

Columbia University, Department of Psychology, anticipates an opening at the ASSISTANT PROFESSOR level, starting with the 1985-1986 academic year, for a recent Ph.D. with research interests in some field of experimental psychology. We seek an individual who is likely to be an excellent teacher of both undergraduate and graduate students and to achieve an outstanding record of scholarly accomplishment. It is essential that the applicant be competent to teach an undergraduate laboratory course in animal or human psychology. Applicants should submit their curriculum vitae and copies of recent papers, and arrange to have at least three letters of recommendation sent to: **Personnel Search Committee, Department of Psychology, Box 29 Schermerhorn Hall, Columbia University, New York, N.Y. 10027. Columbia University is an Equal Opportunity/Affirmative Action Employer.**

POSITIONS OPEN

Position available—ASSISTANT PROFESSOR, non-tenure-track, to work on the molecular genetics of *Chlamydia trachomatis*.

Emphasis to be placed on cloning of selected gene products and development of mutant strains. Starting salary: \$20,000 to \$25,000, depending on qualifications. Must have Ph.D. or equivalent, and post-doctoral experience in bacterial genetics. Please send curriculum vitae and names of three references to: **Robert B. Jones, M.D., Ph.D., Department of Medicine, EM 302, 545 Barnhill Drive, Indianapolis, Ind. 46223.**

ASSISTANT PROFESSOR. Tenure-track position for which funding is tentative. Starting 1 September 1985. Requires Ph.D. degree with background in **plant tissue culture, plant genetics, and plant recombinant DNA methodology.** Duties: teach undergraduate courses in area of expertise, assist in teaching of introductory courses in biology, and develop research program in applications of plant science. Curriculum vitae and the names of three references should be sent by 15 March 1985 to: **Tom Frederick, Head, Department of Biology, Rochester Institute of Technology, One Lomb Memorial Drive, Rochester, New York 14632.** An Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR OF ANATOMY WEST VIRGINIA UNIVERSITY

Applications are invited from individuals qualified to teach functional human gross anatomy and embryology. Preference will be given to applicants having an active research program which has the potential for extramural funding and which would augment existing areas of strength within the department. A relevant doctoral degree and at least 2 years of postdoctoral experience are required. Closing date for applications is 1 April 1985. Submit curriculum vitae with complete bibliography and three letters of reference to: **Dr. David B. Burr, Search Committee, Department of Anatomy, West Virginia University Medical Center, Morgantown, W.Va. 26506-6302.**

West Virginia University is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR PLANT SYSTEMATICS—CURATOR OF THE HERBARIA CORNELL UNIVERSITY

The L. H. Bailey Hortorium, a unit of the Division of Biological Sciences and the New York State College of Agriculture and Life Sciences, Cornell University, seeks applicants for a tenure-track position in plant systematics and curator of the herbaria (BH & CU), available 1 September 1985. Seventy-five percent of time will be devoted to curatorial activities and to the development of a vigorous, independent research program. The Cornell Herbaria currently house over 750,000 specimens, including the largest collection of palms in the New World. Twenty-five percent of time will be devoted to conducting and expanding the Hortorium's extension program. The curator also will be expected to participate in the Hortorium's special research programs on the taxonomy of cultivated plants and there will be opportunities to teach. The appointee must have a Ph.D. with major interests in plant systematics and familiarity with the curation of a herbarium. We are particularly interested in applicants with research interests in one or more of the following areas: horticultural taxonomy; chromosomal cytology; taxonomy of tropical plants; bryology; gymnosperm taxonomy; systematic anatomy; floristics. Applicants should send their curriculum vitae, a detailed statement of future research interests and curatorial experience, and arrange to have three letters of recommendation sent to: **Dr. David A. Young, Search Committee Chairperson, L. H. Bailey Hortorium, 467 Mann Library, Cornell University, Ithaca, New York 14853.** Closing date for applications is 16 March 1985. *Cornell University is an Equal Opportunity/Affirmative Action Educator and Employer.*

BIOCHEMICAL AND GENETIC TOXICOLOGY

For research program in carcinogenesis and molecular biology. Clinical and laboratory dimensions Ph.D. level with relevant experience. Excellent working conditions. Available immediately. Send curriculum vitae and salary requirements to:

**Preventive Medicine Institute/Strang Clinic
55 East 34th Street
New York, N.Y. 10016
Attention: Dr. Daniel G. Miller**

POSITIONS OPEN

DEPARTMENT OF PSYCHOLOGY LINCOLN UNIVERSITY

The Psychology Department at Lincoln University (Pennsylvania) anticipates a tenure-track position at the **ASSISTANT OR ASSOCIATE PROFESSOR** level for fall 1985. Applicants should have a recent Ph.D. in physiological psychology (psychobiology), behavioral pharmacology, neuropharmacology, or behavioral neuroendocrinology.

Applicants should be able to develop and teach strong, undergraduate laboratory courses in animal behavior, psychopharmacology, behavioral neuroendocrinology or developmental psychobiology. Candidates will be expected to teach and develop courses in the department's Gerontology Certification Program. Applicants should have an interest in developing a strong research program and demonstrate an ability to acquire external funding or participate in funded programs already in existence in the department.

Curriculum vitae should be sent no later than 1 March 1985 to:

**Dr. Charles C. Duncan, Chairperson
Department of Psychology
Lincoln University
Lincoln University, Pa. 19352-0999**

Lincoln University is an Equal Opportunity Employer

ASSISTANT PROFESSOR OF SYSTEMIC PHYSIOLOGY

Applications for an assistant professor (salary and level dependent upon qualifications and experience) are now being accepted from qualified candidates with both D.V.M. degree and Ph.D. in physiology (or associated field). Candidate must have demonstrated interest, aptitude, and experience in teaching areas of systemic physiology and demonstrated interest and achievement in research. Responsibilities will include lecture and laboratory instruction in systemic physiology for students in the professional veterinary program and to develop didactic instruction at the graduate level in their area of expertise. Supervision of graduate students in laboratory research will also be required. Candidate will be responsible for the development of a creative and productive basic and clinical research program in their area of interest as an indispensable and fundamental requirement of this position. Send curriculum vitae, including bibliography, and names of at least three references to: **Dr. Alfred A. Heusner, VM: Physiological Sciences, School of Veterinary Medicine, University of California, Davis, Calif. 95616.** Applications will be accepted through 1 March 1985, or until a suitable candidate is identified. *The University of California is an Affirmative Action/Equal Opportunity Employer.*

ASSISTANT RESEARCH NEUROCHEMIST. Department of Neurology, University of California, San Francisco. Candidate should have at least 2 years of postdoctoral experience in signal transduction in the nervous system involving protein kinases. Knowledge of nicotinic acetylcholine receptor biochemistry and extensive experience with monoclonal antibody production, immunohistochemistry, and tissue culture is required. Candidate should have experience in developmental studies in the nervous system including application of molecular biology techniques to developmental neurobiology: specifically, messenger RNA preparation and translation in vivo and in vitro. Please submit complete curriculum vitae, including list of publications and three letters of reference, by 1 March 1985 to: **Dr. Adrienne Gordon, Ernest Gallo Clinic and Research Center, San Francisco General Hospital, Building 1, Room 101, San Francisco, Calif. 94110.** *The University of California is an Equal Opportunity/Affirmative Action Employer.*

ASSOCIATE IN RESEARCH—Full-time position available at Yale Arbovirus Research Unit to establish laboratory colonies of phlebotomine sand flies and to conduct experimental studies on viruses and parasites transmitted by these insects. Candidates must have an M.S. in entomology or M.P.H. as well as prior experience in sand fly taxonomy and biology. Prior experience in arboviruses and protozoa (*Leishmania*) is also required. Annual salary is \$24,790. Interested applicants should submit their résumés to: **Dr. Robert B. Tesh, Yale Arbovirus Research Unit, Department of Epidemiology and Public Health, Yale University School of Medicine, P.O. Box 3333, New Haven, Conn. 06510.** *Yale University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

ASSISTANT RESEARCH SCIENTIST available 1 July 1985 in mammalian spinal cord electrophysiology and neural recovery of function. Projects principally involve extracellular and intracellular techniques but also include HRP, histochemical, and behavioral methodologies to investigate the mechanisms involved in synaptic transmission, segmental motor control, and recovery of function after spinal cord and peripheral nerve injury. Individuals should have a Ph.D. or M.D. with research accomplishments in cellular neurophysiology, the ability to perform both independent and collaborative research of high quality, and the capacity for teaching at the graduate level. Salary to be based on qualifications and experience. Send curriculum vitae, summary of research interests, and letters of recommendation by 8 March 1985 to: **Dr. G. W. Sybert, Department of Neurological Surgery, Box J-265, University of Florida Health Center, Gainesville, Fla. 32610.**

An Equal Opportunity/Affirmative Action Employer

ASSOCIATE DEAN

The University of Maryland Graduate School at University College seeks an associate dean beginning 1 July 1985 or sooner. The associate dean will be responsible for administrative aspects of all technology oriented degree programs in the Graduate School. These include the M.S. in technology management, the M.S. in computer systems management, the M.S. in program evaluation and organizational assessment and the M.I.S. and marketing tracks in the general management/administrative program. Responsibilities will include but not be limited to program and faculty development and faculty recruitment. Further, this individual will be responsible to the dean, Graduate Studies, for planning activities, promotion of research, and other administrative issues. The Graduate School offers its programs at seven sites in Maryland, and Europe. Additional programs are planned, in particular, an M.S. in engineering management.

The successful candidates will have a Ph.D., D.B.A., or D.P.A. with a technology, management, or behavioral science background, successful teaching at the graduate level, and a record of research/scholarly activities. Practical experience in management in a technologically oriented environment is a major consideration. Salary will be commensurate with the candidate's qualifications.

Please send a current résumé and the names, addresses, and telephone numbers of three current references to:

**Dean
University of Maryland Graduate School
at University College
University Boulevard at Adelphi Road
College Park, Maryland 20742**

To be assured of consideration, applicants should apply by 1 March 1985. *An Equal Opportunity/Affirmative Action Employer.*

COMPUTER SYSTEMS FACULTY

The University of Maryland Graduate School at University College seeks two faculty members in the following areas for the 1985-1986 academic year: computer systems and technology assessment, and computer systems and human factors. These faculty members will participate in an interdisciplinary management/administration program which has tracks in marketing, management information systems, health care administration, and organizational training; an M.S. in technology management; an M.S. in computer systems management; and an executive management/administrative program. An additional planned program is an M.S. in engineering management. These programs are offered at seven sites in Maryland.

Successful candidates will have a minimum of an M.S. in computer science and a Ph.D., D.B.A., or D.P.A. in another discipline or J.D. Nonacademic work experience is a plus. Further, the candidates should be able to present evidence of successful teaching and research/scholarly activity. Salary and rank will be commensurate with the candidates' qualifications.

Please send a current résumé and the names, addresses, and telephone numbers of three current references to:

**Dean
University of Maryland Graduate School
at University College
University Boulevard at Adelphi Road
College Park, Maryland 20742**

To be assured of consideration, applicants should apply by 1 March 1985. *An Equal Opportunity/Affirmative Action Employer.*

VASCULAR BIOLOGY RESEARCH

The Upjohn Company, recognized as a world leader in pharmaceutical research, is expanding its Atherosclerosis and Thrombosis Research Group and is seeking a Scientist to initiate and carry out original research in **Vascular Cell Biology** (Position #16230).

The successful candidate will be expected to conduct research to understand the development of atherosclerosis and its accompanying complications of thrombosis and vasospasm, focusing on cellular interactions at the blood vessel wall (endothelium, smooth muscle, macrophage, platelets, neutrophils). Devise systems to study the control of cell injury, cell proliferation, infiltration, and lipid accumulation. Applicants should have a Ph.D. in a medical science with relevant expertise in biochemistry, cell biology, physiology and/or pharmacology.

Upjohn offers a stimulating research environment and career potential. Kalamazoo is a mid-sized southwestern, Michigan community offering an excellent mix of cultural and recreational options. **For confidential consideration, please send a current c.v., a list of publications, names and addresses of references, and graduate transcripts to: Ph.D. Recruitment Coordinator Department, The Upjohn Company, 7000 Portage Road, Kalamazoo, Michigan 49001. Please refer to Position #16230 in your correspondence.**

Upjohn

A century of caring

An Equal Opportunity Employer M/F/H/V

SENIOR SPECIALIST IN SCIENCE AND TECHNOLOGY AND CHIEF, SCIENCE POLICY RESEARCH DIVISION

THE LIBRARY OF CONGRESS
Congressional Research Service

GS-17, \$68,700

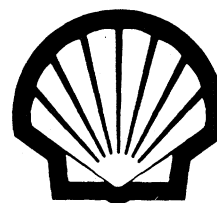
QUALIFICATIONS: Three years of specialized experience, one year of which must have been at the GS-15 level in the Federal service or at a comparable level of difficulty outside the Federal service, are required. The experience must clearly demonstrate broad knowledge of the field of science, technology and public policy, and expert knowledge of one or more subfields such as economic/policy analysis, biological or physical sciences, engineering, or operations research, as well as the ability to plan, organize, direct, and manage a complex research and public policy analysis program.

APPLICATION PROCEDURES: Applicants must call the Library of Congress Employment Office (telephone: 202-287-5627) to request a copy of Vacancy Announcement #50027 and a Personal Qualifications Statement (SF-171). Applicants must have a copy of the Vacancy Announcement to apply for the position. Résumés are not accepted in lieu of the Personal Qualifications Statement.

Civil Service status not required
Equal Opportunity Employer

The selected applicant will be required to file a financial disclosure statement with the House of Representatives, U.S. Congress, in accordance with the provisions of Public Law 95-521, Ethics in Government Act of 1978.

Closing date: 1 March 1985.



Exploratory Entomologist

Outstanding opportunity for established research professional at Shell's Biological Sciences Research Center in California.

Qualifications

- Ph. D. in Entomology, Biochemistry, or a closely related discipline.
- Strong professional training and demonstrated practical experience in insecticide toxicology and insect physiology or biochemistry.
- Strong interest in insects and their impact on agriculture.

Responsibilities

- Design and implement interdisciplinary exploratory research programs in insecticide toxicology, insect physiology and biochemistry for the discovery of new methods of control.
- Work closely with Chemists and Biologists on evaluating insect control methods.
- Train and supervise laboratory technicians.

The position offers competitive salary and excellent benefits.

Applicants should be U.S. citizens or have a permanent resident visa.

Interested applicants should send a résumé, in confidence, to:

Manager-Employee Relations
Shell Development Company
Biological Sciences Research Center
P.O. Box 4248
Modesto, California 95352

Shell Development Company

An Equal Opportunity Employer M/F

POSITIONS OPEN

ASSISTANT SCIENTIST LIPID BIOCHEMISTRY

Refer to Job Order Number: CA-8501

The W. ALTON JONES CELL SCIENCE CENTER is seeking to fill a position at the assistant scientist level for June 1985. Studies will involve tumor promotion in rodents and the lipid role in cellular differentiation and transformation. **Qualifications include:** Ph.D. in biology with previous experience in cell biology and biochemistry. Person must have knowledge in lipid biochemistry and be familiar with techniques in lipid methodology. Also, have hands on experience with kinetics, HPLC, GLC, and thin-layer chromatography, and experience with rodents. Communication and writing skills are essential. Complete curriculum vitae, including a brief statement of research interest and complete addresses for three references, should be sent to: **Lorraine L. Tyler, Personnel Manager, Personnel Department, W. ALTON JONES CELL SCIENCE CENTER, 10 Old Barn Road, Lake Placid, New York 12946.**

An Affirmative Action/Equal Opportunity Employer

BIOLOGY, three temporary positions beginning September 1985: (i) assistant professor (Ph.D.), to teach two-semester introductory biology course for majors (1-year position); (ii) assistant professor (Ph.D.), to teach comparative anatomy, vertebrate embryology, and invertebrate zoology; also anatomy/physiology for nonmajors (1-year position); and (iii) instructor or assistant professor (M.A./M.S. or Ph.D.) to teach a course in man, nature, and society for nonmajors; also participate in general biology for nonmajors (fall semester only). The College of St. Thomas is a coeducational, Catholic liberal arts college committed to the total development of the individual student. Applicants must have degrees as indicated and strong commitment to teaching at the undergraduate level. Letter of application, curriculum vitae, and three letters of reference should be sent directly to: **Kathy Fell, Box 4208, College of St. Thomas, 2115 Summit Avenue, St. Paul, Minn. 55105.** Application letter should address the requirements of the position and identify it by number. All materials must be received by 15 March 1985. *An Equal Opportunity/Affirmative Action Employer.*

CLINICAL NUCLEAR MEDICINE IMAGING PHYSICIST

The Department of Diagnostic Radiology has an opening for a medical physicist. This clinically funded position includes an appointment in Diagnostic Radiology with a primary commitment to nuclear medicine (both general nuclear medicine and nuclear cardiology) and an opportunity to participate in academic programs. Candidates should have a Ph.D. or similar degree in the physical sciences with previous clinical nuclear medicine experience and be Board-certified or -eligible. Although experience in nuclear cardiology would be preferred, a desire to participate in nuclear cardiology is essential. Responsibilities include physics support of routine clinical procedures, development and testing of phantoms for optimization of patient studies, and education including lectures and the development of appropriate laboratories. Qualified applicants should forward curriculum vitae and cover letter highlighting their qualifications and career goals to: **Dr. Joel E. Gray, Mayo Clinic, Rochester, Minn. 55905.** *Mayo Clinic is an Equal Opportunity/Affirmative Action Employer.*

DEVELOPMENTAL BIOLOGIST

Faculty position available September 1985 in the Department of Anatomy for a developmental biologist with research program in biochemical and functional aspects of a developing system, for example, gene expression, cell and tissue interactions, role of regulatory molecules in development. Must have postdoctoral experience and ability to develop independent, productive research program. Teaching responsibilities include participation in teaching anatomical sciences in the medical-dental curriculum; participation in the graduate program in cell and developmental biology. Prior teaching or training in anatomy desirable but not required. Applicants should submit curriculum vitae, list of publications, projected research plans, and names of three references by 15 April to:

Dr. Joseph A. Grasso
Developmental Biology Search Committee
Department of Anatomy
The University of Connecticut Health Center
Farmington, Conn. 06032
An Affirmative Action/Equal Opportunity Employer, M/W/H

POSITIONS OPEN

ASSOCIATE RESEARCH SCIENTIST

The Cardiovascular Laboratory in the Department of Pharmacology, Columbia University, is seeking an associate research scientist with an M.D. or Ph.D. degree and biomedical engineering experience to participate in investigations on excitation of the arrhythmic heart. The successful candidate will be required to have expertise in (i) the design and maintenance of complex analog and digital signal processing instrumentation, (ii) the development of computer software for signal analyses and the UNIX operating system, and (iii) physiological techniques for studying cardiac electrical activity. Interested persons should write to:

Dr. Brian F. Hoffman
Department of Pharmacology
College of Physicians & Surgeons
Columbia University
630 West 168 Street
New York, N.Y. 10032

Columbia University is an Equal Opportunity/Affirmative Action Employer.

ASSOCIATE RESEARCH SCIENTIST IN PHARMACOLOGY

The Department of Pharmacology is seeking an associate research scientist with an M.D. or Ph.D. degree to participate in studies on the pathophysiological basis for abnormal electrical activity in ischemic myocardium. The successful candidate will be required to have demonstrated expertise in the use of microelectrode techniques to study transmembrane potentials of cardiac muscle as well as expertise in the fabrication and use of ion selective microelectrodes for determination of intracellular ion activities. Interested persons should send curriculum vitae and the names of three references to:

Dr. Brian F. Hoffman
Department of Pharmacology
College of Physicians & Surgeons
Columbia University
630 West 168 Street
New York, N.Y. 10032

Columbia University is an Equal Opportunity/Affirmative Action Employer.

BIOLOGY POSITION (FULL-TIME)

Maryville College-St. Louis, Division of Mathematics and Natural Sciences, seeks a versatile biologist for a 9-month, tenure-track appointment, beginning fall 1985. Candidate must have an advanced organismal physiology background and ability to teach gross anatomy, genetics, and pathophysiology. Students include majors and health paraprofessionals. Ph.D. in a biological science required and teaching experience preferred. Salary based on qualifications and experience. Send letter of application, detailed résumé, and names of three references by 1 March 1985 to:

Dianna B. Lammert
Director of Personnel
Maryville College-St. Louis
13550 Conway Road
St. Louis, Missouri 63141

Affirmative Action/Equal Opportunity Employer
Screening will begin 1 March and continue until the position is filled.

DIRECTOR OF A DEVELOPMENTAL NEUROBIOLOGY RESEARCH CENTER

The Medical School of the University of North Carolina at Chapel Hill (UNC-CH) seeks a director for the Biological Sciences Research Center (BSRC), a multidisciplinary research center devoted to basic research in the broad area of developmental neurobiology and mental retardation. Nominations or applications are invited for the position of director. This center is housed in 33,000 square feet of a modern research building.

The director is the chief administrative officer of the Center and reports to the dean of the School of Medicine. Candidates should have an M.D. or Ph.D. degree, a strong record of neurobiological research achievement, a commitment to continue an active research program, administrative experience, and qualifications for a primary tenure-track appointment in a basic or clinical science department in the School of Medicine. Nominations and applications should be received prior to 1 April 1985 by: **The Search Committee for the Director of the BSRC, Office of the Dean, School of Medicine, University of North Carolina at Chapel Hill, Chapel Hill, N.C. 27514.** *Women and minorities are encouraged to identify themselves voluntarily. UNC-CH is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

BIOCHEMIST

The Department of Biochemistry at Rutgers University invites applications for a tenure-track assistant professor position. Candidates are sought in the area of macromolecular structure, assembly, and interactions. Fields of interest include biomembranes, cytoskeleton, complex carbohydrates, multienzyme complexes, and nuclear structures. The successful candidate will be expected to develop an active research program and to participate in graduate and undergraduate instruction. Send curriculum vitae, statement of research interests, and three letters of recommendation before 15 March 1985 to: **Structural Biochemist Search Committee, Department of Biochemistry, Rutgers University, Piscataway, N.J. 08854.** *Rutgers University is an Affirmative Action/Equal Opportunity Employer.*

BIOCHEMIST. The Department of Chemistry at Brooklyn College of the City University of New York invites applications for a tenure-track position as assistant professor of biochemistry beginning September 1985. Candidates must have the ability and motivation to develop a vigorous and productive research program and a commitment to excellence in teaching at the graduate and undergraduate levels. Applicants should send curriculum vitae and a statement of future research plans, and have three letters of recommendation sent to: **Professor Leon Gortler, Chairman, Department of Chemistry, Brooklyn College, Brooklyn, N.Y. 11210.** *An Equal Opportunity/Affirmative Action Employer.* Application deadline: 31 March 1985.

CELL/MOLECULAR BIOLOGIST

The Department of Anatomy at Georgetown University invites applications for a tenure-track faculty position at the assistant or associate professor level, beginning 1 July 1985. Applicants should have completed postdoctoral training, have demonstrated excellence in their area of research, and be capable of establishing an independent program supported with extramural funds. While the specific area of research is not as important as excellence, individuals interested in extracellular matrix, membrane biology, or cytoskeleton are encouraged to apply. The appointee will be expected to teach gross anatomy.

Persons interested in this position should send a copy of their curriculum vitae, copies of two or three publications, names of three referees, and a one-page statement outlining their research objectives to:

Dr. Martin Dym, Chairman
Department of Anatomy
Georgetown University
School of Medicine-School of Dentistry
3900 Reservoir Road, NW
Washington, D.C. 20007

Deadline for application receipt is 22 March 1985. *Georgetown University is an Affirmative Action/Equal Opportunity Employer.*

Brown University, Providence, R.I., is seeking applications for **DIRECTOR OF ANIMAL CARE.** The individual will be responsible for the clinical and administrative management of the Animal Care Facility and staff and will serve as veterinarian to the Animal Research Committee and to University personnel using laboratory animals in teaching and research. Candidates must hold the D.V.M. or equivalent degree from an accredited school of veterinary medicine and be certified or eligible for certification by ACLAM or have equivalent qualifications. The position offers the opportunity for a concurrent appointment in an academic department, if desired, depending on the qualifications and experience of the applicant. The position is available 1 July 1985 and applications will be accepted until 20 March 1985. Applicants should submit curriculum vitae and three letters of reference to: **Dr. Elizabeth Leduc, Brown University, Box G, Providence, R.I. 02912.** *Brown University is an Equal Opportunity/Affirmative Action Employer.*

ECOLOGIST-FIELD BIOLOGIST. Tenurable faculty position at the assistant professor level. Position is responsible for the field program within the department including summer field trips. Ph.D. and demonstrated interest and success in teaching required. Emphasis on teaching, but research interest desirable. Send curriculum vitae, three letters of recommendation, and all transcripts by 1 March 1985 to:

Dr. James P. McKeown, Chairman
Department of Biology
Millsaps College
Jackson, Miss. 39210

SeaPharm

SeaPharm, a new international biotechnology company developing pharmaceutical applications for marine natural products, is seeking several key scientists for their Research Department. Areas of specialty are:

- **TUMOR BIOLOGY:** Experience in design and operation of *in vitro* tumor model systems for evaluating chemotherapeutic agents. Skills in mammalian cell culture, immunobiology and *in vivo* tumor models highly desirable. A PhD in Cell Biology, Pharmacology or closely related science plus two or more years of experience required.
 - **MICROBIOLOGY:** Experience in design and operation of *in vitro* antimicrobial assay systems. Experience with soil screening, development of resistant strains, fungal biochemistry and *in vivo* infection models highly desirable. A PhD in Microbiology or closely related science plus two or more years of experience required.
 - **GROUP LEADER PHARMACOLOGY:** Experience in design and operation of *in vitro* primary screens and *in vivo* secondary test systems. Skill in antitumor, antiviral, immunoregulators and general pharmacologic evaluation of new drug candidates highly desirable. A PhD in Pharmacology or Biology plus three or more years of industry experience.
 - **PLANT BIOCHEMISTRY:** Experience in preparation, purification and assay of enzymes from differentiated plants and cell culture suspension. Some experience in plant tissue culture would be an added advantage.
 - **NATURAL PRODUCTS CHEMISTRY:** Experience in synthetic chemistry of complex natural products and a firm grounding in structural elucidation using modern techniques such as NMR and mass spectrometry. Knowledge of biosynthesis technology would be an added advantage.
- * Senior candidates with several years of experience at the PhD level may be appointed Research Scientist in these above areas. Appointments may also be at the Post Doctoral level in the case of recently graduated or prospective PhD candidates.

Applicants must be willing to relocate to the beautiful area of Florida's Eastern Treasure Coast. Send resume to: Ms. Kathy M. Filion, SeaPharm, Inc., 741 Alexander Road, Princeton, New Jersey 08540.

C hemists

Analytical Methods

Marion Laboratories Inc. is an "uncommon company" — a leader in the rapidly expanding, high technology segment of the health care industry. We currently have positions available in our Chemical Affairs Department in R&D for experienced Analytical Chemists at our Marion Park facility in Kansas City.

A Ph.D. in Analytical Chemistry or a related field is essential, with experience in methods development, dissolution testing and familiarity with computer data handling systems being highly desirable. Candidates should have a minimum of 2 years experience in pharmaceutical analysis at the bench level or the equivalent in advanced training. Candidates must be knowledgeable in wet chemical and instrument analysis; i.e., TLC, GC, HPLC, UV/visible spectroscopy, infrared spectroscopy, and atomic absorption spectroscopy. Some analytical experience in synthetic polymer testing associated with medical devices is highly desirable.

We offer an excellent total compensation and benefits package including bonus, stock options, profit sharing, comprehensive group health, dental and life insurance. Please send a detailed resume including salary history, in confidence to: Recruiting and Placement, Dept. CRM.



**Marion
Laboratories, Inc.**
10236 Marion Park Drive
Kansas City, MO 64137

Equal Opportunity Employer

"the uncommon company"

TECHNOLOGY TRANSFER

**LEARN HOW THIS COUNTRY'S FIRST
MAJOR TRANSFER OF TECHNOLOGY—
FROM A NATIONAL LAB TO A PRIVATE
CORPORATION—WAS ACCOMPLISHED.**

Who should attend: Laboratory officials and researchers seeking new sources of capital and venture capitalists and high-tech entrepreneurs seeking new technologies.

When: Thursday, February 21, 1985

Where: Santa Fe Hilton, Santa Fe, New Mexico

Speakers: Donald M. Kerr, *Director, Los Alamos National Laboratory*; Dr. Bruce Merrifield, *Assistant Secretary of Commerce for Technology, Productivity and Innovation*; Irving Weiman, *Prudential-Bache Securities*; A. David Silver, *Santa Fe Private Equity Fund* and Ross U. Robinson, *CEO, Mesa Diagnostics Inc.* George Gilder, author of *The Spirit of Enterprise*, will be the featured luncheon speaker.

For further details, call or write: Mary Freitas, Santa Fe Private Equity Fund, 524 Camino del Monte Sol, Santa Fe, New Mexico 87501. Telephone: (505) 983-1769.

VICE CHANCELLOR FOR RESEARCH AND DEAN OF THE GRADUATE COLLEGE

The University of Illinois at Chicago

Nominations and applications are invited for the position of Vice Chancellor for Research and Dean of the Graduate College at the University of Illinois at Chicago.

This new position offers the special challenge of integrating the research and graduate educational activities of the two formerly separate campuses that now comprise a single UIC, and of creating new initiatives which will facilitate the campus' continuing development as a major graduate and research university. In addition to providing campus leadership in this regard, specific responsibilities of this position include: the promotion and maintenance of excellence in research and graduate education throughout the campus; the administration of the Graduate College, the Campus Research Board, and various research support units of the Graduate College; the development of public and private sources of support for campus research program; the development of university-industry relationships consistent with the research mission of the campus, and providing the major point of linkage between the campus and the developing Chicago Technology Park.

Strong preference will be given to individuals with the following qualities:

- an earned doctorate and a record of achievement which would justify an appointment as tenured professor;
- demonstrated deep understanding of the internal and external circumstances in which faculty carry on research and graduate education;
- ability to develop means for enhancing the University of Illinois at Chicago as a major performer of the highest quality graduate education and research;
- evidence of administrative ability and of success in working with agencies which support research, both within and outside the University.

Position available September 1, 1985, or earlier, if desired. Salary negotiable. To ensure full consideration, nominations and applications (including resume) should be submitted by March 15, 1985, to:

**Professor Phillip M. Forman, Chair
Search Committee for a Vice Chancellor for Research
and Dean of the Graduate College
c/o Office of the Chancellor
The University of Illinois at Chicago
Box 4348
Chicago, Ill. 60680**

Attention: Ms. Linda Cesario (312/996-8364)

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

POSITIONS OPEN

MISSISSIPPI: CHAIR OF ANESTHESIOLOGY. The University of Mississippi Medical Center at Jackson seeks a Board-certified anesthesiologist to chair its Department of Anesthesiology. The successful candidate will direct departmental training of residents and student nurse anesthetists in a busy practice of anesthesia for general, neuro, OB, adult and pediatric cardiac, trauma, and all surgical subspecialty cases. An individual with strong academic, administrative, and research talent is sought. Interested applicants should submit curriculum vitae and three references to: Martin Dalton, M.D., Department of Surgery, University of Mississippi Medical Center, 2500 North State Street, Jackson, Miss. 39216-4505. *Equal Opportunity Employer, M/F/H/V.*

The Marine Science Institute, University of California, Santa Barbara (UCSB), is seeking a distinguished marine scientist to serve as **DIRECTOR OF THE INSTITUTE.** The Marine Science Institute is a multidisciplinary Organized Research Unit at the University of California, Santa Barbara. It is the focus for marine related research conducted by 75 faculty members together with associated professional researchers at the University. The successful candidate must combine an active research program in the physical or biological sciences with a breadth of experience and perspective to provide leadership to the current multidisciplinary marine science community at UCSB. The directorship will be coupled with a tenured faculty appointment in the appropriate academic department with opportunity for initiating courses. Interested persons should submit curriculum vitae and a list of no fewer than four references to: The Search Committee, Office of Research Development, UCSB, Santa Barbara, Calif. 93106, no later than May 1985. Appointment to this position will be effective 1 September 1985, or by negotiation if a later date is necessary. *Equal Opportunity/Affirmative Action Employer*

MULTI-CENTER MEDICAL RESEARCH VA PROGRAM OF DIRECTOR

The Veterans Administration (VA) invites applications of qualified candidates for the position of **Chief, Cooperative Studies Program within Medical Research Service, Department of Medicine and Surgery.** Responsibilities include: (i) the scientific and administrative supervision of a broad and comprehensive nationwide program of multi-center clinical trials of the relative effectiveness of alternative medical interventions and other multi-center studies relevant to care of Veteran patients; (ii) the identification of research needs and the development, planning, and implementation of high-quality research in the area of controlled clinical trials; and (iii) the management of four established statistical and data processing coordinating centers and a central research pharmacy. The program currently supports 25 active studies conducted in more than 70 VA medical centers with a FY 1985 budget of \$14 million. Experience in biomedical research, multi-center clinical trials, and administration is essential. Applicants must be U.S. citizens and physicians licensed to practice medicine. An additional degree in biostatistics is also desirable. This is a title 38 excepted service position with a salary range of \$61,296 to \$77,649 (currently limited to \$68,700) and is eligible for bonus pay up to \$22,500. Submit curriculum vitae to: Chairman, Search Committee, Richard J. Greene, M.D., Ph.D., Medical Research Service (151), Veterans Administration, 810 Vermont Avenue, NW, Washington, D.C. 20420, or telephone: 202-339-5041. *The Veterans Administration is an Equal Opportunity/Affirmative Action Employer.*

GENERAL CLINICAL RESEARCH CENTER CORE LABORATORY DIRECTOR Ph.D. in biological sciences with experience in biochemical and physiological procedures, teaching, administrative, and research experience to direct Core Laboratory servicing a multidisciplinary clinical research facility. Must be interested and have ability to interact productively with M.D.'s, nurses, and other allied health professionals doing NIH-supported clinical research. Forward curriculum vitae with brief covering letter outlining reasons for interest to: Elliot Danforth, Jr., M.D., Director, General Clinical Research Center, University of Vermont, Medical Center Hospital of Vermont, Burlington, Vt. 05401. *The University of Vermont is an Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

POSITIONS OPEN

DIRECTOR—CANCER CENTER UNIVERSITY OF CALIFORNIA, SAN DIEGO, SCHOOL OF MEDICINE Applications and nominations are invited for the position of director of the Cancer Center at the School of Medicine, University of California, San Diego (UCSD). We seek an individual who will provide leadership to this federally designated Cancer Center, an Organized Research Unit of the University of California. Tenured rank and salary will be commensurate with experience. The Center's programs encompass basic and clinical research, training, and patient care. Laboratory space is located in two buildings, with a third in the development stages. Facilities include a new outpatient clinic and a recently renovated inpatient unit. Recruitment may include a research team. Serious consideration will be given to applications received by 1 March 1985. Send applications to: Dr. Robert C. Petersdorf, Dean, School of Medicine, M-002, UCSD, La Jolla, Calif. 92093 *University of California is an Affirmative Action/Equal Opportunity Employer.*

DENDROLOGIST The Department of Environmental and Forest Biology, State University of New York (SUNY), College of Environmental Science and Forestry, Syracuse, seeks to fill a 12-month position in dendrology at the assistant or associate professor level by 1 July 1985. Ph.D. in botany, silvics, ecology, or related discipline required. Demonstrated commitment to excellence in undergraduate instruction and research specialization in plant ecology, systematics, and evolution or other areas that support the Department's programs. Responsibilities include teaching dendrology courses plus additional offerings in specialized, coordinating arboretum, greenhouse, and herbium functions required for dendrology, establishing research program, and participation in graduate program. Salary competitive and negotiable. Submit letter of application, curriculum vitae, and three letters of recommendation by 1 April 1985 to: Dr. D. J. Raynal, Chairman Dendrologist Search Committee Department of Environmental and Forest Biology Syracuse, New York 13210 *An Equal Opportunity/Affirmative Action Employer*

ELECTRICAL ENGINEERING TECHNOLOGY Full-time, teaching position, State University of New York (SUNY) Alfred State College; start immediately, no later than 19 August 1985. Tenured track position requires M.S. degree in electrical engineering or technology. B.S. graduates with industrial experience are encouraged to apply. Experience in the fabrication of monolithic and thick-film integrated circuits is preferred. Teaching assignments may include microelectronic circuits, microcomputer applications programming for electronic circuits, MSI and LSI circuits, and computer-aided circuit testing and data acquisition. Microcomputer hardware and software experience desirable. Rural atmosphere, clean environment, academic community at salaries competitive with industry. Apply with letter and resume to: Jon K. LeCiro, Electrical Engineering Technology Department Chairman, SUNY Alfred State College, Alfred, New York 14802. *SUNY is an Equal Opportunity/Affirmative Action Employer.*

ENGINEERING AND PUBLIC POLICY. Faculty candidates, primarily at the rank of assistant professor. Candidates must hold a Ph.D. in science or engineering and have research interests which lie in: (i) policy problems involving computer, information or other electric or electronic technologies; (ii) the design and use of advanced policy-oriented decision support systems which include the application of AI techniques such as expert systems; (iii) technology/policy problems in the fields of technological innovation, flexible manufacturing and robotics; (iv) risk analysis involving environmental biochemistry and toxicology; or (v) technical issues in arms control and national defense policy. Research undertaken in JRP is strongly focused in engineering and science. Joint appointments with traditional disciplinary departments are available. The successful candidate will also teach one or two courses per semester. Send resume to: Professor M. Granter Morgan, Head, Department of Engineering and Public Policy, Carnegie-Mellon University, Pittsburgh, Pa. 15213. Telephone: 412-578-2672.

POSITIONS OPEN

SPANISH-SPEAKING ELECTRONIC AND COMPUTER SCIENTISTS specializing in energy systems, maintenance of equipment and systems analysis are needed in COSTA RICA AND HONDURAS. Ph.D., M.S., or experienced scientists interested in positions in Central American universities and government agencies may submit resume for placement and relocation assistance to: Inter-governmental Committee for Migration, 1346 Connecticut Avenue, NW, Suite 711, Washington, D.C. 20036.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT) MIT seeks applications in the area of **ENVIRONMENTAL MICROBIOLOGY** for a possible appointment to a tenure-track, junior faculty position. Our interests include: microbial degradation of organic compounds in the environment, microbial transformations in biogeochemical cycles, marine or freshwater microbial ecology. A strong background in working knowledge of waste treatment microbiology would be helpful. The candidate will be expected to teach undergraduate and graduate subjects in the area of environmental microbiology and to conduct research and supervise graduate students. Applicants with broad backgrounds interested in joining a multidisciplinary group of scientists and engineers working in the areas of aquatic chemistry, plant biology, wetland ecology, organic geochemistry as well as in the physical aspects of water science are particularly encouraged to apply. Submit a resume and names of three references to: Rafael L. Bras, Water Resources and Environmental Engineering Division Department of Civil Engineering, Room 48-311 MIT Cambridge, Mass. 02139 *MIT is an Equal Opportunity/Affirmative Action Employer.*

FACULTY POSITION Department of Anatomy University of Saskatchewan Applications are invited for a tenure-track position at the assistant professor level. Applicants should have experience in teaching anatomy, embryology, neuroanatomy, or cell biology. Applicants strong research program should also have proven research background and a strong research program. Applications, including curriculum vitae, names of three referees, and an outline of proposed research should be submitted to: Dr. S. Fedoroff, Professor and Head Department of Anatomy College of Medicine University of Saskatchewan Saskatoon, Saskatchewan, Canada S7N 0W0 *The University of Saskatchewan is an Equal Opportunity Employer. In accordance with Canadian immigration requirements, Canadian citizens or landed immigrants will be given preference.*

GENETICIST. Undergraduate college seeks a Ph.D. in a modern area of genetics to teach introductory biology and courses in area of expertise. Development of a research program involving undergraduate students is expected. The tenure-eligible position will be at the level of assistant or associate professor starting in August 1985. Send curriculum vitae, transcripts, and three letters of recommendation, which must specifically address the teaching ability of the candidate, before 22 March 1985 to: Biology Search Committee, Biology Department, Ithaca College, Ithaca, New York 14850. *Ithaca College is an Affirmative Action/Equal Opportunity Employer.*

HISTOLOGY TECHNICIAN Experienced technician needed to take charge of the histology facility of a program of research on the primate visual system. Experience with a wide range of techniques is needed, including histochemical staining, autoradiography, cytology, and silver impregnation. Computer experience a decided advantage. Send resumes to: Ms. Brantley, Personnel Department, New York University Medical Center, 317 East 34 Street, New York, N.Y. 10016. An Affirmative Action/Equal Opportunity Employer, M/F.

ENDOWED CHAIR IN MOLECULAR BIOLOGY

in the Department of Biology MEMPHIS STATE UNIVERSITY

The Department of Biology at Memphis State University invites applications for an endowed Chair of Molecular Biology. Applicants and nominations are being sought for a tenured position at the full professor level. The candidate should be a nationally or internationally recognized scholar with an established record of significant achievements in molecular biology research. Expertise should include the application of recombinant DNA techniques to problems in viral, microbial, animal or plant molecular biology. A Ph.D. in microbiology, genetics, biochemistry, molecular biology, immunology or related field is required.

The appointee will be expected to be a catalyst in developing a center of excellence in molecular biology, to supervise and contribute to the education and training of graduate students and post-doctoral associates, and to interact with other research programs. Considerable funds are available to help equip and operate a laboratory. An attractive salary, commensurate with experience, will be provided. The appointment is effective August, 1985 or as negotiated.

Applications should include curriculum vitae, statement of research interests and the names of 3 references. Applications and inquiries may be directed to Dr. James F. Payne, Molecular Biology Search Committee, Biology Department, Memphis State University, Memphis, TN 381532. Applications will be accepted until a suitable candidate is found.

PRESIDENT CONSORTIUM FOR SCIENTIFIC COMPUTING, INC.

The Consortium for Scientific Computing is a non-profit corporation formed by 12 major research universities to operate a state-of-the-art supercomputing center to be known as The John von Neumann Center for Scientific Computing. The Center will be located in Princeton, New Jersey and will provide supercomputing facilities for the national academic research community as well as the Consortium institutions.

Its President will serve as chief operating officer and be responsible for planning, directing, and managing the Consortium's activities as well as working with the Consortium's Board of Trustees to initiate the von Neumann Center.

The successful candidate should have a doctorate in science or engineering or an equivalent combination of education and management, extensive experience in information systems management or in the management of a large research group having considerable computer usage, and 3-5 years of experience as a senior administrator. We are seeking an individual who is a polished professional, who has excellent people and communication skills, and who is a doer with consistent results.

Please send your resume to Professor James D. Bruce, Chairman of the CSC Search Committee, Massachusetts Institute of Technology, Room 10-219, 77 Massachusetts Avenue, Cambridge, Massachusetts 02139. (Electronic mail address: JDBruce MIT-MULTICS.ARPA)

The Consortium for Scientific Computing, Inc. is an equal opportunity employer.

Participating Institutions: University of Arizona, Brown University, University of Colorado, Harvard University, Institute for Advanced Study, Massachusetts Institute of Technology, New York University, University of Pennsylvania, Pennsylvania State University, Princeton University, University of Rochester, and Rutgers University.

Graduate Training in Biotechnology

Applicants are invited to apply for fellowships in a program of integrated study leading to a doctorate in biotechnology. The program consists of course work and research directed at solving problems in biotechnology for food and agriculture. Advanced training includes methods of: prevention of infectious diseases, recombinant DNA procedures, genetic engineering of industrial organisms, enzymology, biomaterials science and engineering, controlled release and computer control for biotechnology processes.

Specific research areas include:

- genetics of microorganisms for antibiotics and food applications
- enzyme technology
- controlled release systems
- determination of structure-function relationships of biomaterials
- kinetics of degradation of foods and drugs

Annual fellowships are provided by a U.S. Department of Agriculture Graduate Fellowship Program. Applicants for entry in spring, summer, or fall 1985 must send a statement of goals, interests and relevant experience and arrange to have complete college transcripts, GRE scores and three letters of reference sent on an MIT Graduate School application form to the Graduate Admissions Office, as soon as possible. **Applications may be obtained from the Student Office, Room 16-318, M.I.T., Department of Nutrition and Food Science, Cambridge, MA 02139. Telephone inquiries may be made to the above office at 617-253-5804, or to Professor Karel at 617-253-6744.**

M.I.T. is an affirmative action institution.

MIT

RESEARCH TRIANGLE UNIVERSITIES PLANT MOLECULAR BIOLOGY Graduate and Postdoctoral Fellowships

Duke University, North Carolina State University at Raleigh, and the University of North Carolina at Chapel Hill together with the North Carolina Biotechnology Center have formed a Consortium to advance studies in plant molecular biology. With support from CIBA-GEIGY, R. J. Reynolds Industries, and the Biotechnology Center, the Consortium will provide graduate and postdoctoral fellowships in 1985 for study and research in plant molecular biology at the three Triangle universities. Each fellow will be based at one of the institutions, but will participate in activities involving faculty and students at all three institutions. The goal of the Consortium is to enhance the community of plant molecular biologists among the three institutions and participating companies. Graduate and postdoctoral fellows appointed in 1984 are already in place.

The graduate student stipend is \$8,000 plus tuition, with an allowance for supplies and travel. The award is renewable for up to three years. The postdoctoral stipend is \$21,500, subject to university policies, with an allowance for supplies and travel, renewable for up to two years.

Candidates must apply directly to departments or postdoctoral sponsors at the universities, and must notify them of their interest in the Plant Molecular Biology Program. Acceptance at the institution is a prerequisite of the Fellowship Program.

Contacts: Frank Armstrong, NCSU [(919) 737-7876]; Ann Mathysse, UNC-CH [(919) 962-6941]; and John Boynton, Duke [(919) 684-3046].

Graduate student application materials must also be received at the NCBC by March 4 and must include: (1) a brief statement of research and career interests; (2) the departments of NC universities receiving applications; (3) transcripts and GRE scores; and (4) three letters of reference. A copy of a letter sent to the department(s) clearly granting permission to release (3) and (4) to the NCBC is acceptable. Postdoctoral applications must be submitted by March 11 and should follow the format of NIH postdoctoral applications, complete with research description, and three letters of reference. The applicant is responsible for the sponsor's submission of a statement of what he/she will commit to the program.



**NORTH CAROLINA
BIOTECHNOLOGY CENTER**
BOX 12235 · RESEARCH TRIANGLE PARK, NC · 27709

**U.S. DEPARTMENT OF AGRICULTURE (USDA)
AGRICULTURAL RESEARCH SERVICE (ARS)**

**National Program Leaders—Two Positions
for (Forage, Pasture, and Range)
and (Weed Science)**

Highly qualified scientists are needed to assume the duties of national program leader and will serve as the focal point for national leadership and coordination of agricultural research programs relating to (forage, pasture, and rangelands) and (weed science), on the Agricultural Research Service's National Program Staff.

The successful candidate will focus on building broad multidisciplinary research programs to solve national agricultural problems conducted throughout the United States and in several foreign countries. Candidates must demonstrate skills for program planning, setting research priorities, allocating resources, and evaluating programs.

QUALIFICATIONS:

In addition to the basic requirement for all grades, candidates must have 3 years' professional experience in the programs related to (forage, pasture, and rangelands) and/or (weed science). Some education may be substituted for a portion of the experience requirements.

The positions are located in Beltsville, Maryland. Grade level is GM-15. Salary range is \$50,495 to \$65,642, based on qualifications and experience. U.S. citizenship is required.

Candidates *must* contact the person listed below to obtain an application package.

Applications must be received no later than February 28, 1985 and sent directly to:

Ivy C. Hungerford
Personnel Division
U.S. Department of Agriculture
Room 107, Building 003, BARC-West
Beltsville, MD 20705

USDA IS AN EQUAL OPPORTUNITY/AFFIRMATIVE ACTION EMPLOYER.

**NASA/COLUMBIA UNIVERSITY
SUMMER INSTITUTE ON PLANETS AND
CLIMATE
UNDERGRADUATE GRANTS
3 June to 9 August 1985**

The NASA Goddard Space Flight Center's Institute for Space Studies, in cooperation with Columbia University's Center for the Study of Global Habitability, announces a summer program designed to introduce undergraduates in the physical sciences and mathematics to research possibilities in planetary atmospheres and climatic changes. The program consists of a 3-week lecture series at the Institute for Space Studies in New York City, followed by 7 weeks of individual research conducted at either the Institute for Space Studies or other Goddard Space Flight Center divisions in Greenbelt, Maryland. Participants will receive a \$1250 stipend, free housing, and travel expenses.

Applications should be submitted in the form of a letter to: **Summer Institute on Planets and Climate, c/o Center for the Study of Global Habitability, 409 Low Memorial Library, Columbia University, New York, N.Y. 10027.** The letter of application must include: (i) home and school addresses, telephone number, and social security number; (ii) a one-page typewritten statement of professional goals and interests (please be specific—a research site and supervisor will be chosen on this basis); (iii) a transcript of college courses and grades; and (iv) the names of two or three college professors who have been asked to provide letters of reference. The transcripts and letters of reference should be sent directly to the above address.

The deadline for the receipt of applications is 1 March 1985. Awards will be announced on or about 1 April 1985. Participation is limited to 12 undergraduates selected by national competition. *All applicants will receive consideration without regard to race, color, age, national or ethnic origin, or sex.*

POSITIONS OPEN

NEW FACULTY MEMBER

Eastern Virginia Medical School, Department of Biochemistry, is seeking applications for assistant or associate professor. Applicant should be actively carrying out research in regulation of gene expression in eukaryotic cells or membrane biochemistry, using techniques of recombinant DNA, and/or hybridoma technology. Excellent applicants in other area of modern biochemistry will be considered. Applicant should also have interest in teaching medical and graduate students. Please send curriculum vitae, bibliography, description of research interests, and names and addresses of three references to: **Dr. Karl A. Schellenberg, Department of Biochemistry, Eastern Virginia Medical School, P.O. Box 1980, Norfolk, Virginia 23501. Affirmative Action/Equal Opportunity Employer.**

INSTRUCTOR/ASSISTANT PROFESSOR. The Division of Burn Surgery of the University of Michigan Medical School, Department of Surgery, Section of General Surgery, has an academic position open at the rank of **INSTRUCTOR THROUGH ASSISTANT PROFESSOR.** The individual will work full-time for 1 year in patient care, teaching, and research. Applicants must be a graduate of an American or Canadian medical school, Board-certified by the American Board of Surgery or equivalent board, and have a special interest and skills in critical care. The person selected will also have an interest in medical research related to burn surgery. The position is available from 1 July 1985 through 30 June 1986. Reply to: **Dr. Irving Feller, Chief, Division of Burn Surgery, 200 North Ingalls, Ann Arbor, Mich. 48104. The University of Michigan is an Affirmative Action/Equal Opportunity Employer. PCN 52.**

MALE REPRODUCTIVE BIOLOGY. Postdoctoral position available to study the molecular biology of testicular-specific histone genes using cultured spermatogenic cells and in situ cytohybridization techniques. Experience with cell culture, cell fractionation methods, and protein biochemistry desirable. The successful applicant will be working with Dr. A. L. Kierszenbaum and Dr. Chi-Bom Chae. Send curriculum vitae and names of three references to: **Ellen Edmonds, The Laboratories for Reproductive Biology, Box 4, MacNider Building, The University of North Carolina at Chapel Hill, Chapel Hill, N.C. 27514; telephone: 919-966-5159. An Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to voluntarily identify themselves.**

MEMBRANE BIOLOGY

The Department of Physiology invites applicants for a tenure-track position at the assistant professor level whose research is in the broad area of membrane biology. The department is well represented in electrophysiology—particularly patch clamp techniques—and seeks additional independent laboratories that will either add to current areas of strength or broaden the scope of the department. Possibilities for collaboration are excellent and start-up support is competitive. Those interested should send curriculum vitae, names of three references, and letter describing research plans to:

**Dr. Robert S. Eisenberg
Bard Professor and Chairman
Rush Medical College
1750 West Harrison Street
Chicago, Illinois 60612**

Rush is an Equal Opportunity/Affirmative Action Employer.

MOLECULAR BIOLOGISTS: U.S. Department of Agriculture, Animal and Plant Health Inspection Service, has an opening for a **microbiologist/molecular biologist** at the Foreign Animal Disease Diagnostic Laboratory, located at Plum Island, N.Y. Position includes responsibility for developing a program which applies state-of-the-art molecular biological, immunological, and biochemical techniques to detect agents which cause foreign animal diseases. Develops diagnostic methods and reagents to detect disease agents utilizing RNA and DNA probes, fingerprinting, immunoblotting, and restriction endonuclease techniques. Starting salary is \$37,600 per year. For additional information and application forms, contact: **U.S. Office of Personnel Management, James N. Hanley Federal Building, 100 South Clinton Street, Room 841, Syracuse, N.Y. 13260. Telephone: 315-423-5660.** Applications will be accepted between 15 February and 14 March 1985. *The U.S. Government is an Equal Opportunity Employer.*

POSITIONS OPEN

TUFTS UNIVERSITY, SCHOOL OF VETERINARY MEDICINE (TUSVM), invites applications for a newly created **FACULTY POSITION** in large animal surgery, based at Grafton, Massachusetts, commencing 1 July 1985. The applicant for this appointment should have a D.V.M. or equivalent degree. In addition, completion of residency training in large animal surgery to at least a Phase II level should have occurred by 1 July 1985. A Ph.D. degree or equivalent should have been completed, preferably with an emphasis on studies of locomotion and gait. Clinical and research experience in orthopedic diseases, including degenerative joint disease, is important for this position. The successful applicant will be expected to participate actively in research for a minimum of approximately 25 percent of his/her time, and for approximately 75 percent in large animal surgical service and in teaching in clinical, laboratory, and didactic formats. Applications (letter of intent, curriculum vitae, and names of at least three references) should be submitted by 31 March 1985 to: **Dr. Anthony Schwartz, Chairman, Department of Surgery, TUSVM, 350 South Huntington Avenue, Boston, Mass. 02130.** Salary and rank will be commensurate with experience and qualifications. *Tufts University is an Equal Opportunity/Affirmative Action Employer.*

**INSECT-PLANT INTERACTIONS/
PLANT ECOLOGY**

The University of Virginia seeks a research assistant professor, beginning 1 July 1985. This individual will develop a research program at the University of Virginia's Blandy Experimental Farm on the ecology and evolution of insects and/or plants, relying heavily on field experimentation. This facility is located near Winchester, Virginia, approximately 90 miles from the University. It has residence, dining, library, computing, laboratory, and greenhouse facilities, as well as a staff of four to support the operation of the facility and assist in research. Residence at the farm is required, and interaction with faculty at the University is expected. Twelve-month salary with an initial 3-year contract will be provided. A Ph.D. is required. Applicants should submit curriculum vitae, reprints, a statement of research interests, and three letters of reference by 15 March to: **Dr. Edward F. Connor, Academic Director, Blandy Experimental Farm, Department of Environmental Sciences, Clark Hall, University of Virginia, Charlottesville, Virginia 22903. The University of Virginia is an Affirmative Action/Equal Opportunity Employer.**

MARINE BOTANIST

The Department of Biology of St. Francis Xavier University expects to support the application of an NSERC university research fellow in the 1985-1986 competition. These fellows are selected on a competitive basis by NSERC. NSERC university research fellowships are awarded for 3 years, renewable for a further 2 years and carry a salary at the assistant professor level as well as support for research. *Nominees must be Canadian citizens or landed immigrants at the time of nomination.* Applications are sought from Ph.D.'s with 1 or 2 years of postdoctoral experience ideally in aquatic biology with specialization in marine plant physiology and ecology. Research in physiological or biochemical adaptations to the marine environment is of particular interest. Teaching will include a half course in plant physiology and, optionally, a half course at the graduate level in the area of specialty. Candidates should submit curriculum vitae and the names and addresses of three references to:

**Dr. M. Weisbart, Chairman
Department of Biology
St. Francis Xavier University
Antigonish, Nova Scotia, Canada B2G 1C0**

In accordance with Canadian immigration requirements, this advertisement is directed to Canadian citizens and permanent residents of Canada.

POSTDOCTORAL FELLOWS in molecular biology/applied computer science are available at the Dana-Farber Cancer Institute and the Bio-Statistics Department of the Harvard School of Public Health. Candidates must have a recent Ph.D. in molecular biology, molecular genetics, or computer science. The research will center on the problems of comparative analyses and identification of genetic sequence patterns. This will involve collaboration with active experimental molecular biologists and computer software developers. Positions available immediately. Send curriculum vitae and three letters of reference to: **Dr. Temple F. Smith, Dana-Farber Cancer Institute, 44 Binney Street, Room 1154, Boston, Mass. 02115. An Affirmative Action/Equal Opportunity Employer.**

Kellogg's

ENGINEERS/SCIENTISTS

Kellogg Company, a world leader in the manufacture of ready-to-eat cereals and other convenience food products, has several challenging growth positions in the Engineering and Scientific areas. We have a need for various levels of experience and educational requirements ranging from B.S. to Ph.D. Our openings cover a variety of disciplines including:

ANALYTICAL CHEMISTRY

BIOCHEMISTRY

BIOLOGY

CIVIL & STRUCTURAL

ENZYMOLGY

EQUIPMENT TECHNOLOGY

FOOD SCIENCE

**INSTRUMENTATION &
COMPUTER CONTROL**

MATERIALS HANDLING

MECHANICAL UTILITIES

**PACKAGING MATERIALS &
EQUIPMENT**

PHYSICAL CHEMISTRY

PROCESS SYSTEMS

STATISTICS

**INDUSTRIAL ENGINEERING &
PROCESS MODELING**

These high visibility career positions are located at our Corporate Headquarters in Battle Creek, Michigan. We offer stimulating work environment, competitive salary, company-paid benefits, growth based on performance, and liberal relocation assistance.

Send resume to:

**Engineering/Science Recruiter
Corporate Employment Services
KELLOGG COMPANY
235 Porter Street
P.O. Box 3423
Battle Creek, MI 49016-3423**

An Equal Opportunity Employer M/F/V/H

THE FOUNDATION FOR SUCCESS

If you'd like to step into the future with a stable and growing company, consider Collagen Corporation, a premier biomedical innovator. We've laid the foundation for success for our people as well as for our company, and offer a "player-manager" the opportunity to direct our immunology research laboratory.

Manager, Immunology Laboratory

Collaborating with other scientists, you will be responsible for immunological support of products on the market or being tested in the clinic, as well as participate in a wound-healing project directed to understanding and utilizing cell-matrix-factor interactions. Essential requirements include a PhD and several years' experience in humoral and cell-mediated immunology.

Share Our Future

Collagen Corporation's strong future is assured by our solid foundation for success. To share our future, please send your CV, bibliography, and the names of several references to Dr. Karl A. Piez, Director, Connective Tissue Research Laboratories, Box 101, 2500 Faber Place, Palo Alto, CA 94303. We are an equal opportunity employer.

Collagen Corporation



Molecular/ Cellular Biologist

Expansion of Pfizer's Central Research Division has created a position for a molecular/cellular biologist to pursue research aimed at the discovery of new therapeutic agents for cancer control. You will be expected to participate in research on the role of oncogenes and growth regulation in tumor progression and metastatic spread. You must have a PhD in molecular biology, cell biology, or biochemistry and have completed at least one post-doctoral fellowship working with the molecular or cellular biology of malignant cells, particularly in laboratories concerned with retrovirus and oncogene molecular biology.

This position offers an excellent opportunity for professional recognition and career growth. Publication of important findings will be encouraged. We also offer competitive compensation, benefit package and the opportunity to live in an attractive Connecticut shore community. Please send resume and description of research accomplishments to: Jerry K. Larson, PhD, Manager of Employment, Pfizer Central Research, Eastern Point Road, Groton, CT 06340.



An equal opportunity employer

POSITIONS OPEN

Head, Division of Science

Search committee seeks a division head for the Division of Science at Northeast Missouri State University, Kirksville. Northeast recently gained national recognition in being the co-recipient of the G. Theodore Mitau Award for Innovation and Change in Higher Education. Recognition has also come at the state level in the recommendation by the Commission of Higher Education that Northeast become the premier liberal arts and science university in Missouri.

The Science Division is one of 13 academic divisions and serves approximately 600 majors with 35 full-time faculty members representing the following disciplines: biology, chemistry, physics and science education. An MS program is offered in biology plus an MA program in science education, with emphasis in a variety of science options.

Applicants must have an earned doctorate in a science field with an outstanding academic record and demonstrated scholarship. Candidates with documented skills in leadership, administration, curriculum development, research and grantsmanship are desired. Salary is negotiable based on qualifications and experience.

Please forward letter of application, curriculum vitae, academic transcripts (undergraduate and graduate) and three letters of reference to: Dr. Gary Sells, Search Committee, Division of Science, Northeast Missouri State University, Kirksville, MO 63501.

Application deadline is March 15, 1985, or until position is filled.

NMSU

NMSU is an equal opportunity employer.

MEDICAL HUMANITIES—Tenure-track position, Department of Medical Humanities, Southern Illinois University School of Medicine. Candidate must have advanced degree in epidemiology, ethics, health economics, or health policy. Clinical expertise required with background in nursing preferred. Doctorate preferred but all but dissertation with substantial clinical experience, particularly in an academic setting, accepted. Faculty rank to be negotiated. The department is multi-disciplinary with 10 full-time and 30 adjunct faculty. Send curriculum vitae and three references, including telephone numbers, to: Glen W. Davidson, Ph.D., Chairman, Department of Medical Humanities, P.O. Box 3926, Springfield, Ill. 62708. Position open until filled, however, the search committee will begin selection 15 March 1985. Desired appointment date: 1 July 1985.

MOLECULAR BIOLOGIST

The University of Texas System Cancer Center (UTSCC)

Science Park-Research Division

Applications are invited for a faculty position (assistant or associate professor level) in a multidisciplinary research laboratory studying cellular and molecular mechanisms of carcinogenesis. Research programs at Science Park, located in Buescher State Park 40 miles west of Austin, include somatic cell genetics, DNA repair and mutagenesis, carcinogen metabolism and adduct formation, tumor promotion, mechanisms of lymphomagenesis, normal and tumor cell differentiation, biochemical genetics and growth factors. Candidates should have an independent research program that would interface with one or more of the above areas as well as a record of peer reviewed grants and research publications. Preference will be given to individuals who have extensive expertise and commitment in the area of molecular biology. The Science Park provides competitive salary and benefits, a stimulating research environment, postdoctoral and graduate students, and opportunities for interaction with faculty at nearby institutions including the University of Texas Health Science Center in Houston, University of Texas at Austin, and Texas A&M University. Interested applicants should send complete curriculum vitae, the names of three references, and a brief statement of research interests to: Dr. Thomas J. Slaga, Director, UTSCC, Science Park-Research Division, P.O. Box 389, Smithville, Tex. 78957; telephone: 512-237-2403. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL ASSOCIATE POSITION available to study molecular aspects of Ca^{2+} and cyclic nucleotide regulation of membrane functions in the mammalian lens. Ph.D. in biological sciences required, with experience in biochemistry and immunocytochemistry desirable. Inquiries to: Dr. Charles Louis, Department of Veterinary Biology, University of Minnesota, 1988 Fitch Avenue, St. Paul, Minnesota 55108. The University of Minnesota is an Equal Opportunity Employer and Educator and specifically invites and encourages applications from women and minorities.

POSITIONS OPEN

NEUROPHARMACOLOGIST/EPILEPTOLOGIST

The Oregon Comprehensive Epilepsy Program is seeking a full-time, Board-eligible/certified neurologist to join an active epilepsy program. The position offers the atmosphere and environment of academia with the remuneration and efficiency of private practice. Applicant must have clinical and research experience in anticonvulsant pharmacology and will be expected to expand the neuropharmacology research program. In addition, the applicant will participate in the teaching of neurology residents and have patient care responsibilities. Financial arrangement, support staff, and laboratory space negotiable. Send curriculum vitae and summary of research interests to: Dr. Kenneth D. Laxer, Good Samaritan Hospital and Medical Center, 1015 NW 22 Avenue, Portland, Oregon 97210.

NEUROPHYSIOLOGIST: ASSISTANT PROFESSOR

The Department of Physiology at Jefferson Medical College, Philadelphia, Pennsylvania, seeks a full-time, 12-month faculty position for a neurophysiologist-neuroscientist at the assistant professor level starting 1 September 1985. Excellent space and working conditions are available. Candidates should have a Ph.D. or M.D. degree and 2 to 3 years of relevant postdoctoral experience. Investigators in the area of opiate receptors, neural control of cardiovascular or pulmonary function, autonomic neurophysiology, neurochemistry or some other area compatible with ischemia-shock research are preferred. Evidence of independent research and ability to develop grant applications is important. Applicants should send their curriculum vitae, including a statement of their research interests and experience, and arrange to have three letters of recommendation sent to: Dr. Allan M. Lefer, Chairman, Department of Physiology, Jefferson Medical College, Thomas Jefferson University, 1020 Locust Street, Philadelphia, Pa. 19107. An Equal Opportunity/Affirmative Action Employer.

PLANT MOLECULAR GENETICIST. The Department of Botany, Plant Pathology, and Microbiology of Auburn University invites applications for a tenure-track position at the assistant or associate professor level beginning immediately. Preference will be given to candidates who can document abilities in molecular genetics/biology of plants. Applicants must have a minimum of 1 year of postdoctoral training and a strong background in biochemistry and molecular biology. Responsibilities include development of a creative and vigorous research program in mechanisms of gene expression and participation in undergraduate and graduate level teaching. Please submit curriculum vitae, transcripts, reprints of research articles, a statement of professional goals/research interests, and names of three references by 1 April 1985 to: Dr. Robert T. Gudauskas, Department of Botany, Plant Pathology, and Microbiology, Auburn University, Auburn, Ala. 36849. Auburn University is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL FELLOW IN BIOCHEMISTRY. Available immediately. Stipend: \$17,000 per year. Research involves investigation of enzyme mechanisms and regulation using NMR and kinetic techniques. Curriculum vitae and two letters of recommendation should be sent to: Dr. H. J. Fromm, Department of Biochemistry and Biophysics, Iowa State University, Ames, Iowa 50011. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION available immediately for 1 to 2 years to work on 1- and 2-D NMR (500 MHz) studies of drug-oligonucleotide complexes and the effect of DNA polymorphism on drug binding using equilibrium and stopped-flow methods. Send curriculum vitae and names of three references to: Dr. Richard Shafer, Department of Pharmaceutical Chemistry, University of California, San Francisco, Calif. 94143. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITIONS IN BASIC PATHOLOGY available 1 July 1985. M.D. and/or Ph.D. degrees required. Trainees focusing on disease mechanisms will be favored. Applicants must have made arrangements with an intended research sponsor at The University of Chicago. Submit curriculum vitae, transcripts, and three letters of recommendation to: Dr. G. Getz, University of Chicago, Department of Pathology, 5841 South Maryland, Chicago, Ill. 60637; telephone: 312-962-1268. Deadline for receipt of applications: 15 March.

POSITIONS OPEN

Crop Genetics International, a plant biotechnology company located in close proximity to U.S. Department of Agriculture Beltsville facilities, has two research positions available.

1) PLANT PATHOLOGIST

B.S. or M.S. in plant pathology or related field. Individuals with experience in disease diagnosis, pathogen isolation and identification and field research are invited to apply. Experience in application of serological techniques is highly desirable. This position requires approximately 10 percent travel.

2) MICROBIOLOGIST

B.S. or M.S. in biological sciences. Applicants should have a strong background and/or research experience in molecular genetics, microbial genetics, and biochemistry.

Send résumé, a statement of professional experience and objectives, the names of three references, and position of choice to: Crop Genetics International, N.V., 7170 Standard Drive, Dorsey, Maryland 21076.

An Equal Opportunity Employer

POSTDOCTORAL in neurotoxicology research on regulation of AChE in developing muscle and nerve, and long and short term toxicity of organophosphorus esters. Extensive use of cell cultures and mutant animal models. Recent Ph.D. with experience in protein isolation and characterization preferred. Immediately available. Send résumé and letters of recommendation to: Dr. Barry Wilson, Avian Sciences, University of California, Davis, Calif. 95616.

POSTDOCTORAL POSITION—ORGANIC-MEDICINAL CHEMISTRY. Research involves synthesis of nucleoside analogs. Salary: \$16,000 to \$20,000, plus benefits. Send résumé and names of three references to: Dr. John A. Secrist III, Organic Chemistry Department, SOUTHERN RESEARCH INSTITUTE, P.O. Box 55305, Birmingham, Ala. 35255-5305. An Affirmative Action/Equal Opportunity Employer.

A POSTDOCTORAL POSITION is available for studying changes in expression, structure and localization of membrane glycoproteins in secretory systems (for example, pancreas, parotid) during development and neoplasia. Studies will include use of cell (organ) culture, radiolabeling, cell fractionation, immunochemical analysis, oligosaccharide and protein structural analyses (including approaches entailing recombinant DNA technology). Individuals proficient in one of these areas but looking to expand expertise in other areas mentioned are encouraged to apply. The position (to be started on or before 1 June 1985) is funded by an NIH postdoctoral training grant. Applicants must be U.S. citizens or permanent residents. Please send curriculum vitae and names of three references to either: J. David Castle or James D. Jamieson, Department of Cell Biology, Yale Medical School, 333 Cedar Street, P.O. Box 3333, New Haven, Conn. 06510. Yale is an Equal Opportunity Employer.

Site-Specific Mutagenesis at MIT

Postdoctoral position available to investigate heme redox chemistry, protein structure and monooxygenase mechanisms through the study of novel proteins generated by site-directed mutagenesis. Extensive experience in recombinant DNA techniques is essential. Some experience in protein purification/enzyme kinetics would be useful. Appointment will be for 2-3 years with an initial salary of \$18,500 and will be in the Toxicology/Biotechnology program of the Department of Nutrition and Food Science in collaboration with Drs. G.A. Petsko and D. Ringe of the Department of Chemistry. Send curriculum vitae and have 3 letters of reference sent to: Dr. Michael A. Marletta, c/o MIT Personnel, E19-238, 77 Massachusetts Ave., Cambridge, MA 02139. Refer to Job #R85-604.

MIT is an equal opportunity/affirmative action employer.

ORGANIC CHEMIST

Responsibilities: Assist in the synthesis, purification and characterization of modified nucleosides, modified nucleotides and oligonucleotides. Perform preparation of organic compounds as the need arises.

Requirements: B.S. or M.S. in chemistry and several years in the synthesis of nucleotides and oligonucleotides is preferred. Experience with an oligonucleotide synthesizer and HPLC is also desired. The ability to work well in interdisciplinary projects is required.

Please send resume, in confidence, to:

Mr. Wayne E. Fowler
GIBCO/BRL DIVISION
Life Technologies, Inc.
Box 6009
8717 Grovemont Circle
Gaithersburg, MD 20877

*An equal opportunity employer,
M/F/H*

CODON

MOLECULAR BIOLOGY FOR INDUSTRY

CODON is a San Francisco Bay Area biotechnology firm involved in human and animal health care. CODON's expanding research activities have resulted in immediate openings for outstanding candidates with proven skills in molecular biology and related disciplines.

We are seeking individuals ranging from research associates to senior scientists with experience in the following disciplines:

**Molecular Biology
Immunology/Immunochemistry
Protein Chemistry
Biochemistry/Microbiology**

Please send resume and salary requirements to:

**Ms. Janis Serrano
CODON
430 Valley Drive
Brisbane, CA 94005**

HARVARD SCHOOL OF PUBLIC HEALTH

PROFESSOR OF OCCUPATIONAL HEALTH. A doctoral degree plus training and/or experience in Occupational Health required. Certification by the American Board of Preventive Medicine (Occupational Medicine) desirable. Applicants should present a substantial record of research achievement and publications, as well as experience in the development and teaching of graduate-level courses in Occupational Health. A working knowledge of governmental programs in Occupational Health and familiarity, understanding and experience with company and union Occupational Health activities desirable. Ability to interact with other environmental disciplines, including chemistry and engineering, desirable.

Send curriculum vitae, including a list of publications, reprints of several such publications if available, a statement of current and future interests in Occupational Health, and the names of three individuals who would be willing to respond to requests for evaluations to:

**Professor John B. Little, Chairman
Ad Hoc Search Committee
(Occupational Health)
Department of Cancer Biology
Harvard School of Public Health
665 Huntington Avenue
Boston, MA 02115**

The closing date for applications is April 15, 1985.

EXPRESSION OF INTEREST IS PARTICULARLY INVITED FROM QUALIFIED WOMEN AND MINORITY CANDIDATES.

MICROBIOLOGY RESEARCH

Wyeth Laboratories, a leading multinational pharmaceutical and nutritional products division of a Fortune 100 corporation, has a dynamic, rapidly expanding molecular biology research program and requires several immediate additions to its staff. All positions

listed below are based at Wyeth headquarters located on a sprawling business campus in Radnor, PA, an attractive, convenient suburban community on Philadelphia's prestigious Main Line.

Supervisor Recombinant DNA Unit

Requires a scientist with at least five years post-doctoral experience to lead an energetic group in molecular biology with emphasis on mammalian cells and animal viruses. Candidates must have demonstrated ability in recombinant DNA technology and in supervising the research of others. (Position #WD4118-S)

Molecular Biologist

Scientist will purify proteins derived by recombinant DNA methods and test properties in experimental animal models. Minimum three years experience in protein purification, immunology, and animal experimentation necessary. (Position #WD505-S)

Molecular Biologist

Scientist to develop vaccines and other biologicals using recombinant DNA methods. At least three years experience in recombinant DNA techniques essential; work in animal virology (particularly DNA tumor viruses) desirable. (Position #WD506-S)

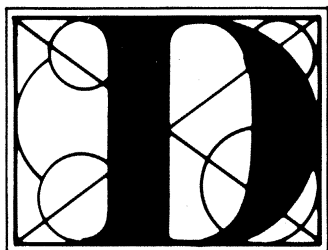
Monoclonal Antibody Specialist

Scientist with two or more years post-doctoral experience to develop monoclonal antibodies for vaccines and other biologicals. This person must interact heavily with other members of the Biologicals and Molecular Biology Sections as well as explore areas of mutual interest with immunopharmacology, cardiovascular, and other research departments. (Position #WD507-S)



Candidates should respond immediately by forwarding a resume or CV, indicating salary history, salary requirement, position applied for, and other pertinent information. All inquiries will be held in strict confidence. Reply to: **Manager of Recruitment, Wyeth Laboratories, Inc., P.O. Box 8299, Philadelphia, PA 19101.** Equal Opportunity Employer, M/F/H/V responses encouraged.

Senior Research Microbiologist



What will you
discover
when you join Lederle?

At Lederle Laboratories we're putting research to work. We're actively involved in the discovery and development of new pharmaceuticals to treat major diseases and deficiencies. Currently we seek a Senior Research Microbiologist who will be responsible for research programs designed to discover novel natural products for medical use.

The successful candidate will have a Doctorate in Microbiology and a strong background in microbial physiology and biochemistry. A minimum of 5 years' postdoctoral training or employment experience is essential. Research experience which includes the development of antimicrobial assay procedures and the mechanism of action of antimicrobial agents is desirable.

At Lederle Laboratories you'll also discover a stimulating, highly professional environment in beautiful Rockland County, just 35 miles from New York City. And, we provide a highly competitive compensation and benefits package, including a 401K savings plan option.

For immediate consideration, forward your resume including salary requirements in confidence to: Mrs. Nancy Levine, Professional Employment Coordinator, Lederle Laboratories, American Cyanamid Company, Medical Research Division, Pearl River, New York 10965. An Equal Opportunity Employer m/f



**Dedicated People
Dedicated to People
Since 1906**

The Pittsburgh In New Orleans Could Mean Opportunity In New Jersey

Ortho Pharmaceutical, a Johnson & Johnson Company, has earned a distinguished reputation for the quality and dependability of its products worldwide. Our commitment, in the areas of research and development, results in an ongoing need for bright, innovative scientists, and we will be at the Pittsburgh Conference speaking to interested chemists about the range of opportunities we can offer.

We are looking for individuals to meet the challenge of the research and development environment, and we strive to provide the best forum to nurture their creativity.

Project Leader—Analytical Chemistry

We currently have a position available within our Advanced Care Products Division for an Analytical Chemist to work as Project Leader with responsibility for managing a group of 3 professionals and 1 technician engaged in analytical methods development and assay of stability samples. The selected candidate will approve analytical methods and test results, recommend the purchase of equipment, and evaluate test methods and stability data.

A PhD in Analytical Chemistry, or equivalent, and a minimum of 5 years' experience in a working analytical laboratory within a pharmaceutical environment is required. Familiarity with instrumental methods, especially HPLC, GLC and computer acquisition and utilization of data, as well as knowledge of UV, IR, wet methods and stability data, are prerequisites.

If this position sounds intriguing, or if you are interested in the other types of positions we have at Ortho, please see our representative at the Employment Bureau.

If you're not planning to attend the Conference and would like to investigate the employment possibilities at Ortho, forward a resume, with salary history and requirements, in confidence to: Dept. 4A.

ORTHO PHARMACEUTICAL CORPORATION
Route 202, Raritan, New Jersey 08869
An Equal Opportunity Employer m/f

A Johnson & Johnson Company



POSITIONS OPEN

The Program in Social Ecology of the University of California at Irvine has a **POSTDOCTORAL POSITION** available in the new scientific discipline of molecular microbial ecology. The project is aimed at assessing the movement and spread of mercury resistant genes in soil bacterial genetics (plasmidology) and hands-on recombinant DNA technology are required. Salary: \$18,000 to \$22,000, annually. Position available immediately.

The Program in Social Ecology is a multidisciplinary academic unit that offers the B.A., M.A., and Ph.D. The Irvine campus is located 40 miles south of Los Angeles and 5 miles from the Pacific Ocean, near the city of Newport Beach. Candidates should submit curriculum vitae, four letters of reference, and copies of publications no later than 8 March 1985 to:

Dr. Betty Olson
Program in Social Ecology
University of California
Irvine, Calif. 92717

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

POSTDOCTORAL POSITION available immediately or 1 July. To study the structure and function of different collagen types in cartilage or skeletal muscle; Ph.D. in cell biology or biochemistry preferred. Send curriculum vitae plus names of two references to: **Dr. Richard Mayne, Department of Cell Biology and Anatomy, University of Alabama at Birmingham, University Station, Birmingham, Ala. 35294.** *The University of Alabama at Birmingham is an Equal Opportunity Employer.*

POSTDOCTORAL POSITION to study the control of gene expression by glucose, temperature, and calcium in mammalian cells, using molecular cloning and gene transfection techniques [see *Science* 226, 187 (1984)]. Background in tissue culture, biochemistry, and/or protein chemistry desired. Send curriculum vitae and names of three references to: **Dr. Amy Lee, Department of Biochemistry, University of Southern California School of Medicine, 2011 Zonal Avenue, Los Angeles, Calif. 90033.**

POSTDOCTORAL POSITION available immediately to study the structure and expression of oncodevelopmental genes in rat liver and hepatomas. Studies include gene cloning, in vitro transcription, DNA sequencing, and chromatin structure of particular genes (that is, AFP, oncogenes, and so forth). Experience in molecular biology would be helpful. Send curriculum vitae with names of three references to: **Dr. Jen-Fu Chiu, Department of Biochemistry, University of Vermont College of Medicine, Burlington, Vermont 05405.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITION available immediately for applicants with a background in molecular and cell biology. Projects involve retrovirus transformation, gene regulation, and control of cellular growth and differentiation. Recent Ph.D.'s with training in virology and recombinant DNA technology or in biochemical and immunological analysis of proteins are preferred.

Applicants should send their curriculum vitae, a brief description of their immediate and long-term goals, and the names of three references to: **Dolores Klaff, Center for Experimental Cell Biology, Berg Building, Mount Sinai School of Medicine, One Gustave L. Levy Place, New York, N.Y. 10029.** *An Equal Opportunity Employer.*

POSTDOCTORAL POSITIONS. One and possibly two positions will be available in spring 1985 for postdoctoral study of structure and function of cholinergic proteins (acetylcholinesterase, muscarinic receptors) employing spectroscopic and tissue culture methods. Applicants should have a background in biochemistry, biophysics, or pharmacology. Send curriculum vitae, a letter describing research interests, and three letters of reference to: **Professor Harvey Alan Berman, 335 Hochstetter Hall, Department of Biochemical Pharmacology, State University of New York at Buffalo, Buffalo, New York 14260.**

POSTDOCTORAL RESEARCH ASSISTANT available 1 September 1985 for 1 to 3 years, to study avian foraging behavior in laboratory setting. Research experience in laboratory and field required. Mathematical, programming, and microcomputer hardware skills desirable. Salary: \$15,000 per year. Send curriculum vitae and three letters of reference by 15 March 1985 to: **Alan Kamil, Division of Neuroscience and Behavior, Psychology Department, University of Massachusetts, Amherst, Mass. 01003.** *An Affirmative Action/Equal Opportunity Employer.*

Associate Senior Investigator

The Analytical, Physical, and Structural Chemistry Department of SK&F Laboratories is seeking a Ph.D. Chemist interested in applying Inductively Coupled Plasma and Atomic Absorption techniques to problem solving in R&D. The selected candidate will develop and implement new spectroscopic methods of analysis for elements in inorganic, organic, and biological substrates; validate procedures with respect to accuracy, precision, sensitivity, and ruggedness; provide data for inclusion in IND and NDA documents; operate and maintain AA and ICP spectrometers; remain current in state-of-the-art spectroscopic elemental analysis and where appropriate, introduce the relevant techniques to SK&F.

We require a Ph.D. in Chemistry with recent training in ICP and AA Spectroscopy, experience with array processors, the ability to work with computers, and excellent problem-solving and communication skills. Experience with vacuum ultraviolet spectroscopy and HPLC is preferred.

Presently located in Philadelphia, the Department will be relocating to a new state-of-the-art Research and Development facility near Valley Forge, PA. We offer an excellent salary, benefits, and relocation package as well as the opportunity for personal and professional growth. Please forward your resume to: George P. Kissell, Sr. Employment Consultant, SK&F Laboratories, 1588 Spring Garden Street, Phila. PA 19101

We are an Equal Opportunity Employer, M/F/H/V

SK&F
A SmithKline Beckman Company

Protein Characterization And Analysis

The Analytical, Physical and Structural Chemistry Department is seeking two scientists experienced in protein characterization and analysis for its recently formed peptide/protein group. These are exciting positions for scientists interested in creative thinking and involve collaboration with the Mass Spectrometry Group in sequencing and glycosylation site studies as well as interaction with the Biotechnology Division in the areas of genetic engineering and protein isolation. The equipment is state-of-the-art including a gas phase sequencer and Pico-Tag amino acid analyzer.

SENIOR INVESTIGATOR

An experienced scientist with a Ph.D. in Chemistry or Biochemistry and a strong background in protein characterization and analysis. The successful candidate will assume responsibility for a staff of four engaged in sequencing and method development for peptide and protein biopharmaceutical compounds.

ASSOCIATE SENIOR INVESTIGATOR

A scientist with a Ph.D. in Biochemistry and 1 to 3 years experience in protein characterization.

Presently located in Philadelphia, the Department will be relocating to a new, state-of-the-art R&D complex near Valley Forge, PA. We offer an excellent salary, benefits, and relocation package as well as the opportunity for personal and professional growth. Please forward your resume to: George P. Kissell, Sr. Employment Consultant, SK&F Laboratories, 1592 Spring Garden St., Phila. PA 19101

We are an Equal Opportunity Employer, M/F/H/V

SK&F
A SmithKline Beckman Company

Physiologist

Becton Dickinson's Corporate Research Center at Research Triangle Park, North Carolina, is a significant source of new medical technologies. Backed by our Fortune 500 resources, a team of dedicated scientists is now pursuing important programs in healthcare products and instrumentation. We are seeking a highly qualified Physiologist to enhance these efforts. The assignment: take a principal role in the design, development and implementation of new and improved blood collection/processing techniques. Specific areas of interest include: evaluation of capillary blood sampling, development of cell separation methods, and technology surveillance.

To qualify, you should have a PhD in Physiology and 2 or more years in the research and development of laboratory/medical instruments or devices. Knowledge and experience in biochemistry, clinical chemistry, hematology, micro-circulation, or engineering science would be beneficial.

We offer an attractive salary, a comprehensive benefits program—including relocation assistance—and the opportunity to contribute to vital work in the dynamic healthcare field. Qualified candidates are invited to send curriculum vitae, in strict confidence, to: Mr. F. Richard Wilson, Human Resources Department, Becton Dickinson Research Center, P.O. Box 12016, Research Triangle Park, North Carolina 27709. An equal opportunity/affirmative action employer.

Caring for people is our business

**BECTON
DICKINSON**

President

aamc

**association of american
medical colleges**

Washington, D.C.

The Executive Council and the Presidential Search Committee invite nominations and applications for the position of President and Chief Executive Officer of the Association.

The Association has as its purpose the advancement of medical education and the Nation's health. In pursuing this purpose, the Association works with many national and international organizations, institutions, and individuals interested in strengthening the quality of medical education at all levels, the search for biomedical knowledge, and the application of these tools to providing effective health care.

The Association represents all accredited United States Medical Colleges and their students through the Council of Deans and the Organization of Student Representatives (OSR), more than 400 teaching hospitals through the Council of Teaching Hospitals; and approximately 80 academic societies in the Council of Academic Societies. The Councils and the OSR have representation in the Assembly, the highest legislative body of the Association, and on the Executive Council, which conducts the Affairs of the Association between the yearly meetings of the Assembly. The Association has national groups relating to specific functions within academic medicine. These groups, which have formal non-voting status in the Association, are: Group on Business Affairs, Group on Medical Education, Group on Institutional Planning, Group on Public Affairs, and the Group on Student Affairs.

The affairs of the AAMC encompass relationships with multiple organizations and constituencies external to the Association that impact medical education and the Nation's health.

Preferred candidates shall, at a minimum, have attained the M.D. degree, and have a distinguished record of scholarly and administrative accomplishment within the framework of academic medicine. The ability to assess the environment, advise on and develop policies, and to develop coalitions and derive consensus both within and external to the Association is an essential characteristic. Candidates must have respect for all segments of the membership, and be capable of maintaining equity for all in the Association. Demonstrated capacity in financial management is a desirable characteristic.

Compensation will be commensurate with the scope of the Association and the responsibilities of the position. Managerial authority will be concordant with responsibilities of a President and Chief Executive Officer. The President is responsible to the Executive Council for the performance of the Association.

Nominations and applications together with the names and addresses of five references will be considered in confidence and should be sent to:

Richard Janeway, M.D.
Chairman, AAMC Presidential Search
Vice President for Health Affairs and Dean
The Bowman Gray School of Medicine
of Wake Forest University
300 South Hawthorne Road
Winston-Salem, North Carolina 27103

The Association of American Medical Colleges is an Affirmative Action, Equal Opportunity Employer. Deadline for receipt of applications or nominations is April 15, 1985.

POSITIONS OPEN

POSTDOCTORAL POSITION available to study the role of carbohydrate-method postsynthetic modification of proteins in diabetes and aging. Applicants should have a recent Ph.D. in biochemistry or chemistry with background in protein chemistry. Send curriculum vitae and names of three references to: **Dr. Vincent M. Monnier, Institute of Pathology, Case Western Reserve University, Cleveland, Ohio 44106.** An Equal Opportunity/Affirmative Action Employer.

TWO POSTDOCTORAL POSITIONS available immediately at the University of Illinois at Chicago, Department of Ophthalmology, to study ocular immunology and ocular biochemistry. Recent Ph.D.'s preferred. Background in immunology, biochemistry, or cell biology required. Research projects center on (i) viral immunology; (ii) connective tissue biochemistry and RNA metabolism of tissue cultured ocular cells. Experience in tissue culture, basic immunologic biochemical or molecular biological techniques desirable. U.S. citizenship or permanent residency required. Prospects of future faculty appointments. Salary commensurate with experience. Please send résumé to: **Alice Long, 1855 West Taylor Street, Chicago, Ill. 60612.**

POSTDOCTORAL POSITION IN NEUROPHYSIOLOGY/NEUROGENETICS available 1 June 1985 to study *Drosophila* mutants with altered membrane excitability. Research involves analyses of single-channel and whole-cell currents in cultured neurons and muscle cells by patch-clamp and voltage-clamp techniques. Background in electrophysiology, cell culture, or *Drosophila* genetics is desirable. The individual will also assist in a graduate seminar course in neurobiology during the 2- to 3-year appointment. Submit curriculum vitae and list of three references to: **Dr. Chun-Fang Wu, Department of Biology, University of Iowa, Iowa City, Iowa 52242.** Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION available immediately to study the mechanism of TCDD (active halogenated compound in Agent Orange) toxicity. The hypothesis suggests that these polychlorobiphenyls may exert their toxicity through a major hormonal imbalance. Research will involve monitoring serum levels of prolactin and certain other hormones in rats and alterations in receptor-mediated hormone action after TCDD administration. Knowledge and interest in pharmacology-toxicology, endocrinology, and/or immunology pertinent. Contact: **Dr. Diane H. Russell, Department of Pharmacology, University of Arizona, College of Medicine, Tucson, Arizona 85724.** Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION for cell/developmental biologist to work on environmental regulation of connective tissue differentiation, involving work with monoclonal antibodies. Biochemical or immunological background preferred. Write to: **Dr. Michael Solursh, c/o University of Iowa, Department of Biology, Iowa City, Iowa 52242.** University of Iowa is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL/RESEARCH ASSOCIATE POSITION available immediately, to employ receptor purification and monoclonal antibody technologies to the study of brain and neurotumor cell line opiate receptors. Background in membrane biochemistry and/or immunology is desirable. Please send curriculum vitae and two references to: **Dr. R. Suzanne Zukin, Department of Biochemistry, Albert Einstein College of Medicine, 1300 Morris Park Avenue, Bronx, N.Y. 10461.**

POSTDOCTORAL RESEARCH ASSOCIATES

Positions for NCI postdoctoral training program in molecular and cellular mechanisms of carcinogenesis are available at The University of Texas Systems Cancer Center (UTSCC)—Science Park. Research programs focus on the following areas: somatic cell genetics, DNA repair and mutagenesis, carcinogen metabolism and adduct formation, tumor promotion, mechanisms of lymphomagenesis, normal and tumor cell differentiation, biochemical genetics, growth factors. Current approaches in whole animal and in vitro culture systems include: flow cytometry (BD FACS 440), HPLC, monoclonal antibody production, Southern blot analysis and DNA sequencing, isoenzyme analyses and electron microscopy. Applicants must be U.S. citizens or permanent residents and have a Ph.D., M.D., or D.V.M. degree. For application forms, contact: **Dr. Thomas J. Slaga, Director, UTSCC, Science Park-Research Division, P.O. Box 389, Smithville, Texas 78957; telephone: 512-237-2403.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL RESEARCH ASSOCIATE

Position available immediately for studies of cholinergic mechanisms in cerebral cortex. Experience in neurophysiology of transmitter systems required. Salary commensurate with experience. Send curriculum vitae and names of three references by 15 March to: **N. M. Weinberger, Center for the Neurobiology of Learning and Memory, University of California, Irvine, Calif. 92717.** An Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL RESEARCH ASSOCIATE opening in a new research program involving studies of nuclear resonance excitation at the x-ray ring of the National Synchrotron Light Source. Nuclear Bragg scattering from crystals or multilayer films will be studied. Applicants should have experience in one or more of the following areas: nuclear resonance (Mössbauer) spectroscopy; x-ray optics; fast coincidence counting methods. A résumé that includes the names of three references should be sent to: **Peter E. Haustein, Chemistry Department, Brookhaven National Laboratory, Associated Universities, Inc., Upton, Long Island, N.Y. 11973.** Equal Opportunity Employer, M/F.

POSTDOCTORAL RESEARCH ASSOCIATE

Position is available immediately for research work in the area of membrane physical chemistry and bioenergetics. Current research focuses on protein-protein and protein-lipid interactions in relation to energy transduction in mitochondria. Background and/or interest in biophysical techniques (ESR, fluorescence, NMR) preferred. Competitive salary with a possibility for long-term employment. Ph.D. in biochemistry, biophysics, or related field is required. Send curriculum vitae and names of three references to: **Dr. Hagai Rottenberg, Department of Pathology, Hahnemann University School of Medicine, Broad and Vine, Philadelphia, Pa. 19102.**

POSTDOCTORAL RESEARCH ASSOCIATE position in yeast molecular biology available immediately. Ongoing project involves metalloenzyme gene isolation and application of the techniques of in vitro mutagenesis to answer functional, structural, and mechanistic questions. Experience in yeast molecular biology and recombinant DNA techniques is highly desirable. Send curriculum vitae and three letters of reference to: **Dr. Joan S. Valentine, Molecular Biology Institute, University of California, Los Angeles (UCLA), Los Angeles, California 90024.** UCLA is an Equal Opportunity/Affirmative Action Employer, and we encourage applications from women and minority candidates.

PROTEIN BIOCHEMIST

ASSISTANT PROFESSOR, Department of Pathology (Ph.D.) or Medicine (M.D.) with potential joint appointment in Departments of Biochemistry or Microbiology, respectively, University of Washington, Seattle. Seeking applicant with strong academic credentials to join biomedical research team involved with the biochemical, genetic, and immunological characterization of relevant proteins of microbial and protozoal pathogens. Preference to individuals with sequencing and/or peptide synthesis experience. Well-equipped laboratory, start-up funds, and competitive salary available. Position available immediately. Send curriculum vitae, bibliography, and three references to: **Dr. Thomas M. Buchanan, Immunology Research Laboratory, 11th Floor, Pacific Medical Center, 1200 12th Avenue South, Seattle, Washington 98144.** The University of Washington is an Affirmative Action/Equal Opportunity Employer.

RESEARCH ASSISTANT PROFESSOR—Pharmacology and experimental therapeutics. Forty hours; \$17,850 per year. To do studies on neuromuscular transmission, using patch-clamp technique in amphibian and mammalian (human) tissue. Ph.D. in pharmacology required; must have courses in neurobiology and neuropharmacology. Mail résumé and copy of ad to: **Department of Employment and Training, 1123 North Eutaw Street, Room 201-B, Baltimore, Md. 21201.** Job Order Number 5015919. Job location: Baltimore, Md.

RESEARCH ASSOCIATES, Ph.D. level, to start summer 1985, or earlier. (i) **ELECTROPHYSIOLOGIST** to study membrane permeability and transport properties of the ocular lens. (ii) **PHARMACOLOGIST/BIOCHEMIST** to study mediators of ocular inflammation. Salary: approximately \$20,000. Contact: **Dr. C. A. Paterson, Box B205, University of Colorado Medical School, Denver, Colo. 80262.** An Equal Opportunity/Affirmative Action Employer.

POSITIONS OPEN

POSTDOCTORAL RESEARCH POSITIONS U.S. Army Aeromedical Research Laboratory (USAARL)

Research associate positions administered by the National Research Council are available in 1985. The Sensory Research Division is soliciting applications for basic and applied research opportunities in the areas of visual neurophysiology, visual neuropharmacology, visual and auditory psychophysics, and applied research in vision and audition.

Additional details of research opportunities may be obtained by contacting: **Dr. Bruce Leibrecht, Director, Sensory Research Division, USAARL, P.O. Box 577, Fort Rucker, Alabama 36362-5000.**

Research opportunities are open to experienced senior scientists as well as to recent Ph.D.'s. Stipends begin at \$26,350 for recent graduates and are appropriately higher for seniors. Relocation reimbursement and funds for professional travel on tenure are available, and a health insurance program is offered.

For application materials, please write to: **Associateship Programs (JH608/4), National Research Council, 2101 Constitution Avenue, NW, Washington, D.C. 20418.** Deadlines for applications are 15 April and 15 August.

PRE- AND POSTDOCTORAL RESEARCH—DEPARTMENT OF PHYSIOLOGY AND BIOCHEMISTRY, THE MEDICAL COLLEGE OF PENNSYLVANIA. NIH pre- and postdoctoral training grant positions are available to join an established, multidisciplinary research team studying lipid transport, metabolism, and cardiovascular physiology. Trainees will participate in basic research projects with emphasis on lipid transport and atherosclerosis or various aspects of cellular lipid metabolism. Responsibilities will include developing and conducting studies in the areas of lipoprotein structure, turnover and interactions with cells, enzymes of cholesterol metabolism, vitamin A transport and metabolism, or lipids and arterial wall function. Predoctoral stipends are \$7,500 excluding fees. Postdoctoral candidates should have a Ph.D. or M.D. degree; annual stipends up to \$22,000 are available. Candidates must be U.S. citizens or permanent residents. Applications should include curriculum vitae, names of three references, and summary of research interests. Inquiries or applications should be sent to: **Dr. Michael C. Phillips, Department of Physiology and Biochemistry, Medical College of Pennsylvania, 3300 Henry Avenue, Philadelphia, Pa. 19129.** Equal Opportunity Employer, M/F.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND DEPARTMENT OF PSYCHOLOGY

Applications are invited for two tenure-track positions, rank open. These positions, which are subject to the availability of funds, will become vacant 1 September 1985. Candidates are being sought who have expertise and ongoing research in the following areas:

- 1) Learning/psychopharmacology,
- 2) Group processes/organizational psychology, and
- 3) Cognition.

We are seeking candidates with a Ph.D., evidence of an independent research program and teaching experience. Teaching duties for all positions will involve both undergraduate and graduate courses. *This advertisement is directed to Canadian citizens and permanent residents of Canada.* Applications, including the names of three referees and reprints or preprints of recent publications, should be sent to:

**Dr. J. E. Strawbridge
Head, Department of Psychology
Memorial University of Newfoundland
St. John's, Newfoundland, Canada A1B 3X9**

STREAM ECOLOGIST WEST VIRGINIA UNIVERSITY

The Biology Department is accepting applications for a stream ecologist interested in modeling and aspects of streams other than fishes. The person will teach a course per semester and have an active research program and should be able to interact with the terrestrial ecologists and limnologists already on the staff. The appointment will be as an assistant professor on the tenure-track, and is dependent on the availability of funds. Candidates should send curriculum vitae, copies of publications, and a list of persons willing to serve as references. Applications close on 1 March 1985. Send materials to: **John DeCosta, Biology Department, West Virginia University, Morgantown, W.Va. 26506-6057.**

An Affirmative Action/Equal Opportunity Employer

APPLICATIONS INVITED FOR DIRECTOR, GENERAL CLINICAL RESEARCH CENTERS PROGRAM BRANCH

The National Institutes of Health, Division of Research Resources invites nominations and applications for the position of Director, General Clinical Research Centers Program Branch. This is a Civil Service position in the Senior Executive Service with a salary range of \$61,296 to \$68,700 per annum. (Physicians may be eligible for a comparability allowance up to \$10,000 per year.) Applications will be accepted from all qualified federal government employees, members of the PHS Commissioned Corps, individuals with SES reinstatement eligibility and qualified outside candidates who possess an M.D. degree. A one year probationary period must be served if the individual selected is not currently in the SES.

The Director, General Clinical Research Centers Program Branch, plans, develops, manages and evaluates a multi-million dollar grants and contracts program which supports high quality clinical research environments throughout the nation.

Further information about the position and qualification requirements may be obtained by contacting Ms. Pathenia A. Wiggins at (301) 496-1524. Applications (SF-171, Personal Qualifications Statement) accompanied by a current CV and bibliography should be submitted to Ms. Wiggins at the National Institutes of Health, DRR Personnel, Building 31, Room 5B06, 9000 Rockville Pike, Bethesda, Maryland 20205.

Applications must be postmarked not later than March 4, 1985. (The SF-171 form is available at all Federal Personnel Offices and Job Information Centers.) Applications from women and minority group candidates are solicited.

AN EQUAL OPPORTUNITY EMPLOYER

MOLECULAR BIOLOGIST

A position is available for a Molecular Biologist in a growing molecular biology program at Battelle, Pacific Northwest Laboratories.

The position requires at least two years' postdoctoral research experience in mammalian molecular biology using recombinant DNA techniques; enzymology research experience also desirable. The specific area of study can be: oncogenes, gene regulation and expression, chromosome structure and function, or other related work. Qualifications must be demonstrated by publication record. Initially, the candidate will work on an existing project concerning oncogene expression in cultured cells, but will be expected to build an independent research program.

Battelle-Northwest is a contract research laboratory with a staff of 2800 located in south-central Washington State.

U.S. citizenship required.

Reply in confidence to: Loren Henderson, Manager-Employment, Battelle-Northwest, P.O. Box 999, Richland, WA 99352. An Equal Opportunity Employer M/F.



IMMUNOLOGIST/CELL BIOLOGIST

Cetus Immune Corporation, a leader in biotechnology-based healthcare products, seeks a Scientist to join a stimulating group of immunologists and immunochemists with expertise in the production and characterization of human monoclonal antibodies. Responsibilities will include basic and applied research in these areas.

A Ph.D. and an established research record in the field of immunoregulation or in a closely related area are requirements for this position.

Please send resume in confidence to:
Cetus Immune Corporation
Box BL
3400 West Bayshore Rd.
Palo Alto, CA 94303.



We are an equal opportunity employer.

Our continuous flow Mass Culturing Technique (MCT*) is cell driven—custom designed in each instance to fit the needs of a particular cell.

Critical factors such as the culture chamber and the growth medium are custom designed. The removal of metabolic wastes, the removal of cells when cell density becomes too high, the continuous harvesting of product and purification techniques are on line and controllable. All are combined and adapted to fit your cell's lifestyle.

When you think of it, that's very special response.

BIO-RESPONSE, INC.

1978 West Winton Ave., Hayward, CA 94545
Telephone: 415 786 9744
Telex: 643476

*Trademark of Bio-Response, Inc.

POSITIONS OPEN

The College of Medicine of the University of Oklahoma Health Sciences Center at Oklahoma City is seeking a qualified person to assume the position of **PROFESSOR AND HEAD** of its **Department of Physiology and Biophysics**. The department also serves the Colleges of Dentistry, Pharmacy, and the Graduate College. Applicants should have the promise of an outstanding research career, a distinguished record in teaching, and the potential for productive interaction with colleagues in the basic and clinical sciences. Preference will be given to investigators in the areas of neural control of the circulation and/or respiration. Salary is based on the applicant's qualifications.

Interested candidates should submit curriculum vitae, bibliography, and names of three references by 15 March 1985 to:

Ralph Lazzara, M.D.
Professor
Chairman, Physiology Search Committee
Department of Medicine
University of Oklahoma Health Sciences Center
P.O. Box 26901
Oklahoma City, Oklahoma 73190

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

The Department of Medicine, Stanford University School of Medicine, invites applications for the position of **PROFESSOR OF MEDICINE (RESEARCH)** in the Division of Gerontology.

A major responsibility of the individual will be to direct the research, clinical, and training facets of our expanding Geropsychology program. The individual should be a senior professional who is skilled in both clinical and physiological psychology, with evidence of accomplishments in each subspecialty that has direct implications for the field of aging. The individual should also show evidence of ability to develop and direct large interdisciplinary program projects and clinical/research training programs of relevance to gerontology. This would include evidence of ability to collaborate with physicians and other professionals in a multidisciplinary setting to generate innovative research and training programs. In addition, the individual should have demonstrated the ability to develop an independent, self-sustaining research program with a clinical focus in geropsychology. Applicant must be a graduate of an APA-approved program in clinical psychology, and have completed an APA-approved internship. *Stanford University is an Equal Opportunity Employer and welcomes nominations of women and minority group members and applications from them.*

Please send inquiries to: **Gerald Reaven, M.D.**, Stanford University School of Medicine, Geriatrics Research, Education and Clinical Center, Veterans Administration Medical Center, 3801 Miranda Avenue, Palo Alto, Calif. 94304.

REPRODUCTIVE TOXICOLOGY—Research fellow position to study changes in biochemical and morphological parameters of testicular cell cultures exposed to male reproductive toxicants. Inquiries to: **Dr. Michael J. Brabec**, Department of Environmental and Industrial Health, or **Dr. Michael J. Welsh**, Department of Anatomy and Cell Biology, The University of Michigan, Ann Arbor, Mich. 48109. *The University of Michigan is an Equal Opportunity/Affirmative Action Employer.*

Position available for Ph.D. in molecular biology or genetics with appropriate experience and bibliography, to be appointed as **RESEARCH INSTRUCTOR**. Interests of laboratory are the role of bacteria in spondyloarthropathies. Send curriculum vitae to: **Dr. Peter Lipsky**, Director, Harold C. Simmons Arthritis Research Center, University of Texas Health Sciences Center, 5323 Harry Hines Boulevard, Dallas, Texas 75235. *An Equal Opportunity Employer.*

SENIOR RESEARCH SCIENTIST

To undertake the scientific and administrative management of a program on time-resolved fluorescence and phosphorescence microscopy on cell surfaces, including design and construction of spectrometer, experimentation and instruction on instrument. Requirements: Interdisciplinary Ph.D. and postdoctoral training in physics and biophysics, and biochemistry; 2 years of experience in BASIC and FORTRAN for scientific research; \$25,000 per year; 40 hours per week. Résumés to: **Ben Loomis**, Wisconsin Job Service, 819 North 6 Street, Milwaukee, Wisconsin 53203. *Equal Opportunity Employer. Employer paid ad.*

POSITIONS OPEN

RESEARCH ASSISTANT PROFESSOR DEPARTMENT OF MEDICINE UNIVERSITY OF VERMONT COLLEGE OF MEDICINE

Full-time research assistant professor to conduct independent and collaborative research in mechanics of the in situ, beating heart in various animal models and to assume partial responsibility for developing a laboratory for the performance of cardiovascular physiologic studies in various animal models. Applicants must have Ph.D. in physiology or related area or M.D. degree, 2 years of demonstrated productivity in postdoctoral cardiovascular physiologic research training, expertise in cardiovascular instrumentation, research design and computerized data analysis. Qualified and interested candidates should send curriculum vitae, names and addresses of three references, and brief outline of future research interests by 1 March 1985 to: **John C. Hoak, M.D.**, Chairman, Department of Medicine, Fletcher House 311, MFU, Burlington, Vt. 05401. *An Affirmative Action/Equal Opportunity Employer. Women and minorities are encouraged to apply.*

RESEARCH ASSOCIATE position available immediately for Ph.D. to study gene regulation in yeast. Recombinant DNA techniques will be used to identify and overproduce regulatory proteins whose function will be determined. Candidates with experience in molecular biology or protein chemistry preferred. Salary range: \$17,000 to \$23,000. Send résumé and the names of three references to: **Dr. Robert Dickson**, Department of Biochemistry, University of Kentucky, Lexington, Ky. 40536. *An Equal Opportunity Employer.*

RESEARCH POSITIONS—Ph.D. Level

Available immediately. Studies in areas of cholesterol biosynthesis, sphingolipid chemistry and metabolism, lipoprotein metabolism, and regulation of sterol synthesis by naturally occurring and synthetic inhibitors. Experience in analytical biochemistry, metabolism, cell culture studies, or bioorganic chemistry of concerned compounds desirable. Salary dependent on qualifications and experience. Send résumé and names of three references to: **G. J. Schroepfer, Jr.**, Department of Biochemistry, Rice University, P.O. Box 1892, Houston, Texas 77251. *Rice University is an Equal Opportunity/Affirmative Action Employer.*

RESEARCH PROFESSOR IN ENTOMOLOGY

The Department of Entomology and Economic Zoology is seeking a nationally recognized entomologist with a significant record of achievement in research and extramural competitive grant success to establish a research program in some aspect of integrated pest management such as, but not limited to, insect toxicology/biochemistry or insect population genetics. The applicant will be expected to teach undergraduate and/or graduate courses in his/her area of specialization. Successful candidate should have demonstrated administrative and leadership capabilities, and must have an understanding of experiment station objectives.

This is a 12-month, senior-level position. Nominations and applications should be sent before 15 April 1985 to:

Dr. Herbert T. Streu
Department of Entomology and Economic Zoology
Cook College
J. B. Smith Hall, Georges Road
New Brunswick, N.J. 08903

An Affirmative Action/Equal Opportunity Employer

SYNTHETIC ORGANIC CHEMIST to work in the area of vitamin D synthetic chemistry and the characterization of newly isolated vitamin D metabolites. Contact: **Dr. R. Kumar**, 5-164 West Joseph, Mayo Clinic and Foundation, Rochester, Minn. 55905 or call collect 507-285-4300. *An Equal Opportunity/Affirmative Action Institution.*

SYNTHETIC ORGANIC AND BIO-ORGANIC CHEMISTS—POST Ph.D. POSITIONS

Available immediately. Studies of inhibitors of sterol synthesis. Organic synthesis, radioisotopic synthesis, small molecule x-ray crystallography, bio-analytical studies. Salary dependent on qualifications and experience. Send résumé and names of three references to: **G. J. Schroepfer, Jr.**, Department of Biochemistry, Rice University, P.O. Box 1892, Houston, Texas 77251. *Rice University is an Equal Opportunity/Affirmative Action Employer.*

POSITIONS OPEN

FLATHEAD LAKE BIOLOGICAL STATION UNIVERSITY OF MONTANA

SYSTEMS ANALYST: A postdoctoral position (Ph.D.) required to develop a simulation model for the purpose of studying effects of lake and stream regulation on nutrient dynamics and productivity of Flathead Lake. Responsibilities also include formatting and analysis of hydrologic and water quality data files. Modeling experience in limnology preferred.

PHYCOLOGIST: A research assistant is needed to conduct work on the effects of lake level regulation on species composition and productivity of periphyton in Flathead Lake. An M.S. degree with specialization in ecology of benthic algae is required.

These are considered permanent, professional-staff positions, but are nontenurable. Interested persons are invited to submit a letter of application, curriculum vitae (listing three references), and reprints of selected journal papers to: **Dr. Jack A. Stanford**, Director, University of Montana Biological Station, Bigfork, Mon. 59911, by 1 March 1985. *An Equal Opportunity/Affirmative Action Employer.*

VIROLOGIST. Senior full-time academic position, Ophthalmology Department, concentration in herpes virology, experienced researcher, proven track record with granting agencies. Ph.D. or M.D. Curriculum vitae to: **H. Kaufman, M.D.**, Louisiana State University Eye Center, 136 South Roman Street, New Orleans, La. 70112. *An Equal Opportunity/Affirmative Action Employer.*

VISITING SCIENTIST positions are available for new and established Ph.D.'s and/or M.D.'s in the areas of cell and molecular biology. Some experience in either area is desirable but not essential. Appointments will be made for at least 2 years at an annual salary up to \$25,000, depending on qualifications and experience. Employment will also include liberal fringe benefits. Interested applicants should send curriculum vitae and names of three references to: **Dr. Gordon H. Sato**, c/o Personnel Office, W. ALTON JONES CELL SCIENCE CENTER, 10 Old Barn Road, Lake Placid, New York 12946.

An Affirmative Action/Equal Opportunity Employer

ZOOLOGIST. Continuing appointment available August 1985 in the Department of Biology, The Pennsylvania State University, Berks Campus, Reading, Pennsylvania. Duties include teaching general biology/zoology and basic human anatomy and physiology for allied health majors. Genetics or ecology background desirable. Continuing scholarly activity, including research and publication, will be required. Salary and rank commensurate with qualifications. Application deadline: 30 March 1985. Send curriculum vitae, transcripts, and three letters of reference to: **Dr. William H. Neff**, Box G, 208 Mueller Building, University Park, Pa. 16802. *An Affirmative Action/Equal Opportunity Employer*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP. Positions are available in an NIEHS training program for multidisciplinary research at Yale Medical School in environmental toxicology and physiology in the following areas: biochemistry, epidemiology, pathology, pharmacology, physiology, and toxicology. The positions are open to U.S. citizens or permanent residents with M.D., D.V.M., Ph.D., or equivalent degrees. Applicants should send curriculum vitae with two references, and specify their area of interest, to: **Arthur B. DuBois, M.D.**, **John B. Pierce Foundation Laboratory**, Yale School of Medicine, 290 Congress Avenue, New Haven, Conn. 06519. *Affirmative Action/Equal Opportunity Employer.*

Ph.D. FELLOWSHIPS. Predoctoral fellowships are available for graduate training toward a Ph.D. in biological sciences. Research areas include molecular biophysics of membranes and proteins, molecular and cellular endocrinology, cellular and developmental neurobiology, and pulmonary and exercise biochemistry. The deadline for applications is 15 March 1985. Further information and application forms are available from: Graduate Adviser, Department of Physiology and Biophysics, College of Medicine, University of California, Irvine, Calif. 92717.

SCIENCE

SCIENCE Introduces "The Four-Day Close"

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

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

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

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

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

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

*At a 15% premium.

Molecular Biology

Applications are invited for a staff scientist position in a research group studying gene expression in *E. coli* and cDNA expression in yeast. Applicants should possess a PhD degree in molecular biology or biochemistry, with graduate study in gene expression in *E. coli*, plus an additional one to two years' experience in gene expression in *E. coli*, with emphasis on the regulation of the translational machinery *in vivo* and *in vitro*. Applicant should also have demonstrated skills in recombinant DNA technology, protein purification, and the development of transcription and translation systems *in vitro*. Knowledge of gene expression in yeast is desirable. Salary \$35-43K.

Applications are also invited for a staff scientist position in a collaborative research project in cDNA cloning of T cell lymphokines and cDNA expression in mammalian cells. Requires a minimum of two years of postdoctoral experience in constructing and screening cDNA libraries using direct mammalian expression vectors; knowledge of T cell immunology; and demonstrated skill in *E. coli* gene expression and recombinant DNA technology, especially in cloning and expressing eukaryotic cDNA in mammalian cells. Salary \$35-43K.

For either position, send curriculum vitae, selected publications, and the names of three references by March 15, 1985, to: Human Resources Manager, DNAX Research Institute, 1450 Page Mill Road, Palo Alto, CA 94304. An equal opportunity employer.

AAAS Memberships and Subscriptions

• Whenever you write us about your membership or subscription, please attach a Science address label to ensure prompt service.

• **Mail to:** Membership and Subscription Records, AAAS, 1515 Massachusetts Ave., NW, Washington, D.C. 20005.

☐ **Change of Address:** Please provide 6 weeks' notice. Paste an address label from a recent issue in the space provided. Print new address below.

☐ **Query:** If you have a question, place your address label here and attach this form to your letter.

• **To join or subscribe:** Mail this form with your payment, mark the appropriate boxes, and print your name and address in the space below. (For renewals, attach label.)

☐ **Membership rates** (individual only)

☐ \$56 USA ☐ \$80 Canada ☐ \$83 Foreign
☐ \$121 air-surface delivery via Holland

☐ **Subscriber rates**

☐ \$93 USA ☐ \$117 Canada ☐ \$120 Foreign
☐ \$158 air-surface delivery via Holland

**ATTACH
LABEL
HERE**

☐ Payment enclosed

☐ Bill me later

Name

Please print

Address

City

State

Zip

SA16R52

FELLOWSHIPS

POSTDOCTORAL RESEARCH FELLOWSHIP IN PLANT BIOLOGY

Position now open to study the regulation of ethylene biosynthesis in cultured plant cells. Preference given to applicants with experience in plant biochemistry, physiology, and/or tissue culture. Please send curriculum vitae and the names of three references to: **Dr. William Pengelly, Department of Chemistry (ATTN:DLS), OREGON GRADUATE CENTER, 19600 NW Von Neumann Drive, Beaverton, Oregon 97006.**

An Equal Opportunity Employer, M/F/H/V

PREDOCTORAL FELLOWSHIPS IN PHYSICS, FOOD SCIENCE, MATHEMATICS, ECOLOGY, STATISTICS, CERAMIC SCIENCE AND ENGINEERING, BIOMEDICAL ENGINEERING, PSYCHOLOGY, NUTRITION, ENGLISH, HISTORY AND URBAN PLANNING AND POLICY DEVELOPMENT.

GRADUATE SCHOOL—NEW BRUNSWICK RUTGERS UNIVERSITY

Outstanding applicants are encouraged to apply to the above graduate programs and compete for exceptional fellowships for the fall semester 1985. Stipends of \$10,000, plus tuition remission, renewable for up to 4 years of full-time study, are available to support high-quality students entering any of these 12 graduate programs at Rutgers University in New Brunswick. Applicants are required to provide complete transcripts, GRE scores, and recommendations from individuals who are willing to attest to the strength of the applicant's academic and doctoral research potential. Application information is desired by 1 March 1985. For applications and information, telephone: 201-932-7034 or write: Associate Dean Alan D. Antoine, Graduate Fellowship Program, Graduate School—New Brunswick, Rutgers University, 25 Bishop Place, New Brunswick, New Jersey 08903.

PRE- AND POSTDOCTORAL FELLOWSHIPS THE WAKSMAN INSTITUTE OF MICROBIOLOGY RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

Predoctoral and postdoctoral fellowships are available for study in any of the following areas: cell genetics; microbial development; enzyme secretion; general microbiology; cellular regulation; tumor virology; fermentation; immunochemistry and immunology; microbial ecology; molecular biology of plastids; chemistry of microbial products; virus-host interactions and ultrastructure; virology; molecular genetics; developmental genetics; microbial genetics; and plant molecular biology. The Waksman Institute is adding new laboratories to already impressive facilities that include a fermentation pilot plant. Predoctoral stipends are \$5,500 annually, plus remission of tuition and fees; postdoctoral stipends start at \$16,500. For information and applications, write: **Dr. Otto Plescia, The Waksman Institute of Microbiology, Rutgers University, P.O. Box 759, Piscataway, New Jersey 08854-0759; or telephone: Elvira Buscaino at 201-932-3813.** *An Equal Opportunity Affirmative Action Employer.*

PREDOCTORAL FELLOWSHIP, \$10,000 FOR A MINORITY STUDENT THE WAKSMAN INSTITUTE OF MICROBIOLOGY RUTGERS, THE STATE UNIVERSITY OF NEW JERSEY

A predoctoral fellowship is available to a highly qualified minority student for study in any of the following areas: cell genetics; microbial development; enzyme secretion; general microbiology; cellular regulation; tumor virology; fermentation; immunochemistry and immunology; microbial ecology; molecular biology of plastids; chemistry of microbial products; virus-host interactions and ultrastructure; virology; molecular genetics; developmental genetics; microbial genetics; and plant molecular biology. The Institute is adding new laboratories to already impressive facilities that include a fermentation pilot plant. The fellowship, which requires enrollment in the graduate program in microbiology, includes a stipend of \$10,000 plus tuition, fees and other expenses. For information and an application, please specify **MINORITY PREDOCTORAL FELLOWSHIP** and write: **Dr. Otto Plescia, The Waksman Institute of Microbiology, Rutgers University, P.O. Box 759, Piscataway, New Jersey 08854-0759; or telephone: Elvira Buscaino at 201-932-3813.** *An Equal Opportunity/Affirmative Action Employer.*

FELLOWSHIPS

POSTDOCTORAL FELLOWSHIP in endocrinology and metabolism, 1 July 1985, in Endocrine Research Unit, Mayo Clinic, Mayo Medical School. Candidates must have Ph.D., D.V.M., D.D.S., or M.D. degree and must be United States citizen or holder of immigrant visa. Investigators in unit are interested in the metabolism and mechanism of action of calcitropic hormones such as parathyroid hormone, calcitonin, and vitamin D. Contact: **Dr. R. Kumar, 5-164 West Joseph, Mayo Clinic, Rochester, Minnesota 55905; telephone: 507-285-4300.** *An Equal Opportunity/Affirmative Action Institution.*

POSTDOCTORAL FELLOWSHIPS to investigate ion transport processes in membranes isolated from cardiac muscle. Ongoing projects involve detailed study of sodium-calcium exchange across cardiac sarcolemma. Projects are also being initiated on sarcolemmal sodium-proton exchange and sodium-anion cotransport. Experience in membrane biochemistry is advantageous but not required. Send curriculum vitae and names of three references to: **Dr. Kenneth D. Philipson, Cardiovascular Research Laboratory, Department of Physiology, A3-381 CHS, University of California, Los Angeles, School of Medicine, Los Angeles, Calif. 90024.**

The University is an Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOWSHIP IN IMMUNOBIOLOGY. Postdoctoral fellowships in cancer immunobiology are available at Sloan-Kettering Institute for Cancer Research. Fellows will be trained in cellular immunology, development and interaction of lymphoid cells, molecular immunology, clinical immunology and cancer, human and mouse immunogenetics, tumor immunology, cell surface immunochemistry, and immunogenetics. Training methods include individualized research with qualified mentor training in clinical laboratory analysis, lectures, courses, seminars, discussions, rounds, clinics, and conferences. Individual research program will be offered either in New York City or at Walker Laboratory, Rye, N.Y. Only U.S. citizens or foreign nationals with permanent resident or immigrant visas will be considered. Send inquiry with brief résumé to: **Dr. Y. S. Choi, Immunobiology Training Program Director, Sloan-Kettering Institute for Cancer Research, 145 Boston Post Road, Rye, N.Y. 10580.** *An Equal Opportunity/Affirmative Action Employer.*

PREDOCTORAL FELLOWSHIPS FOR MINORITY STUDENTS IN LIFE SCIENCE, PHYSICAL SCIENCE, MATHEMATICS, STATISTICS, ENGINEERING, AND MANAGEMENT.

GRADUATE SCHOOL—NEW BRUNSWICK RUTGERS UNIVERSITY

Outstanding minority students are encouraged to apply to selected graduate programs and compete for Minority Advancement Program Fellowships for fall 1985. Stipends of \$10,000, plus tuition remission, renewable for up to 4 years of full-time study, are available to support quality students entering any of 33 graduate programs at Rutgers University in New Brunswick. Applicants are required to provide complete transcripts, GRE scores, and recommendations from individuals who are willing to attest to the strength of the applicant's academic and doctoral research potential. Application information is desired by 1 March 1985. For applications and information, telephone: 201-932-7908 or write: **Dr. Arnold G. Hyndman, Minority Advancement Program, Graduate School—New Brunswick, Rutgers University, 25 Bishop Place, New Brunswick, New Jersey 08903.**

PROGRAMS

JOINT GRADUATE PROGRAM IN TOXICOLOGY, RUTGERS UNIVERSITY. UMDNJ-RUTGERS MEDICAL SCHOOL is conducting a national search for M.S. and/or Ph.D. candidates in toxicology. You are invited to study at a center where basic mechanisms of action, application of applied techniques and risk assessments are emphasized in a well-rounded interdisciplinary curriculum. More than 40 faculty direct research in cellular/molecular toxicology, immunotoxicology, hepatotoxicology, carcinogenesis, inhalation/respiratory toxicology, behavioral and neurotoxicology, environmental and aquatic toxicology, and drug metabolism. Assistantships and predoctoral fellowships are available on a competitive basis. Contact: **Dr. Robert Snyder, Director, Graduate Program in Toxicology, Rutgers University, P.O. Box 789, Piscataway, N.J. 08854.** Telephone: 201-932-3720.

PROGRAMS

CAREER CHANGE OPPORTUNITY

This unique program offers the candidate with an earned doctorate in the sciences the opportunity to obtain a Doctor of Optometry (O.D.) degree in two calendar years. Employment opportunities exist in private practice, industry, education, and research. Contact: **Ph.D.—O.D. Program Director, Admissions Office, Room 15, The New England College of Optometry, 424 Beacon Street, Boston, Mass. 02115.**

PREDOCTORAL PROGRAM IN BIOMEDICAL SCIENCE

The School of Medicine at the University of South Carolina offers interdisciplinary graduate training and research in anatomy, microbiology and immunology, pharmacology, and physiology leading to the Ph.D. degree. Assistantships begin at \$6000 per year. Please contact: **Assistant Dean for Graduate Studies, School of Medicine, University of South Carolina, Columbia, S.C. 29208.** *Equal Opportunity/Affirmative Action Employer.*

GRADUATE STUDY

APPLIED MOLECULAR BIOLOGY

A 2-year master's program emphasizing molecular genetics, hybridoma technology, and recombinant DNA research techniques. This is a hands-on, laboratory-intensive program at University of Maryland, Baltimore County, for those with a bachelor's degree in an appropriate science.

Available to: College graduates with degrees in biology, biochemistry, or chemistry.

Fees: Standard tuition.

Information: **Michael C. O'Neill, Director AMB Program, Department of Biological Sciences, University of Maryland, Baltimore County, Catonsville, Maryland 21228, Telephone: 301-455-2261**

COURSES

AQUACULTURE TRAINING COURSES: Penaeid Shrimp Reproduction and Larval Rearing Course, 22 April to 31 May 1985; and Aquatic Chemistry and Plankton Biology Course, 10 June to 19 July 1985, at The Oceanic Institute. Contact: **Gary E. Karr, The Oceanic Institute, Makapuu Point, Room 2, Waimanalo, Hawaii 96795.** Telephone: 808-259-7951.

TWENTY-SIXTH ANNUAL COURSE IN MEDICAL GENETICS AND EXPERIMENTAL MAMMALIAN GENETICS. Directors: Victor A. McKusick, M.D., and Thomas H. Roderick, Ph.D. Location: The Jackson Laboratory, Bar Harbor, Maine. Time: 8 to 19 July 1985.

First conducted in 1960, this course is a joint enterprise of Johns Hopkins University (JHU) and The Jackson Laboratory. Lecturers and workshops conducted by 12 members of the JHU faculty, 12 members of the JAX staff, and 12 guest faculty. Persons may apply for the course by writing to either: **Dr. McKusick, Johns Hopkins Hospital, Baltimore, Md. 21205, or Dr. Roderick, Jackson Laboratory, Bar Harbor, Maine 04609.**

MARKETPLACE

Electron Microscope for Sale

Siemens electron microscope; model 1A; resolution 8 angstrom units; magnification range 200–80,000 diameters; double condenser lens; cold finger; camera: 12 negatives each 6.5 × 9 cm.; water re-circulating unit (Cardley); Sola high voltage regulator; can be put under service contract with Siemens Corp.; excellent teaching and research instrument.

Evaporator for Sale

Mikros model VE-10 automatic valving vacuum evaporator; air-cooled diffusion pump; for electron microscopy preparations: carbon coating, metal evaporation, shadow casting, replica formation, etc.

Contact: **Dr. Lawrence Herman, Department of Anatomy, New York Medical College, Valhalla, NY 10595, (914) 347-5630**

Circle No. 180 on Readers' Service Card

ANNOUNCING THE PROGRAM FOR FASEB SUMMER RESEARCH CONFERENCES FOR 1985

The Federation of American Societies for Experimental Biology will again present a series of Summer Research Conferences designed to meet the demand of experimental biologists for *intimate and detailed analysis* of current research in areas of intense scientific interest. The conferences, held weekly at the Vermont Academy in Saxtons River, Vermont, will be limited to an attendance of 150 persons and will be by invitation upon application. A conference fee of \$260 per person covers one week's room, board and registration. For additional information, a complete program and application form, see the February issue of *FEDERATION PROCEEDINGS*, Volume 44, Number 2, or contact Robert W. Krauss, 9650 Rockville Pike, Bethesda, MD 20814 (301) 530-7093.

NEUROTRANSMITTERS (June 9 - 14)

Chairman: Bruce Howard, UCLA Medical School
Vice-chairman: William O. McClure, University of Southern California
Regulation of Neurotransmitter Metabolism I&II. A. Tank, N. Weiner, T. Joh, E. Lewis, E. Diliberto, R. Zigmond, B. Collier, D. Jendon; **Neuropeptides.** R. Axel, J. Roberts, G. Sutcliffe, R. Scheller, J. Douglas, L. Eiden, R. Evans; **Synaptic Vesicle Structure.** D. Aunis, C. Creutz, V. Whittaker, D. Njus; **Transport and Storage.** S. Parsons, S. Schuldiner, P. Dannies, B. Kanner, G. Rudnick; **Neurotransmitter Release and Membrane Retrieval I&II.** R. Siraganian, P. Greengard, B. Howard, R. Holz, T. Reese, J. Meldolesi, H. Winkler, C. Unsworth, R. Miller; **Modulation of Release.** D. Michaelson, M. Dubocovich, J. Brown, J. Cooper, M. Livingstone; **Neurotoxins.** W. McClure, J. Dolly, E. Yavin, D. Yoshikami.

MICRONUTRIENTS: TRACE METALS (June 16 - 21)

Chairman: Edward Harris, Texas A & M University
Vice-chairman: Robert Cousins, University of Florida
Iron Absorption, Metabolism and Utilization. P. Saltman, H. Munro, E. Morgan, G. Bates; **Metabolism and Function of Copper.** J. Prohaska, M. Linder, R. Rucker, M. Ettinger; **Biological Functions of Selenium.** J. Rotruck, R. Burk, H. Cohen; **Workshop: Methods of Nutritional Assessment.** C. Veillon, D. Gordon, W. Mertz, O. Levander; **Zinc Homeostasis and Function.** R. Cousins, B. O'Dell, M. Hambidge, I. Bremner; **Workshop: Approaches to the Study of Metabolism of Trace Metals.** F. Nielson, E. Morgan, A. Prasad, J. Spears; **Trace Metals in Reproduction, Growth and Development.** J. Apgar, P. Gullino, L. Hurley, K. Falchuk; **Abnormalities in Trace Metal Metabolism.** I. Sternlieb, D. Danks, M. Failla; **Role of Trace Metals in Disease Resistance and Therapy.** J. Sorenson, G. Brewer, G. Fernandes, D. McMurray.

SMOOTH MUSCLE (June 23 - 28)

Chairman: Julius Allen, Baylor College of Medicine
Vice-chairman: R. Kent Hermsmeyer, University of Iowa
Contractile Proteins. D. Hartshorne, R. Murphy, J. Stull, P. DeLanarolle, K. Campbell; **Excitation-Contraction Coupling.** D. Harder, G. Haeusler, C. Van Breeman, R. Paul, T. Godfraind; **Mechanics.** B. Johansson, F. Fay, R. Meiss, P. Dobrin, M. Mulvaney; **Calcium Localization.** V. Kreye, L. McGuffee, K. Morgan, M. Sturek, R. Phair; **Ion Pumps.** A. Brading, A. Jones, G. Siegel, S. Navran, N. Speralakis; **Membrane Receptor Excitation Mechanisms.** C. Cohen, P. Abel, J. Singer, T. Bolton, H. Kuriyama; **Development, Hypertrophy and Protein Production.** R. Bevan, G. Owens, G. Gabella, R. Bagby, C. Seidel; **Hypertension.** H. Overbeck, M. Pamnani, W. Stekiel, S. Gray, W. Halpern.

LYMPHOCYTE & ANTIBODIES (June 30 - July 5)

Chairman: Henry Wortis, Tufts University School of Medicine
Vice-chairman: Cox Terhorst, Harvard Medical School
Strategies for Inserting Genes. R. Flavell; **Rearrangement and Expression of the Immunoglobulin Repertoire.** F. Alt; **Antigen Presenting Cell Phenotypes.** M. Dorf; **B-Cell Activation.** D. Parker, A. DeFranco, C. Cowing, A. Abbas, R. Chesnut, B. Malynn; **Molecules Involved in T-Cell Activation.** C. Terhorst, T. Mak, W. Greene, L. Cantley; **The Function of Lyl B-Cells.** C. Sidman, D. Sherr, L. Herzenberg, E. Vitetta; **Cytotoxic T-Cell Effector Functions.** P. Henkart, E. Podack, A. Greenberg; **Epstein Barr Virus & B-Cell Transformation.** D. Thorley-Lawson, E. Kieff, J. Sullivan, G. Lenoir; **HLA Gene Structure & Disease.** B. Dupont.

SOMATIC CELL GENETICS (July 7 - 12)

Chairman: Thomas Caskey, Baylor College of Medicine
Vice-chairman: Phillip Coffino, University of California/San Francisco
Oncogenes. I. Verma, I. Sigal, C. Sherr, T. Kataoka; **Somatic Cell Selection Workshop.** P. Coffino; **Cellular Receptors.** A. Ullrich; **Tissue Specific Gene Regulation.** W. Schaffner, T. Maniatis, D. Baltimore, P. Chambon; **Gene Walking Workshop.** H. Lehrach; **Transgenic Mice.** F. Constantini, R. Kraumlauf, R. Jaenisch, M. Evans. **Recombination.** R. Rothstein, F. Alt, M. Capecchi, M. Liskay; **Transgenic Workshop.** F. Constantini; **Gene Transfer.** T. Caskey, D. Miller, R. Mulligan, R. Kellems; **Cellular Immunity.** S. Tonegawa, T. Mak, W. Green, D. Raulet; **Vector Development and Usage Workshop.** D. Miller; **Gene Mapping.** J. Gusella, D. Drayna, D. Housmann, H. Lehrach, F. Collins; **Plant Somatic Cell Genetics.** L. Bogorad, R. Chaleff, R. Fraley.

DEVELOPMENTAL NEUROBIOLOGY (July 14 - 19)

Chairman: Nicholas Spitzer, University of California/San Diego
Vice-chairman: Lynn Landmesser, University of Connecticut
Lineage Relationships in Vertebrates and Invertebrates. N. Spitzer, D. Weisblat, K. Herrup; **Lineage Probed with Molecular Markers.** L. Landmesser; **Neurite**

Outgrowth - Cellular Mechanics. N. Spitzer, P. Lefoumean, K. Pfenninger, C. Lance-Jones; **Pathfinding.** L. Landmesser, C. Goodman, J. Palka, U. Rutishauser; **Development of Voltage-Dependent Ion Channels.** N. Spitzer, C. Bader, G. Strichartz, S. Siegelbaum; **Development of Neurotransmitter-Activated Channels.** L. Landmesser, E. Cooper, N. Nathanson; **Biochemical Correlates of Development - Neurotransmitter Synthesis.** N. Spitzer, S. Landis, I. Black, J. Barker; **Hormonal Triggers and the Roles of Surface Molecules.** L. Landmesser, P. Patterson, J. Sanes; **Specificity of Neuronal Connections.** N. Spitzer, W. Thompson, D. Purves, S. Easter, E. Frank.

GASTROINTESTINAL DIFFERENTIATION (July 21 - 26)

Chairman: Lenard M. Lichtenberger, University of Texas Medical School/Houston
Vice-chairman: Susan J. Henning, University of Houston
General Discussants: F. Moog, E. Lebenthal, D. Alpers, R. Lester, P. Sunshine; **Molecular and Cellular Mechanisms of GI Ontogeny.** K. Hafften, G. Teitelman, J. Gordon, P. Colony; **Ontogeny of GI Endocrine Cells.** A. Pearce, L. Lichtenberger, A. Andrews, J. Polak; **Innervation and Motility of the Developing Gut.** M. Gershon, Y. Ruckebusch, F. Morris; **Development of Immune and Barrier Properties of the GI System.** J. Trier, M. Neutra, R. Rodewald, W. Walker; **Development of the Salivary and Pancreatic Secretion.** R. Redman, W. Ball, L. Cutler, J. Morisset, J. Jamieson; **Development of the Gastric Secretion.** L. Johnson, J. Forte, E. Dial; **Development of Intestinal Digestion.** S. Henning, K.Y. Yeh, D. Menard, G. Gall; **Development of Intestinal Absorption.** O. Koldovsky, S. Toverund; **GI Differentiation in the Adult.** N. Kretchmer, R. Grand, A. Zweibaum, J. Madara.

MECHANISMS OF CARCINOGENESIS (July 28 - August 2)

Chairman: Charles Sherr, St. Jude Children's Research Hospital
Vice-chairman: Ellen Vitetta, University of Texas Southwestern Medical School
Oncogenes and Transforming Genes I. H. Hanafusa, J. Brugge, I. Verma, C. Sherr, T. Deuel; **Receptors and Hormones I.** M. Brown, T. Hunter, G. Carpenter, I. Pastan, A. Ullrich; **Hematopoietic Transformation.** C. Berard, T. Graf, A. Bernstein, O. Witte, D. Boettiger; **New Therapeutic Modalities.** A. Nienhuis, P. Martin, E. Vitetta, P. Thorpe; **Promotion, Chemicals, Radiation and Drug Resistance.** W. Haseltine, V. Ling, N. Colburn; **Host Response to Tumors.** M. Greene, R. Lynch, G. Nicolson, J. Forman; **Receptors and Hormones II.** C. Weissmann, K. Smith, T. Waldmann, G. Todaro, B. Ozanne; **Oncogenes and Transforming Genes II.** P. Leder, R. Eisenman, D. Lowy, G. Cooper, P. Neiman; **Insertional Mutagenesis and Enhancer Elements.** R. Jaenisch, G. Peters, G. Vande Woude, G. Khoury.

PROTEIN KINASES (August 4 - 9)

Chairman: James Nield, Duke University Medical Center
Vice-chairman: Jyh-Fa Kuo, Emory University School of Medicine
Opening Address: P. Greengard. **Evening Address:** I. Pastan. **Protein Kinase C.** J. Kuo, R. Bell, P. Blumberg, W. Anderson; **Calmodulin Protein Kinase.** R. Adelstein, A. Means, R. Tsien; **Phosphatases.** C. Klee, E. Fischer, D. Brautigan; **Substrates.** P. Blackshear, L. Williams, J. Garrison, J. Cooper; **Receptor Phosphorylation.** R. Lefkowitz, R. Klausner, P. Lieberman; **Signal Generation.** E. Lapetina, J. Williamson, L. Cantley, M. Smigel; **Gene Regulation.** D. Granner, R. Maurer, M. Rosenfeld, M. Greenberg; **Receptor Kinases.** S. Aaronson, W. Pledger, R. Davis.

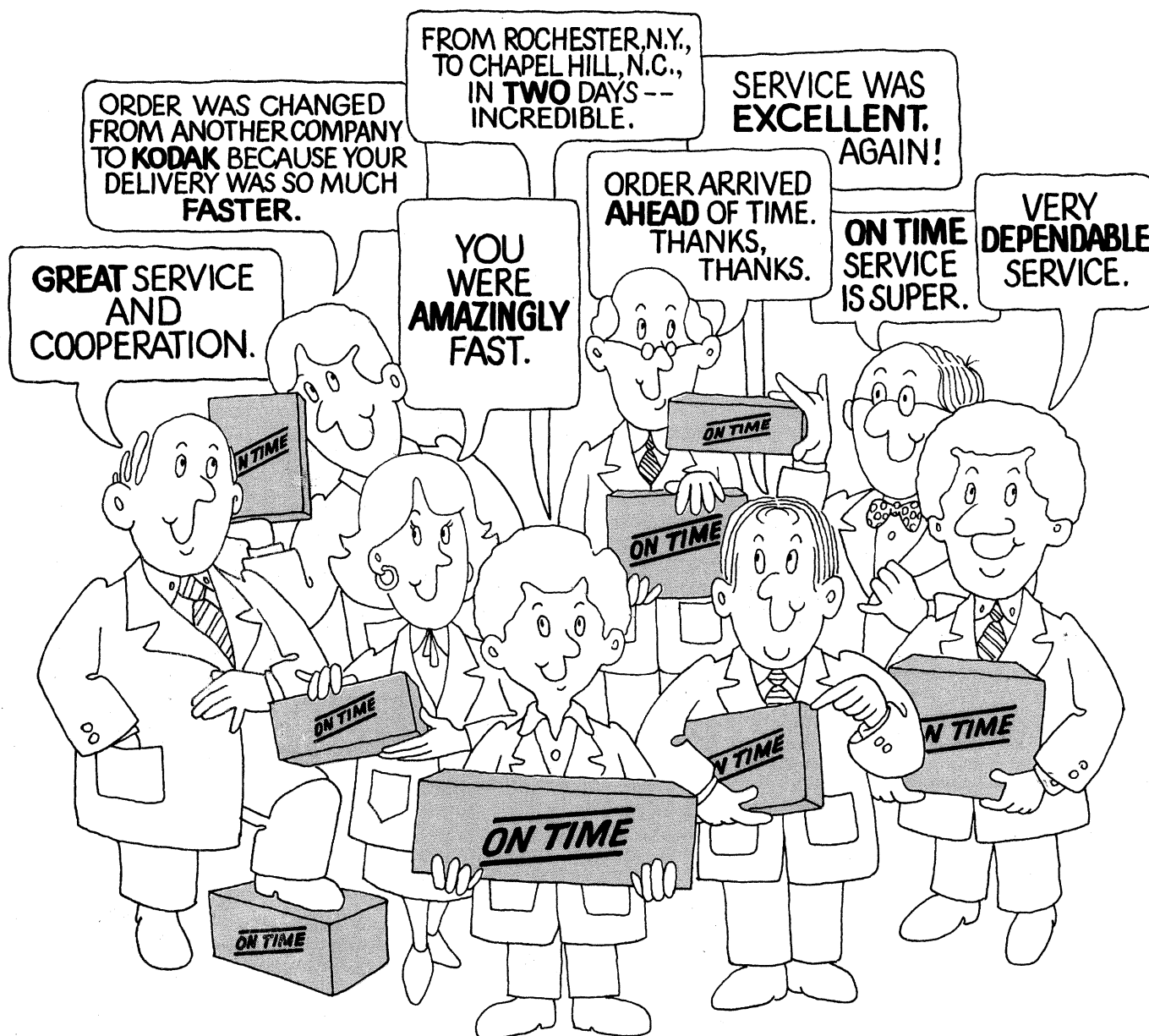
BIOLOGY & CHEMISTRY OF VISION (August 11 - 16)

Chairman: Paul A. Hargrave, University of Florida Health Center
Vice-chairman: Meredith Applebury, Purdue University
Rhodopsin Structure, Function and Topography. P. Hargrave, J. Findlay, R. Liu; **Visual Pigment Gene Structure.** M. Applebury, H. Khorana, J. Nathans; **Applications of Molecular Biology to the Study of Vision.** D. Bridges, J. Hurley, J. Piatigorsky; **Biochemistry of Visual Transduction.** P. Lieberman, H. Kuehn, N. Goldberg, B. Fung; **Models for Visual Transduction.** E. Bownds, J. Brown, J. Korenbrot, R. Cote, J. Lisman; **Retinoid Metabolism and Transport.** J. Saari, D. Bridges, D. Bok, G. Chader, R. Rando; **Developmental Biology of the Retina.** D. Papermaster, C. Barnstable, I. Nir, S. Zipursky, J. Besharse; **Visual System Membranes: Components and Properties.** R. Cone, R. Molday, P. Witt, N. Colley; **Ionic Basis of Photoreceptor Transduction.** D. Baylor, K.W. Yau.

FASEB

Circle No. 188 on Readers' Service Card

Do users like our ON TIME delivery? Take their words for it.



To take advantage of ON TIME direct-shipment service, contact your dealer handling Kodak laboratory chemicals. Give your dealer your order, and we'll ship it fast—usually within 24 hours.



KODAK LABORATORY AND SPECIALTY CHEMICALS

The creative source.

ON TIME service is available through these dealers: American Scientific & Chemical; American Scientific Products; Bioclinical Laboratories NJ; B.C. Chemicals Division; Brand-Nu Laboratories, Inc.; Bryant Laboratory, Inc.; CAMX Scientific; Captree Chemical Corp.; Doe & Ingalls, Inc.; Fisher Scientific; Mays Chemical; Midland Scientific, Inc.; North-Strong Division; Preiser Scientific; Sargent-Welch Scientific; Scientific & Industrial Sales & Service, Inc.; Specialty Chemicals, Inc.; Spectrum Chemical Mfg. Corp.; VWR Scientific Inc.; Ward's Natural Science Establishment, Inc.

© Eastman Kodak Company, 1983 Kodak Laboratory & Specialty Chemicals, Rochester, NY 14650

Circle No. 142 on Readers' Service Card