has come to unravel how volcanic eruptions, variations in solar activity, altered circulation of the ocean, and many other factors influence the global climate system on time scales of less than a few human generations. The "Little Ice Age" of recent history provides a stimulus to renew interdisciplinary research on a key topic. The Little Ice Age is an impressive place to start.

> JONATHAN T. OVERPECK Lamont-Doherty Geological Observatory Palisades, NY 10964

### **Reprints of Books Previously Reviewed**

Galileo: Heretic. (Galileo Eretico.) Pietro Redondi. Sando Licker, Princeton, NJ, 1989. Paper,
 S9.95. Reviewed 237, 1059 (1987).
 Toward a New Philosophy of Biology. Observa-tions of an Evolutionist. Ernst Mayr. Harvard University

Press, Cambridge, MA, 1989. Paper, \$14.95. *Reviewed* **240**, 1801 (1988).

### **Books Received**

Algebraic Geometry and Commutative Algebra. In Honor of Masayoshi Nagata. Hiroaki Hijikata et al., Eds. Academic Press, San Diego, CA, 1989. 2 vols. xviii,

804 pp. Each vol., \$69. Analysis of Sterols and Other Biologically Significant Sterols. W. David Nes and Edward J. Parish, Eds. Academic Press, San Diego, 1989. xvi, 341 pp., illus. \$69

Anatomy of a Scientific Discovery. Jeff Goldberg. Bantam, New York, 1989. xii, 228 pp. Paper, \$8.95. Reprint, 1988 ed.

Animal Motivation. Patrick Colgan. Chapman and Hall (Routledge, Chapman and Hall), New York, 1989. x, 159 pp., illus. \$52.50; paper, \$19.95. Chapman and Hall Animal Behaviour Se

Hall Animal Behaviour Series. Arid Zone Geomorphology. David S. G. Thomas, Ed. Belhaven (Pinter), London, and Halsted (Wiley), New York, 1989. xii, 372 pp., illus. \$59.95. Banking and the Promotion of Technological Development. Nicolas Jequier and Yao-Su Hu. St. Mar-tin's, New York, 1989. x, 220 pp. \$35. Beauty and the Brain. Biological Aspects of Aesthet-ics. Ingo Rentschler, Barbara Herzberger, and David Epstein Eds. Birkhäuser Boston. Cambridge. MA.

Epstein, Eds. Birkhäuser Boston, Cambridge, MA, 1988. 332 pp., illus. \$49.50. Based on a meeting, Bad Homburg vor der Höhe, F.R.G.

Between MITI and the Market. Japanese Industrial Policy for High Technology. Daniel I. Okimoto. Stan-ford University Press, Stanford, CA, 1989. xviii, 267

pp., illus. \$27.50. Chemical Sensing with Solid State Devices. Marc

Chemical Sensing with Solid State Devices. Marc
 J. Madou and S. Roy Morrison. Academic Press, San
 Diego, CA, 1989. xvi, 556 pp., illus. \$89.50.
 Classical Novae. M. F. Bode and A. Evans, Eds.
 Wiley, New York, 1989. xvi, 341 pp., illus. \$163.
 Cold Dawn. The Story of SALT. John Newhouse.
 Pergamon-Brassey's McLean, VA, 1989. viii, 302 pp.
 \$26. A Pergamon-Brassey's Classic.

A Companion to the Physical Sciences. David Knight. Routledge, New York, 1989. iv, 177 pp. \$25. Computational Molecular Biology. Sources and Methods for Sequence Analysis Arthur M. Lesk, Ed. Oxford University Press, New York, 1988. xii, 254 pp., illus. \$49.95. Prepared under the auspices of CODATA Task Group on Coordination of Protein Sequence Data Banks.

Developments in Japanese Economics. Ryuzo Sato and Takashi Negishi, Eds. Academic Press, San Diego, CA, 1989. xiv, 292 pp. \$59.95. Twelve papers "summarizing the studies conducted by prominent

Japanese economists." Developments in Ultrastructure of Reproduction. Pietro M. Motta, Ed. Liss, New York, 1989. xxii, 484 pp., illus. \$165. Progress in Clinical and Biological Research, vol. 296. From a symposium, Rome, Italy, July 1988.

Exposure of the U.S. Population from Diagnostic Medical Radiation. National Council on Radiation Protection and Measurements, Bethesda, MD, 1989. vi, pp. Paper, \$14. NCRP Report no. 100.

First Naples Workshop on Bioactive Peptides. (Capri, Italy, May 1988.) Ettore Benedetti et al., Eds. Wiley, New York, 1989. viii, 530 pp., illus., + plates. Paper, \$50. Biopolymers, vol. 28, no. 1 (1989). The Flocks of the Wamani. A Study of Llama

Herders on the Punas of Ayacucho, Peru. Kent V. Flannery, Joyce Marcus, and Robert G. Reynolds. Aca-demic Press, San Diego, CA, 1989. xii, 239 pp., illus. \$49.95; paper, \$24.50

Forecasting in Business and Economics. C. W. J. Granger. 2nd ed. Academic Press, San Diego, CA, 1989. xii, 279 pp. \$34.95. Fourth Generation Business Systems. Vendor

Support Environments and Systems Vendor Support Environments and Systems Generation. Alex Varsegi. Wiley, New York, 1989. xiv, 332 pp., illus. \$34.95.

From a Life of Physics. H. A. Bethe et al. World Scientific, Teaneck, NJ, 1989. x, 92 pp. Paper, \$6. Reprint.

Human Retrovirology. Facts and Concepts. Jörg Schüpbach. Springer-Verlag, New York, 1989. viii, 115 pp., illus. \$59. Humans in Space. 21st Century Frontiers. Harry L.

Shipman. Plenum Press, New York, 1989. viii, 351 pp., illus. \$22.95

Hypersaline Environments. Microbiology and Bio-geochemistry. Barbara Javor. Springer-Verlag, New York, 1989. viii, 328 pp., illus. \$59. Brock/Springer Series in Contemporary Bioscience.

Ignorance and Uncertainty. Emerging Paradigms. Michael Smithson. Springer-Verlag, New York, 1989. xiv, 393 pp., illus. Paper, \$42.50. Cognitive Science. Images of the Ice Age. Paul G. Bahn and Jean Vertut. Facts on File, New York, 1989. 240 pp., illus.

\$35.

The Immune System. Evolutionary Principles Guide Our Understanding of this Complex Biological Defense System. Rodney E. Langman. Academic Press, San Diego, CA, 1989. xlvi, 209 pp., illus. \$49.95; paper, \$22.95

Immunoglobin Genes. T. Honjo, F. W. Alt, and T. H. Rabbitts, Eds. Academic Press, San Diego, CA, 1989. xviii, 410 pp., illus. \$79.50.
 The Information Age and Soviet Society. Richard

W. Judy and Virginia L. Clough, Hudson Institute, Indianapolis, IN, 1989. viii, 99 pp. Paper, \$10. Intuitive IC Electronics. A Sophisticated Primer for Engineers and Technicians. Thomas M. Frederiksen. 2nd

ed. McGraw-Hill, New York, 1989. xviii, 205 pp., illus. \$39.95; paper, \$19.95. McGraw-Hill Series in Intuitive IC Electronics.

Inverse Gas Chromatography. Characterization of Polymers and Other Materials. Douglas R. Lloyd et al., Eds. American Chemical Society, Washington, DC, 1989. xii, 331 pp., illus. \$69.95. ACS Symposium Series, vol. 391. From a symposium, Toronto, Ontario, June 1988

Ionizing Radiation Effects in MOS Devices and Circuits. T. P. Ma and Paul V. Dressendorfer, Eds., Wiley-Interscience, New York, 1989. xx, 587 pp., illus. \$69.95

Mechanisms of Psychological Influence on Physical Health. With Special Attention to the Elderly. Laura L. Carstensen and John M. Neale, Eds. Plenum, New York, 1989. 196 pp., illus. \$49.50. From a confer-ence, Bloomington, IN, May 1986. Medical Revolution in Minnesota. A History of the

University of Minnesota Medical School. Leonard G Wilson. Midewiwin Press, St. Paul, MN, 1989. xii, 612

Pp., illus. \$55.
The Meeting. Gatherings in Organizations and Communities. Helen B. Schwartzman. Plenum, New York, 1989. xvi, 344 pp. \$39.50.
Men from Earth. Buzz Aldrin and Malcolm McConmut. Plenum, New York, 1989. article and Malcolm McConmut. Planet Science New York, 1989. article and the science of the s

nell. Bantam, New York, 1989. xxii, 312 pp + plates. \$19.95

Metallurgy and Materials Science and Engineering at MIT: 1865-1988. Michael B. Bever. Massachusetts Institute of Technology, Department of Materials Science and Engineering, Cambridge, MA, 1988. 135 pp., illus., + chart. \$25. Metaphors of Consciousness. Ronald S. Walle and

Metaphors of Consciousness. Rohad S. wale and Rolf von Eckartsberg, Eds. Plenum, New York, 1989. xxii, 521 pp., illus. Paper, \$19.95. Reprint, 1981 ed. Metastasis. Gregory Bock and Julie Whelan, Eds. Wiley, New York, 1989. x, 255 pp., illus. \$54.95. Ciba

Foundation Symposium 141. From a symposium, London, U.K., April 1988.
 Mineral Adsorption in the Monogastric GI Tract.

Frederic R. Dintzis and Joseph A. Laszlo, Eds. Plenum,

New York, 1989. x, 214 pp., illus. \$55. Advances in Experimental Medicine and Biology, vol. 249. From a meeting, Toronto, Ontario, June 1988. **Missing the Meaning?** A Cognitive Neuropsy-chological Study of Processing of Words by an Aphasic Patient. David Howard and Sue Franklin. MIT Press, Cambridge, MA, 1989. xx, 171 pp., illus. \$25. **A Model of Its Kind**. A. McGehee Harvey *et al.* Johns Hopkins University Press, Baltimore, 1989. Vol. 1, A Centennial History of Medicine at Johns Hopkins. xii, 372 pp., illus. \$30. Vol. 2, A Pictorial History of Medicine at Johns Hopkins. x, 172 pp. \$20. **Models of Thought**. Vol. 2. Herbert A. Simon. Yale University Press, New Haven, 1989. xviii, 508 pp., illus.

University Press, New Haven, 1989, xviii, 508 pp., illus, \$55; paper, \$29.95. Thirty Reprinted papers, mostly from the 1970s and '80s.

The Molecular Biology of Fertilization. Heide Schatten and Gerald Schatten, Eds. Academic Press, San Diego, CA, 1989. xviii, 384 pp., illus. \$85. Cell Biology.

**Molecular Endocrinology**. Franklyn F. Bolander. Academic Press, San Diego, CA, 1989. x, 318 pp., illus. \$39.50

\$39.50.
Multi-Armed Bandit Allocation Indices. J. C. Gittins. Wiley, New York, 1989. xii, 252 pp. \$69.95.
Wiley-Interscience Series in Systems and Optimization. Myelination and Demyelination. Implications for Multiple Sclerosis. Seung U. Kim, Ed. Plenum, New York, 1989. viii, 275 pp., illus. \$65. From a symposium, Vancouver, BC, June 1987.
Narratives from the Crib. Katherine Nelson, Ed. Harvard University Press. Cambridge MA, 1989. xii

Harvard University Press, Cambridge, MA, 1989. xii, 350 pp. \$30.

Nonlinear Fiber Optics. Govind P. Agrawal. Aca-demic Press, San Diego, CA, 1989. xii, 342 pp., illus. \$39.95 Quantum Electronics

Notes on Science, Technology and Science Education in the Development of the South. Abdus Salam. Third World Academy of Sciences, Trieste, Italy, 1989. 169 pp. Paper. Nucleic Acid and Monoclonal Antibody Probes.

Applications in Diagnostic Microbiology. Bala Swamin-athan and Gyan Prakash, Eds. Dekker, New York, 1989. xx, 717 pp., illus. \$150. Infectious Disease and Therapy, vol 2

Numerical Simulation and Optimal Control in Plasma Physics. With Applications to Tokamaks. Jac-Plasma Physics. With Applications to Tokamaks. Jacques Blum. Gauthier-Villars, Paris, and Wiley, New York, 1989. xviii, 363 pp., illus. \$77.95. Wiley/Gauthier-Villars Series in Modern Applied Mathematics. Nutritional Impact of Food Processing. J. C. Somogyi and H. R. Müller, Eds. Karger, Basel, 1989. viii, 346 pp., illus. \$193.50. Bibliotheca Nutritio et Dieta, no. 43. From a symposium, Reykjavik, Sept. 1987. Observations and Interpretation of Hawaiian Volcanism and Seismichty 1779–1955. An Annotated National Science Science

canism and Seismicity, 1779–1955. An Annotated Bibliography and Subject Index. Thomas L. Wright ad

Bibliography and Subject Index. Thomas L. Wright ad Taeko Jane Takahishi. University of Hawaii Press, Ho-nolulu, 1989. xvi, 270 pp., illus. \$30. **The Oceans.** A Book of Questions and Answers. Don Groves. Wiley, New York, 1989. xviii, 203 pp., illus. Paper, \$12.95. Wiley Nature Editions. **The Plant-Feeding Gall Midges of North America**. Raymond L. Gagné. Comstock (Cornell University

Raymond J. Gagné. Comstock (Cornell University Press), Ithaca, NY, 1989. xii, 356 pp., illus. \$45. **Plasma Diagnostics**. Vol. 2, Surface Analysis and Interactions. Orlando Auciello and Daniel L. Flamm, Eds. Academic Press, San Diego, CA, 1989. x, 337 pp., illus. Plasma Materials Interactions. illus, Plasma-Materials Interactions

Plasma Physics for Nuclear Fusion. Kenro Miyamoto. MIT Press, Cambridge, MA, 1989. xvi, 618 pp., illus. Paper, \$27.50. Translated from the Japanese edi-tion (Tokyo, 1987).

Plasma Waves. D. G. Swanson. Academic Press, San Diego, CA, 1989. xii, 422 pp., illus. \$39.95. Population and Resources in Western Intellectu-

al Traditions. Michael S. Teitelbaum and Jay M. Win-ter, Eds. The Population Council, New York, 1989. viii, 310 pp. Paper, \$12. Population and Development Review, vol. 14 supplement (1988). Based on a seminar, Cam-bridge, UK, Aug. 1987. Practical Handbook of Environmental Control.

Conrad P. Straub, Ed. CRC Press, Boca Raton, FL, 1989. viii, 537 pp., illus. \$45. Practical Handbook of Marine Science. Michael J.

Kennish, Ed. CRC Press, Boca Raton, FL, 1989. viii, 710 pp., illus. \$45.

Practical Handbook of Physical Properties of

Rocks and Minerals. Robert S. Carmichael, Ed. CRC Press, Boca Raton, FL, 1989. xiv, 741 pp., illus. \$45. Prediabetes. Rafael A. Camerini-Davalos and Har-old S. Cole, Eds. Plenum, New York, 1988. xii, 421 pp., illus. \$79.50. Advances in Experimental Medicine and Biology, vol. 246. From a symposium, Iguazu Falls, Argentina, April 1988.

Quanten-Elektrodynamik. W. B. Berestetzki, E. M. GDR, 1989. xvi, 612 pp., illus. DME 52. Lehrbuch der Theoretischen Physik, vol. 4. Translated from the Rus-sian edition (Moscow, 1980).

Reconstructing the Past. Parsimony, Evolution, and Inference. Elliott Sober. MIT Press, Cambridge, MA, 1989. xviii, 265 pp., illus. \$27.50. A Bradford Book

Red Blood Cell Membranes. Structure, Function, Clinical Implications. Peter Agre and John C. Parker, Eds. Dekker, New York, 1989. xxii, 733 pp., illus. \$150.

Eds. Dekker, New York, 1989. xxii, 733 pp., illus. \$150.
Hernatology, vol. 11.
Rereading Russell. Essays in Bertrand Russell's Metaphysics and Epistemology. C. Wade Savage and C. Anthony Anderson, Eds. University of Minnesota Press, Minneapolis, 1989. xii, 320 pp. \$29.50. Minnesota Studies in the Philosophy of Science, vol. 12.
Research in Congenital Hypothyroidism. F. De-lange, D. A. Fisher, and D. Glinoer, Eds. Plenum, New York, 1989. xii, 367 pp., illus. \$79.50. NATO Advanced Science Institutes Series A, vol. 161. From a workshop, Brussels, Belgium, May 1988.
Reaolving Semantic Ambiguity David S. Gorfein

**Resolving Semantic Ambiguity**. David S. Gorfein, Ed. Springer-Verlag, New York, 1989. xii, 337 pp., illus. Paper, \$59. Cognitive Science.

Paper, \$59. Cognitive Science.
 Retroviruses and Disease. Hidesaburo Hanafusa, Abraham Pinter, and Maynard E. Pullman, Eds. Aca-demic Press, San Diego, CA, 1989. xii, 196 pp., illus.
 \$45. From a symposium, New York, Nov. 1987.
 RF Plasma Heating in Toroldal Fusion Devices.
 V. E. Golant and V. I. Fedorov. Consultants Bureau (Plenum), New York, 1989. viii, 194 pp., illus. \$85. Translated from the Russian by Donald H. McNeill.
 Risk Assessment and Decision Making Using Itest Basults. The Carcinogenicity Prediction and Bat-

Test Results. The Carcinogenicity Prediction and Battery Selection Approach. Julia Pet-Edwards et al. Plenum, New York, 1989. viii, 211 pp., illus. \$49.50. Solar and Stellar Granulation. Robert J. Rutten

and Giuseppe Severino, Eds. Kluwer, Novell, MA, 1989. xxvi, 661 pp., illus. \$173. NATO Advanced Science Institutes Series C, vol. 263. From a workshop, Capri, Italy, June 1988.

Space. A New Community of Opportunity. William G. Straight and Henry N. Bowes, Eds. Published for the CA, 1989. xviii, 453 pp., illus. \$70; paper, \$55. Advances in the Astronautical Society by Univelt, San Diego, CA, 1989. xviii, 453 pp., illus. \$70; paper, \$55. Advances in the Astronautical Sciences, vol. 67. From a conference, Houston, TX, Nov. 1987. The Symbiotic Universe. Life and Mind in the paper.

Cosmos. George Greenstein. Morrow, New York, 1989.

271 pp., illus. Paper, \$7.95.
 Symmetries in Science III. Bruno Gruber and Francesco Iachello, Eds. Plenum, New York, 1989. x, 613 pp., illus. \$115. From a symposium, Vorarlberg, Austria, June 1988.

Austria, June 1988.
Symplectic Geometry. A. T. Fomenko. Gordon and Breach, New York, 1988. xiv, 387 pp., illus. \$180.
Advanced Studies in Contemporary Mathematics. Trans-lated from the Russian by R. S. Wadhwa.
Synthon Model of Organic Chemistry and Syn-thesis Design. J. Koča et al. Springer-Verlag, New York, 1989. vi, 207 pp., illus. Paper, \$27.40. Lecture Notes in Chemistry, vol. 51.
Taking Risks. The Science of Uncertainty. Peter Sprent. Penguin, New York, 1989. viii, 264 pp., illus. Paper, \$8.95. Reprint, 1988 ed.
Terranes in the Circum-Atlantic Paleozoic Oro-gens. R. D. Dallmeyer, Ed. Geological Society of Ameri-

Terranes in the Circum-Atlantic Paleozoic Oro-gens. R. D. Dallmeyer, Ed. Geological Society of Ameri-ca, Boulder, CO, 1989. vi, 277 pp., illus. Paper, \$45. GSA Special Paper 230. Textbook of Physiology. Harry D. Patton et al., Eds. 21st ed. Saunders, Philadelphia, 1989. 2 vols. Vol. 1, Excitable Cells and Neurophysiology. xvi, 769 pp., illus, + index. Vol. 2 Circulation, Respiration, Body Bluide Metabolism and Endocrinology. vvi, 1566 pp. Fluids, Metabolism, and Endocrinology. xvi, 1596 pp. illus., + index. \$95.

Theory of Magnetic Neutron and Photon Scatter-ing. Ewald Blacar and Stephen W. Lovesey. Clarendon (Oxford University Press), New York, 1989. xvi, 220 pp. \$60. Oxford Series on Neutron Scattering in Condensed Matter, vol 2

Vertex Operator Algebras and the Monster. Igor Frenkel, James Lepowsky, and Arne Meurman. Academ-ic Press, San Diego, CA, 1989. liv, 508 pp. \$69.95. Pure and Applied Mathematics, vol. 134. Vibration and Coupling of Continuous Systems.

Asymptotic Methods. J. Sanchez Hubert and E. Sanchez Palencia. Springer-Verlag, New York, 1989. xvi, 421 pp. \$79

Water Pollution Biology. P. D. Abel. Horwood, Chichester, U.K. and Halsted (Wiley), New York, 1989. 231 pp., illus. \$76.95. Ellis Horwood Books in Water and Wastewater Technology.

6 OCTOBER 1989

### TMC MICRO-g<sup>®</sup>LAB TABLES

Higher performance...more options, more features

The new TMC Micro-g Series 63-500 lab tables with advanced Gimbal Piston® isolators achieve highest attenuation of both vertical and horizontal vibration. Features include new leveling feet, new 2" thick, high-stiffness, highly damped stainless steel top with rounded seamless edges and corners.

Options offer added utility and convenience: armrests, shelving, choice of top surfaces, casters, equipment support bars, Faraday cages. Sizes from 25" × 36" to  $36'' \times 60''$ . Write or call for new product bulletin No. MG30-86 and price list today.



Circle No. 223 on Readers' Service Card



Photometrics, the world leader in low-light, cooled CCD imaging, is pleased to introduce CCD systems to meet the specialized needs of the microscopist. These high performance systems offer:

- · High linearity of response High dynamic range
- · Resolution of up to 2K x 2K pixels
- · No lag or geometrical distortion
- 12- or 14-bit data
- Prices starting at \$13,500
- These systems are ideal for ratio imaging (fura-2, BCECF, etc.), low-light-level fluorescence microscopy, bright field/low contrast microscopy, and bioluminescence. Call Photometrics for details.

Photo of intracellular calcium concentration in a guinea pig cerebellar Purkinje cell taken using Photometrics Series 200 CCD system. Courtesy of Dr. D.W. Tank, Molecular Biophysics Research Department, AT&T Bell Laboratories



2010 North Forbes Boulevard Tucson, Arizona 85745 (602) 623-6992

In Europe: Photometrics GmbH (0 89) 79 95 80 In Japan: Seki 03/820-1711

Circle No. 234 on Readers' Service Card

### **Products & Materials**

### Benchtop Safety Shields

The Biohazard Shield is a free-standing, clear protective barrier for use by laboratory personnel working with biohazardous material. The shield is 20 inches high and 18 inches wide, with a 12-inch-deep base. Isolab. Circle 462.

The Betastation 200 provides protection from beta radiation and infectious disease chemistries. The hinged acrylic shield and ABS (acrylonitrile butadiene styrene resin) tray provide multiple shield angles and a contained work environment as well as a temporary storage container. Benchmark Technologies. Circle 463.

The Oncor Safety Workstation shields the user from beta emissions, contains chemical spills, and offers protection from splashes. The clear acrylic housing provides a completely enclosed area 24 inches high, 24 inches wide, and 19 inches deep with hinged double doors on each side. Four removable racks hold tubes or other equipment. Oncor. Circle 464.

### Reagent-Grade Water System

Researchers can now turn tapwater into 18-megohm, bacteria-free, reagent grade water at up to 2 liters per minute with the new RGW-5 Phototronic water system. Designed to meet the standards of the College of American Pathologists, National Committee for Laboratory Standards, and American Society for Testing and Materials, the system employs five purification steps. They include carbon adsorption, a triple deionization process to remove ionic impurities, and submicron filtration to remove particulates and bacteria down to 0.2 µm. The RGW-5 system contains no moving parts. A range of options is available with either digital purity meters or low-cost purity lights. A reverseosmosis pretreatment option can extend deionizer cartridge life where total dissolved solids in tapwater exceed ten grains per gallon. Bellco Biotechnology. Circle 470.

A new Universal Joystick can simultaneously control two dc motors in movements through up to five axes. Originally developed for the precision required in scan-



ning electron microscopy, the joystick can be used in virtually any application where infinitesimal control over motion is needed. Raith USA. Circle 459.

### Cell Growth Matrix

Vetrax VX-100 Microspheres are an innovative matrix designed to optimize animal cell culture growth. They have an open, porous structure made of native collagen to create an expansive, tissue-like environment



for the culture of both anchorage- and suspension-preferred cells. With a proven track record in commercial-scale biopharmaceutical production, they are now available for use by research cell biologists and process development engineers. Verax Corp. Circle 479.

### **DNA** Fingerprinting Kit

The SNAP DNA Fingerprinting Kit is a nonradioactive DNA probe that can create a genetic bar code from any mammalian DNA source. The enzyme-labeled probe is specific to multiple loci in the mammalian genome with sensitivity equivalent to isotopic probes, The SNAP system can be used for cell line characterization, tissue typing, identification and paternity studies, gene mapping, and quality control of inbred and transgenic laboratory animals. Molecular Biosystems. Circle 472.

### Large Volume Protein Immunoblotting

The Mega-Dalt-20 can blot nine full-size protein immunoblot gels in an efficient use of time, space, and buffer. It can also be used to run up to 20 SDS-polyacrylamide gel electrophoresis gels. The manufacturer can supply all the other components of the system from premixed buffer to a wide variety of transfer membranes and stains for blotting. Integrated Separation Systems. Circle 491.

### Literature

Bioproducts for Science for 1989–90 describes a wide range of more than 2000 immunological products and services for research, including growth factors and monoclonal and polyclonal antibodies. Bioproducts for Science. Circle 506.

1989 Peptides Catalog lists more than 600 bioactive peptides, 500 small peptides and substrates, 150 polyamino acids, and selected technical books. Sigma Chemical Co. Circle 508.

1989 Plant Cell Culture Catalog is an 80page listing of over 150 products, including powdered media, basal salt mixtures and solutions, vitamin mixtures and solutions, antibiotics, gelling agents, and plant growth regulators. It also lists equipment and technical publications for the plant tissue culture laboratory. Sigma Chemical Co. Circle 509.

The American Type Culture Collection has published a July 1989 supplement to its 1986 Animal and Plant Virus Catalogue. The supplement lists 6 new viruses, 20 polyclonal antisera, and 14 molecularly cloned viruses. American Type Culture Collection. Circle 511.

1989–90 General Chemical Catalog lists over 4000 chemicals for laboratory, research, and pilot-scale applications, with complete specifications and hazard, storage, and shipping information. Spectrum Chemical Mfg. Corp. Circle 514.

*MonoCarb Catalog* lists a new line of monoclonal antibodies recognizing carbohydrate epitopes. Also listed are lines of pure oligosaccharides, HSA-conjugates, and affinity gels. MonoCarb AB. Circle 518.

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

### 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 under-standing that the advertiser does not discriminate among applicants on the basis of race, sex, religion, age, color, national origin, handicap, or sexual prefer-ence. SCIENCE reserves the right, in its discretion, to decline to publish advertisements submitted to it.

### LINE CLASSIFIED ADVERTISING DEADLINES: Thursday, 10 a.m., 2 weeks prior to issue date (mailed on issue date). For deadlines for display advertising, please contact Scherago Associates.

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 CLASSIFIED (POSITIONS OPEN, COURSES, FELLOWSHIPS, MARKETPLACE, and so forth): \$40.00 per line; \$400 minimum, per week (minimum charge covers one inch on a single column; one inch equals 10 lines of 52 characters and spaces per line). No charge for use of box number. No agency commis-sion for ads less than 4 inches. No cash discount. Prepayment required for all foreign ads. Purchase orders required for all other advertising.

#### To ESTIMATE ad cost:

o ESTIMATE ad cost: Structure ad copy on a separate page, on lines of 52 characters and spaces. Include any desired heading. Each line of heading, and/or extra line spaces, and all partial lines (including centered reply information) are counted as full lines. Ad titles located within the text are printed in boldface caps and are only 32 charac-ters per line. In ESTIMATING the cost, multiply total lines x \$40.00 = approximate cost of ad. (This is an approximate cost ONLY: Allow for variation between retimented lines and the lines of the reput lines. estimated cost Orker. Allow for variation between estimated lines and actual typeset lines and the result-ing final cost. Purchase orders must allow for some degree of flexibility and/or adjustment.)

CANCELLATION POLICY: NOTE: Ad cancellations made after Thursday, TWO weeks prior to issue date incur a 10% production charge. Final deadline for cancellations is 12 p.m. Tuesday, ONE week prior to issue date. Cancellations must be in writing.

Send copy for all **Positions Wanted** ads and **Line Classified** ads less than 1/6 page in size (39 lines) to:

SCIENCE Classified Advertising 1333 H Street, NW, Room 940 Washington, DC 20005 Telephone: 202-326-6555

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

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

Blind ad replies should be addressed as follows:

Box (give number) SCIENCE 1333 H Street, NW Washington, DC 20005

### **POSITIONS WANTED**

Biochemist, Ph.D. 25 years of experiences in proteinases, inhibitors, and protein purification. Fifty publica-tions. Current subjects are new connective tissue proteinacs. Japanese, single, permanent resident in U.S. Seeks academic/industrial research position. Box 176, SCI-ENCE.

Cell/Protein/Molecular Biologist, Ph.D. Five years of research on the cell biology, protein chemistry, and pharmacological (anti-tumor) implications of isoprenylation-dependent protein processing of nuclear and onco-gene proteins. Expertise: protein purification, 1D/2D gels, Western/Northern/Southern, DNA/RNA/plasmid purification and analysis, immuno-precipitation/immu-noblots. Seeking industrial/pharmaceutical research and development position. Box 190, SCIENCE.

### **POSITIONS WANTED**

Biochemical Literature—Technical writing, abstract-ing, indexing, translating from German, French. Bio-chemist, Ph.D. seeks employment or free-lancing. Based in New York City. Will accept assignments by mail or telephone. Box 191, SCIENCE.

### **POSITIONS OPEN**

#### APA MONITOR

The School of Human Development at The University of Texas at Dallas announces the availability of four faculty positions in the area of Cognition and Neuroscihese appointments will contribute to the School's interdisciplinary graduate programs where we are devel-oping emphases in cognitive neuroscience. Responsibilties also include teaching in the undergraduate program in Psychology. Candidates should provide evidence of scholarly productivity and a commitment to graduate education in an interdisciplinary context. Appointments will generally be made at the assistant professor level, although one of these positions may be filled at a more advanced level

COGNITIVE SCIENCE—Emphasis on knowledge acquisition and representation, artificial intelligence and expert sytems, complex problem solving, human-com-puter interaction, or text comprehension. Academic earch #: 548.

NEUROSCIENCE-Two positions are open for neurophysiologists or neuroanatomists. One with an emphasis in computational neuroscience, neural modeling of behavior and/or neural circuit analysis. The second position seeks candidates with expertise in neural plasticity, learning, perception or development. Academic Search #: 547.

AGING AND LANGUAGE-Expertise in brain mechanisms and language processes, including the apha-sias, in aging. Academic Search #: 544.

Salary, teaching loads and research support are highly competitive. Indication of sex and ethnicity for Affirmative Action purposes is requested but not required. Please send letter, curriculum vitae and the names of three references by 15 November 1989 to: Academic Search # , The University of Texas at Dallas, P.O. Box 75083, Richardson, TX 75083-0688. The University of Texas at Dallas is an Affirmative Action/Equal Opportunity Employer.

ANATOMY DEPARTMENT: MUSCLE BIOLO-GIST. The Department of Anatomy at The Medical College of Pennsylvania invites applications for a tenure-track position at the assistant/associate professor level, available July 1990. Candidate should have a Ph.D. and postdoctoral experience. The appointee is expected to develop a competitive research program in the area of contractile structure and function, complementing those of present faculty. Research involving EM techniques such as minimal dose imaging in amorphous ice, freeze-substitution, shadowing and image reconstruction, or regulation of contractile activity is preferred. Active participation in team-taught courses in cell biology, microscopic anatomy, or gross anatomy to medical and credute enulants increasing lbase otheris a curvice lum graduate students is required. Please submit a curriculum vitae, statement of research interests and goals, with representative publications and the names of three refer ences to: Rhea J. C. Levine, Ph.D., Department of Anatomy, The Medical College of Pennsylvania/Eppi Division, 3200 Henry Avenue, Philadelphia, PA 19129. Equal Opportunity Employer, M/F.

ASSISTANT PROFESSOR. Tenure-track position available for outstanding candidates with training in cell physiology, biophysics, or regulatory biology. Candi-dates who plan to establish an independent research program involving growth and development are encour-aged to apply, but outstanding candidates in other fields will be considered. The abilities of the applicants are more important than specific research areas Candidates more important than specific research areas. Candidates should submit curriculum vitae, description of future should submit currectum vitae, description of future research program, and have three letters of reference sent to: James T. Stull, Ph.D., Chairman, Department of Physiology, The University of Texcas Southwestern Medical Center at Dallas, 5323 Harry Hines Boule-vard, Dallas, TX 75235–9040. An Affirmative Action/ Equal Opportunity Employer.

### **POSITIONS OPEN**

### ASSISTANT PROFESSOR NORTHWESTERN UNIVERSITY

The Department of Biochemistry, Molecular Biology, and Cell Biology seeks outstanding candidates for a tenure-track assistant professor position. Individuals with strong research interests in cell biology, including intracellular transport processes, membrane-cytoskeleton interactions, regulation of cell growth and differentia-tion, and cell-cell communication and signaling are en-couraged to apply. Exceptionally qualified candidates in other areas will also be considered, as the abilities of the applicant are more important than the particular area of research interest. Research programs in the department include developmental biology, genetics and molecular biology, immunology and virology, and structural biolo-

gy. Candidates should submit curriculum vitae, a list of publications, copies of preprints, a statement of future research objectives, and letters of reference from three persons knowledgeable of the candidate's research and teaching abilities to: Dr. Kelly E. Mayo, Faculty Search Committee, Department of Biochemistry, Molecular Biology and Cell Biology, Northwestern University, 2153 Sheridan Road, Evanston, IL 60208.

Hiring is contingent upon eligibility to work in the United States. Affirmative Action/Equal Opportunity Employer.

CELL AND MOLECULAR BIOLOGY GROUP at West Virginia University. Applications are invited for a tenure-track position at the **ASSISTANT PROFES-SOR** level, available 16 August 1990. Ph.D. and postdoctoral experience are required. We are interested in individuals studying contemporary problems in cell-molecular biology. The successful applicant will be expected to participate enthusiastically and effectively in teaching undergraduate and graduate students, and to establish a strong research program. Please submit curriculum vitae, a brief description of current and future research interests, and the names and telephone numbers of three individuals who are willing to provide letters of evaluation to: Dr. Richard P. Sutter, P.O. Box 6057, Biology Department, West Virginia University, Mor-gantown, WV 26506. Applications must be received by 1 December 1989. WVU is an Equal Opportunity Employer.

### ASSISTANT PROFESSOR BIOCHEMISTRY/MOLECULAR BIOLOGY UNIVERSITY OF ILLINOIS

The Department of Biochemistry at the University of Illinois invites applications for a tenure-track faculty position which will be available starting in August 1990. position which will be available starting in August 1990. Salary is dependent upon qualifications. Candidates must have demonstrated exceptional research ability in dynam-ic areas of biochemistry or molecular biology, and must be prepared to establish an independent research pro-gram and to contribute to graduate and undergraduate teaching programs. A Ph.D. and postdoctoral experience in biochemistry or a related field are required. For full consideration, applicants should submit curriculum vitae, a brief description of their research interests, and three a brief description of their research interests, and three letters of reference by 1 January 1990 to: Professor Richard I. Gumport, Chairman, The Biochemistry Search Committee, Department of Biochemistry, University of Illinois, 1209 West California Street, Urbana, IL 61801. Telephone: 217-333-2013.

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

ASSISTANT PROFESSOR OF VETERINARY/ **PATHOBIOLOGY**. The Department of Veterinary Pathobiology Retrovirus Research Center, College of Veterinary Medicine, The Ohio State University, invites applications for a tenure-track assistant professor in the area of molecular retrovirology. The applicant should have a Ph.D. degree with postdoctoral research experience in molecular retrovirology and a strong commit-ment to research and graduate education. Development of an independent research program with extramural support and collaborative research on animal and/or human health-related retroviral disease problems essen-tial. Applications should include: curriculum vitae, state-ment of career goals, summary of current research activi-ties, and names of at least four individuals from whom letters of reference may be solicited. Deadline for applica-tions: 30 November 1989. Address correspondence to: Dr. Charles Capen, Professor and Chairman, Department of Veterinary Pathobiology, Ohio State Univer-sity, 1925 Coffey Road, Columbus, OH 43210. Equal Opportunity and Affirmative Action Employer.

### **Request for Applications**

### Cystic Fibrosis: From Gene to Basic Defect

The Cystic Fibrosis Foundation invites investigator-initiated research grant applications to extend information from the newly discovered cystic fibrosis (CF) gene to the specific cellular defects observed in CF.

Recent evidence suggests that the CF gene codes for a transmembrane protein involved in the control of cellular transport events. This work complements previous findings on abnormal ion transport in CF. Research areas responsive to this request include, but are not limited to:

- Identification of the biochemical/ physiological events related to the defective ion transport seen in CF;
- Development of appropriate model systems for studying the regulation of defective cellular processes;
- Development of pharmacological agents or other therapies to reverse the abnormal phenotype observed in CF cells.

Research approaches and model systems must be directly relevant to understanding the basic defect in CF. **Applicants may request up to three years of support.** Level of support will be commensurate with the scope of the proposed project.

**The deadline for receipt of applications is December 1, 1989.** For further information and applications, interested individuals are urged to contact Dr. Robert J. Beall or Ms. Dale Glass at the Cystic Fibrosis Foundation.















The Department of Pharmacology and Toxicology invites applications for a tenure-track appointment at the **ASSISTANT PROFESSOR** level. Although all qualified candidates will be considered, preference will be given to individuals whose basic research interests are in the following or related areas: immunopharmacology/ toxicology; molecular biology in pharmacology/toxicology; environmental toxicology. Candidates should have a Ph.D. or M.D. degree, postdoctoral experience, and strong commitment to research at the molecular level. The successful candidate will be expected to participate in teaching in graduate and professional school courses and to develop a vigorous research program capable of attracting extramural funding support. A candidate would be given preference who would utilize and participate in the department's GC/MS facility. Send curriculum vitae and names of three references to: William J. Waddell, M.D., Department of Pharmacology and Toxicology, School of Medicine, University of Louisville, Louisville, KY 40292, by 1 December 1989. The University of Louisville is an Equal Opportunity/Affirmative Action Employer.

The University of California, San Diego, ASSIST-ANT PROFESSOR, BIOCHEMISTRY. The Chemistry Department is recruiting for a junior tenure-track position in the biochemistry area. The candidate must have a Ph.D. and a demonstrated ability for creative research and teaching at the undergraduate and graduate levels. Duties would include teaching in biochemistry both on campus and in the Medical School. Particular preference will be given to candidates using biochemical and biophysical approaches, such as NMR, x-ray crystallography, to study protein structure and function or DNA:protein interactions. All applications received through 15 October 1989 will be given thorough consideration. Salary commensurate with experience and based on the University of California pay scale. Candidates should send curriculum vitae, a list of publications, reprints of representative papers, a summary of research plans, and names and addresses of three references to: Chairman, Biochemistry, B-032, University of California, San Diego, La Jolla, CA 92093–0332. The University of California is an Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR COMMUNITY ECOLOGY/CONSERVATION BIOLOGY. Tenuretrack position in the wildlife department. Ph.D. required at time of appointment. Some university-level teaching skill required. Candidate must have expertise in community ecology and preferably also in conservation biology, as related to wildlife populations, as well as expertise on both consumptive and nonconsumptive use of wildlife populations. Candidates with professional wildlife experience and/or strong quantitative skills will be given preference. Omithology background preferred, but outstanding candidates working with other vertebrates also may be considered. Demonstrated research experience in appropriate specialties is essential. Submit curriculum vitae (including reprints), transcripts of academic work, and three letters of reference to: Dr. Richard L. Ridenhour, Dean, College of Natural Resources, Humboldt State University, Arcata, CA 95521. Telephone: 707-826-3561. Closing date is 15 December 1989. Humboldt State University is an Equal Oppportunity/Affirmative Action Title IX Employer.

ASSISTANT PROFESSOR IN INORGANIC CHEMISTRY at Iowa State University. The Chemistry Department invites applications for a tenure-track inorganic faculty position at the assistant professor level. Candidates are required to establish and maintain a creative and productive research program and excel in both undergraduate and graduate teaching. Outstanding applicants in any area of inorganic chemistry will be considered. Women and minority candidates are especially encouraged to apply. Send curriculum vitae, undergraduate and graduate transcripts, a description of research plans, and arrange for three letters of recommendation to be sent by 15 November 1989 to: Inorganic Search Committee, c/o Professor J. H. Espenson, Chairman, Department of Chemistry, Iowa State University, Ames, IA 50011.

### **POSITIONS OPEN**

The Department of Biological Sciences at Texas Tech University seeks to fill two tenure-track positions at the **ASSISTANT PROFESSOR** level. Texas Tech is one of only two state-approved multi-purpose universities with on-campus medical and agricultural schools. Candidates must hold the Ph.D. degree; postdoctoral experience is highly preferred. Successful applicants are expected to develop strong externally funded research programs, attract graduate students, and interact with other faculty in their area.

EVOLUTIONARY BIOLOGY. Organismal zoologist with area of specialization in systematics/biostatistics, nucleic acid sequencing, or population genetics. Teaching duties include an advanced specialty course and participation in the zoology program. MICROBIOLOGIST: MICROBIAL PHYSIOL-

MICROBIOLOGIST: MICROBIAL PHYSIOL-OGY. Candidates must have a Ph.D. in microbiology, and research focus should be in one of three areas: cell and molecular biology, ecology, or evolution and systematic biology. Teaching duties will include participation in an ASM-approved undergraduate curriculum and an advanced specialty course. A letter of application, curriculum vitae, statement of

A letter of application, curriculum vitae, statement of research goals, and three letters of recommendation should be sent by 10 November 1989 to: Search Committee, Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409.

An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR (tenure-track). D.V.M., D.V.M./Ph.D., or Ph.D. degree in neuroscience/neurobiology, anatomy, or associated field, and/or specialty board certification or eligibility. Candidate must have a demonstrated interest, aptitude and experience in teaching at the professional, graduate and undergraduate levels in areas of anatomy with special emphasis in neuroscience/neurobiology. Candidate must have demonstrated interest and achievement in basic research in the neurosciences/neurobiology. Position available 1 July 1990. Salary dependent upon qualifications/experience. Send curriculum vitae, bibliography, and names of three references to: Dr. D. M. Hyde, Chairperson, Department of Anatomy, School of Veterinary Medicine, 1321 Haring Hall, University of California, Davis, Davis, CA 95616.

An Equal Opportunity/Affirmative Action Employer.

ASSISTANT PROFESSOR—IMMUNOLOGY— Department of Veterinary Microbiology and Immunology, School of Veterinary Medicine, University of California, is seeking a highly qualified applicant to fill a tenuretrack position in immunology. Qualifications include the Ph.D. degree and advanced training in cellular and/or molecular biology with demonstrated research productivity and interest in immunology. The successful candidate will be expected to contribute to the department's and the school's immunology teaching commitments and to establish independent and collaborative-type research programs. Apply in writing and include curriculum vitae, list of publications, and names of three references. Send to: Dr. Jeffrey L. Stott, Chairperson Search Committee, Department of Veterinary Microbiology and Immunology, University of California, Davis, CA 95616. Applications accepted through 15 January 1989 or until a suitable candidate is identified.

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

ASSISTANT PROFESSOR OF ANIMAL PHYSI-OLOGY. California State University, Hayward, Department of Biological Sciences, invites applications for a full-time tenure-track position at assistant professor level, in the area of animal physiology at the systems physiology level (such as neurophysiology). Subject to budgetary approval, beginning September 1990. Ph.D. required. Expected to teach undergraduate lecture and laboratory and graduate seminars as well as direct student research. Must develop an independently funded research program. CSUH seeks to create a stimulating atmosphere for its ethnically diverse faculty and student population. *Women and minorities are especially encouraged to apply*. Please send a copy of curriculum vitae, a brief summary of teaching and research goals, and three reference letters to: Chair, Department of Biological Sciences, California State University, Hayward, Hayward, CA 94542. To be assured full consideration, applications should be received by 1 December 1989. Affirmative Action/Equal Opportunity Employer. Position #90-91 BIOLSCTT1.

### **POSITIONS OPEN**

#### THE BARBARA STOKES DEWEY ASSISTANT PROFESSOR OF BIOLOGY

is a tenure-track position for a candidate with expertise in almost any field of cellula; organismal, or ecological biology. Breadth of knowledge for excellent undergraduate teaching in a small department is required, as is a research program appropriate for participation by advanced undergraduates. Harvey Mudd College is an undergraduate college of science and engineering (member of the Claremont Colleges). Send curriculum vitae to: Dr. T. J. Mueller, Department of Biology, Harvey Mudd College, Claremont, CA 91711. Deadline is 17 November 1989. An Equal Opportunity/Affirmative Action Institution. Women and minorities are encouraged to apply.

ASSISTANT PROFESSOR OF BIOLOGY. Monmouth College invites application for a tenure-track position to begin August 1990. Broad background in biology with expertise in cell/molecular biology desirable. Ph.D. required. Responsibilities will include directing undergraduate research and teaching cell biology, bacteriology (microbiology), general (cell) physiology, a specialty course, and introductory biology. Women and minorities encouraged to apply. Send letter of application, curriculum vitae, transcripts, statement of teaching and research interest, and three letters of recommendation to: William B. Julian, Dean of the College, Monmouth College, Monmouth, IL 61462. Equal Opportunity/ Affirmative Action Employer.

### ASSISTANT PROFESSOR OF PHYSIOLOGY

We are renewing our search for an individual to fill a tenure-track position at the assistant professor level in the Department of Physiology, University of Florida. A person is being sought whose research interests complement those already present in our department, and who has expertise in one or more of the following areas: neural control of blood pressure, molecular neurobiology, or electrophysiology of neural cells in culture. The successful candidate should be an independent thinker, well trained in research and capable of teaching physiology to medical students and graduate students. We encourage applications from persons having at least 2 years of postdoctoral experience, and anticipate a starting date of 1 September 1990. Applications, including curriculum vitae, a summary of present and future research directions, teaching experience, and names and addresses of three references should be sent by 1 December 1990 to: Dr. Colin Sumners, Department of Physiology, University of Florida College of Medicine, JHMHC, Box J-274, Gainesville, FL 32610.

Equal Opportunity/Affirmative Action Employer.

DEPARTMENT OF PHYSIOLOGY AND BIOPHYSICS UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN ASSISTANT PROFESSOR PROTEIN CRYSTALLOGRAPHY

Applications are invited for a tenure-track position in protein crystallography at the assistant professor level starting August 1990. Applicants are required to have a doctoral degree. The successful candidate is expected to develop a vigorous independent research program and participate in our undergraduate and graduate teaching programs. He/she will join a strong group of molecular biophysicists including two diffractionists as part of the commitment to establish an outstanding program in structural biology. Salary for this 9-month appointment will be commensurate with experience and qualifications. An additional 2-month summer salary may be generated from teaching or research sources. In order to ensure full consideration, applications must be received by 15 November 1989. Interviews may be conducted before 15 November 1989, but all applications received by that date will receive full consideration. Applicants should submit curriculum vitae, a list of publications, a short statement of future research plans, and the names of at least three references to: Dr. Andrew H.-J. Wang, Chairman, Search Committee, Department of Physiology and Biophysics, 524 Burrill Hall, The University of Illinois at Urbana-Champaign, 407 South Goodwin Avenue, Urbana, IL 61801. Telephone: 217-244-6637. The University of Illinois is an Affirmative Action/Equal Opportunity Employer.

### CELL, MOLECULAR AND NEURAL BIOLOGISTS

The Department of Cell and Structural Biology at the University of Illinois, Urbana-Champaign, is continuing the expansion of its faculty. Several new tenure-track faculty will be recruited over the next few years at the Assistant and Associate Professor levels. Two positions are available for the 1990-1991 academic year, with a starting date of August 21, 1990. Applicants should hold the Ph.D. degree or equivalent, and show exceptional promise in research in the areas of developmental, neural, or cell biology. Responsibilities will include participation in teaching in these areas. Salary and rank will be commensurate with rank and experience. Substantial start-up funds and laboratory facilities are available to initiate new faculty research programs, for which the UIUC offers exceptional and broad-based supporting resources. These resources include a Transgenic Animal Facility; the Center for Electron Microscopy, with state-of-the-art instrumentation; the Genetic Engineering Facility, providing oligonucleotide and peptide synthesis and automated protein sequencing; the Cell Science Laboratory, which contains hybridoma and flow cytometry facilities; a molecular graphics facility; subsidized shops and animal care facilities; and a superb university library system, the third largest in the nation. The UIUC is a National Center for Supercomputing Applications, and is home to the Beckman Institute for Advanced Science and Technology, which combines research in the physical and biological sciences. Many other units within the Schools of Life Sciences and Chemical Sciences, and the Colleges of Medicine and Engineering offer opportunities for interactions in the cellular and molecular sciences. Urbana-Champaign combines the residential advantages of a medium-sized city (population 120,000) with outstanding cultural amenities within the University, and its location in east-central Illinois gives easy access to the cities of Chicago and St. Louis.

Applicants are requested to send a curriculum vita, a summary of research interests, and three letters of reference to: Byron Kemper, Search Committee Chairman Department of Cell and Structural Biology University of Illinois 506 Morrill Hall 505 South Goodwin Avenue Urbana, Illinois 61801 Telephone: (217) 333-6118

In order to ensure full consideration, applications should be received by December 15,1989. Interviews may be conducted before December 15, 1989, but all applications received by tha date will receive full consideration and the final selection will not be made until after that date The University of illinois is an affirmative action, Equal Opportunity Employer.

### STATE UNIVERSITY OF NEW YORK AT BUFFALO BIOLOGICAL SCIENCES—FACULTY OPENINGS

**TWO ASSISTANT PROFESSORSHIPS:** We anticipate hiring two faculty for Fall 1990. Those appointed will be individuals whose research programs are in the forefront of their fields and who will be able to interact with other members of our faculty.

These positions are open to candidates who will be utilizing modern biochemical, molecular and/or structural approaches in the study of biological problems in areas such as the following: (a) **the immune system** at the molecular and/or cellular level, (b) **development**, or (c) regulation of **gene expression**.

Successful candidates will be expected to have at least two to three years of post-doctoral experience, demonstrate experience in a productive research program, be able to describe in detail plans for future research activities, and show promise for establishing a fundable independent research program.

Candidates will also be expected to demonstrate above average teaching ability for both undergraduate and graduate teaching. Salary will be nationally competitive; excellent laboratory space and equipment available.

To apply, candidates must submit a curriculum vitae, including a statement of research background and teaching experience, and at least three letters of reference, to Dr. Darrell Doyle, Chairman, Department of Biological Sciences, 109 Cooke Hall, State University of New York at Buffalo, NY 14260. Applications will be received until December 31, 1989, or until the positions are filled thereafter.

State University of New York is an Affirmative Action/Equal Opportunity Employer.

National Reseach Council Canada Conseil national de recherches Canada

### Immunology Research Associates

The Molecular Immunology Section of the NRC Biotechnology Research Institute has two research associate positions available for recent doctoral graduates to work on the following topics:

1) T-lymphocyte development; project will be based on the use of an <u>in vitro</u> thymus organ culture system to study the T-cell differentiation pathway in the thymus; molecular biology and/or microscopy expertise required;

2) NK/LAK cell maturation and migration; the effect of various cytokines will be analyzed and the role of microvascular endothelial cells will also be studied; cellular immunology and biochemisty expertise required.

The positions are for an intiial period of two years with the possibility of renewal. Starting salary up to \$36,233 will commensurate with education and experience.

Please reply in writing, including a c.v., brief description of research interests and names of three referees, to:

Dr. L. Martin, Head, Immunology Section, Biotechnology Research Institute, NRCC, 6100 Royalmount Avenue, Montréal (Québec) Canada, H4P 2R2.

Canadä



SCHOOL OF MEDICINE

### CHAIRMAN BIOCHEMISTRY AND MOLECULAR BIOLOGY

The University of Miami School of Medicine is seeking applications and nominations for the position of **Professor and Chairman of the Department of Biochemistry and Molecular Biology.** The person filling this position will have the unique opportunity to greatly expand the department's capabilities in the area of **Molecular Biology.** Substantial funds for the development of the department are available through a generous award from the Lucille P. Markey Charitable Trust as well as considerable funding from the University. In addition to funding the new chairman, these resources will be used to support at least ten new investigators, as well as start up funds and major new equipment. The department will occupy a new seven story building which will be completed in the Fall of 1990. The department includes 16 faculty members (tenure track) with full time primary appointments and a well established graduate program with 35 trainees.

The applicant must have a Ph.D., M.D. or equivalent degree, be internationally recognized for contributions to molecular biological research, have a commitment to educational activities, and have clearly demonstrated leadership and administrative capabilities. The successful candidate is expected to be an outstanding scientist with a strong ongoing, independent and well-funded research program. This person will be expected to promote the molecular biological research capabilities of the department, the Medical School and the University, and to recruit outstanding scientists to the faculty.

Interested applicants should submit a curriculum vitae including the names of 3 references to: Dr. James D. Potter, Search Committee Chairman, Department of Pharmacology, University of Miami, P.O. Box 016189, Miami, FL 33101.

An Equal Opportunity/Affirmative Action Employer.

### ASSISTANT PROFESSOR ANALYTICAL CHEMISTRY

Seek tenure-leading faculty member starting August 1990. Requires Ph.D. Subsequent postdoctoral experience is preferred. Will be expected to establish a vigorous research program in analytical chemistry, with expertise in electrochemistry, optical spectroscopy, surface or solid analysis, or biosensors. Applications, including a complete résumé, brief description of research plans, and three letters of recommendation should be sent by 30 October 1989 (or until suitable candidate applies thereafter) to: Professor James D. Carr, Department of Chemistry, University of Nebraska–Lincoln, Lincoln, NE 68588–0304. Telephone: 402-472-3514. Fax: 402-472-2044. Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSOR OF CHEMISTRY. Tenure-track position beginning 20 August 1990 in an ACS-approved program at University of Portland, a private Catholic university. Teaching responsibilities: general and biochemistry, Director of freshman labs. Participation in undergraduate research encouraged. Ph.D. required, biochemistry preferred. Teaching effectiveness is emphasized. Send curriculum vitae, transcripts, teaching evaluations (if available), research interests, and three letters of recommendation by 5 January 1990 to: Chair of Chemistry Search Committee, Box 4, University of Portland, 5000 North Willamette Boulevard, Portland, OR 97203. An Equal Opportunity/Affirmative Action Employer.

Brown University seeks an ASSISTANT PROFES-SOR OF PSYCHOLOGY, with a specialization in vision. The applicant should have an active experimental research program, and preference will be given to candidates with strong mathematical/computational skills. This is a tenure-track appointment that will begin on 1 July 1990, for an initial term of 3 years. Responsibilities of the position include teaching in psychology at both the undergraduate and graduate levels, directing undergraduate and graduate research, and maintaining a strong research program. We strongly encourage applications from women and minority persons, and from candidates who could advise minority students. Applications should include curriculum vitae, reprints and preprints of scholarly publications, a statement of research and teaching interests, and three letters of recommendation. Submit applications by 1 January 1990 to: The Search Committee, c/o Professor Billy Wooten, Department of Psychology, Brown University, Providence, RI 02912. Brown University is an Equal Opportunity/Afirmative Action Employer.

ASSISTANT PROFESSOR SOIL INSECT BIOLOGY AND MANAGEMENT

Tenure-track with responsibility for developing an innovative research program on the biology, ecology, and management of agriculturally important soil arthropods, and for participation in graduate student training. Applicants should have a Ph.D. in entomology or related field with emphasis in applied research. Send statement of career goals and qualifications, résumé, transcripts, Ph.D. summary, reprints, and list of three references to: Dr. James D. Harper, Head, Department of Entomology, North Carolina State University, Raleigh, NC 27695–7613. Closing date 1 November 1989 or until qualified candidate is found. North Carolina State University is an Affirmative Action/Equal Opportunity Employer.

ASSISTANT PROFESSORS, Tenure-track CELL BIOLOGY. Search reopened. Research interests in cell and molecular structure and function; areas include, but are not limited to, motility, cell-cell interactions, receptors, intracellular signaling. Teaching cell biology is expected. May begin January, 1990. Review begins 1 November 1989.

POPULATION GENETICS/EVOLUTIONARY BIOLOGY. Research interests in theoretical or empirical population genetics. Teaching evolutionary biology is expected. Review begins 15 December 1989. Candidates must have a Ph.D., postdoctoral experience, and proven ability as independent researchers. Participation in graduate programs and allied staff courses is expected. Teaching experience is desirable. Start-up funds available. Forward curriculum vitae, a letter of research and teaching interests, and three letters of recommendation to: Dr. Charles J. Amlaner, Chairman, Department of Zoology, University of Arkansas, Fayetteville, AR 72701. An Equal Opportunity/Affirmative Action Employer.

### **POSITIONS OPEN**

ASSISTANT/ASSOCIATE PROFESSOR OF LABORATORY ANIMAL PATHOLOGY—Department of Veterinary Pathology, University of California, Davis. Candidates must have a D.V.M. (or equivalent) and a Ph.D. with advanced training in pathology. Board certification by the A.C.V.P. is required. Candidates must have special competence in laboratory animal pathology. Persons also certified by the A.C.L.A.M. are encouraged to apply. There should be evidence of productivity in research relating to pathogenesis of diseases of laboratory animals or development of animal models of human disease. The successful candidate will be expected to be competent in the use of techniques necessary for studies at the cellular and molecular level.

The candidate will participate in relevant teaching programs at the professional and postgraduate levels, including service duties for UCD Laboratory Animal Facilities. An important goal will be to establish an independent research program. Rank and salary will be commensurate with qualifications. Starting date is 1 July 1990. Deadline for receipt of applications is 15 December 1989 or until filled.

Applicants should send curriculum vitae and the names of at least three references to: Dr. D. L. Dungworth, Chairman, Department of Veterinary Pathology, University of California, Davis, CA 95616.

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

### DEPARTMENT OF GENETICS HARVARD MEDICAL SCHOOL

The Department of Genetics invites applicants for the position of **ASSISTANT/ASSOCIATE PROFES-SOR**. While qualifications for the position include a strong potential for imaginative research in contemporary genetics, we especially hope to consider individuals whose scholarship is broadly relevant to human biology. Individuals with M.D./Ph.D. degrees who are interested in being part of a basic science department, without required clinical responsibilities, are encouraged to apply. The successful candidate will be nominated for an appointment with the Howard Hughes Medical Institute Genetics Unit located within the department.

This position offers very significant scholarly and scientific resources as well as the opportunity to teach medical students and fellows with strong interests in genetics research.

Applicants should submit, as soon as possible, but prior to 31 December 1989, curriculum vitae, bibliography, a brief (no more than 500 words) description of research interests, and the names of three references to:

Dr. Philip Leder, Chairman Department of Genetics Harvard Medical School 25 Shattuck Street Boston, MA 02115

Harvard University is an Equal Opportunity/Affirmative Action Employer and encourages the application of qualified women and minorities.

### ASSISTANT OR ASSOCIATE PROFESSOR BIOCHEMISTRY/MOLECULAR BIOLOGY

Tenure-track position in biochemistry/molecular biology. Candidates should have a doctoral degree in biochemistry or related area and at least two years of postdoctoral experience. Preference given to candidates with research interests in molecular recognition (including protein and/or DNA structure and function), molecular biology, and molecular neurobiology. Appointee expected to develop a strong, independent research program which complements ongoing studies of molecular structure, protein processing, membranes, molecular biology, mutagenesis, or molecular neurobiology, and to participate in Ph.D. and/or health science training programs. The School of Basic Life Sciences is a new biomedical research center, and provides a stimulating research environment. Research space, access to advanced equipment, and ample start-up funds are available. Screening to begin 1 December 1989 and continue until position is filled. Submit curriculum vitae, bibliography, summary of research goals, and the names of three references to:

Dr. Ronald A. MacQuarrie, Head Division of Molecular Biology and Biochemistry School of Basic Life Sciences University of Missouri–Kansas City Kansas City, MO 64110

### RADIOCHEMIST/NUCLEAR CHEMIST National Institutes of Health Public Health Service

National Cancer Institute Division of Cancer Treatment Clinical Oncology Program Radiation Oncology Branch

**Qualifications:** Position involves research in labelling monoclonal antibodies with metallic radionuclides for clinical use in tumor diagnosis and therapy. A qualified applicant should have:

- A Ph.D. in Nuclear Chemistry or
- Radiochemistry
- Experience in working with high levels of radioactivity
- Ability to do careful scientific measurements
   Knowledge of radiochemical separations/and radionuclide purification

Biological or Radiopharmaceutical experience is desirable.

**Salary:** Dependent upon experience and qualifications.

Location of Position: Bldg. 10 National Institutes of Health, Bethesda, Maryland

For further information contact:

Dr. Otto A. Gansow National Institutes of Health Building 10, Room B3B69 9000 Rockville Pike Bethesda, Maryland 20892 Telephone: (301) 496-5936



U.S. Citizenship Is Not Required NIH IS AN EQUAL OPPORTUNITY EMPLOYER

#### Biotechnology

### Scientist Positions Analytical Development

Metrigen, Inc. a new biotechnology company to develop, manufacture, and sell instruments and reagents for use in biotechnology research and diagnostic applications, located in rural New Jersey 45 minutes from Manhattan, has immediate openings for an Enzymologist and an Analytical Chemist.

 Enzymologist with experience in nucleic acids will be involved in automation of biochemical reactions. Requirements include a PhD/MS or equivalent experience in enzyme purification, with a minimum of 2-4 years' experience developing DNA assays. Please cite position G.T.

 Analytical Chemist will be responsible for integrating highly sensitive detection systems with biochemical reactions. A PhD degree with 3 years of postdoctoral experience or MS degree with 6 years of experience in HPLC and instrument development is required. Industrial experience is welcome and computer skills are desirable. Please cite position R.L.

Metrigen, Inc. offers competitive salary and benefits packages along with an environment of exciting research and team effort. For confidential consideration, please send resume to:

> Metrigen, Inc. Alwein Centre, Suite 6A 131 Ethel Road West Piscataway, NJ 08854

Abbott Laboratories' Corporate Molecular Biology Group has played a key role in Abbott becoming the undisputed leader in the development of innovative medical products. In this fast growing field, our many breakthroughs have included tests for the detection of hepatitis B, AIDS, and most recently, HTLV I, as well as several important therapeutic products. We are continually looking ahead to major achievements as seen by Abbott's overall corporate research and development commitments which totaled \$455 million in 1988. Currently, we have the following opportunities available within this group.

......

4mp

.....

I

.,dh,

IIIIIIIIIIIIIIIIIIIIIIII

111

......

**PEPTIDE CHEMIST**— The selected candidate will prepare synthetic peptides for diagnostic and therapeutic applications. We seek a BS or MS in Chemistry, Biochemistry, Molecular Biology or a related field. A knowledge of automated TBoc and FMoc chemistries, peptide cleavage and HPLC purification of peptides are essential. **Reply to Job #7651.** 

**NUCLEIC ACIDS BIOLOGIST**— The qualified individual will prepare synthetic DNA and RNA oligonucleotides. A BS or MS in Molecular Biology, Biochemistry, Chemistry or a related field is essential. Experience with automated phosphoramidate chemistry, resin cleavage and purification of oligonucleotides are required. **Reply to Job #7500**.

**PROTEIN BIOCHEMIST**— The qualified candidate will be involved with the design, preparation and purification of synthetic and native proteins. A PhD in Protein Biochemistry and/or Peptide Chemistry is required. Leadership skills are preferred. **Reply to Job #7623.** 

**PROTEIN BIOCHEMIST**— The selected individual will be involved with the purification of native and recombinant proteins. A BS or MS in Biochemistry, Molecular Biology, Biology or a related field and extensive laboratory experience in protein purification are required. A background in protein refolding is desirable. **Reply to Job #7620.** 

**MOLECULAR BIOLOGIST**— The selected candidate's research will focus on the molecular biology of synaptic proteins, involving the cloning, characterization and expression of neurotransmitter receptors. A BS or MS in Molecular Biology, Cell Biology, Biochemistry or a related field is required. Knowledge and experience in the following is desired: cloning strategies, library screening, subcloning, DNA sequencing, blot hybridization, eukaryotic gene expression, and cell culture. Familiarity with neurobiology and pharmacology is helpful. **Reply to Job #7511.** 

**CELL BIOLOGIST**— The qualified individual will have a PhD in Cell Biology; postdoctoral experience is a plus. Experience in embryonal cell lines for transgenic animals is required. **Reply to Job #7522.** 

Our headquarters are established in an attractive suburb just 30 miles north of Chicago. Abbott is ready to provide you with an exceptional salary and benefits including profit sharing and stock retirement plans. On your resume, please indicate the Job Number of the position in which you're interested, and your salary history, and forward it to: Keith Allen, Corporate Placement, Abbott Laboratories, 1 Abbott Park Rd., Abbott Park, IL 60064. Abbott is an Affirmative Action Employer.

### **ABBOTT LABORATORIES**



Quality Health Care Worldwide 1888-1989

ASSISTANT/ASSOCIATE PROFESSOR, IN-ORGANIC/PHYSICAL OR INORGANIC/ANA-LYTICAL FULL-TIME, TENURE-TRACK, 9-MONTH position for the Chemistry/Physics Department. College of Arts and Sciences, University of Alaska Anchorage, available for Ph.D. in chemistry with a preferred background in inorganic, physical, or analytical chemistry. Dates of appointment starting in academic year 1990–1991. Salary depends on experience and academic preparation. Assistant Professor, \$27,955— Associate Professor, \$33,072 annual minimum. Postdoctoral research or teaching experience required. Successful applicant will carry a load of 40% teaching, 40% research, and 20% service; instructional duties will involve teaching two 3-hour courses (or equivalent) per semester; supervision of undergraduate research will be expected. The Chemistry Department consists of six full-time faculty with a wide range of research interests and currently offers a Bachelor's degree in chemistry, with a biochemistry option. Plans are being developed to begin a Master's degree program in chemistry in the near future; currently the faculty work with some of the graduate students in the biology program who pursue advanced chemistry courses. Besides the degree program, the department supports an engineering school, a school of nursing and health sciences, and the cooperative medical program (WAMI) with the University of Wash ington. Contact: **Dr. John M. Kennish**, 907-786-**1236**, for further information. Closing date is 1 December 1989, 5:00 p.m. Send curriculum vitae, statement of teaching and research goals, and three letters of recommendation plus graduate transcripts to: **Personnel Services Office**, **3890 University Lake Drive**, Anchorage, **AK 99508.** UAA is an Affirmative Action/Equal Employment Opportunity Employer and Educational Institution. Must be eligible for employment under the Immigration Reform and Control Act of 1986.

#### ASSOCIATE DIRECTOR ALABAMA AGRICULTURAL EXPERIMENT STATION AUBURN UNIVERSITY

Provide leadership for research program management and extramural support. Ph.D. within agricultural, forestry, and related sciences. Have understanding of landfunding. Must be eligible for tenure in your discipline. Position available 1 March 1990. Vitae will be reviewed starting 15 December 1989. Send curriculum vitae to: Dr. Paul K. Turnquist, Chairman, Search Committee, Department of Agricultural Engineering, Auburn University, AL 36849–5417. Telephone: 205-844-4180. Minorities and females encouraged to apply. An Affirmative Action/Equal Opportunity Employer.

#### BIOCHEMISTRY CHAIR UNIVERSITY OF ARKANSAS FOR MEDICAL SCIENCES

This notice is an announcement to potential candidates for the Chair in Biochemistry at the University of Arkansas for Medical Sciences, Little Rock, Arkansas. This position is open to candidates holding the M.D. or Ph.D. degree who would also qualify for a tenured appointment as professor of biochemistry.

Ph.D. degree who would also quality for a terrified appointment as professor of biochemistry. Any individual interested in being considered for this position should send his or her curriculum vitae to: Dr. T. E. Andreoli, Chairman, Biochemistry Search Committee, Department of Internal Medicine, 4301 West Markham, Slot 640, Little Rock, AR 72205. Application deadline is 1 January 1990. The University of Arkansas for Medical Sciences is an Equal Opportunity/Affirmative Action Employer.

BIOCHEMISTRY, Ph.D. Either a postdoctoral position for a recent graduate or a research scientist position for a more experienced candidate is immediately available. Expertise desired in purification and characterization of specific glycoproteins for which a sensitive assay is available. Ability to obtain antibodies for blot and other immunochemical analysis and for quantitation purposes with evolution toward application of molecular biological techniques. Salary negotiable depending upon background. Send curriculum vitae and three references to: R. Thomas Holzbach, G. I. Research Unit, Research Institute, Cleveland Clinic Foundation, 9500 Euclid Avenue, Cleveland, OH 44195–5218. An Equal Opportunity/Affirmative Action Employer.

### **POSITIONS OPEN**

#### ASSOCIATE DEAN AND DIRECTOR OF EXTENSION NORTH CAROLINA STATE UNIVERSITY

North Carolina State University, Raleigh, invites applications and nominations for the position of Associate Dean and Director of the Agricultural Extension Service in the College of Agriculture and Life Sciences. Candidates must have an earned doctorate, strong interest in, and knowledge of extension administration, and demonstrated accomplishments in his/her discipline. They must have a sensitivity for community, farm, forestry, 4-H and youth development, home economics, and agribusiness needs.

The Associate Dean and Director of Extension reports to the Dean of the College and works closely with the Directors of Academic Affairs and Research, as well as with the heads of the 18 academic departments, extension staffs in 101 counties, and with a diverse state clientele. Responsibilities include program development, formulation of budget proposals, allocation of funds, plus the employment, evaluation, and promotion of faculty and staff. Responsibilities also involve program coordination with administrators in the Colleges of Forest Resources and Veterinary Medicine, and at North Carolina Agricultural and Technical State University.

Forest Resources and Veterinary Medicine, and at North Carolina Agricultural and Technical State University. Applications will be accepted until 15 November 1989 or until the position is filled. Supporting materials should include a letter of application, a current résumé, and names, addresses, and telephone numbers of five references. Respond to: Dr. W. L. Klarman, Search Committee Chair, Department of Plant Pathology, Box 7616, North Carolina State University, Raleigh, NC 27695–7616. North Carolina State University is an Equal Opportunity/Affirmative Action Institution.

ASSOCIATE/FULL PROFESSOR, MOLECU-LAR GENETICIST. The George Washington University Graduate Genetics Program extends the deadline for applications for a tenure-track position beginning January, June, or August 1990. Applicants must have demonstrated productivity in any area of molecular genetics, but preference will be given to those in the areas of immunology or molecular genetics of development. The position requires establishing a vigorous research program, directing graduate research, and teaching graduate courses in the faculty member's area of expertise. Salary and rank are commensurate with qualifications and experience. The Graduate Genetics Program is interdisciplinary, and the position will include a joint appointment with an appropriate department. Send curriculum vitae, statements of research and teaching interests, and the names of three references by 27 November 1989 to: Dr. Stefan O. Schiff, Graduate Genetics Program, The George Washington University, Lisner Hall 320, Washington, DC 20052. An Affirmative Action/Equal Opportunity Employer.

BIOCHEMIST (Ph.D.) to participate in drug mechanism and pharmacology studies as part of a large collaborative preclinical and clinical research program with Memorial Sloan Kettering Cancer Center, involving biochemical modulation in cancer therapy. Candidate should have proven expertise with HPLC technology, nucleic acid metabolism, and enzyme analysis. Generous laboratory space, all necessary equipment, and technical support will be provided. Excellent salary and fringe benefits. Interested candidates should submit a letter of application, current curriculum vitae, list of publications, and names, addresses, and telephone numbers of at least three recent references to: Daniel S. Martin, M.D., and Joseph R. Bertino, M.D., 89-15 Woodhaven Boulevard, Woodhaven, NY 11421.

#### CELLULAR OR MOLECULAR IMMUNOLOGY RESEARCH ASSOCIATE OR POSTDOCTORAL FELLOW

Opportunity for rapid advancement and to establish independent laboratory. Work initially with established, NIH-funded investigators studying neurodegenerative disease. Adjunct faculty appointment at nearby universities. Fully equipped laboratory in a major new basic research institute. Located in the greater Phoenix metropolitan area. Send curriculum vitae and a brief statement of career goals to: Dr. Joseph Rogers, Director, Institute for Biogerontology Research, 13220 North 105th Avenue, Sun City, AZ 85372.

### **POSITIONS OPEN**

AVIAN BIOLOGIST. The Biology Department at New Mexico State University seeks a tenure-track assistant professor for appointment as early as fall 1990. Candidates should have a Ph.D. and research interests in one or more of the following areas of avian biology: behavior, ecology, evolution, physiology, or systematics. The successful candidate will be expected to teach at the undergraduate and graduate levels, establish an active research program, and seek extramural funding. Applications must be received by 15 November 1989 and should include curriculum vitae, a statement of research interests, and names, addresses, and telephone numbers of three references. Send applications to: Dr. Naida Zucker, Department of Biology, New Mexico State University, Department 3AF, Box 30001, Las Cruces, NM 88003 or Fax 505-646-6187. An Equal Opportunity/Affirmative Action Employer.

#### AMERICAN CANCER SOCIETY BASIC CANCER RESEARCH EMINENT SCHOLAR CHAIR UNIVERSITY OF FLORIDA (EDWARD R. KOGER PROFESSORSHIP)

Applications are invited for candidates to fill a faculty professorship in basic cancer research, funded through an Eminent Scholar Chair sponsored by the American Cancer Society. The candidate should have demonstrated a strong commitment to academic medicine. Candidates must hold an Ph.D., M.D., or both, and have an accomplished research record in the investigation of fundamental processes of neoplasia. A highly interactive individual would be desirable to take advantage of the research collegiality available at the University of Florida. The scholar could be appointed in a basic science department or jointly with a clinical department. Salary is negotiable and will be based on credentials. Deadline for receipt of applications is 15 January 1990.

Candidates for this position should be nominated or they should submit a letter of application stating teaching and research goals, and include curriculum vitae and at least three names of reference to: Edward M. Copeland, III, M.D., Chairman of Professorship Search Committee, Department of Surgery, Box J-286, JHMHC, Gainesville, FL 32610.

BIOCHEMISTRY—FACULTY POSITION. Applications are invited for a tenure-track assistant professor to begin with the 1990 to 1991 academic year. Responsibilities include teaching general chemistry and undergraduate and graduate biochemistry courses, and directing undergraduate and graduate (M.S.) research. Continued active participation in research is expected. Candidates should have the Ph.D. degree in biochemistry with postdoctoral research experience. Send curriculum vitae, transcripts, outline of research interest, and three letters of recommendation to: Dr. Harry M. Smiley, Department of Chemistry, Eastern Kentucky University, Richmond, KY 40475. Materials should be submitted by 15 December 1989, but applications will be reviewed until the position is filled.

Employment eligibility verification required, Immigration Reform and Control Act of 1986. An Equal Opportunity/ Affirmative Action Employer.

### BIOCHEMISTRY/MOLECULAR BIOLOGY MEHARRY MEDICAL COLLEGE

FACULTY POSITIONS are expected to be available in 1990 in the Department of Biochemistry at the level of assistant or associate professor for well-trained or experienced candidates in the following areas: (i) molecular biology of eukaryotic systems, (ii) membrane biochemistry or molecular biology of signal transduction, and (iii) regulatory aspects of cellular and/or metabolic biochemistry. Successful applicants will be expected to develop and/or maintain a funded research program of high quality, to participate in the graduate and professional (medical, dental, and allied health) school teaching programs of the Department, and to interact with institutional programs in neuroscience and cell/molecular biology. Applicants should send curriculum vitae, names of four individuals who may be contacted for reference, and a summary of potential research projects to: Ifeanyi J. Arinze, Ph.D., Chairman, Department of Biochemistry, Meharry Medical College, Nashville, TN 37208. Meharry Medical College is an Equal Opportunity/Affirmative Action Employer.

## European Opportunities for Ph.D. Life Scientists

Toxicology

Biology

Microbiology

### THE OPENINGS

Procter & Gamble has several entry-level openings for life scientists with Ph.D. or postdoctoral training in the following disciplines:

Biochemistry Food Sciences Immunology Physiology Ecology Pharmacy Virology Soil Sciences Pharmacology

### THE POSITIONS

The openings for these disciplines are in product development, toxicology, environmental sciences, regulatory affairs, and microbiology. These positions are in one of the following Research and Development locations of Procter & Gamble in Europe: Brussels, Belgium; Newcastle upon Tyne or Egham *(near London)*, England; Schwalbach *(near Frankfurt)* or Mainz, Germany; Paris, France; Rome, Italy; Madrid, Spain; or Istanbul, Turkey. *Note: Not all openings are available in all locations*.

### THE CANDIDATES

The candidates will have excellent academic records, good communication skills and a good command of English. If applying for locations other than in England, applicants must be fluent in at least one of the following languages: Dutch, French, German, Italian, Spanish, Greek, Portuguese or Arabic. For locations other than Brussels, fluency in the local language is an important asset. Stationing in Istanbul requires fluency in Turkish.

The candidates should be free of military service obligations. Employment is contingent upon possession of citizenship or immigration visa for European Community or Scandinavian countries, Austria, or Switzerland. A Turkish national is preferred for Istanbul.

### THE COMPANY

Procter & Gamble is a research and development based international corporation with more than \$21 billion in world-wide sales in household consumer products and an R&D budget of over \$625 million.

In Europe, the Middle East and North Africa, Procter & Gamble is engaged in the research and development, manufacture, and sale of a wide range of household consumer products including detergents, fabric-care products, toilet soaps, beauty and health-care products, disposable personal hygiene products, household-care products, beverages, and pharmaceuticals.

### **THE OFFER**

We offer starting positions for a research and development career in a successful, strong, and growing company and in an environment which will stimulate personal and professional growth. We have a policy of 'promotion from within' based on contribution and potential. Salaries are highly competitive and coupled with an excellent benefits package which provides for pensions, health care, and paid relocation.

### **APPLICATIONS**

To apply, please send your resume and publication list to:

Dr. T. J. Logan, Manager European Life Scientists THE PROCTER & GAMBLE COMPANY P.O. Box 398707, Cincinnati, Ohio 45239-8707

Allow 6-8 weeks for response. No agency referrals, please.

### Procter & Gamble

BIOLOGICAL CHEMISTRY—ASSISTANT PRO-FESSOR—University of Florida. The Department of Chemistry invites applications for a tenure-track faculty position at the assistant professor rank starting in the 1990 to 1991 academic year. Evidence of ability to establish and conduct an innovative and vigorous research and teaching program at the undergraduate and graduate levels is required. We are particularly interested in attracting individuals in molecular biochemistry with research activities in physical measurements, mechanistic studies, or theoretical-computational studies of biochemical systems. This is the first of three faculty positions anticipated to be filled in the next few years in the general area of biological chemistry. A successful candidate will be expected to introduce biochemistry into our curriculum both at the undergraduate and graduate levels, and he or she will be affiliated with the University Interdisciplinary Center for Biotechnology Research (ICBR). Applicants should send a complete résumé, which includes statements about research plans and teaching interests, and at least three letters of reference to: Professor N. Yngve Ohrn, Chairman of the Search Committee, VM 363, University of Florida, Gainesville, FL 32611. Deadline for applications is 15 December 1989. The University of Florida is an Affirmative Action/Equal Opportunity Employer.

### BONE MARROW TRANSPLANTATION DIRECTOR/SCIENTIFIC RESEARCH

Baylor University Medical Center, Dallas, Texas, seeks a bone marrow transplantation scientific research director. This individual would add to a well established clinical marrow transplantation research center. This program is a major referral center for marrow transplantation and leukemia/lymphoma research in northern Texas and surrounding states. Qualified applicants should have a Ph.D. or M.D. degree and an established record of achievement in an area directly related to bone marrow transplantation (i.e., graft-vs-host disease, evaluation of fimmune recovery post transplant, evaluation of growth factors in transplantation, applications of molecular biology/gene rearrangement in marrow transplantation). The successful candidate will be responsible for directing laboratory based research projects, publishing in peer reviewed journals, and writing successful grant applications.

Interested candidates should send curriculum vitae to: Joseph W. Fay, M.D., Director, Bone Marrow Transplantation Research Center, Baylor Marrow Transplantation Research Center, Baylor University Medical Center, 3500 Gaston Avenue, Sammons Towers, Suite #410, Dallas, TX 75246. Telephone: 214-820-2619.

CHEMICAL AND BIOLOGICAL SCIENCES at Oregon Graduate Center. Interdisciplinary programs in biotechnology (microbial and plant), membrane chemistry (physical and organic), metallobiochemistry (inorganic and enzymology). Intensive research experience in dynamic department with maximal student-faculty interaction. Research assistantships and tuition scholarships for qualified Ph.D. applicants. Write: Dr. Ninian Blackburn, Department of Chemical and Biological Sciences, Oregon Graduate Center, Beaverton, OR 97006–1999. Telephone: 503-690-1070. Equal Opportunity Employer.

### CHAIR DEPARTMENT OF BIOLOGICAL SCIENCES

Applications and nominations are invited for the position of Chair of the Department of Biological Sciences at the University of South Alabama. The Department has 16 faculty members and offers the B.S. and M.S. programs. Candidates should have a demonstrated commitment to research and teaching and show evidence of extramural funding. Prior administrative experience is desirable. The field of interest is open. Candidates should expect a strong interaction with other departments during the implementation of a doctoral program in marine sciences. Appointment level and salary will be commensurate with experience and will begin fall 1990. Applications will be accepted until 10 December 1989 or until a suitable candidate is selected. Applicants should send curriculum vitae, names and addresses of three references, and a description of future professional goals to: Dr. John A. Freeman, Chair, Search Committee, c/o College of Arts and Sciences, University of South Alabama, Mobile, AL 36688. An Affirmative Action/ Equal Opportunity Employer.

### **POSITIONS OPEN**

#### UCLA DEPARTMENT OF PHYSIOLOGY CARDIOVASCULAR TENURE-TRACK POSITIONS

Applicants are being sought in two areas: (i) vascular—emphasis on molecular genetic, endothelial-smooth muscle interaction, or structural-functional relations; and (ii) cardiac—emphasis on molecular biology with either investigation of hypertrophy-growth or membrane interactions (e.g., channel formation). The recruitment is cooperative among the Departments of Physiology, Medicine, and the Cardiovascular Research Laboratory at the UCLA School of Medicine. Please respond, with curriculum vitae, to:

G. A. Langer, M.D. Cardiovascular Research Lab, A3-381 CHS UCLA School of Medicine 10833 Le Conte Avenue Los Angeles, CA 90024–1760

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

#### CHAIR DEPARTMENT OF BIOLOGICAL SCIENCES UNIVERSITY OF PITTSBURGH

Applications and nominations are invited for the position of Chairperson of the Department of Biological Sciences at the University of Pittsburgh. Candidates should have a distinguished research program as well as the energy and ability to lead the department into its next phase of development. Currently there are 30 tenurestream faculty members. Additional appointments have been approved. Within the department, or available to its members, are facilities for DNA synthesis and sequencing, protein sequencing and peptide synthesis, cell culture and virology, hybridoma production, large-scale fermentation, electron microscopy, and macromolecular x-ray crystallography. The department trains 60 graduate students in addition to 350 undergraduate majors. Candidates from all areas of modern biological research are welcome. Review of applications will begin 1 October 1989. Applicants should send curriculum vitae, along with the names of potential referees to:

Mary Edmonds Chair, Search Committee Department of Biological Sciences University of Pittsburgh Pittsburgh, PA 15260

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

CLINICAL ASSOCIATE IN RENAL MEDI-CINE. Laboratory research: measure A1 (graphite furnace) and divalent cations (atomic absorptionmetry); proximal and distal tubules by enzymatic methods; handmicrodissect to isolate connecting tubules (CNT); computer data-analyst for renal failure program; electrophysiology of Na,Ca,K channels in primary CNT culture (patch clamp); measure intracellular ions (fluorescent dyes), extract and measure serum vitamin D metabolites by HPLC and receptor assay; M.D. or Ph.D. in biomedicine. Forty hours per week; 9:00 a.m. to 5:30 p.m. \$30,000 per year. Résumés to: Illinois Department of Employment Security, 401 South State Street, 3 South, Chicago, IL 60605. Attention: Ms. Mary Millea, Ref. #V-IL 9645-M. An employer-paid ad.

#### DEVELOPMENTAL NEUROBIOLOGY

Applications are invited for a tenure-track faculty position at the assistant professor level. We are particularly interested in persons working at the cellular level who can contribute to a broadly based neuroscience program. Postdoctoral experience required. Successful candidate will be expected to establish a vigorous independent research program and to reinforce our strong commitments to research, graduate training, and undergraduate instruction. Competitive salary, facilities, and start-up funds are available. Send curriculum vitae, statement of research interests, and names of three references by 15 November 1989 to:

Neurobiology Search Committee T. H. Morgan School of Biological Sciences University of Kentucky Lexington, KY 40506–0225 An Equal Opportunity/Affirmative Action Employer. FACULTY POSITION

**MOLECULAR BIOLOGIST, DEPARTMENT OF IN-FECTIOUS DISEASES.** The University of Florida, College of Veterinary Medicine, is seeking applications and nominations for a full-time tenure-track Assistant/Associate Professor Molecular Biology.

The successful candidate will be expected to develop an extramurally funded research program and to collaborate with existing faculty in well-funded international research programs designed to develop recombinant vaccines against infectious diseases of veterinary importance.

Qualifications: Applicants must possess a Ph.D. degree with postdoctoral experience in molecular biology; previous research experience with hemoparasites, and especially *Babesia* spp., and a veterinary degree is desirable.

Applications or nominations should include a curriculum vitae outlining academic training, teaching, research and diagnostic experience, and present professional activities. Include a list of publications, a statement of professional goals, and the names of three persons who can provide letters of references. Applications deadline is November 15, 1989. Position No. VM-8904. Salary will be commensurate with training and experience. Address correspondence to Dr. Anthony F. Barbet, Search Committee Chairman, Department of Infectious Diseases, College of Veterinary Medicine, University of Florida, Box J-137, JHMHSC, Gainesville, FL 32610, (904) 392-1841. The University of Florida is an Equal Opportunity/Affirmative Action Employer.



Research Opportunities in Energy-Related Life, Biomedical, and Environmental Sciences

- Research in OHER-sponsored programs
- Tenable at various national laboratories
- Stipends \$35,000
- Doctoral degree received after April 1, 1988
- U.S. citizens or PRA eligible
  - Information and applications:



Hollaender Postdoctoral Fellowships Science/Engineering Education Oak Ridge Associated Universities P.O. Box 117 Oak Ridge, TN 37831-0117 (615) 576-3190

Deadline January 16, 1990





### Group Leader - Microbiology, Molecular Biologists

The Medical Research Division of American Cyanamid Company is recognized internationally as a leader in the research and development of therapeutic compounds. We currently have the following opportunities available for dedicated professionals at our Research Facilities located at Lederle Laboratories in Pearl River, NY.

### Group Leader - Microbiology

As a result of internal promotion, a challenging and important position exists in the Fermentation Development department of the Medical Research Division for a highly motivated individual with an in-depth knowledge of biotechnology. The primary technical responsibilities of this position relate to the conception, development and improvement of microbial-based processes for the production of a variety of human and animal health products such as antibiotics, recombinant DNA-derived proteins, enzymes, and other compounds with unique biological or chemical activities.

The individual we are seeking will have direct supervisory responsibility for a group of 10-12 scientists and technicians working in several project areas including microbial physiology and biochemistry, genetics, molecular biology, and biotransformation. The successful candidate must be able to work effectively in a multidisciplinary project team environment with protein and organic chemists and process engineers.

To qualify for this highly visible position, a Ph.D. in Microbiology or a closely related field is required as is several years of postdoctoral experience, preferably within the industry. Previous supervisory responsibility is necessary. **RESPOND TO DEPARTMENT DS** 

### Research Biochemist/Molecular Biologist

The Molecular Neurobiology Group of the CNS Research Department is

seeking an individual to join our research program focusing on the isolation, characterization and molecular cloning of the voltage-gated potassium channels and the discovery of novel biological agents modulating them. This program is supported by state-of-the-art molecular biology, protein biochemistry and electrophysiological resources.

The ideal candidate will have a Ph.D. and at least 2 years' postdoctoral experience in molecular biology or protein purification and characterization. A background in Micromanipulation of Xenopus oocytes or electrophysiology of ion channels is desirable. *RESPOND TO DEPARTMENT RZ* 

### Prokaryotic Molecular Biologist

The Antibacterial Drug Discovery Group in the Department of Microbial Biochemistry and Genetics is seeking an individual to perform experiments relating to the creation of novel antibacterial drug screens, the elucidation of the mechanism of action of novel antimicrobial agents and the identification of antimicrobial targets.

You'll need a BA, BS or MS degree with a minimum of 2 years' experience in prokaryotic recombinant DNA technology. A working background in microbial genetics is preferred. *RESPOND TO DEPT IC* 

At Lederle Laboratories, you'll discover that your efforts are rewarded with a competitive salary and excellent benefits. We are located on a 580 acre campus-like setting only 25 miles north of New York City. For immediate consideration, send your resume/c.v. with salary requirements to the appropriate department code to: Professional Employment Representative, Medical Research Division, Lederle Laboratories, Pearl River, NY 10965. Equal Opportunity Employer M/F.



### HOWARD HUGHES MEDICAL INSTITUTE

## **RESEARCH OPPORTUNITIES FOR MEDICAL STUDENTS**

1990-91 Academic Year

### **Research Scholars at the National Institutes of Health**

Under this joint HHMI-NIH program, medical students in the United States spend an intensive year in research at the NIH in Bethesda, Maryland. Residence is provided at the Cloister on the NIH campus. Deadline for applications: January 16, 1990.

### Medical Student Research Training Fellowships

Medical students in the United States spend a year doing fundamental research full time in laboratories of their choice. Deadline for applications: November 8, 1989.

### For Program Announcements and Applications

Research Scholars Program Howard Hughes Medical Institute 1 Cloister Court Bethesda, MD 20814-1460 Telephone (301) 951-6710 or (800) 334-6301

or

Medical Student Research Training Fellowships Howard Hughes Medical Institute Office of Grants and Special Programs 6701 Rockledge Drive Bethesda, MD 20817 Telephone (301) 571-0324

Awards will be announced by early April, 1990

The Howard Hughes Medical Institute, an Equal Opportunity Employer, welcomes applications from all qualified candidates and encourages women and members of minority groups to apply.

### HOWARD HUGHES MEDICAL INSTITUTE

## **DOCTORAL FELLOWSHIPS** IN BIOLOGICAL SCIENCES

### **1990** Competition

	Fellowships are for full-time study toward the Ph.D. or Sc.D. degree in cell biology and regulation, genetics, immunology, neuroscience, and structural biology.
Fellowship Terms	Three-year initial awards Two-year extensions possible \$12,900 annual stipend, effective June 1990 \$11,700 annual cost-of-education allowance, effective June 1990
Eligibility	Less than one year of postbaccalaureate graduate study in biology College seniors First year graduate students M.D., D.O., D.D.S., D.V.M. students or professionals If in M.D./Ph.D. program Less than one year equivalent of tuition support No citizenship requirements U.S. citizens may study abroad Others must study in the United States
Schedule	Application deadline: <b>November 9, 1989</b> Awards announced: <b>Early April 1990</b> Fellowships start: <b>June 1990 — January 1991</b>
	NOTE: Fellowships are highly competitive. In 1989 more than 1,000 applications were reviewed to select 60 fellows.

### For Program Announcements, **Eligibility Guidelines, and Applications**

Hughes Doctoral Fellowships National Research Council Fellowship Office 2101 Constitution Avenue, NW Washington, DC 20418 United States of America Telephone (202) 334-2872

The Howard Hughes Medical Institute welcomes applications from all qualified candidates and encourages women and members of minority groups to apply.

#### CHAIRPERSON AND PROFESSOR DEPARTMENT OF OB/GYN EASTERN VIRGINIA MEDICAL SCHOOL

The Eastern Virginia Medical School announces its search for a Chairperson and Professor of the Department of Obstetrics and Gynecology. The School of Medicine is dedicated to excellence in research, teaching, and clinical care and via its affiliation with area hospitals, serves a population of over 1 million. The department (26 faculty, 22 residents/fellows), is internationally recognized for its in vitro fertilization clinic (Jones Institute for Reproductive Medicine), and is organized into Divisions of Maternal/Fetal Medicine, Gynecologic Oncology, and Reproductive Endocrinology/Infertility. Leadership is sought in the expansion of research programs, clinical services, and in administration of department activities including medical school and residency training programs. Candidates must hold an M.D. degree and be Board Certified in Ob/Gyn. Interested candidates should submit a letter of intent and curriculum vitae by 1 December 1989 to: The Chairman of the Search Committee, Gerald J. Pepe, Ph.D., Department of Physiology, Bastern Virginia Medical School, P.O. Box 1980, Norfolk, VA 23501. The Eastern Virginia Medical School of the Medical College of Hampton Roads is an Equal Opportunity Employer.

#### CLINICIAN-INVESTIGATOR PSYCHIATRISTS UNIVERSITY OF OKLAHOMA MEDICAL CENTER

Several new faculty postions are available for psychiatrists with research interests in affective disorders, anxiety disorders, geropsychiatry, psychoactive substance use disorders, and schizophrenia. Individuals with expertise/ interest in molecular medicine, neuroimaging, neurotransmitters, psychoendocrinology, psychopharmacology, and psychoimmunology are being sought. Appointments can be at any level from assistant to full professor, depending on qualifications. Applicants must have an M.D., be ABPN eligible, and be able to obtain medical licensure. A Molecular Medicine Center has been established at the medical center, a neurosciences group is organizing at the center, and a clinical research infrastructure is being developed at the departmental level. Please send curriculum vitae, statement of research interests, reprints of key publications, and names of three references to:

#### Joe Westermeyer, M.D., Ph.D., Chair Department of Psychiatry University of Okahoma Medical Center P.O. Box 26901, 5SP530 Oklahoma City OK 73190

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

DIRECTOR OF RESEARCH AND SPON-SORED PROJECTS. At California State University, Northridge, one of the largest campuses in the California State University system, will provide leadership, coordination, and administrative support in the development, initiation, and conduct of all research and sponsored project activity. Master's degree required; doctorate preferred. Minimum of 3 years of experience preparing grant proposals, managing budgets, and developing contacts with public and private funding agencies. Recruitment range: \$4,365 to \$5,327 per month, negotiable. Position available 1 August 1990. Send cover letter, curriculum vitae, and names of three references by 1 November 1989, to: Dr. M. I. Johnson, Associate Vice President for Graduate Studies, Research and International Programs, California State University, Northridge, Northridge, CA 91330. Equal Employment Opportunity/Affirmative Action.

FACULTY POSITIONS. School for Field Studies (SFS) seeks permanent resident faculty for marine resource management field program in the Caribbean. Faculty positions in marine ecology or marine management with research focus on fisheries or coastal management issues. Ph.D. (M.S. for associate faculty), excellent teaching skills, experience in field research. Send letter, curriculum vitae, and list of references to: The Dean, SFS, 16 Broadway, Beverly, MA 01915. Telephone: 508-927-7777.

### **POSITIONS OPEN**

**DEPARTMENT HEAD** in Psychology, The University of Tennessee, Knoxville (primary campus of the state university and land-grant institution). The department of 25 full-time and 10 part-time faculty members conducts research and offers graduate education in a variety of specialties, including an APA-accredited program in clinical psychology. There are approximately 400 undergraduate majors and 130 graduate students in a student body of 25,000. Desired starting date is August 1990. The successful candidate must have a Ph.D. in psychology; a demonstrated capacity for leadership; an established record of scholarship, research and teaching; and an understanding of and demonstrated commitment to equal employment opportunity and affirmative action. The area of specialization is open, and the salary commensurate with qualifications. Applications will be reviewed beginning on 1 November 1989. Send vitae and names of five references to: Professor Lee L. Riedinger, Chair, Psychology Search Committee, The Science Alliance, 101 South College, The University of Tennessee, Knoxville, TN 37996–1328. UTK is an Equal

### DIRECTOR OF PROCESS DEVELOPMENT

Ecological Engineering Associates is a pioneer in development and commercialization of waste water treat-

ment processes using natural ecosystem technologies. We seek an experienced individual to plan and implement strategies for designing and commercializing innovative processes. Superior communication skills and interest in the environment are vital. Doctorate in engineering, chemistry, biochemistry, or biology required. Indicate skills and accomplishments in managing complex projects at the interface between science and engineering. Submit résumé and salary history in confidence to: **P.O. Box 436, Woods Hole, MA 02543**.

DIRECTOR OF RESEARCH AND SCIEN-TIFIC EDUCATION for central Ohio firm to direct, coordinate, and participate in hydrogeology research and scientific education of professional association for the ground-water industry; participate in the editing of a national ground-water journal. No experience required in above duties but applicants will qualify with the following: Ph.D. in hydrogeology; 3 years of experience in hydrogeology or subsurface water research. Must have written or co-authored at least ten articles or technical reports relating to hydrogeology or subsurface water. Forty hours per week, 8:00 a.m. to 5:00 p.m.; \$962 per week. Qualified applicants send résumé (no calls) to: C. Bussard, JO# 1111173, Ohio Bureau of Employment Services, P.O. Box 1618, Columbus, OH 43216.

### EUKARYOTIC MOLECULAR BIOLOGIST

Assistant professor, tenure-track position at Kenyon College. Candidates should have a Ph.D., active research program that will involve undergraduates, and evidence of excellence in teaching. Consideration will be given to all types of eukaryotic research utilizing tools of molecular genetics and/or molecular immunology irrespective of the eukaryotic organism of study. Teaching duties include molecular biology and introductory courses. The college provides support for start-up costs. Interested individuals should submit curriculum vitae, graduate and undergraduate transcripts, three letters of reference, and a description of teaching and research interests by 1 November 1989 to: Dr. Dorothy Jegla, Biology Department, Kenyon College, Gambier, OH 43022.

An Equal Opportunity Employer.

#### FACULTY POSITION IN DEVELOPMENTAL BIOLOGY

The Department of Biology at the University of Virginia invites applications from developmental biologists who use cellular and/or molecular genetic approaches to study fundamental problems in developmental biology. We anticipate appointment at the associate or full professor level, although candidates at the assistant professor level will be considered. Send résumé and description of research program to: Developmental Biology Search Committee, Department of Biology, University of Virginia, Charlottesville, VA 22901. Applications will be reviewed beginning 1 November 1989. Equal Opportunity/Affirmative Action Employment.

### **POSITIONS OPEN**

#### DIRECTORSHIP INSTITUTE OF MARINE RESOURCES (IMR) UNIVERSITY OF CALIFORNIA

The University of California (UC) is seeking an outstanding scientist and scholar to direct the Institute of Marine Resources, a Universitywide Research Unit responsible for providing liaison between marine activities on UC campuses, fostering multi-campus and/or crossdisciplinary research programs (e.g., global climate change), general administration of the California Sea Grant College Program, and serving as a main communication link about UC marine-related activities with the UC President's Office and external agencies. The Directorship in the past has been located at the Scripps Institution of Oceanography at UC San Diego, but may reside at any other UC campus that has a major marine research program. The appointment is at the tenured fullprofessor level and would include an academic appointment in a relevant department. The Director is expected to maintain an active research program and engage in activities of the department of which he or she is a member. Nominations and applications are invited from scientists with outstanding research records and demonstrated administrative skills in marine sciences, ocean engineering, or marine affairs and should be send to: **Professor William Doyle, Chair, IMR Search Committee, Institute of Marine Sciences, University of California, Santa Cruz, CA 95064**. Applications must include curriculum vitae, statement of research and interest in the position, and names of four referees. The position is open until filled. The committee will begin considering applications 15 November 1989.

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

DEPARTMENT OF PHYSIOLOGY ASSIST-ANT PROFESSOR. FACULTY POSITION, cell and molecular physiology. The Department of Physiology, The University of Wisconsin–Madison, invites applications for a tenure-track, junior-level faculty position in cellular and/or molecular physiology. The department especially encourages applications from individuals with research interests in regulatory aspects of cellular and subcellular function, but will give serious consideration to outstanding applicants in other areas. The search will favor individuals whose research entails the use of biochemical, biophysical, or molecular biological probes of physiological processes. Excellent opportunities exist for participation in campus-wide interdisciplinary research and training programs. This position will be available after 1 July 1990. Women and minorities are specifically encouraged to apply. Applicants should send curriculum vitae, a summary of

Applicants should send curriculum vitae, a summary of research interests and plans, and three letters of reference to: Dr. Richard L. Moss, Chair, Department of Physiology, University of Wisconsin, 1300 University Avenue, Madison, WI 53706. Deadline for application is 1 November 1989. The University of Wisconsin is an Equal Opportunity/Affirmative Action Employer.

#### FACULTY POSITION IN PHYSIOLOGY

The Department of Physiology at the University of Massachusetts Medical School has an opening for an entry-level assistant professor. We seek applicants with a background and research interests which emphasize the cellular and molecular basis of physiology. Successful applicants will be expected to conduct an active independent research program and participate in teaching medical and graduate students.

cal and graduate students. Candidates should submit by 6 November 1989 curriculum vitae, a complete list of publications, a brief statement summarizing present and future research interests and objectives, and have three letters of reference sent to:

#### H. Maurice Goodman, Ph.D. Professor and Chairman Department of Physiology University of Massachusetts Medical School 55 Lake Avenue North Worcester, MA 01655

The University of Massachusetts Medical School is an Affirmative Action/Equal Opportunity Employer. Applications from women, minorities, and handicapped persons are especially encouraged. For more than a century the employees of Burroughs Wellcome Co. have applied their talents to the discovery and development of important new medicines. Their abilities and initiative have brought our Company preeminence in both the pharmaceutical industry and the scientific world...as our recent Nobel winners give eloquent testimony.



You can begin your career in the Wellcome Research Laboratories if you have interest and qualifications in the following areas of the Division of Pharmacology:

### Jr. Research Pharmacologist (Electrophysiology)

**Pos.#3015-4:** To assist the supervisor of the Biophysics Laboratory with the experimental investigation of the effects of potential CNS active drugs on synaptic transmission. Candidates need a Master's degree in a life science with coursework or experience in electrophysiology **OR** a Bachelor's degree in a life science with two years practical experience in electrophysiology. Experience with single-channel recording preferred.

### Jr. Research Pharmacologist (Cardiovascular Biochemistry)

**Pos.#60670-4:** To participate in the discovery and development of therapeutic agents for cardiovascular diseases. Specified areas of research will be directed at defining the regulation of receptor mediated signal transduction. Candidates should have a Bachelor's degree in a biological or chemical science with two years laboratory experience in pharmacology/physiology or biochemical pharmacology **OR** a Master's degree in biochemistry or pharmacology. Other factors to be considered include: degree in biochemical pharmacology; experience in molecular cardiovascular pharmacology/physiology; experience in the isolation and purification of subcellular membranes and enzymes; familiarity with receptor binding methods and receptor-mediated second messenger generation; tissue culture and SDS-PAGE experience.

### Jr. Research Pharmacologist (Neurochemistry)

**Pos.#61220-4:** To perform neurochemical and pharmacological studies directed toward the discovery and development of novel CNS active agents. Candidates must have a Master's degree in pharmacology, biochemistry or physiology **OR** a Bachelor's degree in biological or chemical science with two years practical laboratory experience in pharmacology or a related discipline such as physiology or biochemistry. Other factors to be considered include: experience with neurochemistry; experience with <u>in vivo</u> and <u>in vito</u> techniques; ability to read and comprehend literature in a specific scientific area and utilize the knowledge to study a research problem; prepare and defend written and verbal summaries of data.

### Jr. Research Biochemist (Neurochemistry)

**Pos.#61277-5:** This position is in the Neuroscience Section of the Medicinal Biochemistry Division. The successful candidate will be responsible for drug screening. Qualified candidates must have a Master's degree in chemistry, biochemistry, biology or pharmacology with 2 years relevant research experience **OR** a Bachelor's degree in the above scientific disciplines plus 3 years relevant research experience. Background in biochemistry, enzymology and ligand binding assays along with experience in the use of personal computers and data acquisition devices required. In vivo drug testing experience and familiarity with protein purification techniques, spectrophotometry, HPLC, radiometric techniques and general analytical and biochemical techniques desirable. Ability to design experiments, analyze data and write test reports preferred.

The pride of working for an industry leader is one of our benefits here. But there are others more tangible...our salaries and the finest benefit program in the industry. It includes the best pension plan in the industry, comprehensive health and dental plans, an excellent savings plan...even fitness facilities. If you are interested in working for us, we would like to hear from you. Submit your resume indicating position number in your cover letter, by November 6, 1989 to: **Burroughs Wellcome Co., Scientific Recruiting and Staffing, 3030 Cornwallis Road, Research Triangle Park, NC 27709.** 

For information on job opportunities with Burroughs Wellcome Co. at Research Triangle Park, call our Job Information Line at (919)248-8347 from any touch tone phone.



BURROUGHS WELLCOME CO. An Equal Opportunity Employer

### FACULTY OPENING IN PHYSICS UNIVERSITY OF CALIFORNIA BERKELEY

The Physics Department of the University of Califor-Ine Physics Department of the University of Califor-nia at Berkeley, pending final budgetary approval, ex-pects to make an appointment at the assistant, the tenured associate, or the full professor level, effective 1 July 1990. We encourage applications from both experimentalists and theorists in condensed matter physics. (including low-temperature physics), astrophysics and space physics, particle physics, atomic physics, and newly

emerging subfields of physics. Please send curriculum vitae, bibliography, statement of research interests, and list of references to: **Professor** P. Buford Price, Chairman, Physics Department, University of California, Berkeley, CA 94720, before 10 December 1989. The University of California is an Equal Opportunity/Affirmative Action Employer.

### FACULTY POSITIONS SYRACUSE UNIVERSITY DEPARTMENT OF PHYSICS

The Department of Physics at Syracuse University anticipates the addition of up to ten new faculty lines as part of a major expansion program. The department currently has active research groups in the areas of biophysics, condensed matter physics, particle physics and relativity. Applications are invited for senior positions in these or other fields with the expectation of adding subsequent junior positions to form new and outstanding research groups. Additionally, individual tenure-track positions are available in the areas of biophysics and physics education. Substantial funds for the initiation of research programs will be available. Applications, including curriculum vitae, summary of research and teaching interests, and at least three supporting letters should be sent to: Faculty Search Committee, c/ o Professor Marvin Goldberg, Department of Phy ics, Syracuse University, Syracuse, NY 13244–1130. Syracuse University is an Equal Opportunity/Affirmative Action Employer

### FACULTY POSITIONS IN EVOLUTIONARY ECOLOGY AND PLANT POPULATION BIOLOGY

The Department of Biological Sciences, University of Cincinnati, is continuing an expansion of its research and teaching in the areas of ecology and evolutionary biology and announces the availability of two tenure-track positions at the assistant professor level for the 1990 to 1991 academic year. The University of Cincinnati has an enrollment of approximately 35,000 students, with 29 full-time faculty and approximately 65 graduate students in biological sciences. Successful candidates for these positions will be expected to develop vigorous, externally funded research programs, train graduate students, and teach courses at the undergraduate and graduate levels. Ph.D. is required and postdoctoral experience is pre-ferred. Applicants should submit a description of their records distances and future research plane a current research interests and future research plans, a current curriculum vitae, and three letters of reference to the appropriate Search Committee Chairman. Deadline for receipt of applications is 15 November 1989. The University of Cincinnati is an Equal Opportunity/Affirmative Action

The openings include: 1) EVOLUTIONARY ECOLOGIST: Conduct research directed toward understanding the evolutionary implications of species interactions, with special consideration given to research which emphasizes coevolutionary issues. Preference will be given to those using mathematical and/or molecular/biochemical approaches in their research. Address application materials to: Dr.

in their research. Address application materials to: Dr. Thomas C. Kane, Evolutionary Ecology Search, De-partment of Biological Sciences, University of Cincin-nati, Cincinnati, OH 45221-0006. 2) PLANT POPULATION BIOLOGIST/ECOL-OGIST: Conduct research emphasizing evolutionary and/or ecological relationships in the study of natural plant populations and communities. Preference will be given to those using quantitative and/or molecular/bio-chemical techniques and field experimentation. Address chemical techniques and field experimentation. Address application materials to: Dr. Jerry A. Snider, Plant Population Biology Search, Department of Biological Sciences, University of Cincinnati, Cincinnati, OH 45221–0006.

### **POSITIONS OPEN**

### FACULTY POSITION

The Materials Department at the University of California, Santa Barbara, invites applications for a tenure-track faculty position in the area of materials characterization with emphasis on transmission electron microscopy and microanalysis techniques, effective 1 July 1990.

The Materials Department has a multidisciplinary fo-cus on such areas as: electronics materials, macromolecules, structural composites, and materials processing. The applicant should have the desire to pursue multidisciplinary research with the other groups in the depart-ment. A proven record of expertise in high resolution transmission electron microscopy and TEM-based mi-croanalysis is expected. Applicants with expertise in the fields of diffraction physics and electron-matter interac-tions are encouraged to apply. The UCSB electron microscopy facility is equipped with four transmission electron microscopes and two

scanning electron microscopes. The analytical laboratory is a shared facility with a full-time staff engineer for maintenance, development, and student instruction.

Responsibilities include teaching and developing strong research programs. A Ph.D. or equivalent degree and evidence of excellent research and teaching expertise are required. Joint appointments with other departments at UCSB are possible. Salary and rank dependent on qualifications.

qualincations. To ensure full consideration, applications should be received by the department before 15 November 1989. Candidates should send a résumé containing teaching and research accomplishments to: **Professor Pierre Pe** troff, Materials Department, University of California, Santa Barbara, CA 93106.

The University of California is an Equal Opportunity/ Affirmative Action Employer. Proof of US citizenship or eligibility for US employment will be required prior to employ-ment (Immigration Reform and Control Act of 1986).

### FACULTY POSITIONS DEVELOPMENTAL BIOLOGY/GENETICS PRINCETON UNIVERSITY

The Department of Biology at Princeton University invites applications for tenure-track positions in the areas of developmental biology and developmental genetics. Candidates should have a Ph.D. degree and research experience in the development of eukaryotes. Appointments at either the junior or senior level will be consid-ered. Applicants should send curriculum vitae, the names of at least three referees, and a summary of research interests to:

### **Developmental Biology Search Committees** Department of Biology Princeton University Princeton, NJ 08544

Princeton University is an Equal Opportunity/Affirmative Action Employer

### FACULTY POSITIONS MOLECULAR, CELLULAR, AND DEVELOPMENTAL BIOLOGY UNIVERSITY OF COLORADO BOULDER

This department is beginning a major expansion into new areas, with recruitment for a substantial number of new faculty. At this time we are seeking to fill three positions over the next 2 years. We are most interested in candidates at the assistant professor level whose research deals with mechanisms of cell-cell communication, signal transduction, or cellular responses. However, we will also accept applications from exceptional individuals in other areas or at more senior rank. We will consider only candidates who have demonstrated outstanding research ability. Other selection criteria will include teaching ability and interaction with colleagues. Candidates should have a résumé, reprints, an outline of proposed research, and at least three letters of reference sent to: Search Committee, Department of MCD Biology, Campus Box 347, University of Colorado, Boulder, CO 80309. Dossiers must be complete by 15 November 1989, but earlier applications will be considered prompt

ly. The University of Colorado has a strong commitment to diversity. We are particularly interested in applications from women, ethnic minorities, and disabled individuals.

### **POSITIONS OPEN**

### FACULTY POSITION IN CELL BIOLOGY CARNEGIE MELLON UNIVERSITY

Applications are invited for a tenure-track position in the epartment of Biological Sciences at Carnegie Mellon University. Applicants must be strongly motivated toward carrying out research in cell biology. Candidates who are just completing their postdoctoral research training will be considered for a position of starting assistant professor; exceptionally well-qualified individuals may be considered for appointment at a higher level. To apply, send curriculum vitae and a concise description of research interests (no more than three pages), and, in addition, have three letters of recommendation sent to:

> Dr. John Woolford Dr. John Woodora Chair, Cell Biology Search Committee Department of Biological Sciences Carnegie Mellon University 4400 Fifth Avenue Pittsburgh, PA 15213

Deadline for applications: 15 December 1989. Carne-gie Mellon University is an Equal Opportunity/Affirmative Action Employer.

#### FACULTY POSITIONS IN PHARMACOLOGY

The Department of Pharmacology at the University of Texas Southwestern Medical Center at Dallas seeks appli-cants for tenure-track positions at the level of assistant or associate professor. Applicants must have a relevant Ph.D. or M.D. degree and postdoctoral training and must show evidence of a firm commitment to a career in must show evidence of a firm commitment to a career in independent research. We are particularly interested in applicants who plan to apply techniques of cellular or molecular biology or biochemistry to fundamental prob-lems of pharmacological interest. Responsibilities in-clude teaching graduate and/or medical students after the first year of employment. Send curriculum vitae, list of three referees, and a brief description of proposed re-search to: Alfred G. Gilman, Chairman, Department of Pharmacology, University of Texas Southwestern Medical Center at Dallas, 5323 Harry Hines Boule-vard, Dallas, TX 75235–9041. An Equal Opportunity/ Affirmative Action Employer. Affirmative Action Employer.

### FACULTY POSITIONS GEOLOGY/CHEMISTRY/BIOLOGY (CHAIR) PROGRAM EMPHASIS IN THE MARINE SCIENCES

As part of a continuing expansion of faculty and a growing commitment to research, the University of South Alabama (USA) seeks to fill four tenure-track positions in the College of Arts and Sciences. These faculty members will be closely involved in the develop-ment and implementation of the interdisciplinary Ph.D. program in **MARINE SCIENCES**. Available positions are in the following disciplines:

GEOLOGY (ASSISTANT/ASSOCIATE PROFESSOR) CHEMISTRY (ASSISTANT/ASSOCIATE PROFESSOR) BIOLOGY (ASSOCIATE/FULL PROFESSOR)

The University of South Alabama is a young and growing urban institution of 11,000 students located in Mobile, Alabama. The Mobile metropolitan area has more than 500,000 people and its Gulf coast location provides pleasant year-round temperatures. Opportuni-ties for collaboration exist with faculty members in the USA Colleges of Medicine, Allied Health, and Engineering. In addition, there is active faculty/student interac-tion, and close collaboration with the Dauphin Island Sea Lab located on a 36-acre campus thirty miles south of Mobile and operated by the Alabama Marine Environ-mental Sciences Consortium.

Candidates should have postdoctoral experience, a strong publication record, and show evidence of sustaining a productive program of exramurally funded research. Special consideration will be given to one or more candidates capable of developing graduate-level curricu-lum offerings in physical oceanography. Salaries are for 9 months and will be competitive. Please send curriculum vitae, a statement of research interests, and the names of three references to: Dr. S. Gene Crossley, Dean, College of Arts & Sciences, University of South Alabama, Humanities Building Room 118, Mobile, AL 36688. Telephone: 205-460-6282.

The University of South Alabama is an Affirmative Action/ Equal Opportunity Employer. M/F/H.



CHOOL OF MEDICINE

### **FACULTY POSITION MOLECULAR CELL BIOLOGY**/ PHARMACOLOGY

The Department of Pharmacology at the University of Miami School of Medicine is seeking applications for a tenure-track faculty position. The position will be available in 1990; rank and salary will be commensurate with experience. Candidates for assistant or new associate professor are preferred. Generous lab space and start-up funds are available. Candidates must have a Ph.D. and/or M.D. degree (or equivalent), and should have an established record of research excellence in the broad area of molecular biological approaches to problems of pharmacological interest. The successful applicant will complement existing research efforts in the Department, which include regulation of cardiac and skeletal muscle function, transmembrane signalling mechanisms, function and development of the nervous system, and the regulation of gene expression.

Applicants should send a curriculum vitae, statement of past and future research interests, and the names and addresses of three references to Dr. John L. Bixby, Search Committee Chairman, Department of Pharmacology, University of Miami, P.O. Box 016189, Miami, FL 33101.

An Equal Opportunity/Affirmative Action Employer

### University of California, Davis **CELLULAR NEUROBIOLOGY** TRAINING PROGRAM

Funding is available to support qualified individuals for training in collular neurobiology at both cellular neurobiology at both postdoctoral and predoctoral levels. Successful applicants will join a young, vigorous neurobiology group that is highly interactive and in which collaborations are common. We particularly encourage participation of trainees in projects involving the expertise of two or more training faculty:

Hilary Anderson, Development of insect

- nervous systems Richard Carlsen, Cell biology of axonal and muscle regeneration
- Leo Chalupa, Prenatal development of mammalian visual system Carol Erickson, Morphogenesis and
- differentiation of neural crest Andrew Ishida, Cell biology of the retina Mark McNamee, Molecular biology of
- ACh receptors Brian Mulloney, Generation and modulation of motor patterns
- Pamela Pappone, Biophysics of ion
- Robert Scobey, Retinal physics of four neurotoxicology Martin Wilson, Cell biology of the retina

For more information, contact Dr. Brian Mulloney, Director, Cellular Neurobiology Training Program, Department of Zoology, University of California, Davis, CA 95616, or phone (916) 752-7468.

UCD is an Equal Opportunity / Affirmative Action Institution.

### **BIOMEDICAL RESEARCH**

### Major expansion of programs at ICI Pharmaceuticals creates excellent opportunities for Research Scientists.

ICI Pharmaceuticals, ranked among the top pharmaceutical research organizations in the world, is dedicated to the challenge of discovering and developing important new therapeutic agents. To support our continued growth and commitment to research, we are currently undergoing a major expansion of programs in Biomedical Research at our Wilmington, DE headquarters.

We have many openings that offer excellent opportunities for individual creativity, visibility and advancement:

### **Pulmonary Pharmacology**

PhD Senior Research Scientists - Positions require a PhD degree with at least 2 years' postdoctoral experience for studies in the listed areas:

- Pharmacological effects of potassium channel modulators in in vitro and in vivo paradigms: Experience with rubidium efflux techniques required.
- Airway hyperresponsiveness: Development of models and acquisition of in vitro and in vivo information relevant to the mechanisms of airway hyperresponsiveness. Knowledge of pulmonary/physiology required.
- Pharmacologic examination of isolated airways: Measurement of contractile and relaxant responses in vitro to exogenously applied and endogenously released substances; modulation of responses by pathologic factors. Experience in pharmacology of isolated tissues desired.

BS/MS Pharmacologists - Positions require a degree in a biological science with background in pulmonary pharmacology:

- Peptide-Hormone Receptor Assays: Biochemical background and experience with radioligand binding assays required.
- Smooth Muscle Pharmacology: Isolated airway smooth muscle studies. Industrial experience in evaluation of drug action an asset.
- In Vivo Pharmacology: Evaluation of hormones and drugs or hemodynamic/ pulmonary responses. Experience in administering drugs and monitoring responses required. Knowledge of surgical techniques and pulmonary experience an asset.

### **CNS Pharmacology**

Neuropharmacologist - PhD in Pharmacology with 3-7 years' experience. Emphasis in operant models and expertise in drug interactions in behavioral paradigms predictive of psychotherapeutic agents. Prior industrial experience in drug discovery programs desirable, with working knowledge of dopaminergic receptor functioning and selected systems pertaining to antipsychotic therapy. Supervisory experience a plus.

Neuro-Electrophysiologist --- BS/MS in Physiology or Pharmacology with experience in in vitro electrophysiological techniques to study ion channels. Proficiency in the use of extra- and intracellular recording techniques, and the patchclamp technique for whole cell and/or single cell channel recording required. Primary cell culture experience is preferred. Explore receptor and channel mediated cellular function in a newly created Molecular and Cellular Pharmacology unit.

Pharmacologists - BS/MS in Biology or Biochemistry with experience in neurobiology or cell biology to work on receptor binding techniques, excitatory amino acid induced second messenger, calcium flux, neurotoxicity, etc. Experience with tissue culture, HPLC highly desirable.

### **General Pharmacology**

Pharmacologist --- BS/MS in a biological science or related discipline for work involving in vitro tests using isolated tissues for characterization of pharmacological activity of compounds. Familiarity with receptor function and electrolyte transport, and membrane pharmacology/physiology preferred. Knowledge of epithelial tissues desirable. In vivo experience a plus.

We offer an excellent salary and benefits program including tuition aid for approved graduate study and relocation assistance, plus the opportunity to build a career with one of the world's leading pharmaceutical research organizations.

Please send your resume with salary requirement, indicating your field of interest, to:

Mary S. Carroll, ICI Pharmaceuticals Group, Wilmington, DE 19897.



Pharmaceuticals Group

An Equal Opportunity Employer M/F.

FACULTY POSITION TENURE-TRACK OPENING, Department of Biology, UCLA, plant cell/ developmental biology at the molecular level. The posi-tion is in the Division of Molecular, Cell, and Developmental Biology in the department, and involves partici-pation in the Interdepartmental Plant Molecular Biology Group. Potential research areas of interest include plant/ microbe interactions, regulation of reproductive developmicrobe interactions, regulation of reproductive develop-ment, signal transduction mechanisms, and hormonal regulation of development, but other relevant areas will also be considered. Applicants should be committed to making a substantial contribution to teaching as well as to developing a strong and innovative research program. Submit curriculum vitae, a statement of research and teaching interests, and have three letters of recommenda-tion sent to: Dr. E. M. Tobin, Chair, Search Commit-ee, Biology Denartment, UCLA, Los Appeles CA

tee, Biology Department, UCLA, Los Angeles, CA 90024 by 1 December 1989. UCLA is an Equal Opportunity/Affirmative Action Employer, and we encourage applications from women and members of minority groups

Full-time junior FACULTY RESEARCH POSI-TION available in the Harvard School of Dental Medicine's Department of Oral and Maxillofacial Surgery. cine's Department of Oral and Maxillofacial Surgery. Responsibilities include developing and conducting basic research and supervising undergraduate and graduate student research in the department's new laboratory at Massachusetts General Hospital. Current laboratory in terests include wound healing, bone healing, peripheral nerve repair, and carcinogenesis. For further informa-tion, send curriculum vitae to: Dr. R. Bruce Donoff, Department of Oral and Maxillofacial Surgery, Mas-sachusetts General Hospital, Fruit Street, Boston, MA 02114. MA 02114.



INSTITUTE OF CHEMICAL TOXICOLOGY WAYNE STATE UNIVERSITY

The Institute of Chemical Toxicology, Wayne State University, invites applications for tenure-track FAC-ULTY POSITIONS at the ASSISTANT, ASSO-CIATE OR PROFESSOR LEVEL; faculty researchtrack positions at all academic ranks are also available. Completely renovated laboratory and well-equipped sup-port facilities are available along with substantial opportunities for collaboration. Emphasis is directed toward molecular/biochemical toxicology, respiratory toxicolo-gy, and metals toxicology. Preference within these areas gy, and metals toxicology. Preference within these areas will be accorded to applicants employing modern molec-ular and cellular approaches in the study of cell differenti-ation, cellular secretions, oncogene expression, gene reg-ulation, transcriptional and posttranscriptional regula-tion, and chemically-mediated retrovirus activation. The successful candidates are expected to develop strong independent research programs, to collaborate in existing research projects, and to participate in biotechnology development. Highly competitive offerings of laboratory space and start-up funds accompany these positions. Applicants should have a Ph.D. and/or M.D. degree and relevant postdoctoral research experience. Send curriculum vitae by 30 December 1989 to:

### Dr. Raymond F. Novak Director, Institute of Chemical Toxicology Wayne State University 2727 Second Avenue, Room 402 Detroit, MI 48201

Wayne State University is an Equal Opportunity/Affirmative Action Employer.

GENETICIST—The Department of Biology of the University of North Carolina at Greensboro (UNCG) has a 9-month tenture-track position for an assistant professor of biology to be filled by August 1990. We seek an individual with an earned doctorate to teach genetics and advanced courses at the undergraduate and graduate level and to develop a research program. Appli-cants should submit, by 12 January 1990, a statement of research and teaching interests, a curriculum vitae, repre-sentative reprints, a list of science courses completed, and schtative reprints, a list of science courses completed, and three letters of reference to: Dr. Robert Cannon, Search Committee, Department of Biology, UNCG, Greensboro, NC 27412-5001. An Equal Opportunity/ Affirmative Action, Title IX, 504 Employer. Minority and female candidates are especially encouraged to apply.



The Ohio State University Postdoctoral Fellowships beginning July 1, 1990, are available in all academic fields. Appointment is for one or two years with a stipend of \$22,500 for a twelve month appointment. An additional supplementation of up to \$500 is provided to assist with moving expenses to Columbus. A one-time \$500 allowance is also available for travel to professional meetings.

Only those Postdoctoral fellowship applications sponsored by a graduate faculty member of The Ohio State University will be considered by the Graduate School. The deadline for submittal of completed applications by a faculty member is January 5, 1990. Prospective applicants are advised to make early contact with a faculty member.

Candidates must have received the Ph.D. degree, or comparable professional degree, within the past five years. Contact a member of The Ohio State University graduate faculty or send a resume and description of your primary re search interest to:

> Roy A. Koenigsknecht Dean of the Graduate School The Ohio State University 230 North Oval Mall, #250 Columbus, Ohio 43210-1366

These materials will be forwarded to the academic department of your choice.

An Affirmative Action/Equal Opportunity Employe

### RADIATION SAFETY OFFICER

Merck Sharp & Dohme Research Laboratories has an opening for a qualified radiological health physicist to serve as radiation safety officer for a research oriented, broad scope radioactive materials license. Minimum necessary qualifications include a M.S. in radiological health, health physics or related field, or an equivalent combination of education and experience, including significant experience in a research environment.

Merck Sharp & Dohme Research Laboratories is located in Rahway, New Jersey approximately 25 miles from New York City. Our salaries, benefits and growth potential are excellent. For consideration, send your resume with the names of three references to Susan F. Glinka, Merck & Co., Inc., P.O. Box 2000, Rahway, New Jersey 07065. An equal opportunity employer.



### JPL/NASA VISITING SENIOR SCIENTIST Chief Scientist/Office of Space Station

The Jet Propulsion Laboratory invites applications to its Visiting Senior Scientist Program for the position of Chief Scientist/Office of Space Station.

The Office of Space Station at NASA Headquarters is seeking an individual with a background in physics, biology or chemistry to aid in defining the scientific uses of Space Station Freedom. The position requires a PhD or equivalent experience and training as well as a record of peerreviewed research publications. Tenured faculty members with experience in NASA programs are the preferred choice, although qualified individuals from nonprofit research institutions may also be considered.

Responsibilities include ensuring proper attention to the scientific uses of the Space Station and representing the Space Station Program to the relevant scientific communities, worldwide. Duties include evaluating new Space Station initiatives, maintaining cognizance of Space Station Program activities, establishing forum and commission studies to review and assess scientific consequences of Station programs and plans, serving as the senior advocate of scientific interests within the program, serving as the principal advisor to the Associate Administrator for Space Station on user-related scientific issues and concerns in the formulation of Space Station policy and plans, establishing communication with Space Station users both internal and external to NASA), maintaining practicing scientist status, and serving as principal spokesman of the Office of Space Station to the scientific user community. For more information about the scope of the program and position responsibilities, contact Dr. John-David Bartoe, Code SC, NASA Headquarters, (202) 453-2961.

The appointee is expected to work closely with government sponsors of potential scientific travel and residence near the NASA Headquarters (in the Washington, DC area) will be required. Normal assignment in the Visiting Senior Scientist Program does not exceed two years. Appointees must be U.S. Citizens or Permanent Residents, and are expected to return to their home institution following their NASA assignment. Please provide curriculum vitae, bibliography and the names of four references to:

**Department T-31** Dr. Harry Ashkenas, 180-900 Jet Propulsion Laboratory 4800 Oak Grove Drive Pasadena, CA 91109 (818) 354-8251

An Equal Opportunity Employer M/F

As a worldwide industry leader with over \$5 billion in sales, Abbott Laboratories has consistently proven itself capable of meeting the toughest challenges in the health care products marketplace. We've led the way with new treatments for cancer, epilepsy, and cardiovascular ailments. Our Erythrocin has become one of the most prescribed drugs. We've recently introduced Depakote, the fastest growing anticonvulsant on the market. And we're continuing to look ahead to major achievements, as seen by overall research commitments totaling \$455 million in 1988.

Hh

Unn

IIIh

...............

''III'

"qp"

MANNUM .....

111111

IIII

11 11

 The Neuroscience Research Division of Abbott's Pharmaceutical Products Division seeks top professionals to join our drug discovery team as we develop new agents to treat central nervous system disorders.

**MOLECULAR NEUROPHARMACOLOGIST (Ph.D.)**— The selected individual will be involved in the discovery of novel cognition enhancers and/or peptide satiety agents. Experience with <u>in vitro</u> test procedures including receptor binding and second messenger systems is essential. A Ph.D. in Neuroscience, Pharmacology or Biochemistry, and at least 2 years relevant postdoctoral experience are required. **Reply to Job MP-7511**.

**BEHAVIORAL PHARMACOLOGIST (Ph.D.)**—The qualified candidate will have experience with and a demonstrated record of innovation in animal test procedures related to drug evaluation. At least 5 years of postdoctoral background is essential. Cognition and industry experience would be an advantage. **Reply to Job BP-7613**.

**PHARMACOKINETICIST (Ph.D.)**—The selected candidate will have a background in biochemistry or pharmacokinetics, and experience with <u>in vivo</u> and <u>in vitro</u> models of peptide drug absorption and metabolism. At least 2 years of relevant postdoctoral research experience is essential. Industry experience is desired. **Reply to Job PK-7612.** 

**MOLECULAR NEUROBIOLOGIST (Ph.D.)** — The selected individual will participate in ongoing research involving trophic factors and gene-based drug therapies. A background in advanced molecular biology and a minimum of 2 years postdoctoral experience are essential. A demonstrated record of independent publication is also required. An interest in immune aspects of CNS function is preferred. **Reply to Job MN-7551.** 

**RESEARCH ASSOCIATES/BEHAVIOR (B.S./M.S.)** — The qualified individual will have 2 or more years experience in Behavioral Pharmacology or a related area. Knowledge of animal surgery, drug administration and computer-based behavioral test procedures is preferred. **Reply to Job RAB-7613**.

**RESEARCH ASSOCIATES/ELECTROPHYSIOLOGY (B.S./M.S.)**—At least 2 years experience in extracellular, intracellular, and/or patch clamp recording from a variety of preparations is required. **Reply to Job RAE-7550**.

The Neuroscience Research Division is committed to a team approach to the discovery of new therapeutic entities and encourages its staff to maintain a high level of visibility within the neuroscience community.

Headquartered in an attractive suburban location just 30 miles north of Chicago, Abbott provides you with an excellent salary and benefits package including profit sharing and stock retirement plans. For consideration, please forward your resume, indicating Job Number interested in and salary history, to: **Patricia Handy, Corporate Placement, Abbott Laboratories, 1 Abbott Park Rd., Abbott Park, IL 60064.** Abbott is an Affirmative Action Employer.

### **MEETING BOUND?**

Abbott representatives will be at the American Society for Neuroscience Conference in Phoenix, Oct. 30 - Nov. 2. To arrange an interview, please forward your resume to Patricia Handy, at Abbott Laboratories by October 23rd.





Quality Health Care Worldwide 1888-1989

#### FACULTY POSITIONS IN CHEMISTRY

The Chemistry Department at the University of California, Berkeley, solicits applications for positions as assistant professor of chemistry, beginning in the fall of 1990. Creative and energetic candidates in any area of chemistry who show exceptional promise for research and teaching are sought, with particular interest in the areas of analytical, inorganic, biological, and theoretical chemistry. Individuals selected for these positions will be expected to establish an outstanding research program. Exceptional candidates with established programs may be considered for appointment with tenure as professor or associate professor. Candidates should send curriculum vitae, a proposed research program, and arrange to have three letters of recommendation sent to: **Chairman, Faculty Recruiting Committee, Department of Chemistry, University of California, Berkeley, CA 94720.** The deadline for receipt of applications is 1 December 1989. The University of California is an Equal Opportunity/Affirmative Action Employer.

### FOUR ASSISTANT PROFESSORS

The Department of Biological Sciences at Northern Arizona University invites applications for four tenuretrack assistant professorships. Ph.D. and postdoctoral experience are expected.

Establishment of a strong extramurally funded research program, and contribution to the undergraduate and graduate curricula are expected. VASCULAR PLANT SYSTEMATIST: Teaching

VĂSCULAR PLANT SYSTEMATIST: Teaching will include an undergraduate course in plant taxonomy. This person will also be responsible for overseeing the Deaver Herbarium, which includes 50,000 specimens, emphasizing the flora of the southwest. MICROBIOLOGIST: Teaching will include under-

MICROBIOLOGIST: I caching will include undergraduate medical microbiology. Research may be in any area of microbiology. INVERTEBRATE ZOOLOGIST: Primary re-

INVERTEBRATE ZOOLOGIST: Primary research interests should be in the ecology, behavior, or evolution of aquatic, non-insect invertebrates. Teaching will include invertebrate zoology. Individuals with experience in additional areas such as parasitology are preferred. FIELD/COMPARATIVE ENDOCRINOLO-

FIELD/COMPARATIVE ENDOCRINOLO-GIST: Research on the endocrinology of natural populations of vertebrates is expected. Teaching in areas such as physiology and/or ecology is expected.

Åpplicants should submit a letter of professional goals (including teaching interests) and research plans, curriculum vitae, representative reprints, and three letters of recommendation by 15 November 1989 to: Search Committee (appropriate position), Department of Biological Sciences, Box 5640, Northern Arizona University, Flagstaff, AZ 86011. Northern Arizona University is an Equal Opportunity Employer and encourages applicants from minority candidates.

#### HEAD, DEPARTMENT OF FOOD SCIENCE AND TECHNOLOGY

Energetic faculty seeks dynamic scholar for leadership in teaching, research, and extension. Located in the heart of the Willamette Valley, Oregon State University ranks among the top Land Grant/Sea Grant universities in the country in research support. Active participation in teaching, research, and extension programs is expected. Qualifications include a Ph.D. in food science or closely related field, experience in budget and personnel management, an established reputation for excellence in teaching, research and/or extension, and an appreciation of the Land Grant/Sea Grant System. The department currently has 19 full-time faculty, 28 technical and support staff, 47 undergraduate and 42 graduate students. Applicants should submit a letter of interest, résumé, and the names, addresses and telephone numbers of three to five references (references will not be contacted before conferral with the candidate) by 30 December 1989 to:

#### Dr. Mina R. McDaniel Chair, Search Committee Department of Food Science and Technology Oregon State University Corvallis, OR 97331

OSU is an Equal Opportunity/Affirmative Action Employer and complies with Section 504 of the Rehabilitation Act of 1973. OSU has a policy of being responsive to the needs of dual-career couples.

### **POSITIONS OPEN**

#### FACULTY POSITIONS DEPARTMENT OF MICROBIOLOGY MEHARRY MEDICAL COLLEGE

Applications are invited for three tenure-track positions at the assistant or associate professor level. Candidates are sought with training and postdoctoral experience in the following areas: (i) molecular virology; (ii) cellular immunology; (iii) molecular approaches to bacterial pathogenesis. Successful applicants will be expected to participate in the graduate and professional teaching programs of the Department of Microbiology and to develop and maintain an extramurally funded research program. Institutional programs in cell and molecular biology, neurosciences, and tropical diseases provide opportunities for collaborative research programs. Please end your curriculum vitae, a summary of your research interests, and the names and the addresses of at least three references to: Dr. Shirley B. Russell, Chair, Department of Microbiology, Meharry Medical College, Nashville, TN 37208. Meharry Medical College is an Affirmative Action/Equal Opportunity Employer. Applications from minority and women candidates are especially encouraged.

#### GENETICIST DEPARTMENT OF BIOLOGY UNIVERSITY OF PENNSYLVANIA

Applications are invited for a tenure-track faculty position at the assistant or associate professor level in the discipline of genetics. Candidates studying problems in genetics or using genetic approaches to study problems in cell and developmental biology are encouraged to apply.

Candidates should have a Ph.D. with postdoctoral experience and demonstrated research accomplishments. The successful candidate is expected to develop a strong research program and participate in teaching at the undergraduate and graduate levels.

Interested persons should send curriculum vitae, representative reprints, a brief description of future research plans, and three letters of reference by 30 November 1989 to:

#### Genetics Search Committee Department of Biology University of Pennsylvania Philadelphia, PA 19104–6018

The University of Pennsylvania is an Equal Opportunity/ Affirmative Action Employer and strongly encourages applications from women and minority candidates

#### MOLECULAR BIOLOGIST

The Department of Biomedical Sciences, Virginia-Maryland Regional College of Veterinary Medicine at the Virginia Polytechnic Institute and State University, is inviting applications for a **TENURE-TRACK FAC-ULTY POSITION**. Minimum requirements for the position include a D.V.M. (or equivalent) and/or Ph.D. and no less than 2 years of postdoctoral experience. Establishment of an independent research program in eukaryotic molecular biology funded by extramural support is expected, as is participation in teaching to both professional and graduate sutdents. Rank and salary for the position is filled. However, review of applications will begin 15 November 1989.

The college offers modern research facilities for molecular engineering, flow cytometry, biochemistry, physiology, electron microscopy, ESR spectroscopy, and computer analysis. The major disciplines in the department include: morphology, biochemistry, physiology, pharmacology, and toxicology. Unique opportunities exist for collaborative and interdisciplinary research. Qualified persons should submit their curriculum vi-

Qualified persons should submit their curriculum vitae, a description of their research interests, current and proposed research funding, and three letters of recommendation to:

Dr. Hara P. Misra Professor and Head Department of Biomedical Sciences Virginia-Maryland Regional College of Veterinary Medicine Virginia Polytechnic Institute and State University Blacksburg, VA 24061–0442

The Virginia Polytechnic Institute and State University is an Affirmative Action/Equal Opportunity Employer.

### **POSITIONS OPEN**

### LIFE SCIENCES EDITOR

Cambridge University Press (American Branch) has an immediate opening for an acquisitions editor in the life sciences. Our publishing program of advanced level monographs and texts covers a wide range of biological disciplines, including physiology, neuroscience, cell and molecular biology, animal behavior, and experimental psychology. Candidates with some graduate training will be preferred. Publishing experience is desirable but not necessary. Please apply in writing and indicate your salary requirements. Write to: Editorial Director, Cambridge University Press, 40 West 20th Street, New York, NY 10011.

#### MANAGER MEDICAL AFFAIRS

We are an expanding Cincinnati-based, private company which invests in, develops, and manages medical technology ventures.

We are seeking an individual with broad medical knowledge to add the clinical dimension to our technology assessment and strategy relative to the evaluation, acquisition, and development of emerging technologies. Reporting directly to the Director of Medical Technology, you will identify, acquire, and manage R&D investments; you will manage our Medical Science Advisory Board meetings; and you will conduct investment analy-

If you are the person we seek, you have the intellectual curiosity, confidence, and capability to accept your next major challenge since medical school; you want to apply your knowledge and background to building on your vision; you seek personal growth; you have working knowledge of technology management concepts; and you have an M.D. degree with distinguished professional accomplishments which amply demonstrate your exceptional management and clinical capabilities.

accompusition which is which analy is denoted accompusition with a source of the sourc

**Box 174, SCIENCE** Equal Opportunity Employer.

MOLECULAR IMMUNOLOGIST. Applications are invited for non-tenure-track appointment at the INSTRUCTOR/ASSISTANT PROFESSOR level in the Department of Medicine (Cardiology Division) at Emory University. Candidates must have an M.D./Ph.D. or equivalent degree with a minimum of 5 years of postdoctoral experience. Expertise in immunoglobulin cloning and manipulation highly desirable. Curriculum vitae with three references should be sent to: Marschall Runge, M.D., Ph.D., Cardiology Division, Emory University, 1364 Clifton Road, Drawer LL-Campus Mail, Atlanta, GA 30322. Preference given to applications received before 1 November 1989. Affirmative Action/Equal Opportunity Employer.

**MOLECULAR BIOLOGY/BIOCHEMISTRY.** The Department of Chemistry and Biochemistry at the University of Notre Dame has a tenure-track faculty position available at the level of assistant professor. Qualified applicants may be considered for a more senior level of appointment. Preference will be given to applicants with research interests in the general areas of molecular biology and/or biological molecular structure (including protein crystallography). The department and college offer outstanding facilities and technical support. Current faculty and staff in molecular biology, biochemistry, and associated fields provide a wide-ranging base for interaction and support in the development of a vigorous research program. Teaching responsibilities will be in the area of molecular biology or biochemistry. Interested individuals should submit a current curriculum vitae including bibliography, a statement of research interests, and three letters of reference to: Molecular Biology/Structure Search Committee, Department of Chemistry and Biochemistry, University of Notre Dame, Notre Dame, IN 46556. The deadline for receipt of all materials is 15 November 1989. The University of Notre Dame is an Affirmative Action/Equal Opportantly Employer. Discover a bright future at Sterling Research Group, the worldwide pharmaceutical research and development organization of Sterling Drug Inc. As a subsidiary of Eastman Kodak, what makes Sterling outshine the rest is the unbeatable combination of a small, friendly company environment and the depth, resources, and growth potential of a large multinational corporation. Discover Sterling today by applying for this position in our Pharmacology Department:

### STERLING CAREERS

### Sr. Research Scientist

An excellent opportunity exists for a scientist to participate in a challenging, interdisciplinary approach to basic research and drug discovery in the neurobiology program. The successful candidate will utilize electrophysiologic techniques to study pharmacologic and disease-related events in the CNS. Familiarity with both in vivo and in vitro techniques is highly desirable.

The neurobiology program is currently pursuing research for the novel treatment of pain, neurodegeneration and psychosis.

The Rensselaer facility is located near Albany, New York, which is a center for summer and winter recreational activities.

In exchange for your talents, we offer a competitive salary and benefits package and outstanding career opportunities for personal and professional growth. For confidential consideration, please forward your resume with salary history/requirements to:

Employee Relations, SRG-4, Sterling Research Group, A Division of Sterling Drug Inc., 81 Columbia Turnpike, Rensselaer, NY 12144. Equal Opportunity Employer M/F/H/V.

### STERLING RESEARCH GROUP

A Subsidiary of Eastman Kodak Company Build A Future With Sterling.

### ASSOCIATE PROVOST FOR RESEARCH/ EXECUTIVE DIRECTOR, WEST VIRGINIA UNIVERSITY RESEARCH CORPORATION

### WEST VIRGINIA UNIVERSITY

West Virginia University is a land-grant research institution with 15 colleges. Founded in 1867, it is the doctoral degree granting institution in the state and enrolls 18,500 students in 176 degree programs. Morgantown is a diverse, scenic community of approximately 45,000, with easy access to Pittsburgh and Washington, DC and ample cultural and recreational opportunities.

### Responsibilties:

The Associate Provost for Research reports directly to the Provost and has major responsibility for research development; in addition, the person selected will serve as the Executive Director of the newly formed West Virginia University Research Corporation. The Associate Provost for Research will have University-wide responsibilities, which include the following:

- Strategic planning for research, including the development, implementation, and maintenance of research policy; organization of institution-wide research management; and development of consortia
- Research liaison activities with federal and state agencies, business and industry, and other educational institutions
- Facilitation and oversight of faculty and student research and scholarly activity
- Coordination of University research advisory groups and supervision of University research centers, institutes, and support units
- Serve as the Executive Director of the West Virginia University Research Corporation (WVURC): responsible for implementing and overseeing all policies and procedures of the WVURC and will assure that the WVURC is responsive to the research needs of West Virginia University

### Qualifications:

We seek to appoint an academic leader possessing qualifications that include the following:

- A background in successful administrative leadership
- Ph.D. or equivalent terminal degree, with research credentials to qualify for tenure in an academic department
- Demonstrated ability in and commitment to developing a strong institutional research program
- Demonstrated ability to negotiate and obtain funding at the highest administrative levels of government, business, and industry
- Sensitivity toward and ability to work with diverse groups
- Commitment to affirmative action and equal opportunity

### Salarv:

Salary will be commensurate with the experience and qualification of the individual selected.

### Term of Appointment:

An appointment will be made for a term of five years, 12 months per year, with the possibility of reappointment.

#### Applications and Nominations:

West Virginia University is strongly committed to diversity and welcomes applications and nominations from women and minority persons. Priority will be given to nomination and applications received prior to *November 15, 1989*. Nominations and applications will, however, be accepted until the position is filled. Applicants must submit a letter of application that addresses each of the responsibilities of the position, a current curriculum vitae, and the names and addresses of five references. Nominations and applications should be sent to:

Cyril M. Logar, Chairperson Associate Provost for Research/ Director of WVURC Search Committee West Virginia University College of Business and Economics P.O. Box 6025 Morgantown, WV 26506–6025 (304) 293-4092

West Virginia University is an equal opportunity/ affirmative action employer.



### A EUROPEAN PHARMACEUTICAL COMPANY IS RECRUITING FOR ITS RESEARCH CENTRE

### A CENTRAL NERVOUS SYSTEM PHARMACOLOGIST

### to work on MECHANISMS OF ALCOHOL DEPENDENCE

The appointment at the level of PROJECT LEADER will be based in Paris, France.

The successful candidate will enjoy a large independance. In addition to creating his own group (initially two assistants) he will be expected to collaborate with a variety of other research groups including chemists.

Applications (including a hand-written letter, curriculum vitæ, and details of current salary should be sent, in confidence to:

MEDIAPA

**MEDIAPA** 50-54, rue de Silly

92513 BOULOGNE BILLANCOURT Cedex - FRANCE quoting reference 6257/S.

### ROCKEFELLER FOUNDATION BIOTECHNOLOGY CAREER FELLOWSHIPS

The Rockefeller Foundation announces a program of career development fellowships designed to enable scientists from developing countries, trained at outstanding centers for advanced research in biotechnology, to continue to work at those or other institutions for three months each year, over a period of at least three years, conducting advanced research and keeping abreast of new developments in their fields. The program will focus upon the development and application of advances in molecular and cellular biology and immunology relevant to agriculture, health, and reproductive biology.

Funding will be shared between the Foundation and the host laboratory, with the Foundation providing travel and per diem support. It is hoped that the fellowships will encourage the establishment of ongoing working relationships between outstanding younger scientists working at third world institutions, and research teams at advanced laboratories.

Applicants to this program should have at least Ph.D.- or M.D.-level training, a proven record of scientific productivity, and a permanent position at a research or teaching institution in their home country. A written project proposal must be developed and submitted jointly by the candidate and the laboratory sponsor.

Information about application procedures can be obtained by writing to Biotechnology Career Fellowships, Fellowship Office, Rockefeller Foundation, 1133 Avenue of the Americas, New York, New York 10036, USA.

### DEPARTMENT CHAIR OF BIOLOGICAL SCIENCES

### STATE UNIVERSITY OF NEW YORK AT BUFFALO

The Department of Biological Sciences at the State University of New York at Buffalo is searching for a Full Professor to build an outstanding research program and assume the position of Department Chair within one year of arrival. The starting date is negotiable and the successful candidate could begin as soon as September 1990. The Department presently consists of 27 full-time tenuretrack faculty with research strengths in the areas of Cell and Molecular Biology, Genetics and Developmental Biology, Cellular Physiology and Ecology. We are committed to excellence in very active undergraduate and graduate programs. Our graduate program currently consists of approximately 50 full-time students. In addition to those who are supported by external grants, many of our graduate students are supported by state funds.

Superb core facilities are available to the Department for DNA and peptide synthesis and sequencing, computer structure modeling, monoclonal antibody production, animal facilities and state-of\_the-art microscopy. In addition the Department has in place a well trained staff who operate and maintain the electron microscopy lab, greenhouse, electronics shop, machine shop and scientific illustration and photography lab.

We seek an outstanding scientist with demonstrated excellence in research and a genuine interest in quality graduate and undergraduate education. It is expected that the candidate will vigorously pursue an active research program, promote Departmental and interdepartmental interactions among the faculty, provide scientific, educational and administrative leadership and continue the development of the Department towards its goal of becoming one of the leading departments in the country. The University has committed considerable resources to this goal and will provide superb setup and operating funds. The opportunity to hire a considerable number of new tenure-track faculty will be available to the new chair.

Submit nominations and applications including curriculum vitae, summary of research interests and names, addresses and telephone numbers of four references to: Dr. Ronald Berezney, Department Chair Search Committee, Department of Biological Sciences, State University of New York at Buffalo, **Buffalo**, New York 14260. Deadline for receipt of completed applications is December 1, 1989, or until a suitable candidate is identified. SUNYAB is an Affirmative Action/Equal Opportunity Employer.



## Research Scientists

### *If contributing to major pharmaceutical discovery is what you have in mind, come to Schering-Plough Research.*

We're a growing \$3-billion pharmaceuticals innovator recognized worldwide for our dedication to discovery. Exceptional opportunities for experienced professionals to advance their careers now exist at our Bloomfield, NJ R&D facility.

### **Biotechnology/Biochemistry**

### **Senior Scientist**

PhD in Molecular Biology, Immunology or Biochemistry with 2-3 years' post-doctoral experience. Experience in cDNA library construction and screening, protein structure-function studies and receptor cloning/ characterization. Experience in characterization of biological responses to lymphokines is desirable.

### **Senior Scientist**

Requires a PhD in Biochemistry, Biology, or Chemistry with 0-3 years' experience in the characterization and purification of proteins, glycoproteins and polypeptides. Areas of expertise include physicochemical techniques such as chemical modification, mass spectrometry, NMR and fluorescence, synthesis and sequencing of polypeptides, carbohydrate structural analysis, and immunochemical characterization of structure function relations.

### Assistant/Associate Scientists

Requires BS/MS in Biochemistry or related discipline and 0-4 years' experience. Protein characterization/ purification experience desirable.

### **Associate Scientists**

BS/MS in Biology or Chemistry. Immunology background in development and 0-4 years' experience in troubleshooting and performance of immunochemical assays essential.

### Allergy

### **Assistant Scientist**

BS/MS in a Biological Science and 0-4 years' experience working with large animals to investigate pulmonary mechanics required.

### **Assistant Scientist**

BS/MS in Molecular Biology or Biochemistry with 0-4 years' experience in DNA/RNA technology and/or protein purification desirable.

### **Tumor Biology**

### Assistant/Associate Scientists

BS/MS in Biological Sciences, Molecular Biology or Biochemistry and 0-4 years' experience. Knowledge of protein preparation and enzyme assays essential. Some experience working with transgenic animals desirable.

### **Microbial Products**

### Assistant Scientist, Analytical or Organic Chemist

MS and 0-2 years' experience. HPLC and spectroscopy experience required.

We offer highly competitive salaries and a generous benefits package. For immediate consideration, send your resume indicating salary history and position desired to: Ms. P. Valendo, Schering-Plough Research, 60 Orange Street, Bloomfield, NJ 07003. We are an equal opportunity employer.

### What you have in mind, we put in action.



### MOLECULAR GENETICIST

The Department of Pathology at The Children's Hospital is searching for a qualified individual to supervise a service laboratory in molecular genetic diagnostic testing. For the appropriate candidate, an academic appointment would be available in the University of Colorado School of Medicine, along with opportunities to pursue research efforts. Applicants must have a Ph.D. in molecular biology or a related field, have experience in molecular genetic testing, and be eligible for board certification in molecular genetics by the American Board of Human Genetics on or before June 1990.

Send curriculum vitae, a statement of career objectives and current and/or planned research, and the names, addresses, and phone numbers of three individuals who have agreed to act as references to: Dr. Vincent Wilson, Director of Molecular Genetics, Pathology Department, The Children's Hospital, 1056 East 19th Avenue, Denver, CO 80218–1088. Equal Opportunity Employer M/F.

### MOLECULAR NEUROBIOLOGIST ALZHEIMER'S DISEASE RESEARCH

The Department of Pharmacology and Toxicology of the Medical College of Georgia invites applications for a tenure-track senior position (associate or full professor) for a molecular neurobiologist with strong interests in Alzheimer's Disease research. We seek an experienced investigator who will interact with both basic science and clinical investigators as part of an Alzheimer's Disease Research Center. The successful candidate will have a proven record of accomplishment. Substantial equipment and personnel support will be provided. The Alzheimer's Disease Research Center is a multi-disciplinary approach to the study of this disease which includes active researchers from several basic and clinical departments. Programs include new therapeutic approahces, novel diagnositc procedures and basic studies of etiology. The Clinical Research Division provides access to human tissue samples and autopsy materials; the Behavioral Research facility utilizes animal models including nonhuman primates. The candidate will also be expected to participate in Department teaching of programs, including medical and graduate students. Candidates should send curriculum vitae, description of research activities and the names of three references to: Dr. Jerry J. Buccafusco, Chairman, Search Committee, Department of Pharmacology and Toxicology, Medical College of Georgia, Augusta, GA 30912–2300. Afiimative Action/Equal Opportunity Employer. Females and minorities are encouraged to apply.

MOLECULAR PHARMACOLOGY: Mayo Medical School invites applications for a tenure-track FAC-ULTY POSITION in Department of Pharmacology, available 1 January 1990. Ideal candidate will have primary interests in pharmacology and be actively using the methods of molecular biology. Special attention will be given to individuals working on the molecular aspects of drug receptors and ligand-gated ion channels, but those with other interests will also be considered. Generous space and start-up funds provided in addition to an attractive package of salary and benefits. Academic rank will be determined by qualifications; established investigators are also encouraged to apply. Applicants should submit curriculum vitae and names and addresses of three or more referees to: Stephen Brimijoin, Ph.D., Department of Pharmacology, Mayo Medical School, 200 First Street Southwest, Rochester, MN 55905. An Equal Opportunity/Affirmative Action Employer.

The Department of Chemistry at the University of Virginia is seeking an outstanding individual for a position in ORGANIC/BIOORGANIC CHEMISTRY. This appointment is expected to be made at the assistant professor level (tenure-track), though exceptional senior applications will be considered. Candidates with a commitment to excellence in research and teaching are encouraged to send curriculum vitae containing a list of publications, a concise outline of research plans, and arrange to have three letters of recommendations sent to: Robert E. Ireland, Chairman, Department of Chemistry, University of Virginia, McCormick Road, Charlottesville, VA 22901. The University of Virginia is an Equal Opportunity/Affirmative Action Employer.

### **POSITIONS OPEN**

### PHARMACOLOGY—MOLECULAR PHARMACOLOGY

Applications are invited for tenure-track positions at the assistant or associate member level in the Program of Developmental Therapy and Clinical Investigation of the Sloan-Kettering Institute. Candidates with a Ph.D. or M.D. degree who have demonstrated outstanding research capabilities in cancer-related pharmacology will be considered. We are especially interested in candidates with a strong interest in mechanisms of drug action at the molecular level, and with interests in clinical application. Additional areas of research emphasized include mechanisms of drug resistance, protein structure and drug design, signal transduction and DNA repair. Please send a detailed curriculum vitae and a statement of research interests by 1 November 1989 to: Dr. Joseph R. Bertino, Program Co-Chairman of Developmental Therapy and Clinical Investigation, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, NY 10021.

Sloan-Kettering Institute is committed to Equal Opportunity through Affirmative Action and, therefore, members of minority groups are encouraged to apply.

Available now to study biochemistry of diacylglycerol kinase. Recent **Ph.D**. with good biochemistry background. Curriculum vitae and two letters of reference to: **Ingming Jeng, Ph.D., Department of Biochemistry, University of Missouri, 5400 Arsenal Street, St. Louis, MO 63139.** Application deadline: 30 November 1989.

Ph.D. POSTDOCTORAL POSITION in the Division of Endocrinology, Department of Pediatrics, Children's Hospital of Pittsburgh. Project involves isolation, purification, and cloning of peptide hormone receptor(s). Experience/extensive training in molecular biology and biochemistry essential. Position offers opportunity for career advancement and subsequent independent research in related field of developmental endocrinology and physiology. Apply with curriculum vitae and four references to: Mark A. Sperling, M.D., Chairman, Department of Pediatrics, Children's Hospital of Pittsburgh, 3705 Fifth Avenue, Pittsburgh, PA 15213. An Equal Opportunity Employer.

PLANT CELL BIOLOGIST, ASSISTANT PRO-FESSOR. The Department of Biological Sciences at Rutgers University-Newark invites applications for a tenure-track assistant professor position in the area of plant cell biology beginning September 1990. Candidates should have postdoctoral experience and will be expected to establish an independent research program and to interact with a young and dynamic faculty in cell, molecular, and developmental biology. The position carries a competitive salary with a substantial start-up package commensurate with a major research effort. A full complement of state-of-the-art facilities in cell and molecular biology is available. Applications including curriculum vitae, three letters of reference, and a brief description of research interests should be sent by 1 February 1990 to: Dr. Harvey H. Feder, Chairman, Department of Biological Sciences, Rutgers University, Newark, NJ 07102. Telephone: 201-648-5347, Fax: 201-648-1007. Rutgers University is an Equal Opportunity/Affirmative Action Employer.

### POSITIONS IN PLANT MOLECULAR BIOLOGY

Two postdoctoral, one research technician position available from 1 September 1989 or 1 January 1990 or until filled. Individuals will work in a team of molecular biologists and tissue culturalists developing new vectors and selection markers for plant transformation. Experience in the basic molecular techniques of cloning essential. Please send curriculum vitae with research interests and the names of three references to: Dr. Angus Hepburn, Department of Agronomy, University of Illinois, 1102 South Goodwin Avenue, Urbana, IL 61801. An Affirmative Action/Equal Opportunity Employer.

### POSITIONS OPEN

#### PLANT MOLECULAR BIOLOGY/PHYSIOLOGY

The Trinity College Department of Biology invites applications for a tenure-track position at the level of assistant professor beginning in the fall term, 1990. Applicants must have a Ph.D. degree; postdoctoral experience is preferred but not required. Teaching responsibilities are a course in plant physiology, an upper-level course in an area of the applicant's interest, participation in a team-taught introductory biology course, and periodic instruction of courses for non-majors. The candidate will be expected to initiate and pursue a program of independent research in which upper-level students may participate; start-up funds are available. Send curriculum vitae, graduate and undergraduate transcripts, and three letters of recommendation to: Donald B. Galbraith, Chairman, Department of Biology, Trinity College, Hartford, CT 06106. Evaluation of applications will begin on 1 December 1989 and continue until the position is filled. *Trinity College is an Equal Opportunity/ Afirmative Action Employer and actively seeks applications* from women and minorities.

PLANT REPRODUCTIVE BIOLOGIST, AS-SISTANT/ASSOCIATE OR FULL PROFESSOR. A tenure-track position to establish a research program related to the genetic and physiological basis of flower, embryo, and fruit development. The research approach should integrate the application of genetics, molecular biology, and biochemistry to understanding fundamental mechanisms regulating these processes with the ultimate goal of understanding fruit and crop production. In addition to establishing a prominent research program, the incumbent will be expected to teach a course compatible with the department curriculum. Application deadline is 15 December 1989 or until filled. Interested individuals should submit résumé, transcripts, statement of research objectives, recent publications, and three letters of reference to: Dr. Brian Larkins, Head, Department of Plant Sciences, University of Arizona, Tucson, AZ 85721. The University of Arizona is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

### POSITIONS IN IMMUNOLOGY, MICROBIOLOGY

The Department of Microbiology at the Medical College of Ohio invites applications for two tenure-track faculty positions at the assistant/associate professor level.

• IMMUNOLOGY: Preference will be given to applicants using molecular approaches for the study of humoral or cellular immunity. Those with a major interest in the interaction of bacteria or viruses with the immune system are encouraged to apply. • BACTERIAL PATHOGENESIS: We are inter-

 BACTERIAL PATHOGENESIS: We are interested in candidates whose research focuses on contempotion of the state of the sta

rary approaches to the study of bacterial pathogenesis. The new faculty members will be provided with generous financial assistance and expected to develop independent, competitively funded research programs. Applicants will find that the laboratory and support facilities at the Medical College of Ohio are outstanding. Salaries are competitive and will be commensurate with experience. Demonstration of a strong commitment to teaching of medical and graduate students also is important in candidate evaluation. Applicants must have postdoctoral experience and should submit curriculum vitae, a statement addressing specific research goals and plans, copies of three representative publications, and names of three references. Send applications to: Earl H. Freimer, M.D., Chairman, Department of Microbiology, Med. 6ad 601ege of Ohio, P.O. Box 10,008, Toledo, OH 43699. Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL FELLOW (2 years), and RE-SEARCH TECHNICIAN (permanent). Positions available in a laboratory that is developing methods for physical mapping of bacterial and human genomes. Funding from the DOE and NIH human genome projects. Prefer experience in tissue culture, retrotransposons, transposons, or enzyme purification. Independence and creativity encouraged. Send curriculum vitae to: Dr. Michael McClelland, California Institute of Biological Research, 11099 North Torrey Pines Road, La Jolla, CA 92037. National Institutes of Health Public Health Service Department of Health and Human Services

### Director Epidemiology and Oral Disease Prevention Program

The National Institute of Dental Research (NIDR) invites nominations and applications for the position for Director, Epidemiology and Oral Disease Prevention Program (EODPP). This is a Civil Service position in the Senior Executive Service with a salary range of \$68,700 to \$76,400 per annum. The person selected may be eligible for Physician's Comparability pay up to \$20,000 per year. A one-year probationary period must be served by the individual selected if not currently in the Senior Executive Service.

The Director, EODPP, is fully responsible for the scientific and administrative management and direction of a research program applying epidemiologic, biometric, and clinical trials methodologies to the investigation of oral diseases and disorders, and serves as the focal point within the Federal sector, the scientific community, and the public for these activities.

Candidates must meet the minimum educational requirements (or possess equivalent combination of experience and training) for Dental Officer, GS-680; Medical Officer, GS-602; General Health Science (Epidemiologist), GS-601; Statistician, GS-1530; or an allied scientific discipline, as defined by the U.S. Office of Personnel Management Handbook X-118, Qualification Standards for Positions Under the General Schedule, which is available in Federal Personnel Offices and Federal Job Information Centers. Further information about the position and qualification requirements may be obtained by contacting Ms. Judith T. Dulovich, (301) 496-6971. An Application for Federal Employment (SF-171), accompanied by a current curriculum vitae and bibliography, should be submitted to

Ms. Judith T. Dulovich Building 31, Room 2C23 National Institutes of Health 9000 Rockville Pike Bethesda, Maryland 20892



APPLICATIONS MUST BE POST-MARKED NO LATER THAN OCTOBER 31, 1989.

SELECTION FOR THIS POSITION WILL BE BASED SOLELY ON MERIT, WITH NO DISCRIMINATION FOR NON-MERIT REASONS SUCH AS RACE, COLOR, RELIGION, SEX, NATIONAL ORIGIN, POLITICS, MARITAL STATUS, PHYSICAL HANDICAP, AGE, OR MEMBERSHIP OR NON-MEMBERSHIP IN AN EMPLOYEE ORGANIZATION.

NIH IS AN EQUAL OPPORTUNITY EMPLOYER



BASF Bioresearch Corporation is the newest Biomedical R&D facility backed by BASF, a 125-year-old company that has specialized in inventive technology and imaginative solutions from day one. Known the world over for our contributions to the chemistry, high-tech and entertainment industries, we're out to make an equally impressive impact in the exciting area of biomedical research and development. If you're ready to take on some of the greatest challenges of our time...cancer and diseases of the immune system...join us for a rewarding career in our results-proven environment.

PhD-level scientists are now being sought for initial staffing of our state-of-theart, Cambridge, MA biomedical R&D facility.

### **MOLECULAR BIOLOGISTS**

Requires significant experience in DNA cloning and gene expression in eukaryotes and prokaryotes. Work will be concentrated on novel lymphokines, their receptors and oncogene regulation.

### **PROTEIN CHEMISTS**

Utilizing your experience in the areas of protein purification, sequencing and amino acid analysis, you'll be involved in a variety of projects dealing with lymphokines and antibodies.

### **CELL BIOLOGISTS** (Immunology)

Positions require background in fields of in-vitro/in-vivo immunology with a focus on lymphokine research, antibody construction and/or autoimmune diseases.

### CELL BIOLOGISTS (Oncology)

Must have experience in field of in-vitro/in-vivo oncology with a strong focus on tumor cell resistance, cell differentiation and/or metastatic properties of tumor cells.

BASF Bioresearch Corporation offers an attractive compensation package to qualified candidates. For further information, please write with curriculum vitae to: Pamela S. Zupfer, Human Resources Department, BASF Bioresearch Corporation, 195 Albany Street, Cambridge, MA 02139. An Equal Opportunity Employer.

The Spirit of Innovation<sup>™</sup>

**BASF Bioresearch Corporation** 





BONUS DISTRIBUTION American Society for Cell Biology

November 5–9, 1989 Houston, TX More than 3,000 bonus copies to be distributed

In addition to the 155,000 mailed copies

SPECIAL CAMERA-READY RECRUITMENT CLOSING DATE

October 16, 1989 Call Gwen Canter (212) 730-1050

### DNA PROBE DIAGNOSTICS

R

ROCHE

oche Diagnostic Systems is commercializing DNA probe assays using the Polymerase Chain Reaction (PCR) developed by Cetus Corporation.

PCR is a universal technology that has used for the sensitive and specific detection of viral and bacterial pathogens, genetic disorders and cancer markers. We are seeking PhDs to join our multidisciplinary team to develop products incorporating this powerful new technology.

**HYBRIDIZATION SPECIALISTS:** Responsible for developing PCR assays for the detection of human viral and bacterial pathogens. Experience in DNA probe assay development and transfer to production/manufacturing required; familiarity with sample processing, hybridization and detection methods essential.

VIROLOGISTS/MICROBIOLOGISTS: Responsible for implementing PCR assays for the detection of human pathogens. Familiarity with conventional culture and other rapid detection methods, experience with assay optimization and clinical trials, a strong molecular biology background and knowledge of nucleic acid hybridization assays required.

Please send your resume including list of publications, references, position of interest and present salary, to: Eleanor M. Malone, Department JL, Hoffmann-La Roche Inc., Nutley New Jersey 07110. We are an equal opportunity employer.

### **Roche Diagnostic Systems**

a subsidiary of Hoffmann-La Roche Inc.



### BINATIONAL FELLOWSHIP PROGRAM UNITED STATES-ISRAEL

BARD, The United States-Israel Agricultural R&D Fund, announces its postdoctoral fellowship program promoting cooperative agricultural research between postdoctorate fellows from the United States and scientists from Israel and vice versa. Grant applicants should be citizens of either the U.S. or Israel, and should have fulfilled the requirements for a Ph.D. degree within the last three years (postdoctorates).

The duration of each fellowship will be determined individually by the fellowship selection committee which may approve a period of up to two years in the host country, with the possibility of a third year in the awardee's home country.

The fellowship grant will be paid directly to the grantee. Each grantee will be awarded a grant of \$25,000, to cover travel expenses and living during the first year. The grant for possible subsequent years will be \$23,000. If necessary, a small allowance, not to exceed \$3,000, will be paid to the institution for operating expenses for the proposed research.

For information on application procedures please contact BARD offices at either:

BARD USDA-ARS Room 107, Bldg. 005, BARC-West Beltsville, MD 20705 U.S.A. Tel: 301-344-2605 Fax: 302-344-1621 BARD The Volcani Center P.O.B. 6 Bet Dagan Israel 50250 Tel: 972-3-9655133 Fax: 972-3-9662506



### The University of Minnesota and

The Minneapolis Veterans Administration Medical Center invite applications for

### THE AMERICAN LEGION BRAIN SCIENCES CHAIR

The American Legion Brain Sciences Chair is a newly endowed position at the University of Minnesota in basic neurobiological research with appointment in the appropriate department based upon the individual's discipline. We seek an outstanding candidate who will be appointed to a full-time Tenured position at the University of Minnesota at either the Professor or Associate Professor level. Duties will be to teach Graduate/Postgraduate level in Brain Sciences and to establish a major research program in the fundamental neurosciences at the Minneapolis Veterans Administration Medical Center. This laboratory will address central issues of neuroscience and disease pathobiology, (for example, synaptic receptors and their role in normal and disturbed brain function) and may involve molecular biology, physiology, pharmacology, anatomy and/or biochemistry. The opportunity to make two or more junior appointments associated with the Brain Sciences Chair, along with the allocation of appropriate laboratory space, developmental funds, and administrative support will provide a well-established investigator with the resources to create a broad research program within an expanding neuroscience community at the University of Minnesota. Minimum requirements for the Associate Professor level include M.D. and/or Ph.D. with professional distinction in research and writing and demonstrated effectiveness in teaching and advising. Minimum requirements for Professor include M.D. and/or Ph.D. plus national reputation in research and evidence of leadership in candidate's professional field. Salary is negotiable. The last date for receipt of applications is 11/30/89 with appointment 1/1/90 or ASAP. Applicants should respond with CV to:

> Dr. Richard W. Price Chairman, Search Committee The American Legion Brain Sciences Chair Department of Neurology, Box 295 UMHC University of Minnesota Medical School Minneapolis, MN 55455

The University of Minnesota is an equal opportunity educator and employer and specifically invites and encourages applications from women and minorities.

### **RESEARCH & DEVELOPMENT**

### An Integrated Team at Baxter

Baxter Hyland Division's Research & Development group is located at a multi-million dollar facility equipped with state-of-the-art technologies. Here, professionals who bring expertise in biology, immunology, biochemistry, chemical engineering and other vital life science areas, are using applied and basic research techniques to develop biological products for the treatment of human disease.

In addition to working on new products or new applications for existing products, these multidisciplined teams are responsible for exploring the ways in which new products might be manufactured. They initiate pilot plant studies for integrating new product manufacturing processes with existing separation, filtration, and processing facilities.

We currently have openings in Cell Culture, Process Analysis and Product Formulation. Two new start-up operations in Molecular Biology and Immunology have also created several openings for scientists and lead scientists to join our team of professionals. Positions range from entry-level to managerial.

Our compensation plan reflects the strength and size of the worldwide Baxter Healthcare Corporation organization. To find out more, send your resume with salary history to: **Baxter Hyland Division**, **Human Resources (CG), 4501 W. Colorado Blvd., Los Angeles, CA 90039.** An Equal Opportunity Employer.

**Hyland Division** 



### **Research Your Future**

Syntex, an international leader in the pharmaceutical and health care industries, has three openings for Research Scientists and one opening for a Postdoctoral Fellow to join our Palo Alto headquarters located on the San Francisco Peninsula.

### **Research Pharmacologist**

Use your strong background in classical receptor theory i.e., knowledge of pharmacological analysis of potency, affinity and receptor reserve. This position requires considerable leadership ability in both basic research and drug discovery programs. You should have experience in a wide range of isolated tissue bioassays including assays routinely employed in the muscarinic, serotoninergic and prostanoid receptor areas. Additional experience in the use of cell culture and radioligand binding would be an advantage. Requirements include a PhD in Pharmacology with 2 or more years of relevant postdoctoral experience.

### **Tumor Biologist**

Develop *in vivo* tumor models to support basic and applied research in cell growth regulation, oncogenes and drug resistance. To qualify, you should have a PhD in Cell Biology, Molecular Biology, or Tumor Biology and 2 or more years of relevant postdoctoral experience.

### **Mechanistic Enzymologist**

Devise novel approaches to identify antiviral chemotherapeutic agents and to study the mechanism of action of antiviral compounds. A PhD in Chemistry, Biochemistry or Mechanistic Enzymology, and 3 or more years of enzyme kinetic research experience are required.

### **Postdoctoral Fellow**

Perform research in the area of lipid biochemistry with special reference to the role of lipids and lipid derived mediators in the regulation of phospholipases in human neutrophils and/or cultured eukaryotic cells. Requires a PhD in Biochemistry, Biology, Chemistry or equivalent with 0-2 years of experience.

Syntex offers outstanding research facilities and a competitive compensation/relocation package in a campus-like environment. For immediate consideration, please send

your resume to: Syntex, Professional Staffing, Dept. K H/SR, 3401 Hillview Avenue, Palo Alto, CA 94304. Syntex is an equal opportunity employer.



PLANT STRUCTURAL AND CELLULAR BI-OLOGIST, ASSISTANT/ASSOCIATE OR FULL PROFESSOR. A tenure-track position to establish a research program in structrual and subcellular aspects of plant growth, development, and differentiation. The research approach should involve modern methods of microscopy and cell biology as applied to plants. In addition to establishing a prominent research program, the incumbent will be expected to teach a course that provides training in modern research approaches in plant anatomy and cell biology. Application deadline is 15 December 1989 or until filled. Interested individuals should submit résumé, transcripts, statement of research objectives, recent publications, and three letters of reference to: Dr. Brian Larkins, Head, Department of Plant Sciences, University of Arizona, Tucson, AZ 85721. The University of Arizona is an Equal Opportunity/ Affimative Action Employer. Women and minorities are encouraged to apply.

**POSTDOCTORAL FELLOW.** The recently established Institute of Marine and Coastal Sciences of Rutgers University invites applications for a postdoctoral fellowship in marine science. Starting date: 1 January 1990. Preference will be given to applicants interested in benthic ecology, geochemistry, fluid dynamics, or larval biology. Letters of application should be sent to: **Dr. F. Grassle, Director, Institute of Marine and Coastal Sciences, Old Blake Hall, Cook College, Box 231, Rutgers University, New Brunswick, NJ 08903.** An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL FELLOW. Applications are invited for an NIH-supported postdoctoral fellowship in research studying the polyamine-dependence of gastrointestinal mucosal proliferation and differentiation. Experiments involving the cell biology of these processes are performed in both whole animals and epithelial cells in culture. For representative publications see: American Journal of Physiology 256, G342 (1989); 256, G1049 (1989); and 257, G145 (1989). There is no citizen restriction on this position. The position is available for 2 to 3 years. Send an application letter, curriculum vitae, and names of references to: Edward R. Seidel, Ph.D., Department Physiology, East Carolina University School of Medicine, Greenville, NC 27858. An Equal Opportunity/Afirmative Action Employer. Federal law requires proper documentation of identity and employability at the time of employment. It is requested that this documentation be included with your application.

**POSTDOCTORAL POSITION** for 1 to 2 years to investigate the mechanism of action of energy transducing ATPace of the  $F_1$  type.

Investigate the internation of action of energy transmising ATPase of the F<sub>1</sub> type. The program includes study of mutant forms of microbial ATPase as well as the mammalian enzyme. Recent Ph.D. with background in enzymological, chemical, or physical aspects of biochemistry. Send curriculum vitae and names of three references to: Dr. H. S. Penefsky, Department of Biochemistry and Molecular Biology, SUNY Health Science Center, 766 Irving Avenue, Syracuse, NY 13210. Applications will continue to be accepted until position is filled.

An Affirmative Action/Equal Employment Opportunity Employer.

**POSTDOCTORAL POSITION** available immediately to study purine nucleoside phosphorylase and G-CSP retroviral-mediated gene transfer in vivo. Experience in molecular biology and/or cell biology desirable. Please send curriculum vitae and names of three references to: Bill Osborne, Ph.D., Department of Pediatrics, RD-20, University of Washington School of Medicine, Seattle, WA 98195, or telephone: 206-543-4735.

#### POSTDOCTORAL POSITION

A postdoctoral position is available to join studies of the transcription, 3' processing, RNP assembly and intracellular trafficking of the U-small nuclear RNAs, as well as mRNA splicing machines. Send curriculum vitae and names of two references (with phone numbers) to: Personnel Office, Attn: Thoru Pederson, Ph.D., Worcester Foundation for Experimental Biology, 222 Maple Avenue, Shrewsbury, MA 01545. An Faual Opportunity/

An Equal Opportunity/ Affirmative Action Employer M/F/H.

### **POSITIONS OPEN**

POSTDOCTORAL POSITION available immediately in diabetes research. Emphasis on insulin action, receptor regulation, and insulin resistance. M.D. or Ph.D. with experience in molecular endocrinology preferred. Send curriculum vitae and three letters of references to: Dr. George Fantus, Polypeptide Hormone Laboratory, 3640 University Street, Room 211, Montreal, Quebec H3A 2B2.

**POSTDOCTORAL POSITION**. University of California, Los Angeles (UCLA), Center for Hazardous Substances Control. Available immediately. Molecular biologist with background and/or interest in general microbiology/biotechnology. Work with microbiologist to isolate organisms and develop new applications for biodegradation of xenobiotic compounds using molecular and genetic techniques. Interdisciplinary teamwork with chemical and wastewater engineers. Send curriculum vitae and request three references be sent to: Dr. Robert A. Mah, Department of Environmental Health Sciences, School of Public Health, UCLA, Los Angeles, CA 90024–1772.

### POSTDOCTORAL POSITION GAMETE CRYOBIOLOGY

A postdoctoral position is available immediately to study the fundamental cryobiology of mammalian (human, rodent, and ruminant) sperm and oocytes. A strong background in either gamete biology or cryobiology is preferred. Current projects in the laboratory focus on biophysical analyses of gametes to determine optimal cryopreservation approaches. Applicants should send curriculum vitae, a statement of research interests, and three letters of reference by 20 October 1989 to: John K. Critser, Ph.D., Center for Reproduction and Transplantation Immunology, Methodist Hospital of Indiaana, 1701 North Senate Boulevard, Dept. 6, Indianapolis, IN 46202. Methodist Hospital of Indiana is an Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITION—BIOCHEMIS-TRY/MOLECULAR BIOLOGY. Available immediately to study the regulation of extracellular matrix proteins in pulmonary tissue. Join an established, interdisciplinary team of investigators using both in vivo and in vitro models for lung development and disease. For additional information, please contact: Dr. Carl Franzblau, Department of Biochemistry, Boston University School of Medicine, 80 East Concord Street, Boston, MA 02118. Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL POSITION** available to study neural, hormonal, metabolic, and biophysical aspects of cardiovascular function. Investigations range from the biochemical to the conscious, integrative level. Send résumé and the names of three references to: Steven L. Britton, Department of Physiology and Biophysics, Medical College of Ohio, Toledo, OH 43699–0008.

POSTDOCTORAL POSITION available immediately to study the molecular biology of P-450 expression in skin. Recent studies from this laboratory suggest that constitutive and inducible P-450 activities in skin are modulated as a function of differentiation. Applicants should have a background in molecular biology and submit curriculum vitae, names and addresses of the references to: Dr. John Reiners, Jr., University of Texas M.D. Anderson Cancer Center, Science Park-Research Division, P.O. Box 389, Smithville, TX 78957. We are an Equal Opportunity/Affirmative Action Employer. UTMD Anderson Cancer Center is a smoke-free workplace.

#### POSTDOCTORAL POSITIONS COLUMBIA UNIVERSITY LABORATORIES

Positions available December 1989 in the laboratories of: (i) G. Gundersen---investigating the role of microtubule stabilization during cell morphogenesis and motility, and the molecular basis of contact inhibition; and (ii) J. Bulinski---studying the function of post-translational modifications of microtubules and molecular biology of microtubule-associated proteins. Send curriculum vitae and names of three references to either: Professor Gundersen or Professor Bulinski, Department of Anatomy and Cell Biology, Columbia University College of P&S, New York, NY 10032. We take Afirmative Action toward Equal Opportunity.

### DIRECTOR OF

We are looking for a person with broad-based industrial experience in pharmacology. The ideal candidate would have experience in evaluating new research areas, a depth of understanding of underlying mechanisms, and broad knowledge of *in vivo* and *in vitro* screens used in new drug discovery.

Our team employs the very latest in computer assisted drug design technology by using the Computer Automated Structure Evaluation (CASE) program. We are looking for a Director of Pharmacology who will work closely with our theoretical and synthetic chemists, using artificial intelligence techniques to identify new chemical entities. A strong knowledge of the existing literature as well as experience in several therapeutic areas is an asset.

If you are goal oriented, feel you can make a difference and would like to be rewarded for your efforts, Biofor is for you. We are a young and success-oriented company focusing on rational computer-aided drug design and would welcome your experience to our team. We offer a competitive salary with the opportunity for substantial growth. We are located in Northeastern Pennsylvania near the beautiful Pocono Mountains. Please send resume to:



### DREXEL UNIVERSITY DEAN, COLLEGE OF SCIENCE SEARCH REOPENED

Drexel University invites nominations and applications for the position of Dean of the College of Science. Drexel is a private nonsectarian institution which emphasizes programs in the sciences and engineering and has a tradition of excellence in cooperative education. It enrolls over 12,000 graduate and undergraduate students in its seven colleges and has an attractive modern campus in the University City area of Philadelphia. The College of Science includes the departments of Bioscience and Biotechnology, Chemistry, Mathematics and Computer Science, Nutrition and Food Sciences, and Physics and Atmospheric Science, as well as associated programs in Teacher Preparation, Biomedical Science and Environmental Science, With a faculty of 89, an enrollment of over 550 science majors, and external research funding over \$3.0 million per year, this growing college seeks a dynamic and innovative Dean

The Dean is the college's academic leader, chief administrator and prime advocate to the University. The Dean reports directly to the Vice President for Academic Affairs and is responsible for administering all aspects of the college, for evaluating all academic programs and faculty, and for providing leadership and guidance recruitment, research curriculum, and resource development.

The successful candidate must have an earned doctorate in an appropriate science discipline, demonstrated management experience, and a record of teaching, research, and scholarly achievement appropriate for a tenured Professorship in one of the departments of the college. Appointment is expected on or after July 1, 1990. Salary is highly competitive. Review of candidate and nominee materials will begin December 1, 1989. Letters of application, including a resume, or letters of nomination, should be sent to:

#### Prof. Stanley Segall

Chairperson, Dean of Science Search Committee c/o The Office of the Dean of Science Drexel University, Philadelphia, Pennsylvania 19104

DREXEL UNIVERSITY IS AN EQUAL OPPORTUNITY AFFIRMA-TIVE ACTION INSTITUTION AND INVITES APPLICATIONS FROM MINORITIES AND WOMEN

### BIOTECHNOLOGY

DEVELOPMENTAL CLINICAL CHEMIST-Ph.D.: Experience in hospital

diagnostic product design. **IMMUNODIAGNOSTIC DEVELOP- MENT MANAGERS-Ph.D.:** 5+ years immunodiagnostic formulation from bench to manufacturing large scale.

### PROBE TECHNOLOGISTS: PCR methodologies.

**PROTEIN CHEMISTS:** Experienced in developing immunodiagnostics-Ph.D./M.S., structure/ function studies-Ph.D., conjugation of enzymes-all levels.

MAMMALIAN CELL CULTURE SPECIALISTS: Bioreactors/hollow fiber system.

Fermentation for large scale production of heterologous genes in E. Coli Ph.D./M.S. Monoclonal antibody production B.S./M.S.

The above is only a partial listing of our current opportunities. B.S., M.S., Ph.D., Post Doctoral fellows are encouraged to apply.

Contact N. Kanoff in confidence



Cambridge NeuroScience Research is a leading research and development company focusing on Neurobiology and its applications. We have a newly expanded state-of-the-art lab located in Cambridge, Massachusetts, close to M.I.T. and Harvard University.

### Staff Scientist— Neuropharmacology

We are looking for an outstanding researcher to contribute to our exciting strategies for neuropharmaceutical development.

The candidate should have a Ph.D. and at least 3 years of post-doctoral experience in the pharmacology/biochemistry of nervous system receptors, second messengers and functional assay systems. Experience/interest in the pharmaceutical industry and drug development is highly desirable. The successful applicant will be able to carry out innovative research programs interacting with synthetic chemists, molecular biologists, electrophysiologists and a pharmaceutical development team.

Cambridge NeuroScience Research offers a stimulating research environment with competitive salaries and excellent benefits. Applicants for the above position should send their curriculum vitae and the names of three references to: Cambridge NeuroScience Research, Human Resources Manager, One Kendall Square, Building 700, Cambridge, MA 02139, U.S.A.

### Cambridge NeuroScience Research

### BUILDING A NEW LAB?

Let the science free product information service put you in touch with the vendors whose products you will need.

Simply write us a letter stating the specifics about your proposed lab and we will do the rest.

WRITE TO: SCIENCE Magazine New Lab Service Dept. 1515 Broadway New York, N.Y. 10036

### The Benefit of Exceptional Growth

Rapid growth at Lifecodes, a division of Quantum Chemical Corporation, has created a number of opportunities for scientists with the talent and the vision to employ innovative technologies toward the development of the next break-throughs in genetic testing.

### Molecular Biologist

A recent PhD in molecular biology or MS plus 3-5 years' industrial experience with DNA-based laboratory procedures. Transfer, scale-up DNA based molecular biology products for identity and diagnostics.

### **Research Associates**

BS/MS in biological sciences or related field required. Industrial or clinical experience in DNA techniques preferred (cloning, DNA transfer, hybridization). Selected candidates will assist in the isolation and genetic characterization of probes used for identity tests and participate in database development. Will also participate in the final development of DNA-based laboratory procedures and set up of new DNA-PRINT\*Lab.

### **Cancer Technologists**

Will perform molecular genetics tests. Requires BS/MS in a biological science and relevant lab experience.

Positions are based at our headquarters in prestigious Westchester County less than one hour north of New York City. Lifecodes offers competitive salaries

and excellent benefits including educational assistance, complete medical/dental, 401K savings, pension and stock bonus plan. For immediate consideration, please forward your resume in strict confidence to: Director of Human Resources, Lifecodes Corporation, Dept. S-1089, Saw Mill River Road, Valhalla, NY 10595. An equal opportunity employer m/f.



**POSTDOCTORAL POSITION.** Postdoctoral NIH-funded computer science/biomathematics position in biology and endocrinology signal modeling and analysis. Start date: fall 1989 to spring 1990. Please respond to: Dr. Johannes D. Veldhuis, Division of Endocrinology and Metabolism, Department of Internal Medicine, Box 202, University of Virginia, Charlottesville, VA 22908. An Equal Opportunity/Affirmative Action Employer.

POSTDOCTORAL POSITION IN MOLECU-LAR IMMUNOLOGY is available at the Johns Hopkins School of Medicine. The laboratory utilizes cellular, biochemical, and molecular biological approaches to address the roles that novel major histocompatibility complex-encoded proteins play in the development, recognition, and function of T cell subsets. Interested individuals should send a résumé and two to three letters of reference to: Mark J. Soloski, Ph.D., Division of Molecular and Clinical Rheumatology, WBSB-702, Johns Hopkins School of Medicine, 725 North Wolf Street, Baltimore, MD 21205.

#### POSTDOCTORAL POSITIONS IN BIOCHEMISTRY AND MOLECULAR BIOLOGY

Two positions are available immediately to study the mechanism of action of specific deoxynucleotide-metabolizing enzymes as well as the regulation of their genetic expression in eukaryotes and prokaryotes. Gene isolation and amplification of their protein products will be required. Once obtained, substrate and regulatory sites on the protein products will be determined by functional group-specific reagents and affinity labels. In addition, site-specific reagenets will be employed to establish the relation of structure to function in these enzymes. Cloning and sequencing experience desirable. The research will be conducted in a well-equipped core facility. Compensation from Health Research Inc. dependent upon experience. Send résumé and three references to: Dr. Frank Maley, Wadsworth Center for Laboratories and Research, Empire State Plaza, Box 509, Albany, NY 12201. An Equal Opportunity/Affirmative Action Employer.

### The University of Minnesota Senior Faculty and Institute Fellow In Large Scale Computing

The University of Minnesota invites applications and nominations to fill several senior faculty positions in large scale computing. Depending on the qualifications of the candidates, these tenured faculty positions will be based in one or more departments at the University. The persons appointed will, in addition to having regular faculty appointments, become Fellows of the Minnesota Supercomputer Institute, which is a research program at the University.

A successful candidate must hold a Ph.D., have at least two years experience in a relevant setting, and have demonstrated outstanding research accomplishments and intellectual leadership in a disciplinary or interdisciplinary area of large scale computing. Recruited candidates will have substantial achievements meriting tenure in an appropriate department. Preference will be given to candidates at the full professor level with programs of demonstrated excellence and originality in supercomputer research, especially those which show promise to complement existing programs at the Institute.

Faculty rank and remuneration are dependent upon experience, qualifications, and accomplishments. Deadline for applications is January 15, 1990. Inquiries, nominations, and applications should be directed to:

#### Professor H.T. Davis Search Committee Chair Minnesota Supercomputer Institute 1200 Washington Avenue South Minneapolis, MN 55415

The University of Minnesota is an equal opportunity educator and employer and specifically invites and encourages applications from women and minorities.

### **POSITIONS OPEN**

#### POSTDOCTORAL POSITION

POSTDOCTORAL POSITION IN FREE RADI-CAL BIOLOGY AND AGING IN DROSOPHILA. Research includes the use of loss of function alleles for the superoxide dismutase and catalase genes to examine the role of enzymatic free radical defense mechanisms in aging, life-span modification, and in rates of DNA damage and cell injury. Cloned sequences of both the SOD and catalase genes will be used to develop transgenic models to study effects of overexpression of lifespan parameters, mutation rate, and tolerance to conditions of oxygen stress. Position available immediately. Send curriculum vitae and three references to: Dr. Glenn C. Bewley, Department of Genetics, North Carolina State University, Box 7614, Raleigh, NC 27695 or call: 919-737-2285.

#### North Carolina State University is an

Affirmative Action/Equal Opportunity Employer.

POSTDOCTORAL POSITIONS IN PHYSIOL-OGY OF EYE: Two positions available 1 January 1990 to study photoreceptor adaptation (*J. Physiol.* 416, 215-243), ganglion cell synaptic receptors (*J. Physiol.* 418, 53-82) or cell physiology of ciliary epitheum (*J. Physiol.* 418, 83-103). \$23,000 plus health. Gordon L. Fain, Professor and Associate Director, Jules Stein Eye Institute, UCLA School of Medicine, Los Angeles, CA 90024-1771.

POSTDOCTORAL POSITIONS IN PLANT BIOCHEMISTRY AND GENETICS. Two positions, one to purify and characterize endoproteolytic enzymes from germinating barley (B. Jones). The second to isolate and use cloned DNAs for mapping RFLPs and linked genes in *Brassica* species (T. Osborn). Submit application, including curriculum vitae, summary of research interests, and the names and addresses of three references to: Dr. B. L. Jones, USDA, 501 Walnut Street, Madison, WI 53705, or Dr. T. C. Osborn, Department of Agronomy, University of Wisconsin, Madison, WI 53706.

The Department of Orthopaedic Surgery at the University of Pittsburgh School of Medicine is currently seeking biochemist, molecular biologist, and biomechanical engineers at the Assistant, Associate, and full Professor levels. These are tenure track positions with secondary appointments either in Engineering or the Department of Microbiology, Biochemistry, and Molecular Biology.

Successful applicants at the junior level will be expected to pursue independent research within the Ferguson Laboratory for Orthopaedic Research in the Department of Orthopaedic Surgery as well as collaborate with other members of the Department of Orthopaedic Surgery. Senior level candidates should have a track record of original research in biochemistry and molecular biology. Preference will be given to candidates interested in animal models of osteoarthritis and biochemical changes that occur in the cartilaginous matrix during osteoarthritis. It is also expected that successful candidates will participate in the Department's teaching program. Each candidate should have a Ph.D. degree and suitable postdoctoral experience.

Qualified applicants should forward a comprehensive curriculum vitae to:

James H. Herndon, M.D. Professor and Chairman Department of Orthopaedic Surgery University of Pittsburgh School of Medicine Rm. M272 Scaife Hall Pittsburgh, PA 15261

The University of Pittsburgh School of Medicine is an equal opportunity and affirmative action employer. Women and minorities are encouraged to apply.

### **POSITIONS OPEN**

POSTDOCTORAL POSITION. Research in intermediate metabolism in vivo and in vitro, with major interest in regulation of carbohydrate metabolism. Application of radioactive and heavy tracers and the use of mass spectroscopy. Position available immediately, funded for up to 3 years. Salary range: \$21,000 to \$26,000 per year. Qualified applicants write with curriculum vitae and reference to: Dr. Joseph Katz, Cedars-Sinai/Harbor-UCLA Medical Centers, REI A-17, 1000 West Carson Street, Torrance, CA 90509.

#### POSTDOCTORAL RESEARCH ASSOCIATE

Position available to work on the cloning of the cDNA of human DNA polymerase delta. Molecular biology experience desirable. Send application and names of three references to: Dr. Marietta Lee, Department of Medicine (R-57), University of Miami, P.O. Box 016960, Miami, FL 33101.

**POSTDOCTORAL/RESEARCH ASSOCIATE** position available immediately to study the neurochemical/molecular mechanisms underlying growth and development/maternal deprivation syndrome. Send résumé and three letters of reference to:

Dr. Saul M. Schanberg Department of Pharmacology, Duke University Medical Center P.O. Box 3813 Durham, NC 27710

Duke University is an Equal Opportunity/Affirmative Action Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE** available immediately for molecular biology/biochemistry studies of mammalian drug and xenobiotic metabolizing enzyme. Experience with cDNA cloning, DNA sequencing, and expression vectors is desirable. Send curriculum vitae and names and telephone numbers of three references to: John Cashman, Department of Pharmaceutical Chemistry, University of California, San Francisco, CA 94143–0446. UCSF is an Equal Opportunity Employer.

### RESEARCH SCIENTIST Cellular Immunology

**Collagen Corporation**, a dynamic and growing biotechnological company dedicated to expanding its research, development, production and marketing of differentiated biomedical products, has an excellent opportunity for a Research Scientist.

As part of a project team examining both cellular and humoral responses to collagen and collagen-based products, you'll be called upon to work interactively with clinical and regulatory departments. The position requires a Ph.D. with 2 years' post-doctoral experience, plus strong working knowledge of in-vivo models of inflammation and in-vitro T-cell functional assays. Excellent communication skills are essential. Technical support will be provided.

We offer an attractive salary, full benefits package and a liberal relocation program. For immediate consideration, please send your resume to: S. Hansen, Human Resources, Collagen Corporation, 2500 Faber Place, Palo Alto, CA 94303. We are an equal opportunity employer.



### DEPARTMENT OF HEALTH AND HUMAN SERVICES U.S. PUBLIC HEALTH SERVICE Alcohol, Drug Abuse, and Mental Health Administration National Institute of Mental Health

### **Chief. Neurosciences Research Branch**

The Division of Basic Sciences has an immediate opening for a Supervisory Interdisciplinary Scientist to serve as Chief of the Neurosciences Research Branch (NRB). The NRB provides a broad range of support for research and research training in basic brain research, including research on humans, vertebrate and invertebrate animals, and isolated biological systems. Relevant approaches extend from studies at the molecular level through those done at the level of the intact organism. The Branch Chief plans, develops, coordinates and administers this broad, national program of research. In carrying out these responsibilities the Branch Chief represents the Institute's interests in the neuroscience of mental health at all levels: Professional associations, universities, private foundations, Federal and state programs, and within the Alcohol, Drug Abuse, and Mental Health Administration. Since the scope of the research program relies heavily upon a growing number of scientific disciplines, the Branch Chief must demonstrate experience and a high degree of competence in the administration of multidisciplinary research programs and possess the ability to coordinate across diverse disciplines. The Branch has an annual budget of approximately \$\$2,000,000 and a staff of 9 people.

Applicants must possess a M.D. or Ph.D. degree, or equivalent training in one of the following disciplines: Pharmacologist, Health Scientist Administrator, or Medical Officer, as well as training related to neuroscience and must have extensive experience in research administration as well as direct research experience in the mental health field. Women and minorities are encouraged to apply. The position will be filled through the Civil Service or Commissioned Corps of the U.S. Public Health Service. The grade of the position is a GM-15, with a salary range from \$57, 158.00 to \$75, 500 per annum. Medical Officers may be eligible for an additional comparability allowance (PCA) of \$8,000 to \$20,000 per annum. Benefits include a retirement plan, health and life insurance, sick and annual leave. Relocation expenses may be paid. Duty station is Rockville, MD. United States citizenship is required.

Any applicant not currently employed in the Federal Government will be required to obtain an eligible notice of rating.

Submit applications for Federal Employment (SF-171) and curriculum vitae to Ms. Turner, Division of Personnel Management, Room 15C-12, 5600 Fishers Lane, Rockville, MD 20857. Applications must be postmarked no later than November 1, 1989.

ADAMHA is an Equal Opportunity Employer

### Search Announced Associate Provost and Associate Director for Academic Affairs Carter Center of Emory University

The Carter Center of Emory University, an international, interdisciplinary, non-partisan institute combining study and analysis with the practical applications of scholarship, focuses its program activity on such fundamental issues as conflict resolution, human rights, agriculture, health, and governance within specific world regions (Africa, Latin America, the Middle East, the Soviet Union and the United States). The Center is a division of Emory University, equal in standing to the professional schools of the University. At its core are distinguished fellows and research associates who collaborate with one another and with President Jimmy Carter.

The position of Associate Provost and Associate Director for Academic Affairs is a newly established senior position at the Center, a dual appointment between the Carter Center and the University. The incumbent will provide academic leadership within the Center, will coordinate Center with University programs, and will contribute to the University's growing emphasis on international programs.

Candidates should have an earned doctorate, a distinguished scholarly record appropriate to a senior faculty rank at Emory University, and significant administrative experience within a university or other non-profit setting.

Nominations and applications should be sent to the Carter Center Search Committee, Office of the Provost, Emory University, Atlanta, Georgia 30322. Letters of application will be held in strict confidence and should include a statement of interest, a curriculum vitae, and a list of three referees. The Committee will begin screening applications on November 1, 1989, and continue until the position is filled. References will be contacted directly by the Committee after November 1, upon notification of applicants.

Emory University is an equal opportunity employer.

### **PROTEIN BIOCHEMIST**

EniChem Americas, Inc. a division of an Italian-based major international chemical company has an immediate opening in the Plant Biotechnology Lab at its Research Center near Princeton, New Jersey.

This opening offers a unique opportunity to a Protein Biochemist to join a group of highly motivated scientists developing programs on crop improvement through biotechnology. The candidates we seek should have strong biochemistry background coupled with expertise in studies of protein structure/function, protein turnover, and posttranslational modifications. There will be opportunities to apply this expertise to both recombinant and non-recombinant proteins. A Ph.D. and at least 2 years of relevant experience are required. Some industrial experience and familiarity with plant research are desirable but not essential.

Successful candidates will enjoy the benefits of joining a new multi-disciplinary research team in a well-equipped, custom designed facility.

Please send your Curriculum Vitae, statement of research interests and names of three references to:

### **Personnel Coordinator**

### EniChem Americas, Inc. 2000 Princeton Park Corporate Center

Monmouth Junction, NJ 08852 eoe m/f

### DIRECTOR

The Exploratorium, a museum dedicated to the public understanding of science, art and human perception is seeking a new director. Located in San Francisco, The Exploratorium is internationally acclaimed as a pioneer in the role of museums as active teaching and learning centers based on an interactive approach.

Candidates should be well grounded in science, art, humanities or education and should have significant leadership experience in a creative, research or educational institution. Management and fund-raising abilities are critical.

Please send all nominations or resumes to **Box 161, SCIENCE.** The Exploratorium is an affirmative action employer.

**POSTDOCTORAL RESEARCH APPOINT-MENTS** are occasionally available with individual faculty members of the Departments of Chemistry and of Chemical Engineering at the University of California, Berkeley. Appointments are normally made for a year, but with the possibility of renewal for a second. Highly qualified persons are invited to apply for positions to be assumed at the time of, or shortly after, the completion of doctoral studies. A single application should be addressed to the faculty member with whom the applicant prefers to be associated. (In the event that no position is available with that faculty member, the application will be circulated to other faculty members with similar research interests.) Arrangements should be made for one confidential letter of reference to be sent by the person best able to judge the applicant's research achievements and potential. Applications should include a résumé, a brief statement of research experience, interests, and goals, and the names and addresses of two additional references. *The University of California is an Equal Opportunity/Affirmative Action Employer.* 

**POSTDOCTORAL RESEARCH ASSOCIATE**, with an M.D. or a Ph.D. in a biological science, to study the molecular biology of Deinobacteriaceae. Demonstrated expertise in DNA sequencing and Deinobacterial molecular genetics required. Minimum salary, \$19,600 per year (40 hours per week). Please send curriculum vitae and three references to:

John D. Shelburne, M.D., Ph.D. Professor and Chairman Pro Tem Department of Pathology, Box 3712 Duke University Medical Center Durham, NC 27710

If not a United States citizen, indicate your current visa status.

**POSTDOCTORAL/RESEARCH ASSOCIATE:** A position in the Pulmonary Division of the Department of Medicine at Duke University will require the use of biomedical engineering to study particle and gas uptake in lungs for the purpose of dosimetry modeling. Interested individuals should send curriculum vitae to: Dr. Robert Mercer, Box 3177, Duke University Medical Center, Durham, NC 27710. An Affirmative Action/ Equal Opportunity Employer.

**POSTDOCTORAL RESEARCH ASSOCIATE**. The Lipsome Company, a pharmaceutical company specializing in lipid-based drug delivery systems, is seeking a recent Ph.D. in immunology with background knowledge in lipid biochemistry to join a small team involved in the research of liposome-based vaccines. Study will focus on the mechanism of liposome action, humoral and cellular responses, and formulation.

Submit curriculum vitae, description of prior research, and names of three references to: Debra Pascale, The Liposome Company, Inc., One Research Way, Princeton, NJ 08540.

#### POSTDOCTORAL RESEARCH ASSOCIATES

Five positions available this fall for a multidisciplinary approach to study peptides and proteins for biological and clinical applications. Candidates should have experience in one of the following areas: (i) peptide synthesis, (ii) immunology, (iii) cell biology, (iv) HIV, (v) blood coagulation, and (vi) growth factors. Send curriculum vitae and names or letters of two references to: Dr. James P. Tam, Rockefeller University, 1230 York Avenue, New York, NY 10021. An Equal Opportunity Employer.

POSTDOCTORAL RESEARCH POSITION immediately available to study steroid hormone and growth factor regulation of cell proliferation and gene expression. Opportunity to participate in collaborative research within the Division of Molecular Genetics. Experience in molecular biology is required. Send curriculum vitae and names of three references to: Sydney A. Shain, Ph.D., Professor, Division of Molecular Genetics, Department of Obstetrics and Gynecology, University of Texas Health Science Center, 7703 Floyd Curl Drive, San Antonio, TX 78284.

Equal Opportunity/ Affirmative Action Employer.

### **POSITIONS OPEN**

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

**POSTDOCTORAL RESEARCH ASSOCIATE** position available immediately to study the mechanisms and regulation of nitrogen transport and metabolism in developing maize kernels. Approaches include enzymology, immunology, <sup>14</sup>C and <sup>15</sup>N incorporation, and in vitro kernel culture. Candidates must have Ph.D. received within the last 3 years in plant physiology, biochemistry, or related areas. Starting salary is \$28,852 per year. Send a résumé marked 9NO34 with the names of three references to: Michael J. Muhitch, Seed Biosynthesis Research Unit, USDA/ARS, Northern Regional Research Center, 1815 North University Street, Peoria, IL 61604. Telephone: 309-685-4011 (extension 368). The Agricultural Research Service is an Affirmative Action/Equal Opportunity Employer.

**POSTDOCTORAL/RESEARCH ASSOCIATE:** A Duke University and EPA cooperative study will investigate new methods for measuring repair of pollutant-induced injury to the lung, with the eventual goal of developing models which relate acute lung injury to chronic lung disease. Interested individuals should send curriculum vitae to: Dr. Gary Hatch, Chief, Biochemical Toxicology Section, MD-82, US EPA, Research Triangle Park, NC 27711. Affirmative Action/Equal Opportunity Employer.

#### POSTDOCTORAL TRAINING POSITIONS IN BEHAVIORAL AND COGNITIVE NEUROSCIENCE

Postdoctoral training positions in behavioral and cognitive neuroscience. Areas of research include visual perception and attention, cortical speech and language processing, motor systems and movement disorders, mechanisms of long-term potentiation and depression, modeling of hippocampal/cortical circuitry, animal models of epilepsy and mental disorders. Techniques include human, primate, and cortical slice electrophysiology, including topographic mapping, current source density and generator analysis; deoxyglucose functional mapping; anatomical tracing and histochemical techniques. Close interactions with molecular and cellar neuroscience groups and with research programs in human development and neurological disorders. Faculty includes H. **Vaughan, J. Arezzo, L. Brown, D. Javitt, D. Kurtzberg, S. Moshe, W. Ritter, C. Schroeder, G. Simpson, M. Steinschneider, P. Stanton, and S. Walkley.** Inquiries or applications, including curriculum vitae, statement of research interests, and three references to: Dr. Herbert G. Vanghan, Jr., Department of Neuroscience, Rose F. Kennedy, Albert Einstein College of Medicine, 1410 Pelham Parkway South, Bronx, NY 10461. Equal Opportunity/Affirmative Action Employer.

#### POSTDOCTORAL IN COMPLEX GENOMES

The Department of Genetics at Washington University offers unique opportunities for training and research in the analysis of complex genomes. Targets for analysis include the genomes of humans, the mouse, *Drosophila*, the nematode, yeast, and bacteria. Analytical methods include genetic mapping with restriction fragment length polymorphisms, physical mapping with cosmids and yeast artificial chromosomes, long-range restriction mapping, large-scale DNA sequencing, and database management. Principal investigators include Maynard Olson, Helen Donis-Keller, Robert Waterston, David Schlessinger, Philip Green, and Daniel Hartl. Scnd résumé to: Daniel L. Hartl, Box 8232, Department of Genetics, Washington University School of Medicine, St. Louis, MO 63110–1095.

**PREDOCTORAL TRAINING** available immediately in experimental pathology and avian medicine. The goal is to determine the role of growth factors in normal and abnormal chicken bone development using immunohistochemistry, in situ hybridization, and protein purification methods. Submit résumé and names of three references to: Dr. Jaroslava Halper, Department of Pathology, College of Veterinary Medicine, University of Georgia, Athens, GA 30602. An Equal Opportunity/Affirmative Action Employer.

### **POSITIONS OPEN**

RESEARCH ASSISTANT PROFESSOR OF PHYSIOLOGY: Neurophysiologist to study the role of the CNS in cardiopulmonary disorders during sleep. Qualifications: Ph.D. in physiology, 2 years of postdoctoral training, and a strong record of research productivity. Extensive experience with mammalian CNS neurophysiology including extra- and intracellular microelectrode recording, drug iontophoresis, neuroanatomical techniques, and surgery is required. The candidate is expected to compete successfully for extramural research funding. Salary: \$42,500 per year; 40 hours per week; 8:00 a.m. to 5:00 p.m. For J.O.#4272973, send curriculum vitae and three letters of reference to: The Philadelphia Job Bank, 444 North 3rd Street—3rd Floor, Philadelphia, PA 19123.

**PROFESSIONAL FACULTY**—assistant research scientist. Incumbent will manage research program on population ecology and genetics of sharks, including direction of fieldworkers, laboratory analysis, computer analysis, and report preparation and publication. Must be experienced in long-line operations, age and growth of elasmobranchs, and population ecology. Ph.D. required. Non-tenure, but program designed for 4 years with potential for additional grant and contract funding thereafter. Full benefits. Send letter of interest, curriculum vitae, and three letters of recommendation by 27 October 1989 to: Dr. J. A. Musick, Head, Vertebrate Ecology and Fisheries Section, Virginia Institute of Marine Science, The College of William and Mary, Gloucester Point, VA 23062. The College of William and Mary is an Equal Opportunity/Affirmative Action Employer. Women and minorities are encouraged to apply.

#### PROFESSOR OF MOLECULAR BIOLOGY

Senior individual with demonstrated interest and ability in undergraduate education. Research interests should lie within molecular biology, broadly defined to include appropriate aspects of cell, development, neuro- and other areas of biology. A strong research program that can involve advanced undergraduates as active participants is expected. Harvey Mudd College, a small (565 students), highly

Harvey Mudd College, a small (565 students), highly selective undergraduate college of engineering and science (member Claremont Colleges), has initiated a major in biology. The current two-person department is to expand to six faculty by 1993. Appointment to be effective July 1990. Rank and

Appointment to be effective July 1990. Rank and salary commensurate with qualifications. Replies should be received by 1 December 1989. Send résumé, statement of research and teaching interests, and names/ addresses of three references to: William K. Purves, Chair, Biology Department, Harvey Mudd College, Claremont, CA 91711. An Equal Opportunity/Affirmative Action Employer. Qualified women and minority group candidates are encouraged to apply.

RESEARCH ASSISTANT PROFESSOR/MO-LECULAR BIOLOGIST—CLINICAL TOXICOL-OGY (non-tenure track) Ph.D. in pharmacology and toxicology, 4 to 5 years of postdoctoral research, demonstrated teaching experience, and demonstrated expertise in eukaryotic molecular biology. A complete job description and qualifications will be sent on request. Deadline for applications 10 November 1989. Interested applicants send curriculum vitae and three letters of reference to: Dr. Philip S. Guzelian, Division of Clinical Toxicology and Environmental Medicine, Medical College of Virginia, Richmond, VA 23298.

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

U.S. Department of Agriculture (USDA), Agricultural Research Service (ARS)—RESEARCH ASSO-CIATE, BIOCHEMISTRY/MICROBIOLOGY. ARS is seeking a postdoctoral research associate to study bioconversion of agricultural oils to physiologically active compounds and to products having potential economic value. Candidates should have knowledge of enzyme purification and characterization. Salary will be commensurate with experience, GS-11/12 (\$28,852 to \$34,580). The appointment is for 2 years. Send résumé to: Dr. C. T. Hou, USDA/ARS, Northern Regional Research Center, 1815 North University Street, Peoria, IL 61604 or call: 309-685-4011. Applications should be marked 9NO11 and must be received by 30 November 1989. Equal Opportunity Employer.

### **RESEARCH SCIENTIST AND ASSOCIATE** MOLECULAR AND CELLULAR BIOLOGY Amgen, a recognized leader in the biotechnology industry, has immediate opportunities for a Research Scientist and a Research Associate to participate in the characterization, cloning and expression of hematopoietic growth factors. Qualified candidates for the Research Scientist position must have a Ph.D. and a minimum of 2 years' postdoctoral experience in the expression of recombinant protein in mammalian and prokaryotic systems. Research Associate candidates must have a BS or MS and a minimum of one year of experience in molecular biology and tissue culture. Industry experience is highly desirable. Amgen offers an excellent compensation and benefits package as well as a stimulating and challenging research environment. Qualified applicants should send a C.V. or resume, including references, in confidence, to: AMGEN, INC. Recruitment, Dept. #333A **Amgen Center** Thousand Oaks, CA 91320-1789

### VICE PRESIDENT FOR ACADEMIC AFFAIRS AND DEAN, SCHOOL OF MEDICINE

Opportunity Employer

### Medical College of Ohio

The Medical College of Ohio, a free-standing institution located in suburban Toledo, Ohio, invites nominations and applications for the combined position of Vice President for Academic Affairs and Dean of the School of Medicine.

As Vice President for Academic Affairs, the incumbent is a member of the College's administrative core, responsible to the President for education and research in the School of Medicine, Graduate School and the Schools of Nursing and Allied Health. These responsibilities include interactions with affiliated teaching hospitals and other organizations, planning for capital needs, and working interactively with other administrative offices to implement the missions of the College.

As Dean, the incumbent serves as the chief executive of the School of Medicine, and provides academic and administrative leadership for a faculty of 253 full-time, 40 part-time and 750 volunteer members. The School enrolls approximately 550 students in curricula leading to the M.D. or the joint M.D.-Ph.D. Degrees. The Dean represents the School of Medicine to the Board of Trustees, President, and to external audiences in the public and private sectors. Other responsibilities include short- and long-range planning and the identification and attraction of financial resources for the School.

Applications with **curriculum vitae** and nominations may be submitted for confidential review by the Search Committee to:

Chairman, Search Committee for Vice President for Academic Affairs and Dean, School of Medicine Office of the President The Medical College of Ohio P.O. Box 10008 Toledo, Ohio 43699-0008

Review of applications and nominations will begin immediately and will continue until an appointment is made. In employment, as in education, The Medical College of Ohio is committed to affirmative action and equal opportunity. Roche Institute of Molecular Biology



he Roche Institute of Molecular Biology is pleased to announce a joint graduate program with the Department of Biological

Sciences at Columbia University. Selected students will complete their thesis research at the Roche Institute while academic requirements will be fulfilled under the supervision of the Department of Biological Sciences at Columbia. Upon completion of the program, students will receive a PhD degree from Columbia University.

The Roche Institute of Molecular Biology, founded in 1967, is dedicated to basic research in emerging areas of molecular biology. Staff members enjoy complete independence in their choice and pursuit of research problems. The Institute is located in suburban New Jersey, approximately 10 miles west of Manhattan, making it readily accessible for lectures and courses at Columbia University and other educational centers in New York City.

Fellowships include stipend and paid tuition. Applications must be received by January 1 to be considered for the following academic year.

For further information and application form, contact: Administrative Office, Roche Institute of Molecular Biology, Nutley, New Jersey 07110; (201) 235-3681.



### NATIONAL SCIENCE FOUNDATION

NSF's Divisions of Cellular and Molecular Biosciences are seeking qualified applicants for Assistant Program Director, Associate Program Director and Program Director positions under the provisions of NSF's Visiting Scientist Program. Since responsibilities include research proposal evaluation, budget development and scientific planning, broad knowledge and specific research accomplishment are key qualifications. The positions are excepted from the competitive civil service and are filled on a one- or two-year rotational/ temporary basis. The positions become available periodically and will be filled beginning in the summer or fall, 1990. The salary ranges and qualifications are as follows:

Assistant Program Director — \$28,852-\$53,460; Ph.D. or equivalent experience plus 2 or more years of research experience beyond the Ph.D.

Associate Program Director — \$41,121-\$64,778; Ph.D. or equivalent experience plus 4 or more years of research experience beyond the Ph.D.

Program Director — \$48,592–\$75,500; Ph.D. or equivalent experience plus 6 or more years of research experience beyond the Ph.D.

In the Division of *Cellular Biosciences*, there are openings in: (1) Cell Biology; (2) Developmental Biology; (3) Cellular Biochemistry; and (4) Physiological Processes.

In the Division of *Molecular Biosciences*, there are openings in: (1) Biochemistry; (2) Biophysics; and (3) Genetics.

Applicants should send resumes or SF-171, Application for Federal Employment, to: National Science Foundation, Personnel Administration Branch, Room 208, 1800 G St. NW., Washington, DC 20550, Attn: Catherine Handle. For further information call Dr. Bruce Umminger, Cellular Biosciences (202) 357-7905 or Dr. James H. Brown, Molecular Biosciences (202) 357-9400. Hearing impaired individuals should call (202) 357-7492.

NSF is an Equal Opportunity Employer.

#### **RESEARCH ASSISTANT** ASSOCIATE POSITION

Position available to work on the development of efficient micropropagation and micrografting systems for several commercially important grapevine rootstock and scion cultivars. Of critical importance is the production of plants of suitable quality for direct field planting. The successful applicant will oversee greenhouse and in vitro stock plant maintenance and coordinate integration of the micropropagation program with Agritope's gene transfer effort. Applicants should possess a B.S. or M.S. in plant biology or horticulture and should have experi-ence in the development of plant tissue culture regenera-

Agritope is a subsidiary of Plant fissue culture regenera-tion and micropropagation systems. Agritope is a subsidiary of Epitope Inc., and develops proprietary products for agricultural uses. Epitope is an Oregon biotechnology company, located outside of Portland, Oregon, that manufactures diagnostic kits and develops novel protective devices and therapeutic drugs for the bache one fold for the health care field.

Position is available immediately. Salary commensurate with qualifications and experience. Please send résumé and names, addresses, and telephone numbers of three references to: James A. Stamp, Agritope Inc., or Epitope Inc., 15424 SW Koll Parkway, Beaverton, OR 97006.

The Department of Biotechnology Research of Pio-neer Hi-Bred International, Inc., is seeking applicants for neer Hi-Bred International, Inc., Is seeking applicants to our ongoing program of crop improvement. Pioneer offers competitive salaries, excellent facilities, and a high cooperative research environment. **RESEARCH ASSOCIATE II, MOLECULAR ENTOMOLOGY**—The successful candidate will be part

of research group involved in the characterization, isola-tion, and cloning of novel anti-insect factors from a variety of sources. Tasks associated with the primary position will involve cDNA cloning of these novel genes and modification to fit into plant expression cassettes. Secondary tasks will involve isolating and quantifying proteins and/or secondary metabolites, enzyme assays, and use of using radioactive material and insect dissections. Opportunities to contribute to other ongoing projects will be available. Other qualifications include the subjirty to follow instructions and work with limited supervision, keep accurate laboratory notebook, and communicate and interact with co-workers.

Training desired: Education—applicant should have an M.S. degree or equivalent in molecular biology, biochemistry, or biology with excellent knowledge of molecular biology, biochemistry, and chemistry. Experience with insects, computers, and statistics would be beneficial. Experience: three or more years of research experience in molecular cloning and/or protein character-

ization and enzyme assays. Pioneer Hi-Bred International, Inc., is an Equal Opportunity/Affirmative Action Employer. Please submit résumé and at least three references to:

> Mary J. Gillman Pioneer Hi-Bred International, Inc. Department of Biotechnology Research 7300 Northwest 62nd Avenue Johnston, IA 50131

**RESEARCH ENTOMOLOGIST, (RESEARCH RESEARCH ENTOMOLOGIST**, (RESEARCH **ASSOCIATE**), GS-414-11/12, USDA, Agricultural Re-search Service, Southern Field Crop Insect Management Laboratory, Stoneville, Mississippi. Incumbent will par-ticipate in the development of population ecology infor-mation in the reproductive behavior of Heliothis spp. and research potential for developing technology to monitor gene flow in this pest complex. Need knowledge of insert cology. If a hitrory strategier and reproductive of: insect ecology, life history strategies and reproductive behavior; population and/or quantitative genetics; and statistical procedures and use of micro- and mainframe computers for data processing and analysis. Must have received a Ph.D. degree within the last 3 years. Salary: Steries and the second state of the second state in the last 3 years. Salary: \$28,852 to \$44,957 per year, based on qualifications and experience. Appointment will be temporary, not to ex-ceed 2 years. Usual federal government benefits apply. For further information: Dr. Jane Hayes, 601-686-2311. For application procedures: Darlene Fowler, 301-344-1508. Applications should refer to Announce-ment No. S.9.021 and be sent along with a complete sent sent along with a complete set. ment No. S-9-021 and be sent, along with a complete college grade transcript to: Dr. Jane Hayes, Southern Field Crop Insect Management Laboratory, USDA, ARS, P.O. Box 346, Stoneville, MS 38776 by close of business 31 October 1989. USDA is an Affirmative Action/Equal Employment Opportunity Employer

### **POSITIONS OPEN**

#### **RESEARCH ASSOCIATE** CLINICAL MICROBIOLOGIST

Immediate opening for a Ph.D. or D.V.M. clinical microbiologist in a diagnostic research facility with solid institutional and sponsored funding. Position will require active management role for two to three bacteriolo-gist and serologist technical staff, participation in a clinical laboratory animal pathology/diagnostic program, active research either independent or collaborative, and training responsibilities. Individuals with a strong research record and knowl-

edge of diagnostic microbiology are asked to apply. We are looking for an organized, service-oriented microbiol-gist with an active interest in continuing a research career component. Send résumés to:

D. M. Stark, Director The Rockfeller University Laboratory Animal Research Center 1230 York Avenue, Box 2 New York, NY 10021 An Equal Opportunity Employer

Jewish Hospital and Washington University School of Medicine have an opening for a **RESEARCH IN-STRUCTOR/ASSISTANT PROFESSOR** position in the Division of Nephrology/Internal Medicine. The applicant should be an M.D. with at least 3 years of training in nephrology. Further training and research interest in cell biology related to hormone signal transduction and mineral metabolism and GTP-binding proteins highly desirable. Position entails commitment to basic research with some teaching and clinical responsibilities. Salary commensurate with education, training, and experience. Minimum salary: \$35,000. Contact: Dr. K. A. Hruska, Chief, Renal Division, Jewish Hospital, 216 South Kingshighway, St. Louis, MO 63110. Closing date: 31 October 1989.

RESEARCH SCIENTIST-Opening exists for a Ph.D. with a minimum of 2 years of laboratory experi-ence in the development of lyophilized products. Experience in designing formulations for optimal lyophilization of antibody-based radiopharmaceuticals required as well as experience with novel analytical methodologies for characterizing product behavior during lyophilization. Minimum starting salary: \$33,000 per year. State-of-the-art research and development facilities. Send your curriculum vitae with a list of publications to: The Philadel-phia Job Bank, 444 North 3rd Street, 3rd Floor, Philadelphia, PA 19123. Responses must include Job Order Number #4272932. We are an Equal Opportunity/ Affirmative Action Employer.

**RESEARCH SCIENTIST** to carry out theoretical research on the electrostatic properties of proteins and nucleic acids. We are seeking a scientist with demonstrat-ed expertise in this area with the credentials necessary to obtain independent research support. Minimum requirements include a Ph.D. in chemistry, biochemistry, or biophysics and at least 3 years of postdoctoral experience. The candidate should also have experience in the development of general user computer software packages. Salary: \$42,000. Send curriculum vitae including names of four references to: Professor Barry Honig, Department of Biochemistry and Molecular Biophysics, Co-lumbia University, 630 West 168th Street, New York, NY 10032. Columbia University is an Equal Opportunity/Affirmative Action Employer.

### SENIOR FACULTY POSITIONS BIOLOGICAL SCIENCES COLUMBIA UNIVERSITY

The Department of Biological Sciences, Columbia University, invites applications for senior faculty (full professor) positions. Preference will be given to leading investigators in the areas of structural biochemistry and vertebrate developmental biology. The successful candidate will play a pivotal role in the

current expansion of the Sherman Fairchild Center for the Life Sciences. Send inquiries by 1 January 1990 to: A. Tzagoloff or M. Levine, 600 Sherman Fairchild

Center, Columbia University, New York, NY 10027. Columbia University is an Equal Opportunity/Affirmative Action Employer. Women and members of minority groups are especially encouraged to apply.

### **POSITIONS OPEN**

RESEARCH-TRACK FACULTY POSITION available for ASSISTANT SCIENTIST IN BIO-CHEMISTRY/MANAGER OF BIOTECHNOLO-GY FACILITY. Supervise operation of macromolecular structure and molecular biology core facilities. Two technicians, cooperation of biochemistry faculty, and supported by Onocology, Diabetes, and Alcohol Centrs. Core instrumentation includes Applied Biosystems DNA Synthesizer, DNA Sequencer, Peptide Synthesizer, DNA Synthesizer, DNA Sequencer, Peptide Synthesizer, and Peptide Sequencer. Opportunity to establish own or collaborative research. Ph.D. in biochemistry of related field required. Applicants should submit their curriculum vitae and names of two references to: Dr. Robert A. Harris, Department of Biochemistry, Indiana Uni-versity School of Medicine, Indianapolis, IN 46202– 5122 5122

Indiana University is an Equal Opportunity/Affirmative Action Employer, M/F.



### STAFF SCIENTISTS

Stratagene has three openings for individuals with a Ph.D. or equivalent degree in biology or chemistry. PEPTIDE CHEMISTRY. Applicant will be expect

ed to set up and staff a peptide synthesis facility. Some experience with financial planning and budgets would be advantageous. Familiarity with neuropeptides and/or cykines would be advantageous. PROTEIN CHEMISTRY. Applicant will be expecttokines

ed to carry out a research program involving gene cloning, expression, and mutagenesis and apply these methodologies to the study of protein interactions from a

methodologies to the study or protein interactions from a structure/function perspective. **IMMUNOLOGIST**: Applicant should have experi-ence generating anti-idiotypic antibodies. Knowledge and practical experience with general molecular biology techniques would be advantageous. Stratagene is in a beautiful coastal location minutes

from several major research centers. All positions offer competitive salaries and excellent benefits. All qualified candidates forward résumés to: Stratagene, Attention: Human Resources, 11099 North Torrey Pines Road, La Jolla, CA 92037.

### SUMMER FACULTY POSITIONS IN SLSTP A NASA PROJECT

Four Project Counselor positions are open in the 1990 Space Life Sciences Training Program (SLSTP) to be held at the Kennedy Space Center, Florida. Project counselors will be involved in the implementation of the 7-week long program (starting mid-June 1990) activities for undergraduate college students. An applicant must have a minimum of M.S. degree, preferably Ph.D. degree and some experience of teaching and research in life sciences and related fields. If interested, please send a letter of application, complete curriculum vitae, and three letters of recommendation before 31 December 1989 to:

Program Director SLSTP Florida A&M University College of Pharmacy and Pharmaceutical Sciences 106 Honor House Tallahassee, FL 32307 Telephone: 904-599-3636

TOXICOLOGY/PHARMACOLOGY: ASSIST-ANT PROFESSOR. Tenure-track position beginning fall 1990. Teach upper-level undergraduate courses in toxicology-pharmacology and others in area of specializa-tion. Application deadline is 15 November 1989. Pro-vide evidence of quality teaching. Send letter, curriculum vitae, transcripts, and three letters of reference to: Dr. Duncan R. Jamieson, Dean, School of Sciences, Ash-land University, Ashland, OH 44805. Equal Opportunity/Affirmative Action Employer

### POSTDOCTORAL POSITION TO STUDY REGULATION OF **CELL GROWTH**

Postdoctoral positions available to study the biochemistry and molecular biology of growth and aging of human epidermis and the pathophysiology of psoriasis. Specific areas of interest include 1) signal transduction, 2) transcriptional regulation, 3) growth factors and cytokines, 4) retinoic acid receptors and 5) immunoregulation of epidermal growth. Positions provide excellent working and living conditions in Ann Arbor and the opportunity to conduct research in a progressive, growing University Medical Center. Address applications including fields of interest and curriculum vitae to: John J. Voorhees, M.D., Professor and Chairman, Department of Dermatology, 1910 Taubman Center, 1500 East Medical Center Drive, Ann Arbor, MI 48109-0314. The University of Michigan is a nondiscrimatory/ affirmative action employer.

### **FELLOWSHIP IN** NEUROCHEMISTRY National Institutes of Health

The Laboratory of Neurosciences, National Institute on Aging, invites applications for the position of Staff Fellow/Medical Staff Fellow to study the postmortem human brain in relation to age, Alzheimer's disease and Down Syndrome, coordinated with ongoing clinical program. Animal models of disease (e.g., murine trisomy 16) and actions of centrally acting drugs will be examined. Applications are invited from individuals having a Ph.D. and/or M.D., plus experience in neurochemistry, molecular approaches to gene expression (including in situ hybridization) or neuroanatomy (including quantitative autoradiography). Salary is commensurate with qualifications. Appointments vary in duration from 2 to 7 years and are tenure-track. Interested applicants should send Curriculum Vitae plus two letters of recommendation to:

Stanley I. Rapoport, M.D. Chief, Laboratory of Neurosciences National Institute on Aging, NIH Bldg. 10, Room 6C-103 9000 Rockville Pike Bethesda, MD 20892



NIH IS AN EQUAL OPPORTUNITY EMPLOYER





(National Institute of Occupational Health and Safety)

### HEAD, RESEARCH AND **SCIENTIFIC DIVISION**

### \$68,409 (Aust) plus benefits

The National Occupational Health and Safety Commission (Worksafe Australia) in Sydney, Australia leads national efforts to provide healthy, safe and productive working arrangements and to reduce the incidence and severity of occupational injury and disease.

The Research and Scientific Division of the Institute has units in occupational medicine, epidemiology and surveillance, statistics, occupational hygiene, toxicology, ergonomics, occupational psychology and hazard evaluation.

Applications are invited from persons with highly developed managerial and leadership ability and high level policy and representation skills to manage the activities of the Research and Scientific Division, including research and advisory services across a range of disciplines and ensuring the Division's scientific excellence, integrity and effectiveness.

Appointment to the Australian Public Service or employment on a fixed term basis for up to five years may be negotiated.

A successful applicant from outside Australia will receive assistance with fares, family and personal effects relocation and housing.

Further information regarding the position may be obtained from the Chief Executive Officer, Dr Edward Emmett on (02) 265 7500 or at the address below.

Applications should be forwarded by Friday 3rd November, 1989 to:

The Personnel Officer, Worksafe Australia, GPO Box 58, Sydney NSW 2001, Australia

AN EQUAL OPPORTUNITY EMPLOYER

UNIVERSITY OF TENNESSEE, KNOXVILLE TWO ASSISTANT PROFESSOR POSITIONS IN MOLECULAR BIOLOGY / GENETICS

#### MOLECULAR BIOLOGIST - MICROBIOLOGY DEPARTMENT

QUALIFICATIONS: Doctoral degree and at least two years postdoctoral experience in Microbiology or closely allied biological science; demonstrated research productivity in molecular biology and potential excellence in teaching.

RESPONSIBILITIES: Graduate and undergraduate teaching in Microbiology/Molecular biology, establishment of a productive independent research program, and academic responsibilities normally associated with a tenure-track faculty position. STARTING DATE: August 1, 1990.

Applicants should submit a letter of interest accompanied by a curriculum vitae, a description of the applicant's research program and career objectives, and arrange for letters of reference to be sent by three individuals who can evaluate the applicant's qualifications for the position. Applications from women and minorities are especially invited. All material should be sent to: Dr. Stuart Riggsby, Chairman, Search Committee, Department of Microbiology, University of Tennessee, Knoxville, TN 37996-0845. Nominations should be made as soon as possible; evaluation of applications will begin in December, 1989.

#### MOLECULAR GENETICIST - ZOOLOGY DEPARTMENT

QUALIFICATIONS: Doctoral degree and at least two years postdoctoral experience; training and research focus in genetics and molecular biology; demonstrated research productivity; potential excellence in teaching; research interests in molecular genetics of Drosophila or Mus preferred, but not required, to complement existing programs.

RESPONSIBILITIES: Graduate and undergraduate teaching in basic and advanced genetics and molecular biology, maintenance of a productive externally supported research program, and other academic responsibilities normally associated with a tenure-track faculty position. STARTING DATE: August 1, 1990.

Applicants should submit a letter of interest and curriculum vitae, a description of the applicant's research program and objectives, and arrange for letters of reference to be sent by three individuals who can evaluate the applicant's qualifications for the position. Applications from women and minorities are especially invited. All material should be sent to: Dr. Mary Ann Handel, Chairman, Search Committee, Department of Zoology, University of Tennessee, Knoxville, TN 37996-0810. Applications should be made as soon as possible; evaluation of applications will begin in December, 1989.

The University of Tennessee is an EEO\AA\Title IX\Section 504 employer.

#### TECHNOLOGY AND INTERNATIONAL RELATIONS

George Washington University's Center for Interna-tional Science and Technology Policy has an opening for an individual whose teaching and research interests focus affairs. The appointment will most likely be made at the assistant professor level, although particularly qualified senior candidates may apply. Appointment is on a ten-ure-track basis. A Ph.D. in an appropriate social science discipline, particularly economics or political science, as well as experience in policy-related teaching and external-ly funded research are desirable. The position will begin in the fall 1990 semester. The deadline for applications is 15 December 1989. Send a letter of application, curricu-lum vitae, and three letters of recommendation to:

John M. Logsdon, Director Center for International Science and Technology Policy 2130 H Street, N.W., Suite 714 George Washington University Washington, D.C. 20052

An Equal Opportunity/Affirmative Action Employer.

### AWARDS

### GRADUATE STUDENT RESEARCH AWARDS ECOLOGY AND ENVIRONMENTAL POLICY

The Science Division of the National Audubon Sociey invites applications for graduate student research support in ecology and environmental policy. Candidates should be at an early stage in their doctoral program. Applications in two general areas are especially encour-

1. Field work on ecological processes with broad

- relevance to the management of National Audubon Society sanctuaries and other managed lands, for example on hydrological cycles, nutrient limitation, prescribed burning, or grazing impacts on natural communities;
- 2. Policy analyses of emerging national environmental issues, for example on the role of electric vehicles in moderating global climate changes, implications of biotechnology for land-use, using the permit-re-view process as a conservation tool, or comparing the conservation implications of food irradication vs. pesticides.

These grants are part of an opening effort to expand the Society's scientific scope, therefore, proposals for ornithological research are incligible for funding under this program.

Approximately three grants of up to \$6000 apiece will be awarded. These grants will be renewable for a period of 2 to 3 years. In addition, a number of smaller, one-time grants may be awarded. Field research on Audubon sanctuaries may also be eligible for some on-site logistical support. Application guidelines may be obtained by writing:

Graduate Student Research Awards National Audubon Society 950 Third Avenue New York, NY 10022

Completed applications are due by 15 February 1990. Winners will be announced by early May.

### **FELLOWSHIPS**

POSTDOCTORAL FELLOWSHIPS (Three) on NIH Training Grant in Chemical and Viral Carcinogene-sis to work in laboratories of: Joseph R. Landolph (molecular biology of chemical transformation); Peter (molecular biology of chemical transformation); Peter A. Jones (tumor cell biology; DNA methylation); Pra-dip Roy-Burman (retroviruses and oncogene alleles); Suraiya Rasheed (retroviruses and AIDS-related lym-phomas); Yuen K. T. Fung (retinoblastoma); Myron Goodman (biochemical mechanisms of fidelity and SOS repair); and Amy Lee (molecular biology: control of mammalian gene expression). Candidates must be U.S. citizens or permanent residents. Minority and women candidates strongly encouraged to apply. Send curriculum vitae, names of three individuals who can supply letter of recommen-dation, and preference of faculty preceptors to: Dr. Joseph R. Landolph, Kenneth Norris Jr. Comprehen-sive Cancer Center/USC School of Medicine, 1441 sive Cancer Center/USC School of Medicine, 1441 Eastlake Avenue, Los Angeles, CA 90033.

### AWARDS

THE ROSENSTIEL SCHOOL OF MARINE AND ATMOSPHERIC SCIENCE OF THE UNIVERSITY OF MIAMI SEEKS NOMINATIONS FOR THE ROSENSTIEL AWARD

The Rosenstiel Award is presented annually to recognize outstanding achievement and distinction in oceano graphic science. This year's award will be presented for excellence in the field of Marine and Atmospheric Chemistry. Nominations, including curriculum vitae and the names of three referees, should be sent by 31 October 1989 to:

Dr. Joseph M. Prospero, Chairman Rosenstiel Award Committee Division of Marine and Atmospheric Chemistry University of Miami 4600 Rickenbacker Causeway Miami, FL 33149-1098

### **FELLOWSHIPS**

#### POSTDOCTORAL FELLOWSHIP

Immunology/Genetics: A position is available to study gene regulation of the CD8 gene in lymphocytes during development using somatic cell and molecular genetic approaches. Applicants must be a U.S. citizen or permanent resident. Please send curriculum vitae and three letters of reference to: Dr. Paula Kavathas, Department of Lab-oratory Medicine, Yale University, 333 Cedar Street, P.O. Box 3333, New Haven, CT 06510.

POSTDOCTORAL FELLOWSHIP: Molecular immunology. Studies focus on: (i) transcriptional regulation of protease expression during mast cell differentiation, (ii) epitope mapping, and (iii) site-directed muta-genesis. This research is a component of a comprehensive training progam in molecular and cellular biology at the Medical College. Send curriculum vitae and three refer-ences to: Lawrence B. Schwartz, M.D., Ph.D., Medi-cal College of Virginia, Box 263, Richmond, VA 23298. Equal Opportunity Employer.

POSTDOCTORAL FELLOWSHIP IN FERTIL-IZATION AND EARLY DEVELOPMENT, Univer-IZATION AND EARLY DEVELOPMENT, Univer-sity of California, Davis. A postdoctoral fellowship is available beginning anytime between February and Au-gust 1990 in an NIH-funded training program. Research areas: cell biology and biochemistry of gametes and fertilization (W. Clark, D. Katz, J. Hedrick, S. Meizel, J. Overstreet); cell biology and morphology of early development (G. Anderson, A. Enders, R. Nuccitelli, B. King, L. Wiley). Candidates must be citizens, noncit-izen nationals, or permanent residents of the USA and must at the time of appointment have a doctoral degree. Send curriculum vitae and a statement of research inter-Send curriculum vitae and a statement of research inter-ests to: Dr. Stanley Meizel, Director, Fertilization and Early Development Training Grant, Department of Human Anatomy, School of Medicine, University of California, Davis, CA 95616. The University of California is an Equal Opportunity/Affirmative Action Institution.

### UCLA-INTERCAMPUS MEDICAL GENETICS TRAINING PROGRAM

The UCLA Inter campus postdoctoral research train-ing program in Medical Genetics utilizes the research and clinical resources of its affiliated campuses and teaching hospitals. This program is open to academically oriented applicants with the M.D., Ph.D., D.D.S. or equivalent degrees. A wide variety of research training opportunities in molecular, biochemical, immuno-, cancer, cyto-, somatic cell, population and clinical genetics are available. The program also meets all the requirements of the American Board of Medical Genetics. Clinical genetics fellowships are available at each of the affiliated hospitals. Application forms are available from: David Rimoin, M.D., Ph.D., Department of Pediatrics, Cedars-Sinai Medical Center, 8700 Beverly Boulevard, Los Angeles, CA 90048.

### MEETINGS

MATHEMATICAL APPROACHES TO DNA SANTA FE, NEW MEXICO, 24–28 JANUARY 1990

Topics: DNA polymorphism-Dickerson; Frank-Kamenetskii; Tinoco. Helical repeat—Bina; Boles; Stasiak; Stein; Travers; Vologodskii; White. DNA supercoiling, structure and function—Liu; Olson; Wang; Wells. Higher-order DNA organization—Cox; Wang; Wells. Higher-order DNA organization—Cox; Englund; Rauch; Laemmli; Travers. Invariants—Bo-gle; Kauffman; Millett. DNA geometry and flexibili-ty—Bauer; Crothers; White; Trifonov; Zimm; Le-vene. Graphics—Feldmann; Langridge. Topology of recombination and transposition—Benjamin; Boocock; Cozzarelli; Mizuuchi; Sumners. Sequencing, matching and mapping—Bell; Galil; Gusfield; Karlin; Lander; Marr; Myers; Pearson; Roberts; Waterman. Student travel fluds available. Apply: Dr. S. J. Snengler. Protravel funds available. Apply: Dr. S. J. Spengler, Pro-gram in Mathematics and Molecular Biology, 214A Stanley Hall, University of California, Berkeley, CA 94720.

### **TRAINING PROGRAM**

POSTDOCTORAL TRAINING PROGRAM IN NEUROBIOLOGY, Columbia University. Emphasis is placed on the analysis of the cellular and molecular basis of neural development, behavior, and behavioral plasticity. Training faculty include: Richard Axel, Craig Bai-19. Training racinty include: Richard Axel, Cralg Bal-ley, David R. Colman, Jane Dodd, Michael Gershon, Claude Ghez, Daniel Goldberg, James Goldman, Lloyd Greene, Mary E. Hatten, Robert Hawkins, Thomas Jessell, Eric Kandel, John Koester, Irving Kupfermann, Ronald Liem, Amy MacDermott, Carol Money, July Marchile, Brudenich, P. Marchild, Lie, R. Kuptermann, Konald Liem, Amy MacDermott, Carol Mason, John Martin, Frederick R. Maxfield, John E. Pintar, Steve Rayport, Lorna Role, Taube Rothman, Samuel Schacher, James Schwartz, Eli Shapiro, Mi-chael Shelanski, Steven Siegelbaum, Gary Struhl, Ekkhart Trenkner, Klaudiusz Weiss, and Robert Wong. Applicants for this NIMH-sponsored program must have the M.D., Ph.D., or D.V.M. degree and be either U.S. citizens or have permanent residency status. Send curriculum vitae, a letter describing research interests, and three letters of reference to: Admissions Committee, Postdoctoral Training Program, Center for Neurobiology and Behavior, 722 West 168th Street, New York, NY 10032. Columbia University is an Equal Opportunity/Affirmative Action Employer.

#### MARKETPLACE



Custom Sequencing Primers in 26 hours\* edundancies. Methylphosphonates. Phosphorothioates. 5'-Phosphorylation HPLC or Gel purification . High Quality & Low Prices

1-800-247-8766 The Midland Certified Reagent Co. AX 915-694-2387 3112A W. Cuthbert, Midland, TX 79701

**1-20% OXYGEN CONTROLLER** FOR CO<sub>2</sub> INCUBATORS Economically transforms any CO<sub>2</sub> incubator into an  $O_2/CO_2$  incubator with oxygen control from 1-20%. Fits all makes all models. Will not affect CO<sub>2</sub> or humidity. Works in glove boxes and other chambers too. Proven reliable since 1983 worldwide.

Reming Bioinstruments Co. 17 Old State Rd. • Redfield NY 13437 USA 800-441-3414 315-387-3414

Circle No. 218 on Readers' Service Card



Circle No. 43 on Readers' Service Card

# Millipore will send 12 scientists into space.

On November 14, Millipore is sponsoring a satellite teleseminar on "Bioresearch Tools for the 1990's."

The three-hour special will be viewed at a network of companies, universities and other sites in the United States and Canada. It features top scientists discussing emerging technologies and applications that will play a major role in bioresearch over the next decade. In addition, valuable information will be provided in six poster presentations. Program Agenda: Bioresearch Tools for the 1990's

Overview of New Technology Jack Johansen, Millipore

Human Genome Instrumentation Charles R. Cantor, Lawrence Berkeley Laboratory

Capillary Electrophoresis James Jorgenson, University of North Carolina

Covalent Protein Sequencing Darryl Pappin, MilliGen/Biosearch Division of Millipore

**2-D Electrophoresis** Calvin McLaughlin, University of California - Irvine

**Protein Characterization by HPLC** M. Patricia Strickler, Waters Chromatography Division of Millipore

Circle No. 248 on Readers' Service Card

Poster presentations include the following topics: multiplex DNA sequencing, nucleic acid blotting, purification of proteins and nucleic acids by HPLC, solid phase peptide synthesis, and preparative protein separations with membrane chromatography cartridges.

To obtain the latest list of viewing sites and a detailed agenda, call the Millipore teleseminar hot line at **800-766-6767**. You can also call our 800 number if you would like to sponsor a downlink site at your facility.



### "This new I-C-E Cell gives me precise cooling *and* heating . . ."

11311 1 16

The E-C Isothermal Controlled Electrophoresis System (I-C-E) **heats and cools** from 0°C to 80°C with setpoint accuracy of  $(\pm)$  0.1°C.

0.1°C! That's precise enough for most applications! This versatile system does it all — 1D, 2D, immuno, SDS, isoelectric focusing, and standard electrophoresis. Even critical life support media.

2

QC

Warm up to the idea that temperature control can be as precise as you want it to be. For only \$1,795 f.o.b. our plant.

Call 1-800-EC RANGE for more information. In Florida, 1-813-344-1644 collect.

E-C Apparatus Corp. 3831 Tyrone Blvd. N. St. Petersburg, FL 33709 Telex: 51-4736 HALA FAX: 1-813-343-5730

I-C-E System includes isoelectric focusing cover with adjustable platinum electrodes and buffer tanks for 1D and 2D separations.

FC100

HH 11 11 11 ...

Circle No. 226 on Readers' Service Card